Competency-Based Dynamic Curriculum for MD/ MS Unani

(PRESCRIBED BY NCISM)

Semester III-VI

Amraze Atfal

(Paediatrics)

(SUBJECT CODE : UNIPG-AA)

(Applicable from 2024-25 batch, from the academic year 2025-26 onwards until further notification by NCISM)

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Preface

The Unani System of Medicine stands as one of the oldest and most well-established healthcare traditions, offering a holistic approach to health and well-being. Rooted in ancient wisdom and refined through centuries of clinical practice, Unani medicine emphasizes the balance of temperament (Mizāj), humors (Akhlāṭ), and lifestyle as fundamental principles for disease prevention and treatment. Recognized by the World Health Organization (WHO) in 1976, this system has gained global acceptance as a comprehensive and effective healthcare resource.

Within the Unani system, Amraze Atfal (Paediatrics) is a dedicated discipline focusing on the health and development of children from infancy to adolescence. This branch provides a structured framework for understanding pediatric diseases, encompassing their etiology, diagnosis, prevention, and management through Unani principles. The pediatric age group is classified under Sinn-i-Numū (Growing age), characterized by a Hot and Moist (Har Ratb) temperament, and further divided into Sinn-i-Ṭufūlat (Infancy), Sinn-i-Ṣabā (Childhood), Sinn-i-Tara'ru' (Adolescence), Sinn-i-Bulūgh/Sinn-i-Ruhāq (Puberty) and Sinn-i-Fatā (final stage of growing age). The primary objective of this specialty is to enhance pediatric health outcomes by preventing and managing a broad spectrum of childhood illnesses. It emphasizes the early detection, effective treatment, and holistic prevention of pediatric diseases while advocating for the adoption of healthy lifestyle practices, including balanced nutrition, immunization, hygiene, and regular medical assessments. This integrated approach ensures optimal growth, development, and overall well-being in children.

The MD (Mahir-e-Amraz-e-Atfal) program is meticulously designed to cultivate highly skilled specialists proficient in the assessment, management, and treatment of pediatric health conditions within the Unani medical framework. The curriculum harmoniously integrates traditional Unani wisdom with modern scientific advancements, aligning with national health policies and global pediatric standards. The program encompasses a comprehensive range of pediatric healthcare modalities, including: 'Ilāj bi'l Taghdhiya (Dietotherapy), 'Ilāj bi'l Dawā' (Pharmacotherapy), 'Ilāj bi'l Yad (Surgical Management), 'Ilāj bi'l Tadbīr (Regimenal Therapy), with a focus on Tadbīr al-Mawlūd (Neonatal Care). Beyond clinical expertise, the program places a strong emphasis on leadership, teamwork, and professional development. It fosters a culture of self-directed learning, entrepreneurship, research implementation, and evidence-based practice, ensuring that graduates are well-equipped to contribute to the advancement of pediatric healthcare. The curriculum is structured to integrate cognitive, psychomotor, and affective learning domains while enhancing communication skills, enabling specialists to deliver high-quality pediatric care across various healthcare settings. These specialists will play a crucial role in strengthening community health, contributing to national healthcare development, and upholding the highest standards of pediatric care for future generations.

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Competency-Based Dynamic Curriculum for MD/ MS Unani

Amraze Atfal (UNIPG-AA)

Summary & Credit Framework

Semester III-VI

Module Number & Name	Credits	Notional Learning Hours	Maximum Marks of assessment of modules (Formative Assessment)
Semester No : 3			
Paper No : 1 (امراض اطفال عمومی اول)(Amraze Atfal Umoomi awwal) General Pediatrics -Part 1)			
M 1 تغذیہ Taghdhiya (Nutrition)	2	60	50
M 2 علم الوراثت الجزئی)Ilmul virasatul-juz-ee) Molecular genetics and Pattern of Inheritance	2	60	50
Paper No : 2 (امراض اطفال عمومی دوم)(Amraze Atfal Umoomi Dowem) General Pediatrics -Part 2)			
M 9 مناعت کے اصول وضوابط وافعال)(Manaat ke usool wa zawabit wa afaal) Principles of Immunization and Function of Immune System	1	30	25
M 10 حفاظت جدرینہ، بارد ترسیل اور جدرینہ کی اقسام)(Hifazate judreena, Barid Tarseel aur judreena ki aqsam) Vaccine Preservation, Cold Chain, and Vaccination Types.	1	30	25
M 11 بچوں میں نئے ابھرنے والے لیکن جدرینہ سے قابل انسداد تشبی بیماریاں)(Bachon m naye ubharne wali lekin judreena se qabile insedad Qashbi bimaryan) Emerging, Common and Vaccine-Preventable Viral Infections in Pediatrics.	2	60	50
Paper No : 3 (امراض اطفال نظامی اول)(Amraze Atfal Nizami awwal) Systemic Paediatrics First)			

M 18 امراض نظام تنفس اول Amrād-i-Nizām i-Tanaffus- I (Respiratory Disorders- 1)	2	60	50
M 19 امراض نظام تنفس دوم Amrād i-Nizām-i-Tanaffus -II (Respiratory Disorder- 2)	2	60	50
Paper No : 4 (امراض اطفال نظامی دوم Amraze Atfal Nizami Dowem) Systemic Pediatrics - Part 2)			
M 27 امراض نظام ہضم اور امراض کبدی۔ا Amrāḍ-i-Niẓām-i-Haḍm aur Amrāḍ-i - Kabidi-I(Gastro Intestinal and Hepatobiliary Disorder -1)	2	60	50
M 28 امراض نظام ہضم وامراض کبد۔دوم Amrāḍ-i-Niẓām-i-Haḍm aur Amrāḍ-i Kabidi-II (Gastro intestinal and Hepatobiliary Disorders -2)	2	60	50
Semester No : 4			
Paper No : 1 (امراض اطفال عمومی اول Amraze Atfal Umoomi awwal) General Pediatrics -Part 1)			
M 3 کروموسومی تفاوت/صبغی تفاوت سریریاتی بےقاعدگیلی سریریاتی خلل (Chromosomy tafa-ut/ Sibghi tafaut Sareeryati be qa-idgiyan/ sareeryati khakal) Chromosomal Variations and Clinical Abnormalities	3	90	75
M 4 1-نشوونمو (Nushu wa numa-1) Growth and Development-1	1	30	25
Paper No : 2 (امراض اطفال عمومی دوم Amraze Atfal Umoomi Dowem) General Pediatrics -Part 2)			
M 12 امراض تنفس میں تعدیہ ویروسی مزمن Chronic, and Respiratory Viral Infections in Pediatrics	1	30	25
M 13 Pediatric Emergencies.	3	90	75
Paper No : 3 (امراض اطفال نظامی اول Amraze Atfal Nizami awwal) Systemic Paediatrics First)			
M 20 امراض نظام قلب۔اول Amrād-i- Nizām-i-Qalb -I (Cardiovascular Disorders- 1)	2	60	50
M 21 امراض نظام قلب۔دوم Amrād-i- Nizām-i-Qalb -II (Cardiovascular disorders- 2)	1	30	25
M 22 علم السرطان Ilm-ul-Sartan (Oncology)	1	30	25
Paper No : 4 (امراض اطفال نظامی دوم Amraze Atfal Nizami Dowem) Systemic Pediatrics - Part 2)			

M 29 امراض نظام ہضم وامراض کبد سوم Amrāḍ-i-Niẓām-i-Haḍm aur Amrāḍ-i Kabidi-III (Gastro intestinal and Hepatobiliary Disorders-3)I	2	60	50
M 30 امراض نظام کلیہ/Amrāḍ-i-Niẓām-i-Kulya (Nephrologic disorders)	2	60	50
Semester No : 5			
Paper No : 1 (امراض اطفال عمومی اول)(Amraze Atfal Umoomi awwal) General Pediatrics -Part 1)			
M 5 نشونما Nushu wa numa-2 (Growth and Development) – 2	1	30	25
M 6 تدابیر وانتعاش نومولود (Tadabīr wa Intea'ash Naumaulood) Newborn Care and Neonatal Resuscitation	3	90	75
Paper No : 2 (امراض اطفال عمومی دوم)(Amraze Atfal Umoomi Dowem) General Pediatrics -Part 2)			
M 14 جرثومی تعدیہ Jarsoomi Tadiya (Bacterial Infections I)	2	60	50
M 15 II جرثومی تعدیہ ,Jarsoomi Tadiya II, (Bacterial Infections II)	2	60	50
Paper No : 3 (امراض اطفال نظامی اول)(Amraze Atfal Nizami awwal) Systemic Paediatrics First)			
M 23 امراض نظام اعصاب ودماغ ۔۔اول Amrād i-Nizām-i--Asaab-wa-Dimaagh – I (NEUROLOGICAL DISORDER –I)	2	60	50
M 24 امراض نظام اعصاب ودماغ۔دوم I Amrad-i-Nizām-i-Asaab-wa-Dimaagh – II(Neurological Disorders-2)	2	60	50
Paper No : 4 (امراض اطفال نظامی دوم)(Amraze Atfal Nizami Dowem) Systemic Pediatrics - Part 2)			
M 31 امراض عین اذن انف وحلق (Amrāḍ-i-'Ayn-Udhun wa Anf)	3	90	75
M 32 امراض جلد (Amrāḍ-i-jild) Skin Diseases	1	30	25
Semester No : 6			
Paper No : 1 (امراض اطفال عمومی اول)(Amraze Atfal Umoomi awwal) General Pediatrics -Part 1)			
M 7 نومولود سقیم (Maulood Saqeem) Sick Newborn	3	90	75
M 8 نفسیاتی واخلاقی امراض Nafsīyātī wa AkhlāqiAmrāẓ (Psychological and Behavioral Disorders)	1	30	25

Paper No : 2 (امراض اطفال عمومی دوم)Amraze Atfal Umoomi Dowem) General Pediatrics -Part 2)			
M 16 طفیلی تعدیہTufaili Ta'dia (Parasitic Infections)	2	60	50
M 17 دیدان امعاءDidan al Am'a' (Intestinal worm infestations)	2	60	50
Paper No : 3 (امراض اطفال نظامی اول)Amraze Atfal Nizami awwal) Systemic Paediatrics First)			
M 25 HEMATOLOGICAL DISORDERS.	2	60	50
M 26 Drugs and Drug's Dosage	2	60	50
Paper No : 4 (امراض اطفال نظامی دوم)Amraze Atfal Nizami Dowem) Systemic Pediatrics - Part 2)			
M 33 امراض غدد لاقناتیہ/Amrāḍ-i-Gududde la Qanatiya (Endocrine Disorders)	2	60	50
M 34 Miscellaneous Diseases.	2	60	50
	64	1920	1600

Credit frame work

UNIPG-AA consists of 34 modules totaling 64 credits, which correspond to 1920 Notional Learning Hours. Each credit comprises 30 hours of learner engagement, distributed across teaching, practical, and experiential learning in the ratio of 1:2:3. Accordingly, one credit includes 5 hours of teaching, 10 hours of practical training, 13 hours of experiential learning, and 2 hours allocated for modular assessment, which carries 25 marks.

Important Note: The User Manual MD/MS Unani is a valuable resource that provides comprehensive details about the curriculum file. It will help you understand and implement the curriculum. Please read the User Manual before reading this curriculum file. The curriculum file has been thoroughly reviewed and verified for accuracy. However, if you find any discrepancies, please note that the contents related to the MSE should be considered authentic. Each paper has 16 credits and each semester covers 16 credits across 4 papers. In case of difficulty and questions regarding the curriculum, write to syllabus24uni@ncismindia.org

Credit Analysis Overview					
Sem/Paper	**Paper No 1**	**Paper No 2**	**Paper No 3**	**Paper No 4**	**Credits**
Semester 3	M-1 | 2 Crs M-2 | 2 Crs	M-9 | 1 Crs M-10 | 1 Crs M-11 | 2 Crs	M-18 | 2 Crs M-19 | 2 Crs	M-27 | 2 Crs M-28 | 2 Crs	**16**
Semester 4	M-3 | 3 Crs M-4 | 1 Crs	M-12 | 1 Crs M-13 | 3 Crs	M-20 | 2 Crs M-22 | 1 Crs M-21 | 1 Crs	M-29 | 2 Crs M-30 | 2 Crs	**16**
Semester 5	M-5 | 1 Crs M-6 | 3 Crs	M-14 | 2 Crs M-15 | 2 Crs	M-23 | 2 Crs M-24 | 2 Crs	M-31 | 3 Crs M-32 | 1 Crs	**16**
Semester 6	M-7 | 3 Crs M-8 | 1 Crs	M-16 | 2 Crs M-17 | 2 Crs	M-26 | 2 Crs M-25 | 2 Crs	M-33 | 2 Crs M-34 | 2 Crs	**16**
Credits	**16**	**16**	**16**	**16**	**64**

Semester VI University examination					
Theory			Practical*		
Paper	Marks	Total	Practical Heads	Marks	Total
Paper -1	100	400	Long case or procedure/Major practical as applicable	100	400
			Short case or procedure/Minor practical	50	
Paper -2	100		Spotters	50	
			Assessing teaching ability	25	
Paper -3	100		Assessing presentation skills	25	
			Viva (4 examiners: 25 marks/each examiner)#	100	
Paper -4	100		Logbook (Activity record)	25	

			Practical/Clinical Record	25	
Semester VI University examination – 800 Marks					

* Details in 6H table; # No separate marks for dissertation viva.

Course Code and Name of Course

Course code	Name of Course
UNIPG-AA	Amraze Atfal (Paediatrics)

Table 1 : Course learning outcomes and mapped Program learning outcomes

CO No	A1 Course learning Outcomes (CO) UNIPG-AA At the end of the course UNIPG-AA, the students should be able to	B1 Course learning Outcomes mapped with program learning outcomes.
CO1	Demonstrate expertise in Unani concepts for pediatric health assessment by conducting comprehensive medical histories, systematic physical examinations, neurodevelopmental assessments, and relevant bedside investigations for accurate diagnosis and management.	PO1,PO2,PO6
CO2	Demonstrate proficiency in applied embryology and genetic counselling by maintaining accurate documentation and adhering to legal and ethical standards; integrate classical therapeutic approaches with contemporary scientific advancements to enhance diagnostic accuracy and improve treatment outcomes.	PO2,PO5,PO8
CO3	Demonstrate the ability to design and implement community health initiatives that promote sustainable lifestyle changes and preventive strategies, in alignment with local and global health policies; with a focused emphasis on breastfeeding promotion, immunization coverage, and effective implementation of national child health programs.	PO3,PO4
CO4	Conduct interdisciplinary research merging Classical Unani medicine with biomedical sciences to produce evidence-based findings that support the integration and expansion of Unani practices in pediatric care (Amraze-Atfal).	PO3,PO4,PO5,PO8
CO5	Integrate Unani, conventional medicine and digital technologies to preserve traditional knowledge, enhance education, innovate drug development, and utilize telemedicine, while promoting sustainability and ethical sourcing.	PO4,PO5,PO8

CO6	Demonstrate expertise in Unani medicine by applying diagnostic and therapeutic principles alongside conventional practices to manage neonates and pediatric emergencies, utilizing evidence-based methods for optimal outcomes.	PO1,PO2,PO6,PO7
CO7	Appraise commitment to lifelong learning, critical thinking, and problem by engaging with emerging research and technologies in classical medicine.	PO4,PO6,PO7,PO8
CO8	Justify the importance of leadership in research and education by interpreting classical Unani literature, mentoring skilled Unani pediatricians, and fostering entrepreneurship to preserve and advance Unani medical knowledge.	PO1,PO2,PO7,PO8

Table 2: Course contents (Modules - Credits and Notional Learning Hours)

Paper No : 1 امراض اطفال عمومی اول (Amraze Atfal Umoomi awwal) General Pediatrics -Part 1						
Semester No : 3						
2A Module Number	**2B Modules & units**	**2C Number of Credits**	**Notional Learning hours**			
			2D Lectures	**2E Practical Training**	**2F Experiential Learning including Modular Assessment**	**2G Total**
	M-1 تغذیہ Taghdhiya (Nutrition) This module provides an in-depth study of pediatric nutrition, focusing on the essential principles of Feeding Practices in Children, including age-appropriate dietary requirements and strategies for fostering healthy eating habits. Students will examine Malnutrition, exploring its causes, types (such as undernutrition and Protein Energy Malnutrition), and the critical importance of early detection and intervention. The module also addresses Nutrition in Special Situations, such as feeding strategies for children with chronic illnesses, Pyloric stenosis, CNS disorders, and Burn. Additionally, the module explores the Unani System of Medicine, highlighting its principles and dietary practices as applied to child health and nutrition. Through a blend of case studies, practical sessions, and insights from Unani medicine, students will gain a well-rounded perspective on pediatric nutrition across various contexts.	2	10	20	30	60

	• M 1U 1 احکامات غذاء اطفال (Aḥkāmāt-i-Ghidhā' atfal) Principles of Feeding Practices in Children 1.1.1. Age specific 1.1.2. Nutritional Requirements in children 1.1.3. Feeding behavior 1.1.4. اقسام غذا (Aqsam-i-Ghidhā') Types of Food and associated conditions 1.1.5. Nutritional Issue of importance across Pediatric age 1.1.6. Preventive nutritional counselling in Pediatric Primary Care **• M 1U 2 نقص تغذیہ (Nuqṣ-i-Taghdhiya) Malnutrition)** 1.2.1. ہزال *(Huzāl)* Underweight 1.2.2. سوء تغذیہ بنقص الحم (Su-i Taghdiya binaqs-i leham) Protein energy Malnutrition 1.2.3. قلت وزائد حیاتین۔الف (Qillat wa Ifrāṭ Ḥayātin -A) Vitamin A Deficiency and Excess 1.2.4. قلت حیاتین۔ب (Qillat Ḥayātin -B) Vitamin B Complex Deficiency 1.2.5. قلت حیاتین۔ث (Qillat Ḥayātin -C) Vitamin C Deficiency 1.2.6. قلت وزائد حیاتین۔د (Qillat wa Ifrāṭ Ḥayātin -D) Vitamin D deficiency and Excess 1.2.7. قلت حیاتین۔ی (Qillat Ḥayātin -E) Vitamin E deficiency 1.2.8. قلت حیاتین۔ک (Qillat Ḥayātin -K) Vitamin K deficiency 1.2.9. قلت مغذیہ دقیقہ (Qillat Maghziya Daqeeqa) Micronutrient Deficiencies 1.2.10. اخفاق نمو (Ikhfaq i Namu) Failure to thrive **• M 1U 3 تغذیہ بحالت خاص (Taghziya Ba-Halat i Khas) Nutrition in Special situation** 1.3.1. Critically Ill Child 1.3.2. تضیق البواب *(Taḍiyyuq-al-buwwab)* Pyloric stenosis 1.3.3. امراض راس ونظام اعصاب ودماغ *(Amrāḍ-i-Ra's-o-Niẓām-i-A'ṣāb-o-Dimāgh)* Central Nervous System Disorders					

	1.3.4.حرق *(Harq)* Burn					
	M-2 علم الوراثت الجزئی (Ilmul virasatul-juz-ee) Molecular genetics and Pattern of Inheritance This module provides a foundational understanding of genetics in a clinical setting, focusing on molecular genetics, inheritance patterns, and their application in patient care. This module is about the mechanisms of genetic inheritance, molecular diagnostic techniques, and the essential role of genetic counselling in managing hereditary conditions. Emphasis is placed on applying genetic knowledge to support accurate diagnosis, personalized treatment, and patient-family education. **• M 2U 1 علم الوراثت الجزئی (Ilmul virasatul-juz-ee) Molecular genetics** 2.1.1. Structure of RNA and DNA 2.1.2. Primary, secondary, and tertiary **• M 2U 2 طرز توارث (Tarz-e tawarus) Pattern of inheritance** 2.2.1. Autosomal dominant 2.2.2. Autosomal recessive 2.2.3. X – Linked, Y – Linked 2.2.4. Mitochondrial **• M 2U 3 سلامتی تشخیص (Salmati tashkheesh) Molecular diagnosis** 2.3.1. Biomarker Tests 2.3.2. Genetic Screening 2.3.3. Tumour Sequencing 2.3.4. Liquid Biopsies **• M 2U 4 وراثتی مشاورت (Virasati mushawarat) Genetic Counselling** 2.4.1. Principles of genetic counselling	2	10	20	30	60

	2.4.2. Role of a genetic counsellor.					
		4	20	40	60	120
Semester No : 4						
2A Module Number	**2B Modules & units**	**2C Number of Credits**	**Notional Learning hours**			
			2D Lectures	**2E Practical Training**	**2F Experiential Learning including Modular Assessment**	**2G Total**
	M-3 کروموسومی تفاوت/ صبغی تفاوت سریریاتی بےقاعدگیاں سریریاتی خلل (Chromosomy tafa-ut/ Sibghi tafaut Sareeryati be qa-idgiyan/ sareeryati khakal) Chromosomal Variations and Clinical Abnormalities This module delves into genetic abnormalities and their health implications, beginning with Structural and Numerical Aberrations that cause various disorders. This module explore Aneuploidies, such as Down syndrome and Turner syndrome, focusing on conditions arising from abnormal chromosome numbers. The study will extend to Sex Chromosome Abnormalities, including Klinefelter and Triple X syndromes, emphasizing their clinical features. Participants will also learn about Dysmorphism, identifying physical manifestations associated with genetic syndromes. The module concludes with an overview of Gene Therapy, examining advancements aimed at correcting genetic	3	15	30	45	90

	disorders. Through theoretical and practical approaches, it provides comprehensive insights into genetic aberrations and therapeutic interventions. **• M 3U 1 ساختی اور عددی انحراف (Sakhti aur adadi inhiraf) Structural and Numerical Aberrations** 3.1.1. Mechanisms of structural aberrations 3.1.2. Types of numerical aberrations **• M 3U 2 عددی انحرافات (Adadi inhirafat) Aneuploidies** 3.2.1. Autosomal Trisomy 3.2.2. Trisomy 1 33.2.3. Trisomy 1 83.2.4. Trisomy 21 **• M 3U 3 غیر طبعی جنسی کروموسومز (Ghair tabaee Jinsi chromosomes) Sex chromosomes abnormalities** 3.3.1. Sex Chromosome Aneuploidy 3.3.2. Turner Syndrome 3.3.3. Klinefelter Syndrome 3.3.4. 47, XYY Syndrome **• M 3U 4 شکلی خرابی/بدشکلی/شکلی اختلال (Shakli kharabi/ bad shakli/ shakli ikhtilal) Dysmorphism** 3.4.1. Malformation 3.4.2. Disruptions 3.4.3. Deformations 3.4.4. Dysplasia **• M 3U 5 علاج جینی (Ilaj Jeeni) Gene Therapy** 3.5.1. Principles and mechanisms of gene therapy					

	3.5.2. Types of Gene Therapy 3.5.3. Concepts of gene delivery					
	M-4 1-نشوونما(Nushu wa numa-1) Growth and Development-1 This module facilitates an understanding of growth and development, which follow predictable patterns with individual variations. It emphasizes the role of anthropometric measurements in evaluating physical attributes for assessing growth, while nomograms are used to compare these measurements against standard benchmarks, providing a comprehensive evaluation of a child's developmental progress. Additionally, it explores how temperament influences growth and development, shaping individual trajectories and outcomes. **• M 4U 1 نشوونماکےاصول Nushū wa Numū ke Uṣūl (Principles of Growth and Development)** 4.1.1. نمواورنشوکےاصول(Numū aur Nushū keTaṣawwurāt) Concept of Growth versus development 4.1.2.نمو پراثرانداز ہونےوالےعوامل(Numū par Aṡarandāz hone wāleʿAwāmil) Factors influencing growth 4.1.3.نمواورترقی کےنظریات(Numū aur Taraqqī ke Nazariyāt) Theories of development cognitive, psychosocial, behavioral. **• M 4U 2 سن صباوسن ترعرع Sinn-i-Ṣabā se Sinn- i-Tara'ru' (Normal growth and development in childhood and adolescence)** 4.2.1.جسمانی نمو کی ترتیب سن طفولت سے سن ترعرع(Jismānī Numū kī Tarteeb - Sinn-i-Tufūlat se Sinn-i-Tara 'ru ') Physical growth patterns - Infancy to adolescence 4.2.2.ترقیاتی مراحل محرکاتی،ذہنی،انفعالی(Taraqqiyātī Marāḥil, Muḥarrikātī, Zehnī, Anfāʿilī) Developmental mile stone - motor, cognitive, emotional	1	5	10	15	30

	4.2.3.سن ترعرع میں نفس اجتماعی کے مسائل(Sinn-i-Tara'ru' mein Nafs-i-Ijtimāī ke Masāil) Adolescent psychosocial challenge 4.2.4.نمو پر غذائیت کے اثرات(Numū par Ghidhā'īyat ke Asrāt) Nutritional impacts on growth **• M 4U 3 نمواور نشو کی تقویم Numū aur Nushū kī Taqwīm /Assessment of Growth and Development،** 4.3.1.نمو کی نگرانی(Numū kī Nigrānī) Growth Monitoring: anthropometrics, Growth charts 4.3.2.ترقیاتی ادات فحص (TaraqqiyātīIdāt Faḥas) Developmental Screening tools: Denver, Bayley 4.3.3.غذائی اور نفسیاتی تقویم(Ghidhā'ī aur NafsiyātīTaqwīm) Nutritional and psychological assessments 4.3.4. Role of imaging and lab investigations **• M 4U 4 نمواور ترقی کا معائنہ Numū aur Taraqqī ka Mu'āina (Developmental assessment) according to unani concept.** 4.4.1.یونانی اصول مزاج،اخلاط،طبیعت(Unānī Uṣūl: Mizāj, Akhlāṭ, Ṭabī'at) Classical concept of developmental assessment of growth 4.4.2نشونما کے درجات(Nushū numā ke Darajāt) Stages of development **• M 4U 5 مروجہ/معیاری شماری خاکہ (Muravvajah/ me-aari shumari khakah) Standards /nomograms** 4.5.1. Types of Nomograms 4.5.2. Significance of Nomograms in Pediatrics age groups					
		4	20	40	60	120
Semester No : 5						
2A	**2B** **Modules & units**	**2C**	**Notional Learning hours**			
			2D	**2E**	**2F**	**2G**

Module Number		Number of Credits	Lectures	Practical Training	Experiential Learning including Modular Assessment	Total
	M-5 نشونما Nushu wa numa-2 (Growth and Development) – 2 This module provides an in-depth exploration of short stature and developmental delays, examining their implications for sexual maturation and puberty. It covers the underlying causes, assessment techniques, and management strategies for these conditions, highlighting the significance of a holistic approach in monitoring and supporting children's overall growth and development. By integrating psychological, social, and physical aspects, the module aims to equip caregivers and professionals with the tools necessary to promote healthy growth in affected children. **• M 5U 1 قصیرالقامت کانقطہ نظر Qaseer al qamat ka nuqta-i-nazar (Approach to Short Stature)** 5.1.1. درجہ بندی (Darjah Bandī) Classification 5.1.2. تشخیص کاطریقہ (Tashkhīṣ ka Ṭarīqah) Diagnostic approach 5.1.3. عام اسباب (Ām Asbāb) Common causes 5.1.4. علاج (ʿIlāj) Management **• M 5U 2 سن بلوغت Sinn-i-Bulughat (Puberty)** 5.2.1. بلوغت مبکر (Bulūghat Mubakkir) Precocious puberty 5.2.2. بلوغت ابطاء، اقسام اور اسباب (Bulūghat Ibṭāʾ, Aqsām aur Asbāb) Delayed Puberty Types and causes 5.2.3. ثانوی جنسی تغیرات (Thānawī Jinsī Taghayyurāt) Secondary sexual characteristics 5.2.4. علاج (ʿIlāj) Treatment	1	5	10	15	30

	• **M 5U 3 تاخر نمو Taakhur i namu (Developmental Delay)** 5.3.1. اقسام (Aqṣām) Types 5.3.2. جائزہ کا طریقہ (Jā'izah ka Ṭarīqah) Assessment 5.3.3. ابتدائی مداخلت (Ibtidā'ī Mudākhalāt) Early intervention strategies 5.3.4. توقعات اور نتائج (Tawaqqʿāt aur Natā'ij) Prognosis and long-term Outcomes • **M 5U 4 طبعی جنسی نمو و اضطرابات Al-Numū al-Ṭabʿī Jinsī Iḍṭirābāt (Normal Sexual Maturation and Its Disturbances)** 5.4.1. Tanner stages 5.4.2. Hormonal changes					
	M-6 تدابیر و انتعاش نومولود (Tadabīr wa Intea'ash Naumaulood) Newborn Care and Neonatal Resuscitation This module covers essential topics in the care of neonates and infants, from perinatal support to the intricacies of feeding and safe transportation. It provides develop a strong foundation in assessing newborn health, providing effective nutritional support, and understanding protocols for safe transport, especially in critical cases. • **M 6U 1 تدابیر دوران ولادت Tadabīr duran-e-Wilāda (Perinatal care)** 6.1.1. Foetal Screening tests 6.1.2. تدابیر دوران ولادت Tadabīr duran-e-Wilāda (Care during labour and routine delivery). • **M 6U 2 تدابیر و امتحان نومولود Tadabīr wa Imtehan-e- Nau Mawlūd (Newborn Care and Assessment)** 6.2.1. Nursing care 6.2.2. Infant mother bonding 6.2.3. Kangaroo Mother care (KMC)	3	15	30	45	90

	6.2.4. Resuscitation **• M 6U 3 رضاعت نومولود(Raḍā'at naumaulood) Newborn feeding** 6.3.1. رضاعت پستانیRaḍā'at Pistani (Breast feeding) 6.3.2. Supplementary feeding 6.3.3.فطامFiṭām (Weaning /Complementary feeding). **• M 6U 4 خاص حالات میں غزائی معمولات(Khas halat m ghizai mamoolat) Feeding practices in special cases** 6.4.1. Preterm Infant 6.4.2. Low Birth Weight (LBW) 6.4.3. Intrauterine Growth Restriction (IUGR) **• M 6U 5 نومولود کی منتقلی(Naumaulood ki Muntaqli) Neonatal Transportation** 6.5.1. Sick Newborn 6.5.2. Documentation at the time of referal					
		4	20	40	60	120
Semester No : 6						
2A Module Number	**2B Modules & units**	**2C Number of Credits**	**Notional Learning hours**			
			2D Lectures	**2E Practical Training**	**2F Experiential Learning including Modular Assessment**	**2G Total**

	M-7 نومولود سقیم(Maulood Saqeem) Sick Newborn This module provides a comprehensive overview of the critical aspects of neonatal care, focusing on high-risk infants and the challenges associated with their management, Focusing on the importance of thermoregulation. It provides knowledge and skills essential for the assessment, monitoring, and follow-up of neonates, with an emphasis on early diagnosis and intervention in surgical problems. **• M 7U 1 خطرے سے دوچار نوزائدہ(Khatre se do-char nauzaeda) High Risk Infant** 7.1.1. Low Birth Weight 7.1.2. یرقان نومولود(Yarqān-i-Nau Maulood) Neonatal Jaundice 7.1.3. اختناق الولادت(Ikhtenaq al wiladat) Birth Asphyxia 7.1.4. طفل خدیج(Tifl Khadeej) Prematurity 7.1.5. تعدیہ(Ta'adiya) Infection 7.1.6. Intrauterine Growth Restriction (IUGR) **• M 7U 2 توازن حرارت(tawazun hararat) Thermoregulation** 7.2.1. Physiological mechanisms involved in thermoregulation in neonates 7.2.2. Clinical features of hypothermia in neonates 7.2.3. Prevention hypothermia immediately after birth **• M 7U 3 مراجعت نومولود(Muraje-at naumaulood) Neonatal follow up** 7.3.1. Significance of neonatal follow-up 7.3.2. Key components of a neonatal follow-up program 7.3.3. Criteria for referring neonates to specialized follow-up programs **• M 7U 4 جراحتی مسائل (بروقت تشخیص اور حوالگی)(Jarahati masa-el (bar waqt tashkheesh aur hawalgi) Surgical problems (Early diagnosis &Referral)**	3	15	30	45	90

	7.4.1. Tracheoesophageal Fistula with esophageal atresia 7.4.2. Anorectal malformation 7.4.3. Diaphragmatic Hernia 7.4.4. Hirschsprung's diseases 7.4.5. Urogenital anomalies 7.4.6. Necrotizing Enterocolitis (NEC) 7.4.7. Congenital Labor emphysema 7.4.8. Volvulus 7.4.9. Phimosis, Paraphimoses and Hypospadias					
	M-8 نفسیاتی واخلاقی امراض Nafsīyātī wa AkhlāqiAmrāẓ (Psychological and Behavioral Disorders) This module explores psychological disorders within the classical framework, encompassing eating disorders, autism, sleep disorders, and behavioral and conduct disorders. It explores the defining characteristics, underlying causes, and effective management strategies for each condition, emphasizing a holistic understanding that considers both individual and environmental factors. By promoting this comprehensive perspective, the module aims to enhance the ability to support individuals facing these challenges. **• M 8U 1 امراض نفسیاتی کا یونانی نظریہ (Concept of psychological disorders in classical medicine.)** 8.1.1. امراض نفسیاتی اور یونانی نظریہ (Amrāẓ Nafsīyātī wa Unānī Nazriya) 8.1.2. یونانی اصول (Unani Uṣūl/ Mizāj, Akhlāṭ, Ṭabīʿat) Unani Principle 8.1.3. Classical medicine in child psychology. **• M 8U 2 اضطرابات اکل Iḍṭirābāt al-Akl (Eating disorders)** 8.2.1. بولیموس/جوع البقر (Jūʿ al-Baqar/ Būlīmūs) Bulimia	1	5	10	15	30

	8.2.2.بطلان اشتہا(Buṭlān-i-Ishtihā) Anorexia 8.2.3.فساد شہوت(Fasād al-Shahwa) Pica 8.2.4.اجترار علاج(Ijtirār, ʿIlāj) Rumination **• M 8U 3 اضطراب نوم/ذاتویہ Dhātawiyyah/ Iḍṭirāb al-Naūm (Sleep disorders))** 8.3.1.ذاتویہ(Dhātawiyyah) Autism 8.3.2.اضطراب النوم(Iḍṭirāb al-Naūm) Sleep Disorders **• M 8U 4 اخلاقی امراض Akhlāqi Amrāẓ (Behavioral Disorders)** 8.4.1. Attention Deficit Hyperactivity Disorder (ADHD) 8.4.2. Oppositional defiant disorder (ODD) 8.4.3. Conduct Disorder 8.4.4.مزاج غاضب(MizājGhāḍib) Temper Tantrum 8.4.5. Breath holding					
		4	20	40	60	120
		16	80	160	240	480

Paper No : 2 امراض اطفال عمومی دوم(Amraze Atfal Umoomi Dowem) General Pediatrics -Part 2

Semester No : 3

2A Module Number	2B Modules & units	2C Number of Credits	Notional Learning hours			
			2D Lectures	2E Practical Training	2F Experiential Learning	2G Total

					including Modular Assessment	
	M-9 مناعت کے اصول وضوابط وافعال (Manaat ke usool wa zawabit wa afaal) Principles of Immunization and Function of Immune System This module offers a foundational overview of the immune system, focusing on the components and mechanisms of immune response, including the identification and management of hypersensitivity reactions. It also covers the principles of immunization, vaccine development, and the latest immunization schedules. Emphasis is placed on understanding how vaccines trigger immune responses, the prevention of vaccine-preventable diseases, and the role of immunization in pediatric healthcare." **• M 9U 1 تعارف مناعتی نظام (Taaruf-i Manaati nizam) Introduction to the Immune System.** 9.1.1. Innate vs. Adaptive Immunity 9.1.2. Key immune organs and cells involved in the response 9.1.3. Functions of antibodies and immunoglobulins **• M 9U 2 مدافعتی ردعمل اور زود حساسیت (Mudafi-ati radde amal aur zood-hassasiyat) Immune Responses and Hypersensitivity** 9.2.1. Mechanisms of immune responses 9.2.2. Types of hypersensitivity reactions (Type I-IV) **• M 9U 3 مناعت کے اصول وجدید مناعتی خاکہ (Manat ke usul wa jaded manati khaka) Immunization Principles and Updated Schedule:** 9.3.1. Overview of immunization principles. 9.3.2. Recent updates to national and global immunization schedules. 9.3.3. Vaccination strategies for different populations.	1	5	10	15	30

	• M 9U 4 تمنیع کے بعد منفی اثرالتعارف، تقسیم، تشخیص اور انتظام وعلاج (Tamnee k bad manfi asrat-Ta-aaruf, Taqseem, Tashkheesh aur intzam/ ilaj) Adverse Effects Following Immunization (AEFI) - Introduction and Classification,diagnosis& management: 9.4.1. Definition and significance of AEFI. 9.4.2. Classification of AEFI. (Mild, Severe, Serious) 9.4.3. Diagnostic approaches. 9.4.4. Clinical management and follow-up for AEFI cases.					
	M-10 حفاظت جدرینہ، بارد ترسیل اور جدرینہ کی اقسام (Hifazate judreena, Barid Tarseel aur judreena ki aqsam) Vaccine Preservation, Cold Chain, and Vaccination Types. This module provides a comprehensive overview of vaccine preservation, focusing on the principles of cold chain management and the importance of maintaining optimal temperatures for vaccine efficacy. It covers cold chain equipment, temperature monitoring techniques, and detailed guidelines for the storage, handling, and transport of vaccines. This module provides the skills to ensure proper vaccine management, prevent spoilage, and adhere to national and international standards for vaccine preservation. • M 10U 1 حفاظت جدرینہ کا تعارف اور بارد ترسیل (Hifazate hudreena ka taaruf aur barid tarseel) Introduction to Vaccine Preservation and Cold Chain 10.1.1. Importance of maintaining the cold chain for vaccine efficacy 10.1.2 Key elements of the vaccine preservation process. • M 10U 2 باریدترسیل ک آلات، بارد ترسیل کی مرمت، اور حرارت کی نگرانی (Barid tarseel k Aalat, barid tarseel ki marammat, aur Hararat ki nigrani) Cold Chain Equipment ,cold chain repair and Temperature Monitoring 10.2.1. Overview of cold chain equipment (refrigerators, coolers, etc.)	1	5	10	15	30

	10.2.2. Methods for monitoring temperature in cold chain maintenance 10.2.3. Strategies for maintaining cold chain equipment and repairing faults **• M 10U 3 ذخیرہ اندوزی، اسکہ سمبھالنا اور اسکی منتقلی کے لیے رہنما خطوط (Zakheera andozi, usko sanbhalna aur uski muntaqli k liye rahnuma khutoot) Guidelines for Vaccine Storage, Handling, and Transport** 10.3.1. WHO and national guidelines for vaccine storage 10.3.2. Best practices for handling and transportingvaccines. **• M 10U 4 مروجہ اور اختیاری جدرینہ (Muravvajah aur ikhtiyari judreena) Standard and Optional Vaccines.** 10.4.1. Overview of mandatory standard vaccines (DPT, MMR, Hep B, etc.) 10.4.2. Target populations and vaccination schedules for standard vaccines 10.4.3. Definition and examples of optional vaccines **• M 10U 5 تاریخ اختتام، مدت استعمال، بقا اور سرد ترسیل کا نظام (Tareekh e ikhtetam, muddate istemal/ baqa aur sard tarseel ka intezam) Vaccine Expiry, Shelf Life, & Cold chain maintenance** 10.5.1. Shelf life and expiry monitoring for vaccines					
	M-11 بچوں میں نئے ابھرنے والے لیکن جدرینہ سے قابل انسداد قشبی بیماریاں (Bachon m naye ubharne wali lekin judreena se qabile insedad Qashbi bimaryan) Emerging, Common and Vaccine-Preventable Viral Infections in Pediatrics. This module covers the epidemiology, clinical features, diagnosis, prevention, and management of key viral infections in paediatrics, including Chickenpox, Measles, Rubella, Mumps, Poliomyelitis, Japanese Encephalitis, Rabies, Dengue, and Chikungunya. Emphasizing vaccination strategies, clinical management, and public health measures, the module equips the skills to effectively prevent and treat these infections while managing potential complications in children.	2	10	20	30	60

	• M 11U 1 قسمی امراض طفحیہ بیرونی، اور عہد طفلی کے امراض (Qasbi amraze tafahiya bairooni, aur ahde Tifli k amraz) Viral Exanthems and Childhood Diseases 11.1.1. حمیقا Ḥumayqa (Chickenpox) 11.1.2. حصبہ Ḥaṣba (Measles) 11.1.3. German Measles (Rubella, Three-Day Measles) 11.1.4. ورم اصل الاذن Warm e Aslul Uzn (Mumps) • M 11U 2 جدرینہ سے قابل انسداد، قسمی دماغی امراض (judreena se qabile insdad, qashbi dimaghi Amraz) Neurological and Vaccine-Preventable Viral Infections 11.2.1. استرخاء Istarkha (Poliomyelitis) 11.2.2. Japanese Encephalitis 11.2.3. داء الکلب Hydrophobia (Rabies) • M 11U 3 نئے وقوع پزیر قشمی تعدیہ (Naye waqoo pazer qashbi taadiya) Emerging Viral infections 11.3.1. حمی دنج Humma E Danj(Dengue Fever) 11.3.2. Chikungunya Fever					
		4	20	40	60	120

Semester No : 4

2A Module Number	2B Modules & units	2C Number of Credits	Notional Learning hours			
			2D Lectures	2E Practical Training	2F Experiential Learning including Modular Assessment	2G Total

	M-12 امراض تنفس میں تعدیہ ویروسی مزمن Chronic, and Respiratory Viral Infections in Pediatrics This module provides a comprehensive overview of significant viral infections in paediatrics, including HIV, Cytomegalovirus (CMV), Infectious Mononucleosis, Respiratory Syncytial Virus (RSV), and SARS COVID-19. It focuses on the epidemiology, clinical presentation, diagnosis, and management of these infections, with emphasis on prevention, treatment strategies, and managing complications in children. The module also addresses the public health implications and infection control measures required for these conditions **• M 12U 1 Chronic and Opportunistic Viral Infections** 12.1.1. Pediatric HIV / AIDS 12.1.2. Cytomegalovirus (CMV) 12.1.3. Infectious Mononucleosis (Epstein-Barr Virus) **• M 12U 2 ویروسی تنفس امراض تعدیہ Viral Respiratory Infections** 12.2.1. نزلہ وزکام Nazlawa Zukham (Respiratory Syncytial Virus (RSV) Infection 12.2.2. Severe Acute Respiratory Syndrome (SARS – Covid 19)	1	5	10	15	30
	M-13 Pediatric Emergencies. This module focuses on the recognition, stabilization, and management of critical pediatric emergencies, including Cardiovascular Emergencies like Advanced Life Support (ALS), Basic Life Support (BLS), and Arrhythmias; Neurological Emergencies such as Traumatic Brain Injury (TBI) and Status Epilepticus; Gastrointestinal Emergencies like Volvulus, Intussusception, and Severe Dehydration. It also covers the diagnosis and treatment of Allergic and Anaphylactic reactions, Accidents and Poisoning, and Acid-Base Imbalances, providing a comprehensive approach to pediatric emergency care.	3	15	30	45	90

	• **M 13U 1 Cardiovascular Emergencies** 13.1.1. Pediatric Basic & Advanced Life Support 13.1.2. Arrhythmias 13.1.3Shock • **M 13U 2 Neurological Emergencies** 13.2.1. Traumatic Brain Injury (TBI) 13.2.2. Status Epilepticus • **M 13U 3 Gastrointestinal Emergencies** 13.3.1. Volvulus & Intussusception 13.3.2.قلت الماء (Qillat-ul maa) Severe Dehydration,Electrolyte Imbalance • **M 13U 4 Allergic ,Toxicological Emergencies& Metabolic derangements** 13.4.1. Allergic & Anaphylactic Emergencies 13.4.2. Accident & Poisoning 13.4.3. Acid-Base imbalance • **M 13U 5 Pre-Transport and Referral Protocols** 13.5.1. Pre-Transport Stabilization 13.5.2. Timely Referral to Appropriate Department					
		4	20	40	60	120
Semester No : 5						
2A **Module Number**	**2B** **Modules & units**	**2C**	**Notional Learning hours**			
			2D **Lectures**	**2E**	**2F**	**2G** **Total**

		Number of Credits		Practical Training	Experiential Learning including Modular Assessment	
	M-14 جرثومی تعدیہ Jarsoomi Tadiya (Bacterial Infections I) This module(Bacterial Infections I) examines bacterial infection through the Unani concept of Ufunat (infective putrefaction), emphasizing the role of humoral imbalance and the accumulation of fasid mawad (morbid material) in accelerating tissue decay. It covers infectious diseases like whooping cough, diphtheria, and tetanus, linking Unani concepts like Hummayāt ‘Ufūniyya with microbial causes. Emphasis is placed on preventive immunization (Al-Taqaddum bi’l Ḥifẓ), antitoxins, and supportive care, combining conventional and Unani therapeutic principles (Uṣūl-i-‘Ilāj). The module aims to enhance skills in timely identification and integrated treatment to support public health. **• M 14U 1 عفونت کا نظریہ Ufūnat ka nazariya (Classical concept of Infections)** 14.1.1. عفونت کا نظریہ (*Ufūnat* ka nazariya) classical Unani concept of Infection. 14.1.2. امراض معدیہ کا نظریہ *(Amrāḍ Mu‘diya ka nazriya)* Concept of Infectious diseases. 14.1.3. Nazla Har ki Mahiyate marz, asbab, alamat, tashkis, ilaj ba lehaz darjate marz, Usul i ilaj wa ilaj. 14.1.4. Etiology and Epidemiology, Pathophysiology, Clinical Manifestations, Diagnosis, Differential Diagnosis, Management and Treatment, Prevention of Haemophilus influenzae type B (Hib) Disease. **• M 14U 2 شہیقہ shahiqa (Whooping Cough) and Diphtheria** 14.2.1. شہیقہ (shahiqa), Mahiyate marz, darjate marz, alamat, Usul i ilaj wa ilaj	2	10	20	30	60

	14.2.2. Etiology and Epidemiology, Pathophysiology, Clinical Manifestations, Diagnosis, Differential Diagnosis, Management and Treatment, Prevention of Pertussis. 14.2.3.خناق(*Khunaq)* ke aqsam, alamat, tashkis, Usul i Ilaj wa Ilaj. 14.2.4. . Etiology and Epidemiology, Pathophysiology, Clinical Manifestations, Diagnosis, Differential Diagnosis, Management and Treatment, Prevention of Diphtheria. **• M 14U 3 Brucellosis and Leptospirosis.** 14.3.1. . Etiology and Epidemiology, Pathophysiology, Clinical Manifestations, Diagnosis, Differential Diagnosis, Management and Treatment, Prevention and Control of Brucellosis(Malta Bukhar) and Leptospirosis. **• M 14U 4 کزاز Kuzāz (Tetanus)** 14.4.1.کزاز (*Kuzāz)* ki Mahiyate marzi, aqsam, asbab, alamat, Usul i laj wa Ilaj. 14.4.2. Etiology and Epidemiology, Pathophysiology, Clinical Manifestations, Diagnosis, Differential Diagnosis, Management and Treatment, Prevention and Vaccination of Tetanus. **• M 14U 5 Anaerobic Infection** 14.5.1.ورم اغشیہ دماغ*waram Aghshiya dimaagh* ke Asbab wa alamat, tashkis, Usul i Ilaj wa Ilaj. 14.5.2. Etiology and Types of Anaerobic Organisms, Epidemiology, Pathophysiology, Clinical Manifestation, Diagnosis, Differential Diagnosis, Management and Treatment, Prevention and Control, Complications, Prognosis of Meningococcal Infection. 14.5.3.عطاش(*Uṭāsh)* / تشنک(*Tashnak) Mahiyat,* alamat wa asbab, Ilaj.					
	M-15 II جرثومی تعدیہ,Jarsoomi Tadiya II, (Bacterial Infections II) The module Bacterial Infections II deals with acute and chronic bacterial infections, focusing on Helicobater pylori infections correlated with the concept of Waram Mi'da. The	2	10	20	30	60

	module will help students to equip with the clinical, communicational, ethical, and affective efficiencies. They will be able to diagnose and manage Typhoid طیفودس/حمی معویہ, Tuberculosis (TB) سل ودق, Leprosy جزام, Syphilis آتشک, Nosocomial and Opportunistic Infections, with recommended regimens and supportive therapies eg. immunomodulators and hepatoprotective Unani medicines. The module has special focus to tadbīr e naqihin, tadbīr e Madquq, tadbīr e majzum (تدابیر ناقحین، تدابیر مدقوق، تدابیر مجزوم) and emphasizing the importance of awareness and prevention in combating these diverse bacterial threats. Each unit aims to enhance understanding and facilitate better management of these infections. **• M 15U 1 ورم معدہ Waram Mi'da (Helicobactor Pylori)** 15.1.1. ورم معدہ (Waram Mi'da), aqsaam, asbab, alamat, tashkhis, usul i ilaj and ilaj. 15.1.2. Etiology and Epidemiology, Pathophysiology, Clinical Manifestations, Diagnosis, Differential Diagnosis, Management and Treatment, Complications, Prevention and Control of Helicobacter Pylori. **• M 15U 2 سل و دق،تدرن Tadarrun, Sill wa Diq (Tuberculosis)** 15.2.1. سل و دق،تدرن (Tadarrun, Sill wa Diq)، حمی دقیہ (Ḥummā Diqqiyya), Asbab, alamat, ذبول (Dhubul), زوبان (*Dhawbān*), تدابیر مدقوق (tadabir madquq), regimen for tuberculosis patients, Usul i ilaj wa ilaj 15.2.2. Etiology and Epidemiology, Pathophysiology, Types of Tuberculosis, Clinical Manifestations, Diagnosis, Differential Diagnosis, Management and Treatment, Drug-Resistant Tuberculosis, Complications, Prevention and Vaccination, Prognosis of Tuberculosis. **• M 15U 3 حمی معویہ Humma Mi'wiyya (Typhoid Fever)**					

	15.3.1. حمی معویہ (Humma Mi'wiyya) ke asbab, alamat, tashkis, Usul i ilaj wa ilaj. 15.3.2. Etiology and Epidemiology, Pathophysiology, Clinical Manifestations, Stages of Typhoid Fever, Diagnosis, Differential Diagnosis, Management and Treatment, Complications, Prevention and Vaccination, Prognosis of Typhoid Fever. (Enteric Fever) **• M 15U 4 جذام Judham (Leprosy)** 15.4.1. جذام (*Judham)* ke Aqsam, Asbab, Alamat, tashkis, Awarzat, تدابیر مجزوم (Tadbir Majzum), regimen for leprosy patients, Usul i Ilaj wa Ilaj 15.4.2. Hansen Disease/ Leprosy: Etiology and Epidemiology, Pathophysiology, Types of Leprosy (e,g,, paucibacillary, multibacillary), Clinical Manifestations, Diagnosis, Differential Diagnosis, Management and Treatment, Complications, Prevention and Control, Prognosis of Leprosy. **• M 15U 5 آتشک Ātshak (Syphilis)** 15.5.1. آتشک (Ātshak) ke مترادفات (mutradefat), mahiyate marz, asbab, Aqsam, alamat, tashkis, Darjate marz, Usul i Ilaj wa Ilaj. 15.5.2. Etiology and Epidemiology, Pathophysiology, Stages of Syphilis (Primary, Secondary, Latent, Tertiary), Clinical Manifestations, Diagnosis, Differential Diagnosis, Management and Treatment, Complications (e,g,, neurosyphilis, congenital syphilis), Prevention and Control, Prognosis of Syphilis. 15.5.3. Definition and Common Types of Nosocomial Infections, Etiology and Common Pathogens, Pathophysiology, Risk Factors, Clinical Manifestations, Diagnosis, Differential Diagnosis, Management and Treatment, Prevention and Infection Control Measures, Complications and Impact on Healthcare of Nosocomial Infections, and Opportunistic Infections.					

		4	20	40	60	120
Semester No : 6						
2A Module Number	**2B Modules & units**	**2C Number of Credits**	**Notional Learning hours**			
			2D Lectures	**2E Practical Training**	**2F Experiential Learning including Modular Assessment**	**2G Total**
	M-16 طفیلی تعدیہ Tufaili Ta'dia (Parasitic Infections) This module focuses on various types of parasitic infections, particularly Humma Khiltiya, Humma due to Ufūnat, and Ḥummā Nāfiḍa (fever with rigors and chills). It covers management strategies for different stages of the fever.The term Al-Buḥrān refers to the critical turning point in a disease course; Al-Buḥrān al-Jayyid indicates a crisis with a good prognosis, while Al-Buḥrān al-Radī signals a crisis with a poor prognosis. The module enable students to identify features of Al-Buḥrān. The module outlines the principles of Uṣūl-i-'Ilāj and treatment approaches for Ḥummā Nāfiḍa and other parasitic infections and their prognosis. **• M 16U 1 حمی اجامیہ Humma Ajamiyya (Malaria)** 16.1.1. حمی اجامیہ (Humma Ajamiyya) ke asbab, alamat, darjat marz Naubat wa fatra, Bohran, usul i Ilaj wa Ilaj. 16.1.2. Introduction, Causes, Types, Transmission, Symptoms, Diagnosis, Treatment, Prevention, Complications, Epidemiology, Prognosis of Malaria.	2	10	20	30	60

	16.1.3.عظم طحال (Izam-i-Ṭiḥāl) asbab, alamat, Usul i Ilaj wa Ilaj. 16.1.4. Definition, Causes, Pathophysiology, Clinical Features, Diagnosis, Treatment, Complications, Prevention, Epidemiology of tropical splenomegaly. **• M 16U 2 دایلفیل Da'al Fil (Filariasis)** 16.2.1.دایلفیل Da'al Fil: Asbab, Tashkhis, Alamat, Aqsam, Ilaj, Tadabir for Da al fil. 16.2.2. Introduction, Causes, Life Cycle, Transmission, Types, Clinical Features, Diagnosis, Treatment, Prevention, Complications, Epidemiology of Filaria. 16.2.3. Etiology, Pathogenesis, Clinical Manifestations, Diagnosis, Differential Diagnosis, Management, Prognosis of tropical eosinophilia. **• M 16U 3 زحیر Zaḥīr Wabā'ī(Amebiasis)** 16.3.1.زحیر (Zaḥīr Wabā'ī) Amebiasis Definition, Causes (Asbab), Pathophysiology (Mahiyat marzj), Types of Pechis, Signs and Symptoms (Alamat), Diagnosis (Tashkhis), Treatment Principles (Usool-e-Ilaj), Medicinal Treatment (Adviyah), Dietary Recommendations (Ghiza), Regimenal Therapy (Tadabir), Prognosis (Taqdeer), Prevention and Lifestyle Taqaddum bil Hifz of pechis, Amebiasis. 16.3.2. Etiology, Pathogenesis, Clinical Features, Diagnosis, Treatment, Complications, Prognosis, Prevention of hydatid cyst. **• M 16U 4 Giardiasis** 16.4.1. Introduction and prevalance, Etiology, Pathogenesis, Transmission, Clinical Features, Diagnosis, Treatment, Prevention, Complications, Prognosis of Giardiasis. **• M 16U 5 کالازار Kalazar (Black Sickness)** 16.5.1.کالازار(Kalazar) Black Sickness, Etiology, Pathogenesis, Clinical Features, Diagnosis, Treatment, Prevention, Prognosis, Complications of Kalazar.					

	M-17 دیدان امعاء Didan al Am'a' (Intestinal worm infestations) This module focuses on the classical concepts, diagnosis, treatment, and management of Dīdān al-Am'ā'(helminthic infestations), with an emphasis on tapeworm (حب القرع),hydatid disease, hookworm, and pinworm etc. Enable to practice the importance of ethical issues in research, deworming campain and advocacy in broader preventive measures. **• M 17U 1 حب القرع' Ḥabb al-Qar (Tape worm)** 17.1.1. حب القرع (*Ḥabb al-Qar),* Tape worm: Etiology, Life Cycle, Transmission, Clinical Features, Diagnosis, Treatment, Complications, Prevention, Prognosis of Tapeworm. 17.1.2. Etiology, Pathogenesis, Clinical Features, Diagnosis, Imaging and Neuroimaging, Treatment, Seizure Management, Complications, Prognosis, Prevention of neurocysticercosis that leads to seizure disorder. **• M 17U 2 حیات Ḥayyāt (Roundworm)** 17.2.1. حیات *(Ḥayyāt)* roundworm: Etiology, Life Cycle, Transmission, Clinical Features, Diagnosis, Treatment, Complications, Prevention, Prognosis of roundworm. **• M 17U 3 صغار Ṣighār (Threadworm)** 17.3.1.صغار,(Ṣighār) Thread worm (trichuriasis): Etiology, Life Cycle, Transmission, Clinical Features, Diagnosis, Treatment, Complications, Prevention, Prognosis of threadworm. **• M 17U 4 مستدیرہ Mustadira (Hookworm)** 17.4.1مستدیرہ,*(Mustadira)* hookworm (strongyloides): Etiology, Life Cycle, Transmission, Clinical Features, Diagnosis, Treatment, Complications, Prevention, Prognosis of hookworm. 17.4.2. Khitiya (Whipworm) 17.2.3. Sighar/ Charne/ chunuene (Pinworm)	2	10	20	30	60

	• **M 17U 5 Cryptosporidiosis** 17.5.1. Cryptosporidiosis: Etiology, Pathogenesis, Clinical Features, Diagnosis, Treatment, Prevention, Prognosis, Complications of Cryptosporidiosis.					
		4	20	40	60	120
		16	80	160	240	480

Paper No : 3 امراض اطفال نظامی اول (Amraze Atfal Nizami awwal) Systemic Paediatrics First

Semester No : 3

2A Module Number	2B Modules & units	2C Number of Credits	Notional Learning hours			
			2D Lectures	2E Practical Training	2F Experiential Learning including Modular Assessment	2G Total
	M-18 امراض نظام تنفس بلول Amrād-i-Nizām i-Tanaffus- I (Respiratory Disorders- 1) This module of respiratory disorders in children provides a comprehensive overview of common and critical pediatric respiratory conditions, such as Upper respiratory tract infections, Foreign body in upper respiratory tract, Acute bronchiolitis, acute bronchitis, and Pneumonia, including clinical evaluation of respiratory system and special diagnostic procedures. The module emphasizes on evidence-based practices, classical literature review and application of classical knowledge in diagnosing and managing disease. It also	2	10	20	30	60

	integrates guidelines for family education, health promotion and multidisciplinary approach in managing respiratory diseases in children. **• M 18U 1 نظام تنفس کی طبی تشخیص وخصوصی تشخیصی طریقہ کار Nizām i- Tanaffus ki Tibbi Tashkhis wa Khususi Tashkhis-i-Tariqa-i-kar (Clinical evaluation of respiratory system and special diagnostic procedures** 18.1.1 Clinical parameters for the assessment of respiratory diseases 18.1.2 Diagnostic procedures concerned with respiratory disorders in children 18.1.3 Concept of Tariqa-i-Tashkhis from classical text 18.1.4 Recent Guidlines **• M 18U 2 تعدیہ امراض نظام تنفس اعلی Ta'diya Amrād-i- Nizām-i- Tanaffus A'lā (Upper respiratory tract infections)** 18.2.1 Definition, etiology, epidemiology, pathogenesis, clinical manifestation, diagnosis, treatment, complications of Upper respiratory tract infections 18.2.2 Different Infections of Upper respiaratory tract mentioned in classical text. **• M 18U 3 Foreign body in lower respiratory tract** 18.3.1 Definition, epidemiology, types (acute, chronic), risk factors, clinical presentations, diagnostic evaluation, management and complications of Foreign Body Aspiration. **• M 18U 4 Acute respiratory distress syndrome** 18.4.1 Definition of Acute Respiratory Distress Syndrome (ARDS), etiology, pathogenesis, pathophysiology, clinical presentations, diagnostic investigations, complications, management, and prognosis. **• M 18U 5 ورم شعبۃ الریہ وسعال صبیان Waram-i-Shu'bat-ur-Ri'a and Su'āl-i-Sibyan (Acute bronchiolitis and Acute Bronchitis)**					

	18.5.1 Definition, etiopathogenesis, epidemiology, clinical features, diagnostic evaluation, differential diagnosis, treatment, prognosis, prevention of Acute Bronchiolitis and Acute Bronchitis 18.5.2 Concept of Waram-i-Shu'bat-ur-Ri'a and Su'āl-i-Sibyan under the heading of Tarif, Aqsam, Tariqa-i-Tashkhis, and Usul-i-Ilaj. **• M 18U 6 ذات الریہ Dhāt al-Ri'a (Pneumonias)** 18.6.1 Definition, classification, etiology, pathogenesis, clinical manifestations, complications, diagnosis, treatment (WHO Criteria), prognosis, prevention and social awareness regarding pneumonia 18.6.2 Description of Dhāt al-Ri'a, its Tarif, Asbab, Ala'mat, Imtihan, and Ilaj.					
	M-19 امراض نظام تنفس دوم Amrād i-Nizām-i-Tanaffus -II (Respiratory Disorder- 2) This module of respiratory disorders provides an inclusive understanding of key pediatric respiratory diseases, including Bronchiectasis, Dry pleurisy, Pleural effusion, Lung abscess, Bronchial asthma, Cystic fibrosis, and Obstructive sleep apnea. It emphasizes both classical and conventional perspectives on diagnosis, treatment, and management, exploring etiologies, clinical presentations, and pharmacological and non-pharmacological interventions. To integrate Ilaj-bil-Dawa (pharmacotherapy), Ilaj-bil-Ghidha (dietotherapy), and Tadabir (regimenal therapy) for holistic care. This module equip with the skills to manage complex respiratory conditions effectively. **• M 19U 1 اتساع الشعب Ittisa' al Shu'ab (Bronchiectasis)** 19.1.1 Definition, etiopathogenesis, predisposing factors, clinical manifestation, diagnosis, treatment, prognosis of Bronchiectasis	2	10	20	30	60

	19.1.2 Concept of Ittisaʿ al-Shuʿab in classical text with its Tarif, Asbab, Tashkhis, Usul-i-Ilaj, and Ilaj. **• M 19U 2 ذات الجنب Dhāt al-Janb (Dry pleurisy)** 19.2.1 Definition, etiology, pathology, pathogenesis, clinical features, diagnosis, differential diagnosis, treatment 19.2.2 Description of Dhāt al-Janb with its Aqsam, Asbab, Tariqa-i-Tashkhis, Awarizat, Buhran, Usul-i-ilaj, Parhez and Ghidhā-i Tadabir. **• M 19U 3 ذات الجنب مای Dhāt al-Janb Maʿi (Pleural effusion)** 19.3.1 Definition, etiology, pathogenesis, clinical manifestations, diagnosis, differential diagnosis, treatment, complications of Pleural Effusion. 19.3.2 Concept of Dhāt al-Janb Maʿi, its Asbab, Tariqa-i-Tashkhis, and Ilaj in Classical literature. **• M 19U 4 تقیح صدر Taqayyuh-i-Sadr (Empyema thoracis)** 19.4.1 Definition, epidemiology, etiology, clinical features, diagnosis, complications, treatment, prognosis of Empyema Thoracis 19.4.2 Taqayyuh-i-Sadr in classical text with Tarif, Asbab, Tariqa-i-Tashkhis, and Ilaj. **• M 19U 5 دبیلہ الریہ Dubayla al- Ri'a (Lung abscess)** 19.5.1 Definition, etiology, pathogenesis, clinical manifestations, diagnosis, treatment, prognosis of Lung Abscess. **• M 19U 6 ربو Rabw (Bronchial asthma)** 19.6.1 Definition, etiopathogenesis (excitatory and predisposing factors), pathophysiology, clinical features, clinical grading of exacerbation of acute asthma, diagnosis, differential diagnosis, complications, management					

	19.6.2 Rabw in classical text, its Aqsam, Asbab, Tariqa-i-Tashkhis, Usul-i-Ilaj, Ilaj, Parhez wa Mamnu'at. 19.6.3. Chronic obstructive pulmonary disease (COPD). **• M 19U 7 Cystic Fibrosis** 19,7.1 Genetic basis, pathogenesis, pathology, clinical manifestations, diagnosis, management and treatment of Cystic Fibrosis. **• M 19U 8 Obstructive Sleep Apnea** 19.8.1 Definition, mechanisms of Obstructive Sleep Apnea (OSA), its clinical manifestation, diagnostic tools, and the management plan.					
		4	20	40	60	120

Semester No : 4

2A Module Number	2B Modules & units	2C Number of Credits	Notional Learning hours			
			2D Lectures	2E Practical Training	2F Experiential Learning including Modular Assessment	2G Total
	M-20 امراض نظام قلب۔اول Amrād-i- Nizām-i-Qalb -I (Cardiovascular Disorders- 1) This module provides an in-depth understanding of pediatric cardiovascular diseases, covering clinical evaluation, diagnostic methods and the physiological transition from Fetal to Neonatal circulation in classical as well as conventional method. It deals with pathology,	2	10	20	30	60

	diagnostic criteria, and management approaches for Congenital Heart Diseases (CHDs) and Rheumatic heart disease, with a comparative focus on classical and conventional methods.It provides to build skills in cardiovascular examination, fetal circulation assessment, and evidence-based treatment planning. Emphasis is placed on culturally responsive, integrative care to equip for holistic, child-centered cardiac care. **• M 20U 1 نظام قلب کی طبی تشخیص و خصوصی تشخیصی طریقہ کار Nizām i-Qalb ki Tibbi Tashkhis wa Khususi Tashkhisi Tariqa-i-kar (Evaluation of cardiovascular system and Special diagnostic procedures)** 20.1.1 Classical (Alamat-i-Amrad-i-Qalb, Tariqa-i-Tashkhis) and conventional parameters for the assessment of Cardiovascular diseases. 20.1.2 Diagnostic procedures to evaluate Cardiovascular diseases. 20.1.3 Recent guidelines, and approaches to Cardiovascular System. 20.1.4 Heart sounds and different types of murmurs. **• M 20U 2 دوران خون جنینی Dauran-i-Khun Janini (Fetal Circulation(** 20.2.1 Features of fetal circulation, 20.2.2 Physiological changes or the transitions at birth, 20.2.3 Effect of neonatal transitions on circulation and cardiovascular functions of neonate and infant. **• M 20U 3 خلقی امراض قلب Khalki Amrād i-Qalb (Congenital heart diseases)** 20.3.1 Acyanotic and Cyanotic congenital heart diseases, thier epidemiology, genetic basis, etiology, pathophysiology, clinical manifestations, diagnosis, differential diagnosis, treatment, complications & prognosis 20.3.2 Obstructive Congenital Heart Diseases. **• M 20U 4 Acquired heart diseases**					

	20.4.1 حمی حداری Humma-i-Hadari (Rheumatic fever)- its epidemiology, etiopathogenesis, clinical features, diagnosis (John's criteria), differential diagnosis, complications, management, and Rheumatic prophylaxis 20.4.2 امراض قلب حداری Amrād-i-Qalb i-Hadari (Rheumatic heart diseases)- their clinical presentation, diagnosis, differential diagnosis, treatment, prevention 20.4.3 Different Patterns of valvular heart diseases- their clinical manifestations, diagnosis, differential diagnosis, treatment, and prevention. 20.4.4 Classical concept of Humma-i-Hadari and Amrād-i-Qalb i-Hadari					
	M-21 امراض نظام قلب۔دوم Amrād-i- Nizām-i-Qalb -II (Cardiovascular disorders- 2) This module of cardiovascular disorders provides a comprehensive overview of inflammatory cardiovascular diseases in pediatric population, including Infective Endocarditis, Myocarditis, Pericarditis, as well as metabolic and systemic conditions like Hyperlipidemia and Systemic Hypertension. It focuses on both classical and conventional approaches for diagnosis, management, and prevention. Students will explore contemporary medical methods alongside traditional Unani principles, developing competencies in Tariqa-i-Tashkhis (diagnostic approach) and Usul-i-Ilaj (principles of treatment). Emphasis is placed on the holistic integration of lifestyle modification, pharmacological interventions, and regimenal therapies. **• M 21U 1 التہاب درون قلب Iltihab Darun-i-Qalb (Infective endocarditis)** 21.1.1 Definition, etiology, epidemiology, pathogenesis, clinical features (Modified Duke Criteria), diagnosis, differential diagnosis, complications, treatment, prognosis, prevention 21.1.2 Concept of Iltihab Darun-i-Qalb and its Aqsam, Ala'mat, Usul-i-Ilaj, Ilaj in Classical literature.	1	5	10	15	30

	• M 21U 2 التہاب عضلات قلب Iltahab i- Adhalat-i-Qalb (Myocarditis) 21.2.1 Definition, etiology, epidemiology, clinical features, diagnosis, differential diagnosis, treatment, complications, of Myocarditis 21.2.2 Description of Iltahab i-Adhalat-i-Qalb with its Tarif, Ala'mat, Usul-i-Ilaj, and Ilaj. • M 21U 3 ورم غشاء القلب Waram Ghisha i-Qalb (Pericarditis) 21.3.1 Definition, etiology, clinical manifestations, diagnosis, differential diagnosis, treatment, complications of Pericarditis 21.3.2 Concept of Waram Ghisha i-Qalb in classical text, its Asbab, Ala'mat, Usul-i-Ilaj, and Ilaj. • M 21U 4 فرط تدسمی الدم Fart-i-Tadassum fid-Dam (Hyperlipidemia in children) 21.4.1 Definition, etiology, predisposing factors, clinical features, diagnosis, prevention and management of Hyperlipidemia in children. • M 21U 5 ارتفاع ضغط الدم نظامی Irtifa-i-Zaght-ul-Dam Nizāmi (Systemic hypertension in children) 21.5.1 Definition, etiology, clinical features, diagnosis, management, course and prognosis of Systemic Hypertension in children.					
	M-22 علم السرطان Ilm-ul-Sartan (Oncology) This module focuses on pediatric malignancies, particularly leukemia, lymphoma, and other tumors common in children, such as neuroblastoma, retinoblastoma, Wilm's tumor, and soft-tissue sarcomas , etc. It provides insights into the clinical presentation, diagnostic techniques, staging, and treatment modalities for these cancers. Practical components cover histopathological analysis, imaging interpretation, and patient-centered management strategies. It also include Unani perspective,i.e. Sartaan (cancer) which is viewed as an imbalance of the body's humors, especially the melancholic humor (sauda),	1	5	10	15	30

	leading to irregular cell growth. Unani medicine emphasizes holistic management, including dietary adjustments, immunity-boosting unani drugs, and Ilaj-bil-Tadbir (regimental therapies) to support conventional oncology care. The module content also endorse to conduct evidence based research of applying unani pathy on cancer (Sartaan) patient. **• M 22U 1 Leukemia** 22.1.1.Acute Lymphoblastic Leukemia 22.1.2.Acute Myelogenous Leukemia. 22.1.3.1.Chronic Myelogenous Leukemia. 22.1.3.2.Juvenile Myelomonocytic Leukemia. 22.1.3.3.Down Syndrome with Acute Leukemia. 22.1.3.4.Infant Leukemia. **• M 22U 2 Lymphoma** 22.2.1.Hodgkins Lymphoma 22.2.2.Non-Hodgkin Lymphoma **• M 22U 3 Concept of Sartan and other pediatric tumour.** 22.3.1.Unani concept of Sartaan (Asbab, Aqsam, Alamat, Tashkhis, Usul-i-ilaj, etc.). 22.3.2.Tumours of Neuron, retina, kidney, liver, bone and soft-tissue sarcoma,etc.					
		4	20	40	60	120
Semester No : 5						
2A	**2B** **Modules & units**	**2C**	**Notional Learning hours**			
			2D	**2E**	**2F**	**2G**

Module Number		Number of Credits	Lectures	Practical Training	Experiential Learning including Modular Assessment	Total
	M-23 امراض نظام اعصاب ودماغ۔اول Amrād i-Nizām-i--Asaab-wa-Dimaagh –I (NEUROLOGICAL DISORDER –I) This modules deals with neurological disorders in Pediatrics provides a comprehensive understanding of common pediatric neurological conditions, including the evaluation of the central nervous system (CNS), specialized diagnostic techniques, seizure disorders, acute flaccid paralysis (AFP), and Bell's palsy etc. This module equips with clinical skills for assessment, diagnosis, and management, focusing on neurological examination, interpretation of diagnostic results, and tailored treatment strategies. It also include Unani Pediatrics conditions such as Sara'a, Laqwa,etc. focusing on their Asbab, Alamat, and Ilaj within the Unani medical framework. The module emphasizes holistic approaches to treatment, including dietary modifications, unani remedies, and Ilaj-bil-Tadbir (regimental therapies) to enhance recovery and support overall health. Practical sessions will include patient assessments and the application of Unani principles to develop individualized care plans for children with neurological impairments. **• M 23U 1 Nizam- i-Asaab-wa-Dimāgh ki Tibbi Ta نظام اعصاب ودماغ کی طبی تشخیص وخصوصی تشخیصی طریقہ کار Tibbi Tashkhis of Nizam- i-Asaab-wa-Dimāgh and KhususiTashkhisi Tariqa-i-kar(Evaluation of Central Nervous System and Special diagnostic procedures)** 23.1.1.Clinical parameters for the assessment of Neurological disorders. 23.1.2.Special diagnostic procedures for the evaluation of Neurological Disorders.	2	10	20	30	60

	• **M 23U 2 Seizure Disorders Part- A** 23.2.1. *Sar΄* (Epilepsy) 23.2.2. *Sar΄a-i-radi* (Status Epilepticus). • **M 23U 3 Seizure Disorders Part-B** 23.3.1.Generalized Tonic Clonic Seizure. 23.3.2.Febrile Convulsion. 23.3.3.Management of Acute seizure. • **M 23U 4 لقوہLaqwa (Bell's Palsy)** 23.4.1.Unani concept of Laqwa . 23.4.2.Bell's Palsy (Introduction, aetiology, pathophysiology, clinical manifestation, diagnosis, management and prognosis). • **M 23U 5 Acute Flaccid Paralysis (AFP)** 23.5.1.Acute Flaccid Paralysis (AFP) Surveillance. 23.5.2.Guillain Barre syndrome.					
	M-24 امراض نظام اعصاب ودماغ۔دوم Amrad-i-Nizām-i-Asaab-wa-Dimaagh –II(Neurological Disorders-2) This module provides a comprehensive overview of various conditions affecting the nervous system in children, including mental retardation, cerebral palsy, hydrocephalus, encephalitis, meningitis, and intracranial space-occupying lesions (ICSOL). It will explore the clinical manifestations, diagnostic evaluations, and management strategies for these disorders, incorporating insights from Unani medicine. The Unani framework emphasizes the concepts of Mā' al-Ra's, Humq, Falij-i-dimagh and Sarsam etc. focusing on the	2	10	20	30	60

	importance of humoral balance and Ilaj-Bit-Tadbir OR regimental therapies for holistic treatment. **• M 24U 1 a) حمق Humq (Intellectual Disability) b) فالج دماغی Fālij-i-Dimāghī (Cerebral Palsy)** 24.1.1. Unani concept of Humq (Tareef, asbab, alamaat, tashkhees, usul-i-ilaj, ilaj, etc.) 24.1.2.Intellectual Disability (Definition,Grades of mental handicap, prevalence, etiology, pre-disposing factors, Clinical manifestations, Investigations,Differential diagnosis, prevention and Management). 24.1.3.Unani concept of Falij-i-Dimaghi (Tareef, asbab, alamat, tashkhis, usul-i-ilaj, ilaj, etc 24.1.4.Cerebral Palsy (Definition, Etiopathogenesis, Classification, Evaluation, Diagnosis,D/D, Prevention and management) **• M 24U 2 ماءالراس Mā' al-Ra's (Hydrocephalus)** 24.2.1.Unani cocept of Mā' al-Ra's (Asbab, Alamat, Usul-i-ilaj, Ilaj.) 24.2.2.Hydrocephalus (CSF circulation,Definition,Etiology and Classification,Pathophysiology,Clinical feature ,Diagnosis, Differential diagnosis and Management.). **• M 24U 3 زوايد سلعات دماغيه Zawaid-i-sulaat Dimaghiya (Intracranial Space Occupying Lesions)** 24.3.1.Concept of increased Intracranial Tension. 24.3.2.Brain tumours 24.3.3.Inflammatory granulomas. 24.3.4.Brain abscess 24.3.5.Subdural hematoma. **• M 24U 4 سرسام Sarsām (Meningitis)**					

	24.4.1.Unani concept of Sarsam (Tareef, asbab, alamat, usul-i-ilaj, ilaj). 24.4.2.Meningitis (Definition, Classification, Epidemiology, Pathogenesis, Pathology, Clinical Features, Complication, Diagnosis, Differential diagnosis, Management) • **M 24U 5 Encephalitis / Encephalopathy** 24.5.1.Encephalitis and Encephalopathies (Definition, Epidemiology, Etiopathology, Clinical features, Prognosis, Diagnosis, Management)					
		4	20	40	60	120
Semester No : 6						
2A Module Number	**2B Modules & units**	**2C Number of Credits**	**Notional Learning hours**			
			2D Lectures	**2E Practical Training**	**2F Experiential Learning including Modular Assessment**	**2G Total**
	M-25 HEMATOLOGICAL DISORDERS. This module provides an in-depth exploration of various blood-related conditions, including anemia, hemoglobinopathies, disseminated intravascular coagulation (DIC), immune thrombocytopenic purpura (ITP), hemophilia, and sickle cell disease, Hemophilia,etc. It also include unani perspective i.e. Faqr-ul-dum(Anemia). Unani medicine emphasizes holistic management, including dietary adjustments, dawa bil ghiza, unani formulation to manage it. It will provide an understanding of the pathophysiology, clinical manifestations,	2	10	20	30	60

	diagnostic methods, and treatment strategies for these disorders. The module also covers essential topics like blood components and the principles of blood transfusion, emphasizing safe practices and ethical considerations. **• M 25U 1 فقرالدم Faqr-ul- dam (Anemia)** 25.1.1.Iron Deficiency Anemia 25.1.2.Hemolytic Anemia 25.1.3.Megaloblastic Anemia 25.1.4.Aplastic Anemia **• M 25U 2 Hemoglobinopathies** 25.2.1.Sickle Cell disease. 25.2.2.Thalassemia. **• M 25U 3 Hemorrhagic and Thrombotic Diseases:** 25.3.1.Immune Thrombocytopenic Purpura. 25.3.2.Hemophilia. 25.3.3.Disseminated Intravascular Coagulopathy. **• M 25U 4 Blood component & Blood Transfusion** 25.4.1.Blood component & blood Transfusion 25.4.2.Risk of blood Transfusion. 25.4.3.Guideline for pediatric Platelet & RBC transfusion.					
	M-26 Drugs and Drug's Dosage This module covers the principles of drugs, drug's dosage and dose management in pediatric care, focusing on Unani single and compound drugs, alongside an overview of pharmacovigilance concerning infants and younger pediatric group and rational use of	2	10	20	30	60

	drugs. It will provide insight into recent studies on Unani pharmacological treatments in pediatrics, developing skills in dose calculation and tailored therapy for young patients. The module also includes an introduction to common conventional medicines used in pediatric population, enhancing student's knowledge in pharmacology to ensure effective, integrative treatment approaches. **• M 26U 1 Unani Drugs and Drug's dosage- 1** 26.1.1 Concept of dose calculation in Classical literature. 26.1.2 Brief introduction to Pharmacovigilance concerning infants and younger pediatric group and rational use of drugs. 26.1.3 Recent studies of Unani drugs on children 26.1.4 Single drugs used in pediatric population (Dose, dosage, indications, contraindications, substitute, side effects, correctives) **• M 26U 2 Unani Drugs and Drug's Dosage- 2** 26.2.1 Compound Unani drug's (Dosage form, dose, indications, route of administration, correctives contraindications, side effects) 26.2.2 Systemic categorization of compound drugs. **• M 26U 3 Conventional Drugs** 26.3.1 Common Conventional Drugs and thier dose, dosage form, indications, contraindications, side effects 26.3.2 Rational use of conventional drugs 26.3.3 Adherence to drugs in certain conditions.					
		4	20	40	60	120

		16	80	160	240	480
Paper No : 4 امراض اطفال نظامی دوم (Amraze Atfal Nizami Dowem) Systemic Pediatrics - Part 2						
Semester No : 3						
2A Module Number	**2B Modules & units**	**2C Number of Credits**	**Notional Learning hours**			
			2D Lectures	**2E Practical Training**	**2F Experiential Learning including Modular Assessment**	**2G Total**
	M-27 امراض نظام ہضم اور امراض کبدی۔I :Amrāḍ-i-Niẓām-i-Haḍm aur Amrāḍ-i -Kabidi-I(Gastro Intestinal and Hepatobiliary Disorder -1) This module enables students to perform complete clinical evaluation of GastroIntestinal and Hepatobiliary disorders which consists detailed history taking and examination. This module illustrate and implement the special Investigations related with Gastro Intestinal System (GIT) .This module also focus on diagnosing various oral cavity diseases along with management in both Unani and conventional medicine and its preventive measures. It also outlines the Unani concepts of Ishāl and Zaḥīr along with modern perspective of Diarrhoea and its management by WHO guidelines and dietary counselling. This module also enables to apply the knowledge and skills like administration of IntraVenous cannula, Ilaj Bil Tadbir (IBT) for treatment of gastrointestinal	2	10	20	30	60

	disorders.This module explains different etiological conditions of chronic diarrhoea as Malabsorption Syndrome , Lactose Intolerance and other related conditions. **• M 27U 1 نظام ہضم کی طبی تشخیص وخصوصی تشخیصی طریقہ کار Tibbi Tashkhis of Niẓām-i-Haḍmand Khususi Tashkhisi Tariqa-i-kar (Clinical Evaluation and Special Investigation of Gastro Intestinal System)** 27.1.1 Clinical parameters for the assessment of Gastrointstinal and hepatobiliary disorders. 27.1.2 Special Diagnostis procedures for the evaluation of Gastrointstinal and Hepatobiliary disorders. 27.1.2.1 Imaging test 27.1.2.2 Non Invasive & Invasive test 27.1.2.3 Serology test 27.1.2.4 Blood test 27.1.2.5 Stool test **• M 27U 2 امراض دہن (Amrāḍ-i-Dehan) Diseases of oral cavity** 27.2.1 ورم اللسان *Waram-al Lisān* (Glossitis) 27.2.2 بثور دہن *Basoor-i- dehan* (Stomatitis) 27.2.3 قلاع *Qulā* (Thrush) 27.2.4 اورام لثہ *Awrām-i-Litha* (Gingivitis) 27.2.5 Geographical Tongue 27.2.6 تاکل الاسنان Ta'akkul al-Asnān (Dental Carries) 27.2.7 شق الشفہ والحلق *Shakkushifa-wal-Halaq (*Cleft lip and palate) **• M 27U 3 اسہال Ishāl (Diarrhoea)**					

	27.3.1 اسہال حاد Ishāl -i-Haad (Acute diarrhoea) 27.3.2 اسہال مزمن Ishāl -i-Muzmin (Chronic diarrhoea) 27.3.3 اسہال دائمی Ishāl -i-Daimi (Persistent diarrhoea) 27.3.4 اسہال دوری (Recurrent diarrhoea) 27.3.5 اسہال اطفال Ishāl-i-Aṭfāl (Infantile diarrhoea) 27.3.6 ORT (Oral Rehydration Therapy) 27.3.6.1 Dehydration, Assessment of severity of dehydration and treatment with plan A,B and C of Oral Rehydration Therapy. **• M 27U 4 زحیر Zaḥīr (Dysentery)** 27.4.1 زحیر امیبائی *Zaḥīr amebayi* (Amoebic Dysentery) 27.4.2 Bacillary dysentery 27.4.3 زحیر صادق *Zaḥīr Ṣādiq* (Had & Muzmin) 27.4.4 زحیر کاذب *Zaḥīr Kādhib* (Had & Muzmin) **• M 27U 5 نقص انجذاب Naqs-e-inzijab (Mal absorption)** 27.5.1 Malabsorption Syndrome 27.5.2 Coeliac Diseases (Gluten Sensitive Enteropathy) 27.5.3 Lactose Intolerance 27.5.4 Milk protein Allergy 27.5.5 Protein Losing Enteropathy 27.5.6. Gut Health/ Gutbiome					
	M-28 امراض نظام ہضم وامراض کبد۔دوم (Amrāḍ-i-Niẓām-i-Haḍm aur Amrāḍ-i Kabidi-II (Gastro intestinal and Hepatobiliary Disorders -2)	2	10	20	30	60

	This module enables students to grasp the concepts of Irritable Bowel Syndrome (IBS), Inflammatory Bowel Disease (IBD) and its management in Unani and conventional medicine.It also emphasizes the Unani concept of Qay'and Qūlanj along with modern perspective of approach of Vomiting and Abdominal colic.It also explores the role of Unani medicine and lifestyle modification in management of Qabd (Constipation) with its aetiology,types and prevention.This module also explains the Waram al-Maq'ad (Proctitis) and Khurooj-al-Maq'ad (Rectal prolapse) with its etiology ,clinical presentation, management and prevention of both Unani and modern perspective (usul-i- Ilaj ,Ilaj bil dawa and Ilaj Bil Tadbir (IBT). It aims to equip with comprehensive knowledge and perfect skills to diagnose and manage above mentioned diseases independently. **• M 28U 1 Irritable Bowel Syndrome** 28.1.1 Irritable bowel syndrome 28.1.2 Inflammatory Bowel Disease **• M 28U 2 قولنج Qūlanj /Abdominal colic (Qūlanj wa mugas)** 28.2.1 قولنج Qūlanj / mugas (Abdominal colic) 28.2.2 ورم قولون Waram-i- qolon (Colitis) 28.2.3. Appendicitis **• M 28U 3 قیء Qay' (Vomiting)** 28.3.1 Cyclic Vomiting Syndrome **• M 28U 4 Qabd (Constipation)** 28.4.1 Organic Constipation 28.4.2 Functional (Non Organic) Constipation **• M 28U 5 . امراض المقعد Amrāḍ-i-Maq'ad (Diseases of Rectum**					

	28.5.1 خروج المقعد Khurūj al-Maq'ad (Rectal prolapse) 28.5.2 ورم المقعد Waram al-Maq'ad (Proctitis)					
		4	20	40	60	120
Semester No : 4						
2A Module Number	**2B Modules & units**	**2C Number of Credits**	**Notional Learning hours**			
			2D Lectures	**2E Practical Training**	**2F Experiential Learning including Modular Assessment**	**2G Total**
	M-29 امراض نظام ہضم وامراض کبد سوم Amrāḍ-i-Niẓām-i-Haḍm aur Amrāḍ-i Kabidi-III (Gastro intestinal and Hepatobiliary Disorders-3)I Comprehensive description of this module present about hepatobiliary disorders which encompass a range of conditions affecting the liver, gallbladder, bile ducts, and pancreas. Hepatobiliary disorders significantly impact the affective domain, influencing patients' emotional states, psychological adaptation, and social relationships. Understanding these aspects is essential for providing holistic care, addressing not just the physical symptoms but also the emotional and social challenges patients face.By fostering supportive environments and promoting education, Unani healthcare providers can help patients, navigate their experiences with these disorders more effectively by Unani system of medicine.	2	10	20	30	60

	• **M 29U 1 ورم کبد ومرارہ/Waram al-Kabid wa Marara (Hepatitis and Cholecystitis)** 29.1.1. Definition,Aetiology,Types,Clinical Features,Diagnosis, Differential diagnosis and Management. • **M 29U 2 فرط ضغط الدم البابی/Fart zaght-ul-dam albabi (Portal Hypertension) ورم کبد مزمن (Waram al-Kabid Muzmin)** 29.2.1Definition,Aetiology,Types(Intrahepatic, Extrahepatic),Clinical Features,Diagnosis and Management. • **M 29U 3 Wilson Disease (Hepatolenticular degeneration) and عملیہ زرع الکبد /Amlia Zarul kabid (Orthotopic Liver Transplantation)** 29.3.1. Indication (Fulminant liver failure, End stage liver failure,Metabolic disorder, Unrescetable liver tumours). 29.3.2. Contra indication of Orthotopic Liver Transplantation. 29.3.3. Complications Orthotopic Liver Transplantation and Immunosuppression to prevent 'Rejection' and Results. • **M 29U 4 دبیلۃ الکبد/Dubayla al-Kabid Liver abscess and ضربات الکبد باستعمال الدواء (Drug Induced Liver Injury)** 29.4.1.Definition, Aetiology,Types. 29.4.2.Direct (dose-dependent) hepatotoxicity. 29.4.3.Indirect (dose- dependent) hepatotoxicity. 29.4.4.Clinical features,Diagnosis and Management. • **M 29U 5 استسقا/Istisqā (Ascites)** 29.5.1.Definition, Aetiology,Clinical Features, Diagnosis and Management.					
	M-30 امراض نظام کلیہ/Amrāḍ-i-Niẓām-i-Kulya (Nephrologic disorders)	2	10	20	30	60

	Comprehensive description of this module present about Renal system disorders which encompass a variety of conditions that affect the kidneys and the urinary tract. These disorders can impact kidney function, fluid balance, electrolyte levels, and overall health. Module comprehensive description, including causes, types, symptoms, diagnosis, Unani treatment, and complications. Renal system disorders can have a profound impact on overall health and quality of life. Early detection and management by Unani system are crucial to prevent complications and preserve kidney function. Through lifestyle modifications as per Asbabe sitta zarooriya, regular medical care, and appropriate Unani treatment can manage renal health effectively. **• M 30U 1 امراض نظام کلیہ کی مخصوص تفتیشات اور اسکا معائنہ/Amrāḍ-i-Niẓām-i-Kulyaki Makhsus Taftishat aur uska muaaina (Evaluation and special investigation in Renal System)** 30.1.1. معائنہ بول و خون *(muaaina -e-Bawl, muaaina -e-khoon*). **• M 30U 2 ورم کلیہ/Waram al-Kulya (Glomerulonephritis)** 30.2.1. ورم کلیہ حار/Waram al-KulyaHarr (Acute Glomerulonephritis) 30.2.2. متلازمہ کلیہ/Mutalazma kulyah (Nephrotic syndrome) **• M 30U 3 قصور الکلیہ/Qasurul kulia (Renal failure)** 30.3.1. قصور الکلیہ حاد/Qasurul kulia had(Acute Renal failure) 30.3.2. قصور الکلیہ مزمن/ *Qasur al Kulya muzmin (chronic renal failure)* **• M 30U 4 بول فی الفراش/Bawl Filfarash (Enuresis) and امراض کلیہ موروثی/Amrāḍ-i -Kulya Maurusi (Congenital & Hereditary Renal disorder)** 30.4.1. بول فی الفراش/ *Bawl Filfarash (*Enuresis) 30.4.2. امراض کلیہ موروثی/ *Amrāḍ-i -Kulya Maurusi* (Congenital & Hereditary Renal disorder). **• M 30U 5 حصاۃ الکلیہ و مثانہ/Hasat-al -Kulya -wa-Mathana (Renal and Bladder Stone)**					

	30.5.1.حصاۃالکلیہ ومثانہ/Hasat-al -Kulya -wa-Mathana(Renal and Bladder Stone).					
		4	20	40	60	120
Semester No : 5						
2A Module Number	**2B Modules & units**	**2C Number of Credits**	**Notional Learning hours**			
			2D Lectures	**2E Practical Training**	**2F Experiential Learning including Modular Assessment**	**2G Total**
	M-31 امراض عین اذن انف وحلق(Amrāḍ-i-'Ayn-Udhun wa Anf) This module focuses on common diseases of Eyes and ENT in pediatrics .Eye diseases including different diseases of cornea, conjunctiva ,lacrimal system and eyelids and comprehensive knowledge of Unani concept of diseases as well as of conventional medicine. It also focuses on details of some common problems of ear, nose and throat as otalgia, otorrhoea, epistaxis ,sinusitis ,tonsillitis and foreign body in ear & nose and its Unani concept and modern perspectives .it also emphasizes on skills to develop diagnosis and management of these problems of Eye & ENT. It illustrates early diagnosis and early treatment can prevent complication and to conduct awareness programs for healthy society and to recognise when to refer to specialist. **• M 31U 1 (Amrāḍ-i-'Ayn I) Diseases of Eye-I امراض عین۔اول** 31.1.1 امراض جفن *Amrāḍ-i-jafn*(Diseases of Eyelids)	3	15	30	45	90

	31.1.1.1 سلاق Sulāq (Blephritis) 31.1.1.2 شعیرہShaʻīra (Stye) 31.1.1.3 بردہ Barada (Chalazion) 31.1.2 امراض نظام دمعیAmrāḍ-i-Nizame Damei (Diseases of Lacrimal system) 31.1.2.1 Congenital Nasolacrimal Duct Obstruction 31.1.2.2 Dry Eye **• M 31U 2 (Amrāḍ-i-ʻAyn II) Diseases of eye (II)امراض عین۔دوم** 31.2.1 انحراف بصرInherafe basar (Refractory Errors) 31.2.2. امراض قرنیہ Amrāḍ-i-Qarniyya (Diseases of Cornea) 31.2.2.1 نتوءالقرنیہ Nutū' Al- Qarniyya (Bulging Cornea) 31.2.2.2 التہاب القرنیہ Iltihab-al Qarniyya (Keratitis) 31.2.3 امراض ملتحمہ Amrāḍ-i Multahima (Diseases of Conjunctiva) 31.2.3.1 رمد Ramad (Conjunctivitis) 31.2.3.2 بثور ملتحمہ Basoor-i-Multahima (Dermoid cyst) 31.2.3.3 انتفاخ ملتحمہ Intifākh-i- Multahima (Chemosis) **• M 31U 3 Visual disorders امراض بصر((Amrāḍ-i Basar)(Amrāḍ-i-ʻAyn II) Diseases of eye امراض عین۔دوم(II)** 31.3.1. امراض بصرAmrāḍ-i Basar(Visual disorders) 31.3.1.1. شب کوریShabkorī (Night blindness) 31.3.1.2. Retinitis pigmentosa. 31.3.1.3. Ambylopia (Lazy Eye) 31.3.1.4. Astigmatism 31.3.2. نزول الماء Nuzūl al-Mā' (Cataract)					

	• M 31U 4 امراض اذن وانف(Amrāḍ-i-Udhun wa Anf(Diseases of Ear and Nose 31.4.1 امراض اذن (Amrāḍ-i-Udhun) Ear Disorders 31.4.1.1 وجع الاذن Waja' al-Udhun (Otalgia) 31.4.1.2 سیلان الاذن Sayalān al-Udhun (Otorrhoea) 31.4.1.3 طرش Tarash (Hearing loss) 31.4.1.4 قذیٰ الاذن Qadhā al-Udhun (Foreign body in ear) 31.4.2. امراض انف (Amrāḍ-i-Anf) Nose Disorders 31.4.2.1 رعاف Ru'af (Epistaxis) 31.4.2.2. بواسیر الانف Bawasir-i-Al-Anf (Nasal Polyp) 31.4.2.2 قذیٰ الانف Qadha al-Anf (Foriegnbody in Nose) 31.4.2.3 التہاب تجاویف انف Iltihāb-i –tajawi f anf (Sinusitis) **• M 31U 5 . حلق امراض (Amrāḍ-i--Halaq) Throat Disorders ورم لوذتین Waram-i-Lawzatayn (Tonsillitis)** 31.5.1 حلق امراض Amrāḍ-i--Halaq (Throat Disorders) 31.5.1.1 ورم لوذتین Waram-i-Lawzatayn (Tonsillitis) 31.5.1.2. ورم حلق Waram-i-Halaq (Pharyngitis) 31.5.1.3. Adenoid					
	M-32 امراض جلد (Amrāḍ-i-jild) Skin Diseases This module of Amraz-i-jild (dermatology) focuses on diagnosis and management of common skin diseases in pediatric OPD like skin rashes as Diaper rashes,Heat rashes and Urticaria .It also emphasizes hypo and hyper pigmentary lesions with unani concept as *Baras* (Vitilligo), N*amash* (Naevus) and modern concept of Albinism ,Erthrema Multiforme. This module also explain unani concept of *Qūbā)* (Taenia) and Jarab	1	5	10	15	30

	(Scabies) and its modern perspective .It also include *Iltihāb-i – jild* (Dermatitis), *Nār Fārsī* (Eczema), *Ḥazāz* (Seborrhic Dermatitis) and its Unani concept as well as of conventional medicine and conduct awareness in community about preventive measures of skin diseases.This module focuses to develop skills for formulation of different effective nuskhas and its application (zimad ,tila) used in skin diseases mentioned above. **• M 32U 1 جلدی لیجن(Jildi lejan) Skin rashes** 32.1.1 Diaper rash 32.1.2 Heat rashes 32.1.3 شریٰ Sharā (Urticaria) **• M 32U 2 Fasād al-Lawn (Pigmentary lesions)فسادللون** 32.2.1 ErythemaMultiformae 32.2.2 نمش Namash(Naveus) 32.2.3 Albinism 32.2.4 Hypo and hyper pigmentation 32.2.5 برص Baraṣ (Vitiligo) **• M 32U 3 a)قوبا(Qūbā) Taenia b) جرب(Jarab) Scabies** 32.3.1 قوبا (Qūbā) Taenia 32.3.2 جرب (Jarab) Scabies **• M 32U 4 التہاب جلد(Iltihāb-e-jild) Dermatitis** 32.4.1 نارفارسی Nār Fārsī (Eczema) 32.4.2 التہاب جلدحساس Iltihāb-I–jild hassas (Atopic Dermatitis) 32.4.3 التہاب جلد حزاز Ḥazāz (Seborrheic Dermatitis) **• M 32U 5 امراض الشعر(Amrād-i-Sha'ar) Diseases of Hair**					

	32.5.1. شیبSheeb (Premature greying of hair) 32.5.2. داءالثعلبDa'-us Sa'alab (Alopecia)					
		4	20	40	60	120
Semester No : 6						
2A Module Number	**2B Modules & units**	**2C Number of Credits**	**Notional Learning hours**			
			2D Lectures	**2E Practical Training**	**2F Experiential Learning including Modular Assessment**	**2G Total**
	M-33 امراض غدد لاقناتیہ/Amrāḍ-i-Gududde la Qanatiya (Endocrine Disorders) Comprehensive description of this module present about endocrine disorders. Endocrine disorders occur when the glands of the endocrine system produce too much or too little hormone, affecting various bodily functions such as metabolism, growth, reproduction, and mood. These disorders can arise from issues within the glands themselves, such as tumours or autoimmune attacks, or from problems in hormone feedback loops. The endocrine system includes glands like the thyroid, pancreas, adrenal glands, pituitary, and ovaries or testes, which produce hormones that regulate important physiological processes. Endocrine disorders often require lifelong management and regular monitoring to ensure that hormone levels remain balanced and complications are prevented. Unani	2	10	20	30	60

	treatment is highly individualized based on the specific disorder, its cause, and its impact on the patient's health. **• M 33U 1 Disorder of Pituitary Gland.** 33.1.1.Growth Hormone Deficiency (Short Stature/Dwarfism). 33.1.2.Growth Hormone Excess (Gigantism). **• M 33U 2 ذیابیطس/Dhayābīṭus (Diabetes)** 33.2.1 ذیابیطس مائی/*DhayābīṭusMayee* (Diabetes Insipidus). 33.2.2. Disorder of Pancreatic Endocrine system: ذیابیطس شکری/*Ziabetes Shakri* (Diabetes mellitus). **• M 33U 3 Disorders of Thyroid Gland** 33.3.1. قلت افراز درقیہ/*Qillat Ifraz Darqiya* (Hypothyroidism). 33.3.2. فرط افراز درقیہ/*Farte Darqiya* {Hyperthyroidism (Graves Disease). **• M 33U 4 Disorder of Parathyroid Gland** 33.4.1. Hypocalcaemia. 33.4.2. Hypercalcemia. **• M 33U 5 Disorder of Adrenal Gland** 33.5.1. Adrenocortical Excess (Cushing Syndrome). 33.5.2. Deficiency of Adrenocortical Hormone /congenital adrenal Hyperplasia. 33.5.3.Childhood Obesity					
	M-34 Miscellaneous Diseases. Comprehensive description of this module present about miscellaneous disorders, while diverse in their causes and manifestations, often involve complex interactions between genetics, immune system dysfunction, environmental triggers, and lifestyle factors.	2	10	20	30	60

	Diagnosis can be challenging, as symptoms may overlap with other conditions, requiring a multidisciplinary approach to patient care. Unani treatment is typically aimed at managing symptoms, slowing disease progression, and improving quality of life, with some disorders requiring long-term monitoring for complications. **• M 34U 1 وجع المفاصل/Waja al Mafasil(Arthralgia) Waja‘ al-Mafāṣil (Arthralgia)** 34.1.1. Approach to waja al mafasil in children. **• M 34U 2 التہاب مفاصل طفلی Iltihab-i Mafasil /Waja‘ al-Mafāṣil Tifli (Juvenile Idiopathic Arthritis)** 34.2.1. Definition, Aetiology, Clinical Features, Diagnosis and Management. **• M 34U 3 Lymphadenopathy** 34.3.1.Definition, Aetiology, Clinical Features, Diagnosis and Management. **• M 34U 4 حمی مجہول الاسباب Humma-i-Majhul-al-Asbab (Pyrexia of Unknown Origin)** 34.4.1.Definition, Clinical Features, Diagnosis and Management. **• M 34U 5 ضمور العضلات Zamur-al-azlaht (Muscular Dystrophy)** 34.5.1.Definition, Aetiology, Types, Clinical Features, Diagnosis and Management.					
		4	20	40	60	120
		16	80	160	240	480
		64	320	640	960	1920

Table 3 : Modules - Unit - Module Learning Objectives and Session Learning Objective- Notional Learning Hours- Domain- Level- TL Methods

Paper No : 1(امراض اطفال عمومی اول)Amraze Atfal Umoomi awwal) General Pediatrics -Part 1)

Semester No : 3

Module 1 : تغذیہ Taghdhiya (Nutrition)

Module Learning Objectives

(At the end of the module, the students should be able to)

1. Describe the basic principle of nutrition, including macronutrient and micronutrient, impact of balanced and unbalanced diet, and their role in maintaining overall health of a child.
2. Describe the relationship between nutrition and diseases prevention such as malnutrition, vitamin, and mineral deficiencies.
3. Describe common nutritional disorders in pediatrics population and describe the underlying causes and risk factors.
4. Evaluate diagnostic tools and perform clinical assessment to identify nutritional disorders in children
5. Develop evidence-based treatment and intervention strategies for managing pediatric nutritional disorders, including dietary modification, supplemental and therapeutic approaches
6. Apply holistic approach to pediatric care by integrating nutritional management with family dynamics, behavioural factors, and community resources.

Unit 1 احکامات غذاء اطفال(Aḥkāmāt-i-Ghidhā’ atfal) Principles of Feeding Practices in Children

1.1.1. Age specific

1.1.2. Nutritional Requirements in children

1.1.3. Feeding behavior

1.1.4. اقسام غذا(Aqsam-i-Ghidhā’) Types of Food and associated conditions

1.1.5. Nutritional Issue of importance across Pediatric age

1.1.6. Preventive nutritional counselling in Pediatric Primary Care **References:** 26,44,63,70						
3A Course Outcome	**3B Learning Objective (At the end of the (lecture/practical training /experiential learning) session, the students should be able to)**	**3C Notional learning Hours**	**3D Lecture/ Practical Training/ Experiential Learning**	**3E Domain/ Sub Domain**	**3F Level (Does/Shows how/Knows how/Know)**	**3G Teaching Learning Methods**
CO1,CO3,CO4	Describe the basic principles of nutrition and feeding practices in children, factors which influence nutrition like age specific nutritional requirement, food proportion, balanced diet, recommended and avoiding foods, food safety issues, feeding behaviour, cultural and family preferences.	2	Lecture	CE	Knows-how	L&PPT
CO1,CO3,CO4	Demonstrate the impact of nutrition on child health and Preventive nutritional counselling in pediatric primary care.	3	Practical1.1	PSY-MEC	Shows-how	D,DIS,RP,D-M
CO1,CO3,CO4	Display food safety issue in children.	3	Practical1.2	PSY-MEC	Shows-how	CBL,DIS,SIM
CO1,CO3,CO4	Categorise the nutritional disorders and plan the Unani management guidelines.	5	Experiential-Learning1.1	CAN	Does	PER,CBL,DIS,CD
CO1,CO3,CO4	Develop an age specific balanced diet chart.	3	Experiential-Learning1.2	PSY-ORG	Does	CBL,PrBL,PER

Unit 2 نقص تغذیہ (Nuqṣ-i-Taghdhiya) Malnutrition)

1.2.1. ہزال *(Huzāl)* Underweight

1.2.2. سوء تغذیہ بنقص الحم (Su-i Taghdiya binaqs-i leham) Protein energy Malnutrition

1.2.3. قلت وزائد حیاتین۔الف (Qillat wa Ifrāṭ Ḥayātin -A) Vitamin A Deficiency and Excess

1.2.4. قلت حیاتین۔ب (Qillat Ḥayātin -B) Vitamin B Complex Deficiency

1.2.5. قلت حیاتین۔ث (Qillat Ḥayātin -C) Vitamin C Deficiency

1.2.6. قلت وزائد حیاتین۔د (Qillat wa Ifrāṭ Ḥayātin -D) Vitamin D deficiency and Excess

1.2.7. قلت حیاتین۔ی (Qillat Ḥayātin -E) Vitamin E deficiency

1.2.8. قلت حیاتین۔ ک (Qillat Ḥayātin -K) Vitamin K deficiency

1.2.9. قلت مغذیہ دقیقہ (Qillat Maghziya Daqeeqa) Micronutrient Deficiencies

1.2.10. اخفاق نمو (Ikhfaq i Namu) Failure to thrive

References: 44,69,72

3A	3B	3C	3D	3E	3F	3G
CO1,CO3,CO4	Describe the Unani concept of Naks-e-Taghdhiya, causes, risk factors, etiopathogenesis, clinical findings, diagnostic tools, management, and treatment.	1	Lecture	CE	Knows-how	L&PPT
CO1,CO3,CO4	Describe Underweight, causes, risk factors, etiopathogenesis, clinical findings, diagnostic tools, management, and treatment.	1	Lecture	CE	Knows-how	L&PPT
CO1,CO3,CO4	Describe Protein Energy Malnutrition (PEM), its types, causes, risk factors, etiopathogenesis, clinical findings, diagnostic tools, management, and treatment.	1	Lecture	CE	Knows-how	L&PPT

CO1,CO3,CO4	Classify and describe micronutrient deficiencies, its causes, risk factors, etiopathogenesis, clinical findings, diagnostic tools, management.	1	Lecture	CC	Knows-how	L&GD
CO1,CO3,CO4	Elaborate vitamins deficiencies and Hypervitaminosis (Vitamin A & D) and causes, risk factors, etiopathogenesis, clinical findings, diagnostic tools, and management.	1	Lecture	CAN	Knows-how	L&PPT ,L
CO1,CO3,CO4	Recall and discuss Failure to Thrive	1	Lecture	CC	Knows-how	L
CO1,CO3,CO4	Evaluate the clinical presentation of malnutrition and its Unani Management.	4	Practical1.3	PSY-ORG	Shows-how	PER,D,DIS,CBL
CO1,CO2,CO4	Display Undernutrition and its Unani Management	2	Practical1.4	PSY-GUD	Shows-how	PER,PrBL,DIS
CO1,CO3,CO4	Develop the investigation plan of Micronutrient deficiencies and its Unani Management.	3	Experiential-Learning1.3	CS	Does	CBL,CD
CO1,CO3,CO4	Perform a physical and systemic examination of Marasmus and Kwashiorkor.	3	Experiential-Learning1.4	PSY-GUD	Shows-how	CD,SIM,PER,D-BED
CO1,CO2,CO4	Observe and document cases of Vitamin Deficiency and try to identify the case specific causes and risk factor contributing malnutrition.	4	Experiential-Learning1.5	CE	Does	CD,DIS
Unit 3 تغذیہ بحالت خاص (Taghziya Ba-Halat i Khas) Nutrition in Special situation 1.3.1. Critically Ill Child						

1.3.2.تضیق البواب (*Taḍiyyuq-al-buwwab)* Pyloric stenosis

1.3.3.امراض راس ونظام اعصاب ودماغ *(Amrāḍ-i-Ra's-o-Niẓām-i-Aʿṣāb-o-Dimāgh)* Central Nervous System Disorders

1.3.4.حرق (*Ḥarq)* Burn

References: 44

3A	3B	3C	3D	3E	3F	3G
CO1,CO2,CO4	Analyse the feeding issues, method of feeding, management for providing adequate nutrition in Critically Ill Child, Pyloric stenosis, CNS Disorders, Burn in paediatric population	2	Lecture	CAN	Knows-how	L&PPT ,L_VC
CO1,CO2,CO4	Recognise and practice the method used for feeding a child in case of Critically ill Child, cleft palate, Pyloric stenosis, CNS Disorders, and Burn.	2	Practical1.5	PSY-ADT	Shows-how	DIS,D-M
CO1,CO2,CO4	Review the conditions like pyloric stenosis and develop the nutritional counselling protocol	2	Practical1.6	AFT-SET	Shows-how	DIS,CBL,SIM
CO1,CO3,CO4	Demonstrate the process of feeding in the management of cases of critically ill child, pyloric stenosis, CNS disorders, and Burn	4	Experiential-Learning1.6	CS	Does	PBL,DIS,PER,CBL
CO1,CO3,CO4	Demonstrate Unani Management and drugs used in Malnutrition.	4	Practical1.7	PSY-MEC	Shows-how	RP,IBL,DIS,JC,D
CO1,CO2,CO4	Observe and document causes and risk factors, clinical findings, diagnostic tools, and Unani drugs used in Malnutrition.	4	Experiential-Learning1.7	CAN	Does	IBL,CBL,DIS

Practical Training Activity

Practical Training 1.1 **Nutrition Strategies**
Total Learning Hours (3 Hours) Teacher will introduce the importance of nutrition in child growth, immunity, and development. Demonstrate how to assess the nutritional disorders and Unani perspective on child nutrition. (60 Minutes) 1. Hands-on Nutritional Assessment (45 minutes) Student will do Practical Demonstration & Practice Measuring growth parameters (Height, Weight, BMI, MUAC) in simulated settings. Interpreting nutritional status using WHO growth charts. 2. Preventive Nutritional Counseling Role-Play (45 minutes) Interactive Counseling Practice: Role-play scenarios where students counsel parents on pediatric nutrition. Feedback session on effective counseling techniques. 3. Reflection & Assessment (30 minutes) Quiz & Viva Scenario based assesment & case-based questions on pediatric nutrition. Discussion on how to implement nutrition counseling in real pediatric practice.
Practical Training 1.2 Food safety.
Total Learning Hours (3 Hours) 1. Teacher will discuss the Common food safety issues in children, its importance and impact of unsafe food on child health. (60 Minutes) 2. Identifying Unsafe Food & Contamination Risks (45 minutes) Hands-on Activity Visual inspection of food items for spoilage (expired products, mold, smell). Reading food labels for additives, preservatives, allergens.

Demonstration of hand hygiene & proper food storage techniques. 3. Case-Based Learning: Groups analyze food poisoning cases in children and suggest prevention strategies. (45 Minutes) 4. Reflection & Assessment (30 minutes) Quiz and Group Discussion Creative writing , making posters & case-based questions on food safety. Students reflect on how to monitor and prevent food safety risks in pediatric care.
Practical Training 1.3 **Malnutrition**
Total Learning Hours (4 Hours) 1. Teacher will discuss the malnutrition, demonstrate the process of how to evaluate it and Unani approach to malnutrition. (60 Minutes) 2. Hands-on Practice: (30 Minutes) Students measure growth parameters in simulated settings or using pediatric case data. Interpreting findings using WHO growth standards to classify malnutrition severity. 3. Case Study Analysis (60 minutes) Divide students into groups and provide patient case studies with malnutrition symptoms (e.g., Marasmus, Kwashiorkor, PEM). Each group will evaluate signs and symptoms, including weight loss, muscle wasting, and skin changes. Students analyze pediatric malnutrition cases and propose Unani-based dietary & lifestyle interventions i.e ‘Ilāj bi’l Taghdhiya (Diet therapy), ‘Ilāj bi’l Dawa (Pharmacotherapy), ‘Ilāj bi’l Tadbīr (Regimenal Therapy). 4. Group Discussion & Presentation (90 minutes) Each group will present their findings and suggest an Unani treatment plan. Faculty will provide feedback and discuss the importance of integrating Unani principles with modern nutritional therapy.
Practical Training 1.4 **Undernutrition**
Total Learning Hours (2 Hours)

1. Teacher will Discus undernutrition and its Unani Management. (30 Minutes) 2. Display & Discussion on Unani Management. (60 Minutes) Preparation of Visual Displays: Create charts, posters, or digital slides showing Clinical signs of undernutrition (wasting, edema, muscle loss). Unani concept: Su-e-Mizaj, Zauf-e-Hazm, Tafarruq-e-Ittisal (tissue degeneration). Unani diet & Unani Pharmacotherapy. 3. Demonstration of Regimenal Therapy (‘Ilāj bi’l Tadbīr). (30 Minutes)
Practical Training 1.5 **Feeding Techniques.**
Total Learning Hours (2) 1. The teacher will begin by briefly discussing the conditions (critically ill children, pyloric stenosis, CNS disorders, and burns) and their implications on feeding. (30 Minutes) **2.** Provide a model demonstration of different feeding techniques tailored to each condition. (45 minutes) **Identify Conditions**: Students will identify the model and then choose the appropriate condition on which this model has been used for feeding. **Demonstrate Techniques**: **Critically Ill Children**: Show how to use a feeding tube (e.g., nasogastric or orogastric tube) for enteral feeding. Emphasize proper placement and securement of the tube, as well as methods for assessing gastric residuals before feeding. **Pyloric Stenosis**: Discuss the importance of managing dehydration and electrolyte balance before feeding. Demonstrate oral rehydration solutions if applicable and how to gradually introduce feeds once the child is stable. **CNS Disorders**: Illustrate the use of adaptive feeding techniques or special utensils for children with neurological deficits, including positioning strategies and the use of thickened formulas if swallowing difficulties are present.

Burns: Explain the significance of high-calorie, high-protein diets for burn recovery. Demonstrate how to prepare and administer nutrient-dense oral supplements or enteral feeds. **3. Interactive Practice**: Allow learners to practice these techniques on feeding dolls or mannequins under supervision, ensuring they understand each method. (45 Minutes).
Practical Training 1.6 Pyloric stenosis.
Total Learning Hours (2 Hours) 1. Teacher will discuss the challenges in feeding in pyloric stenosis, how to manage these and counsel the mother/caretaker. (30 minutes) 2. Students design the nutritional counselling approach for simulated pediatric patients with pyloric stenosis. Working in pairs, they review the condition's impact on digestion and nutrient absorption, focusing on the need for careful rehydration and gradual reintroduction of feeding post-surgery. Each pair practices counselling techniques, explaining appropriate feeding adjustments, and offering advice on signs to monitor for optimal recovery. (30 minutes) 3. Case Study Analysis: (30 minutes) Present a case of an infant with symptoms like projectile vomiting, weight loss, and dehydration. Groups analyze the case and identify nutritional deficiencies due to frequent vomiting. 4. Pathophysiology Discussion: (30 minutes) Explain why infants develop metabolic alkalosis and dehydration. Discuss the importance of correcting fluid and electrolyte imbalances before surgery.
Practical Training 1.7 **Malnutrition.**
Total Learning Hours (4 Hours) 1. Teacher will discuss the Malnutrition and explain the process of litrature search. (60 minutes) Unani Management of Malnutrition (90 minutes) Discussion on Unani Perspective of Malnutrition. Display of Unani Drugs & Herbal Formulations

Ilaj-bil-Ghiza (Dietary Therapy) Ilaj-bil-Tadbeer (Regimenal Therapy) 2. Demonstration of Unani Diet Preparation: Students prepare Unani-based energy drinks using milk, dates, and almonds. (30 minutes) Role-Play & Discussion (60 minutes) Role-Playing: One student acts as a pediatrician/nutritionist, another as a caregiver. Scenario: A student explains diagnosis and Unani treatment plan for a malnourished child. Group Discussion & Feedback: Faculty provides suggestions for improvement.
Experiential Learning Activity
Experiential-Learning Learning 1.1: **Nutritional disorders.**
Total Activity Hours (5 Hours) **1. Clinical Assessment of Nutrional disorders (60 Minutes)** Divide the students into groups to conduct a comprehensive clinical assessment of their assigned case (each group 3 cases), including: **Medical History**: Review dietary habits, medical history, and socioeconomic factors. **Physical Examination**: Perform a mock physical examination focusing on signs of malnutrition (e.g., growth measurements, skin assessments). **Diagnostic Tools**: Discuss and identify appropriate diagnostic tools (e.g., laboratory tests, dietary assessments). **2. Guideline Development**: Groups develop management guidelines that address: (60 Minutes) **Nutritional Interventions**: Specific dietary modifications, supplementation, or therapeutic diets. **Behavioural Strategies**: Education on healthy eating habits and lifestyle modifications. **3. Monitoring and Follow-up**: Outline follow-up assessments and criteria for evaluating treatment effectiveness. (30 minutes) **4. Discussion and presentation: E**ach group will present and discused assigned cases. (2.5 Hours)
Experiential-Learning Learning 1.2: Balanced Diet Chart

Total Activity Hours (3 Hours) Students learn to create a balanced diet chart tailored to specific age groups. Each group is assigned all age range (infant, toddler, school-age, or adolescent) and tasked with researching nutritional requirements for growth, development, and energy needs for their assigned age group. Using this information, they design a one-week balanced diet plan, ensuring inclusion of essential food groups, appropriate portion sizes, and consideration of cultural dietary preferences. Each group presents and explains their diet chart, focusing on how their plan meets the nutritional needs of their specific age group. This activity builds practical skills in diet planning and deepens understanding of age-related nutritional needs.
Experiential-Learning Learning 1.3: **Common micronutrient deficiencies**
Total Activity Hours (3 Hours) Students work in small groups to plan diagnostic approaches and Unani management for common micronutrient deficiencies (such as iron, vitamin D, and vitamin B12). Each group is assigned a specific deficiency to research, focusing on relevant diagnostic tests (like blood work or clinical assessment) to confirm deficiency levels. Once the diagnostic plan is outlined, groups explore Unani principles for managing the deficiency, identifying foods, herbs, and lifestyle practices recommended in Unani medicine to restore balance and address symptoms. Groups present their diagnostic plan and Unani management approach, discussing how both conventional and traditional practices can be integrated to improve patient outcomes. This activity enhances knowledge of diagnostic techniques and Unani-based management for holistic care.
Experiential-Learning Learning 1.4: **Protein Energy Malnutrition**
Total Activity Hours (3 Hours) **1. Conducting the Examination (1 Hours)** **Method** – 1: Learners perform a structured physical and systemic examination based on the assigned cases of Marasmus and Kwashiorkor. **Method** – 2: Simulate the hypothetical cases of Marasmus and Kwashiorkor and discuss the method of physical and systemic examination and its interpretation **2. Case presentation:** Student have to present a real/simulated cases of Marasmus and Kwashiorkor. (2 Hours)
Experiential-Learning Learning 1.5: **Vitamin Deficiency.**

Total Learning Hours (4 Hours) 1. Divide learners into small groups and assign each group a specific case to analyse. (2 Hours) **Case Presentation**: Each group receives a detailed case report with relevant information, including clinical findings, laboratory results, and patient history. (4 cases/group) **2. Collaboration**: Encourage groups to work together to review the case and discuss potential causes and risk factors for Vitamin Deficiencies. (2 Hours)
Experiential-Learning Learning 1.6: **Feeding in critically ill child**
Total Activity Hours (4 Hours) **1. Method**: Have each group present their case management plan and simulation experience to the larger class. (1 Hours) Divide students into three groups, each assigned a different condition: Pyloric Stenosis CNS Disorders (e.g., Cerebral Palsy, Hydrocephalus) Burn Patients 2. Each group will analyze a case study, assess nutritional challenges, and create a feeding plan. (2 Hours) Clinical Feeding & Management Plan Pyloric Stenosis (Post-Surgical Feeding) Burn Patients (High-Calorie, High-Protein Nutrition) Central Nervous system (CNS) Disorders. 3. Group Discussion & Evaluation (1 Hours) Each group presents their feeding plan and demonstrates key techniques. Faculty provides feedback on accuracy, safety, and patient-centered care.
Experiential-Learning Learning 1.7: Unani drugs in Malnutrition.
Total Activity Time (4 Hours)

1. Allow groups to research and discuss their assigned case, focusing on the causes, risk factors, clinical findings, and relevant diagnostic tools. (3 Hours)

Guided Research: Provide access to textbooks, articles, and online databases for groups to gather information.

Group Discussion: Facilitate discussions within each group to identify:

Causes of Malnutrition: Include dietary inadequacies, socio-economic factors, health conditions, etc.

Risk Factors: Assess factors such as age, gender, economic status, and comorbidities.

Clinical Findings: Review common clinical signs associated with malnutrition.

Diagnostic Tools: Identify tools like anthropometric measurements, blood tests, and dietary assessments.

2. Research Unani Drugs: Assign each group to investigate specific Unani drugs known to aid in nutrition. (1 Hours)

Modular Assessment

Assessment	**Hour**
Instructions: Conduct a structured modular assessment. Assessment will be for 50 marks for this module. Keep structured marking patten. Use different assessment methods in each module for the semester. Keep a record of the structured pattern used for assessment. Calculate the Modular grade point as per Table 6 C **1 T-EW (Theory Essay Writing)** Conduct a theory exam having **one essay writing** question from any unit of this module **(20 Marks)** **P-VIVA (Practical Viva)** Conduct a practical viva **(5 Marks)** 2 **OSCE (Objective Structured Clinical Examination)** **Instruction:** In OSCE is a structured assessment method used to evaluate students' clinical skills and practical knowledge across different clinical task zone. Each clinical task zone assesses a specific skill, such as history taking, physical examination, diagnosis, or communication, with predefined tasks and checklists. History Taking and Patient Interaction (5 Marks)	4

Physical Examination Skills (5 Marks) Diagnosis and Clinical Reasoning (5 Marks) Management and Treatment Planning (5 Marks) Communication Skills (2.5 Marks) Time Management and Efficiency (2.5 Marks) Or Any practical in converted form can be taken for assessment. (35 marks) and Any of the experiential as portfolio/ reflections / presentations can be taken as an assessment. (15 marks)	

Module 2 : علم الوراثت الجزئی (Ilmul virasatul-juz-ee) Molecular genetics and Pattern of Inheritance

Module Learning Objectives

(At the end of the module, the students should be able to)

1. Describe the basic principles of genetics, including inheritance patterns, genetic variation, and the role of DNA, RNA, and proteins in development.
2. Describe the molecular diagnostic techniques and tools used in genetic disorders, interpret the investigations and methods of genetic counselling
3. Perform thorough family history assessments to identify genetic risk factors and inheritance patterns relevant to paediatric patients.
4. Analyse and interpret the results of genetic tests, including karyotyping, single-gene tests, and next-generation sequencing, and their implications for patient management.
5. Discuss the importance and implementation of newborn screening programs for early detection of genetic and metabolic disorders.
6. Create individualized management plans for pediatric patients with genetic disorders, including referrals to specialists, therapeutic interventions, and supportive care.

Unit 1 علم الوراثت الجزئی (Ilmul virasatul-juz-ee) Molecular genetics

2.1.1. Structure of RNA and DNA

2.1.2. Primary, secondary, and tertiary

References: 9,25,44

3A	3B	3C	3D	3E	3F	3G
CO1,CO2,CO7, CO8	Describe the key concepts of molecular genetics, including DNA structure, replication, transcription, translation, and gene regulation.	1	Lecture	CE	Knows-how	L&PPT
CO1,CO2,CO7, CO8	Discuss molecular techniques used in genetics, such as Polymerase Chain Reaction (PCR), gel electrophoresis, and sequencing methods.	2	Lecture	CC	Knows-how	L&PPT
CO1,CO2,CO7, CO8	Display and interpret molecular genetic data from laboratory results, including understanding the significance of genetic mutations in disease.	3	Practical2.1	PSY-MEC	Shows-how	DIS,PSM,PER
CO1,CO2,CO7, CO8	Demonstrate the DNA structure replication, transcription, translation.	3	Practical2.2	PSY-SET	Shows-how	DL,D-M,DIS
CO1,CO2,CO7, CO8	Observe and document the integrating molecular genetics into clinical practice.	3	Experiential-Learning2.1	PSY-MEC	Does	TPW,PER
CO1,CO2,CO7, CO8	Observe and document the ethical implications of molecular genetics, including genetic privacy, discrimination, and informed consent.	3	Experiential-Learning2.2	PSY-MEC	Does	CBL,SIM,TBL,DIS

CO1,CO2,CO7, CO8	Review and present the concept of genetic privacy by examining real-world scenarios.	3	Experiential-Learning2.3	AFT-SET	Does	RLE,CBL,DIS
Unit 2 طرزتوارث(Tarz-e tawarus) Pattern of inheritance 2.2.1. Autosomal dominant 2.2.2. Autosomal recessive 2.2.3. X – Linked, Y – Linked 2.2.4. Mitochondrial **References:** 9,25						
3A	**3B**	**3C**	**3D**	**3E**	**3F**	**3G**
CO1,CO2,CO7, CO8	Interpret fundamental genetic concepts, including genes, alleles, chromosomes, and the role of Deoxyribonucleic acid (DNA) in inheritance.	1	Lecture	CAP	Knows-how	L&PPT
CO1,CO2,CO7, CO8	Describe complex inheritance patterns such as incomplete dominance, codominance, polygenic inheritance, and multifactorial traits	1	Lecture	CE	Knows-how	L&PPT
CO1,CO2,CO7, CO8	Develop Punnett squares to predict the probability of inheritance of specific traits in offspring based on parental genotypes.	2	Practical2.3	PSY-ORG	Shows-how	DIS,TBL,D,TPW
CO1,CO2,CO7, CO8	Perform and interpret pedigree charts to trace the inheritance of traits through generations in families.	2	Practical2.4	PSY-GUD	Shows-how	PER,PSM,D,TBL,DIS

CO1,CO2,CO7, CO8	Discuss the risk of inheriting genetic conditions based on family history and specific inheritance patterns	3	Experiential-Learning2.4	AFT-VAL	Does	SIM,DIS,RP
CO1,CO2,CO7, CO8	Observe and document between various patterns of inheritance, including autosomal dominant, autosomal recessive, X-linked dominant, and X-linked recessive.	3	Experiential-Learning2.5	CAN	Does	CBL,DIS,PER
CO1,CO2,CO7, CO8	Evaluate multifactorial traits by analysing case studies	3	Experiential-Learning2.6	CE	Does	DIS,PER,CBL

Unit 3 سلامتی تشخیص (Salmati tashkheesh) Molecular diagnosis

2.3.1. Biomarker Tests

2.3.2. Genetic Screening

2.3.3. Tumour Sequencing

2.3.4. Liquid Biopsies

References: 25

3A	3B	3C	3D	3E	3F	3G
CO1,CO2,CO7, CO8	Describe the basic principles and significance of molecular diagnosis in the detection and management of genetic disorders.	1	Lecture	CC	Knows-how	L&PPT
CO1,CO2,CO7, CO8	Recognize and describe various molecular diagnostic techniques, including Polymerase chain reaction (PCR), Quantitative Polymerase chain reaction (qPCR), sequencing, and microarrays.	1	Lecture	CAN	Knows-how	L&PPT

CO1,CO2,CO7, CO8	Discuss the ethical and legal implications of molecular diagnostics, including issues related to informed consent, privacy, and data sharing.	1	Lecture	CC	Knows-how	L&PPT
CO1,CO2,CO7, CO8	Interpret genetic test results and understand their implications for patient management, including variant classification and clinical significance.	2	Practical2.5	CE	Shows-how	PER,PBL,DIS,CBL
CO1,CO2,CO7, CO8	Demonstrate and apply quality control measures in molecular diagnostics to ensure accuracy and reliability of test results.	2	Practical2.6	PSY-MEC	Shows-how	W,DIS,SIM
CO1,CO2,CO7, CO8	Identify and develop strategies for integrating molecular diagnosis into clinical workflows and decision-making processes.	3	Experiential-Learning2.7	AFT-SET	Does	TBL,CBL
CO1,CO2,CO7, CO8	Document recent scientific advancements in molecular diagnosis for genetic disorders.	3	Experiential-Learning2.8	CAP	Does	DIS,IBL,PER

Unit 4 وراثتی مشاورت(Virasati mushawarat) Genetic Counselling

2.4.1. Principles of genetic counselling

2.4.2. Role of a genetic counsellor.

References: 9,25

3A	3B	3C	3D	3E	3F	3G
CO1,CO2,CO7, CO8	Describe the principles of genetic counselling, including its purpose, goals, and the role of a genetic counsellor.	1	Lecture	CE	Knows-how	L&PPT

CO1,CO2,CO7, CO8	Describe the indications for genetic counselling, including family history of genetic disorders, abnormal screening results, and recurrent pregnancy loss.	1	Lecture	CC	Knows-how	L&PPT
CO1,CO2,CO7, CO8	Apply ethical principles in genetic counseling by discussing patient confidentiality, informed consent, and psychosocial implications in case scenarios.	3	Practical2.7	PSY-MEC	Shows-how	RP,CBL,DIS,PBL,SIM
CO1,CO2,CO7, CO8	Construct individualized counselling strategies that address the specific concerns and needs of patients and families based on their genetic risks.	3	Practical2.8	PSY-ORG	Shows-how	SIM,CBL,TPW,DIS
CO1,CO2,CO7, CO8	Appraise the outcomes of genetic counselling sessions, including patient understanding, emotional responses, and decision-making processes.	2	Experiential-Learning2.9	AFT-SET	Does	TBL,PER,CBL,DIS

Practical Training Activity

Practical Training 2.1 **Genetic Mutation**

Total Learning Hours (3 Hours)

1. Teacher will introduce the genetic mutation and how to interpret genetic data. (45 Minutes)

2. Method

Use case studies that involve patients with genetic diseases to contextualize the interpretation of genetic data.

Divide the students into groups and provide them a real or simulated case study to each group. (10 minutes)

Each group identify the genetic mutation. (20 minutes)

Group Discussion: Have groups discuss the cases, focusing on: (30 Minutes)

The interpretation of genetic data and how it relates to the patient's condition.

The implications of the genetic findings for diagnosis, treatment options, and genetic counselling.

3. Presentation: Each group presents their case analysis to the class, including their interpretation of the data and clinical relevance. (60 minutes)

Practical Training 2.2 **Deoxyribonucleic acid (DNA)**

Total Learning Hours (3 Hours)

1. Teacher will discuss the structure of DNA and demonstrate the process of replication,transcription, and translation on model or video. (60 Minutes)

2. Students use models and simulations to explore DNA structure, replication, transcription, and translation. (30 Minutes)

3. They begin by constructing a DNA double helix model to understand base-pairing, then "unzip" and replicate it, simulating DNA replication. (30 Minutes)

4. Students create an mRNA strand from one DNA strand to demonstrate transcription, followed by translating the mRNA into a polypeptide chain by matching codons with corresponding amino acids. (60 Minutes)

Practical Training 2.3 **Punnett squares**

Total Learning Hours (2 Hours)

1. Tearcher will discuss importance and uses of Punnett squares and domonstrate how to construct Punnett squares to predict the probability of inheritance. (30 minutes)

2. Divide students into small groups and provide them with different parental genotypes to analyse using Punnett squares.

How it Works:

Activity Setup: Provide each group with: (30 minutes)

A worksheet with different genetic scenarios (e.g., eye color, hair texture).

Blank Punnett squares for their calculations.

Group Work: Each group should: (30 minutes)

Determine the parental genotypes for their assigned scenario.

Construct a Punnett square to predict the inheritance of traits.

Calculate the probabilities of the offspring's genotypes and phenotypes.

3. Discussion: After completing the exercise, have each group present their findings to the class, explaining their process and results. (30 minutes)

Practical Training 2.4 **Pedigree Charts**

Total Learning Hours (2 Hours)

1. Teacher will introduce the Pedigree Chart and demonstrate how to construct and read it. (30 minutes)

2. Divide students into small groups and provide them with different family scenarios to analyse and create pedigree charts.

Activity Setup: Provide each group with: (30 minutes)

A worksheet containing a family scenario with information on affected individuals and their relationships.

Blank pedigree chart templates for their constructions.

Group Work: Each group should: (30 minutes)

Gather information about the individuals in the family scenario.

Construct a pedigree chart representing the inheritance of the trait described in the scenario.

Discuss their reasoning for how they represented relationships and affected statuses.

3. Class Sharing: Each group presents their pedigree chart to the class, explaining their approach and findings. (30 minutes)

Practical Training 2.5 **Genetic Tests**

Total Learning Hours (2 Hours)

1. Teacher will discuss the types of genetic tests and its importance (30 Minutes)

2. Use real or simulated case studies that involve patients who have undergone genetic testing. Provide students with genetic test results, including details about variants identified. (90 minutes)

Implementation:

Present the background of each case, including the patient's family history, clinical presentation, and reason for testing.

Have students analyse the results, identify variants, and classify them (e.g., pathogenic, likely pathogenic, uncertain significance, benign).

Practical Training 2.6 **Quality control in Molecular genetics.**
Total Learning hours (2 Hours) 1. Tearcher will discuss the molecular diagnostic tools and its quality control. (30 minutes) 2. Organize workshops that focus on hands-on training in quality control (QC) measures within the molecular diagnostics laboratory. (90 minutes) **Implementation**: Set up a simulated laboratory environment with equipment and samples. Teach students about QC protocols, including pre-analytical, analytical, and post-analytical phases. Engage them in exercises that include performing QC checks, such as reagent validation, instrument calibration, and environmental monitoring.
Practical Training 2.7 **Genetic counseling**s
Total Learning Hours (3 Hours) 1. Teacher will briefly discuss the ethical principal of genetic counselling. (30 minutes) Divide students into groups and assign different case scenarios. 2. Each group performs a role-play based on an ethical challenge in genetic counseling. (2 hours) Case 1: Confidentiality & Family Disclosure Case 2: Informed Consent in Prenatal Testing Case 3: Psychosocial Impact of Genetic Testing 3. Group Discussion & Feedback (30 Minutes) Each group presents their case and ethical approach. Faculty provides feedback on communication, decision-making, and ethical handling.
Practical Training 2.8 **Genetic Risks.**
Total Learning Hours (3 Hours)

1. Teacher will discuss the individualized counselling strategies on genetic risks. (45 Minutes)

2. Divide Students into groups to discuss and identify specific concerns and needs of simulated patients and families based on genetic risks. Construct individualized counselling strategies on their genetic risks. (90 minutes)

Case Study Distribution: Provide case studies that describe different patient scenarios, such as:

A family with a history of hereditary breast and ovarian cancer.

Parents expecting a child with a known genetic disorder.

An individual seeking testing for a late-onset genetic condition.

Group Work: In their groups, learners will:

Analyse the assigned case and identify the specific concerns and needs of the patient/family.

Construct individualized counselling strategies

Students will construct individualized counselling strategies for their assigned case.

3. Discuss emotional, social, and practical implications related to the genetic risks. (45 minutes)

Experiential Learning Activity

Experiential-Learning Learning 2.1: **Molecular genetics.**

Total Learning Hours (3 Hours)

1. Guide Students in developing a comprehensive plan for integrating molecular genetics into clinical practice.

Framework Introduction: Provide a framework for integrating molecular genetics, including: (60 minutes)

Identifying specific genetic tests relevant to the patient population.

Establishing protocols for genetic testing, interpretation, and counselling.

Developing guidelines for collaboration with genetic counsellors and specialists.

Group Planning: In their groups, learners will: (60 minutes)

Create a detailed integration plan that includes:

Goals for incorporating molecular genetics into patient care. Steps for training staff and educating patients about genetic testing. Strategies for addressing ethical considerations and patient concerns. **2. Presentation**: Each group presents their integration plan to the class for feedback and discussion. (60 minutes)
Experiential-Learning Learning 2.2: **Ethics in molecular genetics**
Total learning Hours (3 Hours) 1. Students engage in group discussions on the ethical implications of molecular genetics, focusing on issues like genetic privacy, discrimination, and informed consent. (1 Hour) 2. Each group is given a scenario highlighting a specific ethical concern—such as potential misuse of genetic information or challenges in obtaining informed consent for genetic testing. (90 minutes) 3. Students discuss the ethical considerations, propose solutions, and then share insights with the class. (30 minutes)
Experiential-Learning Learning 2.3: Concept of genetic privacy
Total Learning Hours (3 Hours) Students explore the concept of genetic privacy by examining real-world scenarios where genetic information could be misused or disclosed without consent. Small groups are assigned different scenarios, such as unauthorized access to genetic data by insurers or employers, sharing genetic test results within families, or breaches in genetic databases. Each group discusses the privacy concerns involved, the potential impact on individuals, and ethical safeguards to protect genetic information. Groups then share their insights, fostering a class discussion on best practices for respecting genetic privacy and safeguarding sensitive genetic data. This activity helps students appreciate the importance of confidentiality in genetic information handling.
Experiential-Learning Learning 2.4: **Genetic Risk Assessment**
Total Learning Hours (3 Hours) **1.** Facilitate a discussion on the implications of genetic risk assessment for individuals and families. (60 minutes)

Guided Discussion: Pose questions to stimulate conversation, such as: How do individuals react to learning about their genetic risks? What role do genetic counsellors play in discussing risk assessment with families? How can individuals use this information to make informed decisions about their health and family planning? **2. Role-Playing**: Have learners take on different roles (e.g., patient, genetic counselor) to practice discussing risk and implications. (2 Hours)
Experiential-Learning Learning 2.5: **Patterns of inheritance**
Total Learnong Hours (3 hours) Students analyse case studies and family pedigrees to recognize and differentiate between inheritance patterns, such as autosomal dominant, autosomal recessive, X-linked dominant, and X-linked recessive. Working in small groups, they examine each case, identify the inheritance pattern based on family history, and discuss distinguishing characteristics of each type. Groups then present their analyses, explaining the basis of their determinations. This activity reinforces understanding of inheritance patterns, enabling students to better assess genetic risks in family histories.
Experiential-Learning Learning 2.6: **Multifactorial traits**
Total Learning Hours (3 Hours) Students examine multifactorial traits by analysing case studies that demonstrate the influence of both genetic and environmental factors. Each group is assigned a trait, such as heart disease, diabetes, or height, and explores how genetics, lifestyle choices, and environmental influences contribute to the trait's expression. Students discuss the interactions between these factors and predict potential risks based on lifestyle and family history. Each group then presents their findings, highlighting how multifactorial traits differ from single-gene traits. This activity enhances understanding of complex traits and the interplay of genetic and environmental factors in health outcomes.
Experiential-Learning Learning 2.7: **Molecular diagnostic tools**
Total Learning Hours (3 Hours)

Students working in groups, they research and analyse a specific molecular diagnostic technique, such as next-generation sequencing, CRISPR-based diagnostics, or polymerase chain reaction (PCR). Each group reviews how their assigned technology is used to detect genetic mutations, enhance early diagnosis, and improve patient outcomes. They then present their findings, explaining the method's principles, advantages, limitations, and its impact on clinical practice. This activity fosters understanding of cutting-edge diagnostic tools and their transformative role in diagnosing and managing genetic disorders.
Experiential-Learning Learning 2.8: **Molecular diagnosis**
Total Learning Hours (3 Hours) **1.** Divide Students into groups to analyze existing clinical workflows and identify areas for integrating molecular diagnostics. **Case Study Distribution**: Provide case studies that describe different clinical scenarios, such as: (30 minutes) A patient with ambiguous symptoms requiring genetic testing for a precise diagnosis. A cancer patient needing targeted therapy based on molecular profiling. An infectious disease case where molecular diagnostics can guide treatment decisions. **Group Work**: In their groups, learners will: (90 minutes) Analyse the existing clinical workflow for their assigned case. Identify points where molecular diagnostics could be integrated to improve patient management and outcomes. 2. Develop a revised workflow that includes molecular diagnostic steps, considering aspects like sample collection, testing, result interpretation, and communication with patients. (60 minutes)
Experiential-Learning Learning 2.9: **Genetic Conselling**
Total Learning Hours (2 Hours) 1. Provide learners with real or fictional case studies to analyze the outcomes of genetic counselling. (60 Minutes) **Case Study Distribution**: Distribute case studies that describe patients' experiences during genetic counselling, including their emotional journeys and decisions made. **Group Analysis**: In small groups, learners will:

Read and analyse the case studies. Identify the outcomes of the counselling sessions and how they impacted the patients. Discuss the effectiveness of the counsellor's strategies in addressing the patients' needs. **2. Presentation**: Each group presents their findings and insights to the class. (60 Minutes)	
Modular Assessment	
Assessment	**Hour**
Instructions: Conduct a structured modular assessment. Assessment will be for 50 marks for this module. Keep structured marking patten. Use different assessment methods in each module for the semester. Keep a record of the structured pattern used for assessment. Calculate the Modular grade point as per Table 6 C **T-EW (Theory Essay Writing)** Conduct a theory exam having **one essay writing** question from any unit of this module **(20 Marks)** **P-VIVA (Practical Viva)** Conduct a practical viva **(5 Marks)** **CL-PR (Class Presentation)** Content of the presentation (5 marks) Organisation: Structure and Coherence (2.5*2= 5 Marks) Delivery: Engagement and Clarity (2.5*2= 5 Marks) Visual Aids: Design and Relevance (2.5*2= 5 Marks) Question and Answer session (5 Marks) Or Any practical in converted form can be taken for assessment . (25 marks) and	4

Any of the experiential as portfolio/ reflections/ presentations can be taken as an assessment .(25 marks)	

Semester No : 4

Module 3 : کروموسومی تفاوت/صبغی تفاوت سریریاتی بےقاعدگیاں سریریاتی خلل (Chromosomy tafa-ut/ Sibghi tafaut Sareeryati be qa-idgiyan/ sareeryati khakal) Chromosomal Variations and Clinical Abnormalities

Module Learning Objectives

(At the end of the module, the students should be able to)

1. Describe the mechanisms, types, and clinical implications of chromosomal abnormalities, including structural and numerical aberrations, aneuploidies, and sex chromosome abnormalities.
2. Describe the significance of dysmorphism in clinical genetics, including key features of common dysmorphic syndromes and their genetic basis.
3. Discuss the principles, approaches, and ethical considerations of gene therapy, including its applications in treating genetic disorders.
4. Demonstrate techniques for identifying chromosomal abnormalities (karyotyping, FISH) and evaluating dysmorphic features using assessment tools.
5. Demonstrate genetic testing and analyse laboratory data to evaluate the presence and implications of chromosomal abnormalities and gene therapy outcomes.
6. Document the case studies to formulate differential diagnoses based on clinical presentations of dysmorphic features and chromosomal abnormalities.
7. Develop individualized genetic counselling strategies for families affected by chromosomal abnormalities and those considering gene therapy.

Unit 1 شکلی اور عددی انحراف (Sakhti aur adadi inhiraf) Structural and Numerical Aberrations

3.1.1. Mechanisms of structural aberrations

3.1.2. Types of numerical aberrations

References: 25

3A	3B	3C	3D	3E	3F	3G

CO1,CO2,CO7, CO8	Describe the mechanisms of structural aberrations (e.g., deletions, duplications, inversions, translocations) and their effects on gene function.	2	Lecture	CE	Knows-how	L&PPT
CO1,CO2,CO7, CO8	Demonstrate techniques for identifying structural and numerical aberrations using karyotyping and fluorescence in situ hybridization (FISH).	3	Practical3.1	PSY-MEC	Shows-how	DL,DIS,PER
CO1,CO2,CO7, CO8	Display karyotype data to detect and interpret chromosomal abnormalities in clinical samples.	3	Practical3.2	PSY-MEC	Shows-how	CBL,PER,DIS
CO1,CO2,CO7, CO8	Analyse the role of chromosomal aberrations in genetic disorders, including examples such as Down syndrome, Turner syndrome, and Klinefelter syndrome.	3	Experiential-Learning3.1	CAN	Shows-how	PER,SIM,CBL,DIS
CO1,CO2,CO7, CO8	Identify Aneuploidy through Karyotype Analysis.	3	Experiential-Learning3.2	AFT-RES	Shows-how	DL,PER,PSM,DIS
CO1,CO2,CO7, CO8	Evaluate Polyploidy and Its Biological Implications	3	Experiential-Learning3.3	CE	Shows-how	SIM,DIS,CBL
CO1,CO2,CO7, CO8	Describe Turner Syndrome through Concept Mapping and Group Discussion.	3	Experiential-Learning3.4	CE	Shows-how	PL,DIS,PER
CO1,CO2,CO7, CO8	Describe the types of numerical aberrations (e.g., aneuploidy, polyploidy) and their implications for human health and development.	1	Lecture	CE	Knows-how	L&PPT ,L

Unit 2 عددی انحرافات(Adadi inhirafat) Aneuploidies

3.2.1. Autosomal Trisomy

3.2.2. Trisomy 13

3.2.3. Trisomy 18

3.2.4. Trisomy 21

References: 9,25

3A	3B	3C	3D	3E	3F	3G
CO1,CO2,CO7, CO8	Describe the definition and types of aneuploidies, including monosomy, trisomy, and tetrasomy, and their mechanisms of occurrence.	1	Lecture	CE	Knows-how	L&PPT
CO1,CO2,CO7, CO8	Discuss the clinical implications and phenotypic consequences of common aneuploidies, such as Down syndrome (Trisomy 21).	1	Lecture	CAP	Knows-how	L&PPT
CO1,CO2,CO7, CO8	Describe the methods used for prenatal screening and diagnostic testing for aneuploidies, including non-invasive prenatal testing (NIPT), chorionic villus sampling (CVS), and amniocentesis.	2	Lecture	CE	Knows-how	L&PPT
CO1,CO2,CO7, CO8	Demonstrate karyotyping techniques to detect aneuploidies from cell cultures or clinical samples.	3	Practical3.3	PSY-GUD	Shows-how	PSM,PBL,DIS,CBL
CO1,CO2,CO7, CO8	Demonstrate Monosomy through Karyotype Analysis.	3	Practical3.4	PSY-SET	Shows-how	BS,DIS,D

CO1,CO2,CO7, CO8	Analyse the Case studies to assess the implications of aneuploidies in different clinical scenarios and develop appropriate management plans.	3	Experiential-Learning3.5	CAN	Does	CBL,DIS,PER,CD
CO1,CO2,CO7, CO8	Describe Down Syndrome through Case Study and Genetic Analysis	3	Experiential-Learning3.6	CE	Does	PER,DIS,PBL
CO1,CO2,CO7, CO8	Demonstrate Edward Syndrome through Role-Playing and Genetic Simulation	4	Experiential-Learning3.7	PSY-SET	Shows-how	DIS,RP,SIM

Unit 3 غیر طبعی جنسی کروموسومز (Ghair tabaee Jinsi chromosomes) Sex chromosomes abnormalities

3.3.1. Sex Chromosome Aneuploidy

3.3.2. Turner Syndrome

3.3.3. Klinefelter Syndrome

3.3.4. 47, XYY Syndrome

References: 9,25

3A	3B	3C	3D	3E	3F	3G
CO1,CO2,CO7, CO8	Describe the various types of sex chromosome abnormalities, including Turner syndrome (45, X), Klinefelter syndrome (47, XXY), and Triple X syndrome (47, XXX).	2	Lecture	CE	Knows-how	L&PPT
CO1,CO2,CO7, CO8	Discuss the genetic mechanisms leading to sex chromosome abnormalities, including nondisjunction and structural rearrangements.	2	Lecture	CC	Knows-how	L&PPT

CO1,CO2,CO7, CO8	Demonstrate clinical presentations, diagnosis, and management strategies for individuals with sex chromosome abnormalities.	4	Practical3.5	PSY-MEC	Shows-how	CBL,DIS,PER,PBL
CO1,CO2,CO7, CO8	Discuss Triple X Syndrome through Case Study Analysis and Group Discussion.	4	Practical3.6	CC	Shows-how	CBL,CD,PBL,PER,DIS
CO1,CO2,CO7, CO8	Identify the case and discuss to evaluate the psychosocial implications of living with sex chromosome abnormalities and the role of multidisciplinary care.	3	Experiential-Learning3.8	AFT-RES	Does	PER,DIS,CBL
CO1,CO2,CO7, CO8	Demonstrate Klinefelter Syndrome through Interactive Genetic Modelling and Peer Teaching.	4	Experiential-Learning3.9	PSY-GUD	Does	PER,DIS,PL,PAL,PrBL

Unit 4 شکلی خرابی/بدشکلی/شکلی اختلال (Shakli kharabi/ bad shakli/ shakli ikhtilal) Dysmorphism

3.4.1. Malformation

3.4.2. Disruptions

3.4.3. Deformations

3.4.4. Dysplasia

References: 25

3A	3B	3C	3D	3E	3F	3G
CO1,CO2,CO7, CO8	Describe dysmorphism and its significance in clinical genetics and diagnosis.	1	Lecture	CE	Knows-how	L&PPT

CO1,CO2,CO7, CO8	Identify the key features and characteristics of common dysmorphic syndromes, such as Down syndrome, Turner syndrome, and Williams syndrome.	1	Lecture	CE	Knows-how	L&PPT
CO1,CO2,CO7, CO8	Discuss the role of genetic and environmental factors in the development of dysmorphic features.	1	Lecture	CE	Knows-how	L&PPT
CO1,CO2,CO7, CO8	Demonstrate the use of systematic approaches to perform a thorough clinical evaluation of dysmorphic features in patients.	4	Practical3.7	PSY-GUD	Shows-how	CBL,DIS,PER,PSM,SIM
CO1,CO2,CO7, CO8	Develop a protocol for counselling to families of individuals with dysmorphic syndromes, addressing their psychosocial and medical needs.	3	Experiential-Learning3.10	AFT-CHR	Does	W,PBL,SIM
CO1,CO2,CO7, CO8	Identify and Understand Dysmorphic Syndromes through Image Analysis and Clinical Observation	3	Experiential-Learning3.11	AFT-RES	Does	CBL,DIS,TBL

Unit 5 علاج جینی(Ilaj Jeeni) Gene Therapy

3.5.1. Principles and mechanisms of gene therapy

3.5.2. Types of Gene Therapy

3.5.3. Concepts of gene delivery

References: 9,25

3A	3B	3C	3D	3E	3F	3G
CO1,CO2,CO7, CO8	Describe the principles and mechanisms of gene therapy, including the concepts of gene delivery, editing, and expression.	1	Lecture	CC	Knows-how	L&PPT

CO1,CO2,CO7, CO8	Demonstrate the different types of gene therapy approaches, such as in vivo and ex vivo gene therapy, and their applications in treating genetic disorders.	3	Practical3.8	PSY-MEC	Shows-how	SIM,D,DIS,PER
CO1,CO2,CO7, CO8	Demonstrate techniques for delivering therapeutic genes using various vectors, such as viral vectors (e.g., lentivirus, adenovirus) and non-viral methods (e.g., CRISPR-Cas9).	3	Practical3.9	PSY-GUD	Shows-how	CBL,D,DIS
CO1,CO2,CO7, CO8	Identify the ethical considerations and regulatory aspects related to gene therapy, including safety concerns and informed consent.	2	Experiential-Learning3.12	AFT-RES	Does	PER,SIM,W
CO1,CO2,CO7, CO8	Analyse Types of Gene Therapy through Case-Based Strategy Development.	2	Experiential-Learning3.13	CAN	Does	JC,CBL,IBL,SIM

Practical Training Activity

Practical Training 3.1 **karyotyping and fluorescence**

Total Learning Hours (3 Hours)

1. Teacher will discuss the karyotyping and fluorescence in situ hybridization (FISH) and its application. (60 minutes)

2. Engage students in analysing karyotype results to identify structural and numerical aberrations.

Group Analysis: Distribute karyotype images or data (both normal and abnormal). In groups, learners will: (60 minutes)

Analyse the provided karyotype data to identify chromosome counts and any abnormalities.

Document their findings and interpretations, including numerical abnormalities (e.g., 47 chromosomes indicating trisomy) and structural abnormalities (e.g., deletions or translocations).

Discuss the implications of their findings for patient diagnosis and management.

3. Presentation: Each group presents their findings, fostering collaborative learning. (60 minutes)

Practical Training 3.2 **Autosomal chromosomal abnormility.**
Total Learning Hours (3 Hours) 1. Teacher will discuss how to interpret chromosomal abnormalities using karyotype data. (60 minutes) **2.** Introduce clinical case studies that involve karyotype analysis to provide context and real-world relevance. (60 minutes) **Case Study Distribution**: Provide clinical cases that require karyotype analysis for diagnosis. Cases could include: A child presenting with developmental delays and physical anomalies. A pregnant woman with advanced maternal age seeking prenatal screening. A patient with recurrent miscarriages and a suspected chromosomal cause. **Group Discussion**: In their groups, learners will: Review the karyotype data associated with each case. Discuss the implications of the findings and how they influence diagnosis, management, and counselling for patients. 3. Present their conclusions and recommended actions based on their analyses. (60 minutes)
Practical Training 3.3 **Karyoping in aneuploidies.**
Total Learning Hours (3 Hours) 1. Teacher will introduce karyotyping techniques to detect aneuploidies from cell cultures. (60 minutes) **2.** Guide learners through the process of analysing karyotype images to detect aneuploidies. (60 minutes) **Group Activity**: Provide a set of karyotype images from both normal individuals and those with aneuploidies (e.g., trisomy 21, monosomy X). Have learners work in small groups to: Count the chromosomes and determine if the karyotype is normal (46 chromosomes) or abnormal (e.g., 47 chromosomes in trisomy 21). Identify any abnormal chromosome structures or numbers. **Karyotype Interpretation**: Teach learners how to record their findings, identifying specific aneuploidies such as: Trisomy 21 (Down syndrome) with an extra chromosome 21.

Trisomy 18 (Edwards syndrome) with an extra chromosome 18.

Monosomy X (Turner syndrome) with a missing X chromosome.

3. Case-Based Discussion: Have learners discuss the clinical implications of the detected aneuploidies, relating their findings to potential patient symptoms and outcomes. (60 minutes)

Practical Training 3.4 **Monosomy by analysing karyotypes**

Total Learning Hours (3 Hours)

Teacher will discuss the Monosomy through Karyotype Analysis. (60 Minutes)

Students explore the concept of monosomy by analysing karyotypes and simulating the effects of chromosomal abnormalities. Each group receives karyotype images illustrating various monosomic conditions, such as Turner syndrome (45, X). Students begin by identifying and discussing the missing chromosome(s) in each karyotype. (45 minutes)

Next, they create a simple simulation where they "remove" a chromosome from a normal diploid set of chromosomes (using colored paper or beads). They then discuss how the loss of a chromosome can affect the organism's development, health, and traits. (30 minutes)

Finally, groups present their findings, focusing on the implications of monosomy on physiological and developmental outcomes. This hands-on activity enhances understanding of the genetic basis and clinical significance of monosomic conditions. (45 minutes)

Practical Training 3.5 **Sex chromosomal abnormal.**

Total Learning Hours (4 Hours)

1. Teacher will discuss the sex chromosome abnormalities and demonstrate process of clinical examination. (60 minutes)

2. Use case-based scenarios that present patients with sex chromosome abnormalities, discussing their clinical signs and symptoms. (90 minutes)

Patient Case Study: Present cases like a young girl with delayed puberty and short stature (suggestive of Turner syndrome) or an adolescent male with delayed secondary sexual characteristics and learning difficulties (suggestive of Klinefelter syndrome).

Group Discussion: Split students into small groups to discuss the clinical features of each case and hypothesize the underlying genetic condition.

3. Presentations: Each group presents their case analysis, discussing the potential diagnosis and management options. (90 minutes)

Practical Training 3.6 **Triple X Syndrome**
Total Learning Hours (4 Hours) 1. Teacher will Begin with a brief overview of Triple X syndrome, including its chromosomal makeup (47, XXX), common physical and developmental characteristics, and how it may affect individuals. (60 Minutes) 2. Students identify Triple X syndrome (47, XXX) by analysing case studies and engaging in a group discussion to understand its genetic basis, clinical features, and implications for individuals. (60 minutes) **Case Study Analysis**: Divide students into groups and provide each group with a different case study that details the experiences of an individual with Triple X syndrome. These case studies should include information about the individual's physical characteristics, cognitive and social challenges, educational experiences, and family dynamics. **Group Discussion**: Each group analyzes their assigned case study, identifying key features and challenges related to Triple X syndrome. They discuss questions such as: What are the typical clinical features of Triple X syndrome? How might this condition impact the individual's daily life and interactions? What support systems are beneficial for individuals with Triple X syndrome? **Presentation**: After their discussions, each group presents their findings to the class, sharing insights from their case study and highlighting important aspects of living with Triple X syndrome. (60 minutes) **3. Reflection**: Conclude the activity with a class discussion about the importance of awareness and understanding of genetic conditions like Triple X syndrome, emphasizing the need for supportive environments and resources. (60 minutes)
Practical Training 3.7 **Dysmorphism.**
Total Learning Hours (4 Hours) 1. Teacher will give overview of Dysmorphism and demonstrate the clinical examination and features of dysmorphism. (60 minutes)

Teach students how to interpret genetic testing results (e.g., karyotypes, FISH, microarray) that confirm or exclude suspected syndromes based on clinical dysmorphic findings.

2. Hands-On Clinical Examination (Model or Peer Assessment) (60 minutes)

Divide students into small groups.

Each group receives a case scenario describing a patient with dysmorphic features.

Step-by-step clinical assessment

Document findings systematically using a clinical assessment sheet.

Genetic Test Results: Provide learners with mock or real genetic test results from patients with dysmorphic features. Show how test results, such as trisomies or chromosomal deletions, relate to the observed dysmorphic characteristics. (30 minutes)

3. Integration of Findings: Have students combine their clinical evaluations with genetic test results to develop a comprehensive diagnosis and management plan. (30 minutes)

4. Students will present and discuss there findings. (60 minutes)

Practical Training 3.8 **Gene Therapy**

Total learning Hours (3 Hours)

1. Teacher will start with a foundational overview of gene therapy, focusing on its goals, mechanisms, and significance in treating genetic disorders. (45 minutes)

Hands-On Simulation of Gene Therapy Approaches (45 minutes)

2. Simulating In Vivo Gene Therapy

Demonstration Activity:

Use colored beads or blocks to represent genes and viral vectors.

Show how the therapeutic gene is packaged into a viral vector.

"Inject" (place) the viral vector into a mock organ model (e.g., a balloon or paper cutout of lungs for Cystic Fibrosis).

Discuss how the gene integrates and produces functional proteins.

Example Disorder: Hemophilia – delivering a clotting factor gene via AAV (Adeno-Associated Virus) vectors.

3. Simulating Ex Vivo Gene Therapy (45 minutes)

Demonstration Activity:

Assign students to role-play as scientists and patients.

Use a petri dish model (printed or crafted) to symbolize patient's extracted cells.

Introduce a mock therapeutic gene into these cells using a simulated viral vector.

"Reinfuse" (place) the corrected cells back into the mock patient model.

Example Disorder: SCID (Severe Combined Immunodeficiency) – Correcting the ADA gene in hematopoietic stem cells.

4. Visual Aids: Use diagrams to illustrate the differences between in vivo and ex vivo approaches, showing the processes involved in each method. (45 minutes)

Practical Training 3.9 **Delivering therapeutic genes.**

Total learning Hours (3 Hours)

1. Teacher will discuss and demonstrate through visual aids for delivering therapeutic genes using various vectors. (60 minutes)

Hands-On Demonstration of Gene Delivery Techniques (60 minutes)

2. Viral Vector Gene Delivery Simulation: Demonstration Activity

Use colored beads or LEGO blocks to represent a therapeutic gene.

Assign students roles: virus, host cell, and gene.

The "virus" (student) carries the gene (bead) and delivers it to the "host cell" (another student).

Example Cases:

Lentivirus for genetic blood disorders (e.g., β-thalassemia) – integrates into host DNA.

Adenovirus for Cystic Fibrosis – delivers genes but does not integrate.

3. Non-Viral Gene Delivery (CRISPR-Cas9 Editing Simulation): Demonstration Activity

Use a printed DNA sequence with a simulated mutation.

Introduce mock CRISPR components (scissors to cut DNA, glue for repaired DNA).

Students simulate how CRISPR targets, cuts, and repairs the gene.

Example Cases:

CRISPR for Sickle Cell Disease – correcting a single mutation in hemoglobin.

4. Case-Based Discussion & Application (30 minutes)

Provide real-world gene therapy case studies.

Groups discuss which delivery method (viral/non-viral) is most suitable for different genetic disorders.

5. Reflection & Assessment (30 minutes)

Short quiz or role-play presentation on gene therapy applications.

Debate: Which method (viral vs. non-viral) is the future of medicine?

Experiential Learning Activity

Experiential-Learning Learning 3.1: **Chromosomal aberration.**

Total Learning Hours (3 Hours)

1. Use clinical case studies of patients with chromosomal disorders such as Down syndrome, Turner syndrome, and Klinefelter syndrome. (90 minutes)

Procedure:

Case Presentations: Students will present with patient case histories, including family history, clinical features (e.g., physical dysmorphisms, developmental delays), and genetic testing results.

Group Work: Divide learners into small groups to analyse the cases, focusing on identifying chromosomal aberrations and discussing how these genetic abnormalities lead to specific syndromes.

2. Presentations: Have each group present their findings, including the chromosomal abnormality, diagnosis, and possible management or interventions. (90 minutes)

Experiential-Learning Learning 3.2: **Genetic karyotype charts**

Total Learning Hours (3 Hours) 1. Students learn about aneuploidy by analysing case studies and genetic karyotype charts to identify chromosomal abnormalities. Each group is given a karyotype image showing examples of aneuploidy, such as trisomy 21 (Down syndrome), trisomy 18, or monosomy X (Turner syndrome). They examine the karyotypes to identify missing or extra chromosomes. (60 minutes) 2. Discuss the associated clinical features and challenges of each condition, and explore the biological mechanisms that lead to aneuploidy. (60 minutes) 3. Groups then present their findings, focusing on diagnosis and implications for patient care. (60 minutes)
Experiential-Learning Learning 3.3: **Polyploidy**
Total Learning Hours (3 Hours) 1. Students explore the concept of polyploidy by examining case studies and comparing chromosomal sets of normal induadual. (60 minutes) 2. Each group is assigned a scenario illustrating polyploidy, such as triploidy or tetraploidy, and investigates how having additional sets of chromosomes impacts an organism's development, growth, and reproduction. (90 minutes) 3. Students discuss examples where polyploidy is beneficial (e.g., in agricultural plants) versus harmful (e.g., rare cases in animals), then share their insights. (60 minutes)
Experiential-Learning Learning 3.4: **Turner syndrome.**
Total learning hours (3 hours) Students create a concept map to visually explore Turner syndrome's genetic and clinical aspects. Working in small groups, they construct a map starting with the central concept of "Turner Syndrome" and branch out to include key elements such as chromosomal abnormality (monosomy X), common physical features, associated health risks, and treatment options. Each group then researches one aspect of the map in more detail, such as cardiovascular health, hormonal treatments, or growth challenges, and adds relevant findings. Groups present their concept maps to the class, facilitating a discussion on Turner syndrome's multifaceted nature and its impact on patient care. This activity enhances understanding of the syndrome's complexity, helping students visualize connections between genetic, medical, and social aspects.

Experiential-Learning Learning 3.5: **Aneuploidies**
Total learning hours (3 Hours) **1.** Use detailed simulated or real case studies of patients with different aneuploidies (e.g., Down syndrome, Turner syndrome, Klinefelter syndrome) to explore the clinical, genetic, and psychosocial implications in various scenarios. **Procedures**: **Case Presentation**: Introduce a variety of clinical scenarios involving aneuploidies. For example: (60 minutes) A newborn with suspected Down syndrome presenting with congenital heart defects. An adolescent with Turner syndrome experiencing delayed puberty and short stature. An adult with Klinefelter syndrome presenting with infertility and testosterone deficiency. **Multidimensional Assessment**: Have learners perform a comprehensive assessment of each case, including: (60 minutes) **Genetic diagnosis**: Use of karyotype results or FISH analysis for diagnosis. **Medical evaluation**: Identify associated medical conditions (e.g., cardiac defects, growth issues, developmental delays). **Psychosocial impact**: Explore the psychological and social challenges that accompany the diagnosis, such as coping with a chronic condition, school challenges, or fertility concerns. **Group Discussion**: In small groups, learners will discuss and formulate a management plan that covers: (60 minutes) Medical treatment (e.g., surgical interventions, hormone replacement therapy). Genetic counselling for the family.
Experiential-Learning Learning 3.6: **Down syndrom**
Total learning hours (3 hours) 1. Students deepen their understanding of Down syndrome by analysing case studies and examining genetic karyotypes. Each group is given a case scenario of an individual with Down syndrome, including medical history, developmental milestones, and family perspectives. (30 minutes) 2. Students review a karyotype displaying trisomy 21 to recognize the genetic basis of Down syndrome. (60 minutes)

3. They discuss common health challenges, developmental needs, and supportive interventions. (90 minutes)

4. Groups then present their findings, focusing on the role of genetics in diagnosis and the importance of holistic, family-centred care.

Experiential-Learning Learning 3.7: **Edward syndrome (trisomy 18).**

Total learning hours (3 hours)

Students engage in a role-playing simulation to understand Edward syndrome (trisomy 18) and its impact. First, participants are assigned roles—such as a genetic counsellor, a family member, or a healthcare provider—and provided with background information on Edward syndrome, including key symptoms and genetic factors. They then simulate in a simulated counselling session where the "genetic counsellor" explains the karyotype showing an extra chromosome 18 to the "family" and discusses the medical implications, possible interventions, and supportive care options. Afterward, participants reflect on their experiences and the emotional and ethical challenges of discussing a complex diagnosis like Edward syndrome. This interactive method deepens empathy and communication skills while reinforcing understanding of the genetic basis and family impact of Edward syndrome.

Experiential-Learning Learning 3.8: **Psychosocial Impact on sex chromosomal abnormalities**

Total learning hours (3 Hours)

1. Provide detailed case studies of individuals living with sex chromosomal abnormalities (SCAs), focusing on their psychosocial experiences, educational challenges, body image issues, and social relationships.

Procedure:

Case Study Presentation: Introduce a detailed case (e.g., a young adult with Turner syndrome dealing with infertility issues or a teenager with Klinefelter syndrome facing social anxiety) and explore their psychosocial concerns.

Group Discussion: Facilitate group discussions on how different members of a multidisciplinary team (e.g., endocrinologists, genetic counselors, psychologists, and social workers) would address the various challenges.

2. Action Plan: Students will be tasked with designing a comprehensive care plan addressing both the medical and psychosocial aspects, incorporating the input of different team members.

Experiential-Learning Learning 3.9: **Klinefelter syndrome.**
Total learning hours (4 hours) Students learn about Klinefelter syndrome by creating a physical model of chromosomes to visualize the genetic basis (47, XXY) and discuss its clinical implications. Each group uses materials like coloured beads or paper strips to construct chromosome sets, adding an extra X chromosome to represent the XXY configuration of Klinefelter syndrome. After building the model, participants identify how this chromosomal difference may lead to characteristics such as delayed puberty, learning difficulties, and fertility issues. Each group then presents their model and findings to their peers, explaining the syndrome's genetic aspects and its impact on health. This hands-on approach reinforces understanding of chromosomal abnormalities while developing communication skills through peer teaching.
Experiential-Learning Learning 3.10: **Communication Skills**
Total learning hours (3 hours) **1.** Organize workshops that focus on developing effective communication skills specific to genetic counselling, including how to deliver difficult news and provide ongoing support. **Communication Skills Training**: Conduct interactive exercises on how to communicate complex genetic information in simple terms, how to break bad news, and how to answer difficult questions from family members. **Simulated Scenarios**: Practice delivering diagnoses and counselling family members, with an emphasis on empathy, active listening, and clear communication of medical information. **2. Peer Feedback**: Learners will provide and receive feedback from their peers and instructors to improve their counselling and communication techniques.
Experiential-Learning Learning 3.11: **Dysmorphic syndromes.**
Total learning hours (3 Hours) Students learn to recognize dysmorphic syndromes by analyzing clinical images and practicing observation techniques. Each group is provided with a set of anonymized clinical images and descriptions illustrating common dysmorphic features associated with syndromes like Down syndrome, Turner syndrome, and

Williams syndrome. Guided by an instructor, participants examine and document distinct physical characteristics, such as craniofacial structures or limb differences, then compare and discuss their observations. Following this, each group collaborates to identify possible syndromes based on their findings and share insights with the class. This activity sharpens observational skills, helping students link physical characteristics with potential syndromic diagnoses in a clinical context.
Experiential-Learning Learning 3.12: **Regulatory Guidelines and Ethical Frameworks.**
Total learning hours (2 hours) **1.** Conduct interactive workshops that focus on the regulatory frameworks for gene therapy (e.g., Food and Drug Administration (FDA) or European Medicines Agency (EMA) guidelines), and how ethical principles (e.g., beneficence, non-maleficence, autonomy, justice) apply to decision-making in gene therapy. **Regulatory Overview**: Present an overview of current regulations governing gene therapy, including the approval process for clinical trials, safety monitoring, and post-therapy follow-up. **2. Interactive Exercises**: Engage learners in interactive scenarios where they must apply ethical frameworks to determine whether a gene therapy trial meets regulatory and ethical standards.
Experiential-Learning Learning 3.13: **Types of gene therapy.**
Total learning hours (2 hours) Students investigate different types of gene therapy—such as gene replacement, gene editing (e.g., CRISPR), and gene silencing—by working through hypothetical patient cases. Each group is assigned a specific genetic condition, such as cystic fibrosis or muscular dystrophy, and asked to determine the most appropriate type of gene therapy based on the condition's genetic basis and therapeutic needs. Groups research their assigned gene therapy technique, considering factors like delivery methods, potential risks, and ethical considerations. They then present their proposed strategy, justifying why their chosen approach would be effective for the case. This activity enhances understanding of gene therapy applications and decision-making in personalized treatment planning.
Modular Assessment

Assessment	Hour
Instructions: Conduct a structured modular assessment. Assessment will be for 75 marks for this module. Keep structured marking patten. Use different assessment methods in each module for the semester. Keep a record of the structured pattern used for assessment. Calculate the Modular grade point as per Table 6 C. **T-EW (Theory Essay Writing)** Conduct a theory exam having **one essay writing** question from any unit of this module **(20 Marks)** **P-VIVA (Practical Viva)** Conduct a practical viva **(5 Marks)** **CL-PR (Class Presentation)** Content of the presentation (5 marks) Organisation: Structure and Coherence (2.5*2= 5 Marks) Delivery: Engagement and Clarity (2.5*2= 5 Marks) Visual Aids: Design and Relevance (2.5*2= 5 Marks) Question and Answer session (5 Marks) **DEB (Debate)** Content Knowledge and Evidence (5 Marks) Argument Structure and Cohesion (5 Marks) Counterarguments and Rebuttals (5 Marks) Presentation and Communication Skills (5 Marks) Team Collaboration and Engagement (5 Marks) Or Any practical in converted form can be taken for assessment . (35 marks) and	6

Any of the experiential as portfolio/ reflections/ presentations can be taken as an assessment .(40 marks)	

Module 4 : 1-نشوونما(Nushu wa numa-1) Growth and Development-1

Module Learning Objectives

(At the end of the module, the students should be able to)

1. Describe normal growth and development according to Classical system of medicine.
2. Describe the factors influencing growth and development, theories of development, nutritional impact on growth in children.
3. Discuss how nomograms are used in paediatric growth and assessment to evaluate and monitor children's development.
4. Demonstrate to assess growth and development.
5. Demonstrate how to measure and plot OFC (Occipital frontal circumference) height and weight for children across different age groups and recognize normal versus abnormal growth patterns. Demonstrate how to assess the following using appropriate resources (Psychosocial development, Language development, Motor development)
6. Identify differences in motor skills (fine and gross) cognitive abilities and emotional regulation.
7. Identify different growth charts, BMI Charts and head circumference charts.
8. Provide counselling on nutrition, life style and other factors affecting growth.

Unit 1 نشوونماکےاصول Nushū wa Numū ke Uṣūl (Principles of Growth and Development)

4.1.1. نمواورنشوکےاصول(Numū aur Nushū keTaṣawwurāt) Concept of Growth versus development

4.1.2.نموپراثراندازہونےوالےعوامل(Numū par Aṡarandāz hone wāleʿAwāmil) Factors influencing growth

4.1.3.نمواورترقیکےنظریات(Numū aur Taraqqī ke Nazariyāt) Theories of development cognitive, psychosocial, behavioral.

References: 38,57,63

3A	3B	3C	3D	3E	3F	3G

CO1,CO2,CO3, CO7,CO8	Describe the principles, concept of growth versus development, factors influencing growth and theories of development.	1	Lecture	CAN	Knows-how	L&PPT
CO1,CO2,CO3, CO7,CO8	Demonstrate hands-on activities in an interactive workshop that engages participants in demonstrating and practicing various developmental theories related to growth and development.	2	Practical4.1	PSY-GUD	Shows-how	RP,PER
CO1,CO2,CO3, CO7,CO8	Discuss the experiences of children with growth disorders linked to genetic factors, and reflect on the emotional and ethical considerations involved in their management	2	Experiential-Learning4.1	CAP	Shows-how	RP,SIM

Unit 2 سن صبا سے سن ترعرع Sinn-i-Ṣabā se Sinn- i-Tara'ru' (Normal growth and development in childhood and adolescence)

4.2.1. جسمانی نمو کی ترتیب سن طفولت سے سن ترعرع (Jismānī Numū kī Tarteeb - Sinn-i-Tufūlat se Sinn-i-Tara 'ru ') Physical growth patterns - Infancy to adolescence

4.2.2. ترقیاتی مراحل محرکاتی، ذہنی، انفعالی (Taraqqiyātī Marāḥil, Muḥarrikātī, Zehnī, Anfāʿilī) Developmental mile stone - motor, cognitive, emotional

4.2.3. سن ترعرع میں نفس اجتماعی کے مسائل (Sinn-i-Tara'ru' mein Nafs-i-Ijtimāī ke Masāil) Adolescent psychosocial challenge

4.2.4. نمو پر غذائیت کے اثرات (Numū par Ghidhā'īyat ke Asrāt) Nutritional impacts on growth

References: 29,50,60

3A	3B	3C	3D	3E	3F	3G
CO1,CO2,CO3, CO7,CO8	Summarize and describe the physical growth patterns and developmental milestones from infancy to adolescence, the psychosocial challenges encountered during adolescence, and the role of nutrition in supporting healthy growth and development throughout these stages.	1	Lecture	CC	Knows-how	L&PPT

CO1,CO2,CO3, CO7,CO8	Demonstrate key developmental milestones and their expected timelines through a practical presentation.	2	Practical4.2	PSY-GUD	Knows-how	L_VC,PER,L&GD
CO1,CO2,CO3, CO7,CO8	Discuss and document about the emotional impact of missing developmental milestones and the significance of early interventions for children and families.	2	Experiential-Learning4.2	AFT-VAL	Shows-how	CBL,RP

Unit 3 نمواورنشوکیتقویم Numū aur Nushū kī Taqwīm /Assessment of Growth and Development

4.3.1. نمو کی نگرانی (Numū kī Nigrānī) Growth Monitoring: anthropometrics, Growth charts

4.3.2. ترقیاتی ادات فحص (Taraqqiyātī Idāt Faḥas) Developmental Screening tools: Denver, Bayley

4.3.3. غذائی اور نفسیاتی تقویم (Ghidhā'ī aur Nafsiyātī Taqwīm) Nutritional and psychological assessments

4.3.4. Role of imaging and lab investigations

References: 29,44

3A	3B	3C	3D	3E	3F	3G
CO1,CO2,CO3, CO7,CO8	Analyze and interpret the assessment and monitoring of growth and development through anthropometric measurements and growth charts, correlate these findings with nutritional and psychological growth parameters, and explain the role of imaging and laboratory investigations in the comprehensive evaluation of growth.	1	Lecture	CAN	Knows-how	L&PPT
CO1,CO2,CO3, CO7,CO8	Perform a comprehensive assessment of growth and development using standardized tools and techniques in a practical demonstration	2	Practical4.3	PSY-MEC	Shows-how	D

CO1,CO2,CO3, CO7,CO8	Advocate the critical importance of accurately measuring height, weight, and head circumference in peers or patients, and commit to thoughtfully interpreting the data by comparing it with developmental benchmarks and the child's age.	3	Experiential-Learning4.3	AFT-CHR	Shows-how	SIM
Unit 4 نمواورترقی کامعائنہ Numū aur Taraqqī ka Mu'āina (Developmental assessment) according to unani concept. 4.4.1. یونانی اصول مزاج،اخلاط،طبیعت (Unānī Uṣūl: Mizāj, Akhlāṭ, Ṭabīʿat) Classical concept of developmental assessment of growth 4.4.2 نشونما کے درجات (Nushū numā ke Darajāt) Stages of development **References:** 36,57,60,63						
3A	**3B**	**3C**	**3D**	**3E**	**3F**	**3G**
CO1,CO2,CO3, CO7,CO8	Discuss the stages of development according to Classical principle.	1	Lecture	CC	Knows-how	L&PPT
CO1,CO2,CO3, CO7,CO8	Demonstrate a thorough evaluation of growth and development by applying classical concepts.	3	Practical4.4	PSY-GUD	Shows-how	RP,W
CO1,CO2,CO3, CO7,CO8	Discuss and document how the temprament influences grouth and development in children through case studies	3	Experiential-Learning4.4	AFT-SET	Shows-how	W,CBL
Unit 5 مروجہ/معیاری شماری خاکہ (Muravvajah/ me-aari shumari khakah) Standards /nomograms 4.5.1. Types of Nomograms 4.5.2. Significance of Nomograms in Pediatrics age groups **References:** 45						
3A	**3B**	**3C**	**3D**	**3E**	**3F**	**3G**

CO1,CO2,CO3, CO7,CO8	Describe the different types of nomograms and their application in paediatrics.	1	Lecture	CK	Knows-how	L&PPT
CO1,CO2,CO3, CO7,CO8	Demonstrate the significance of nomograms in the paediatric age group, showcasing their application through interactive presentations.	1	Practical4.5	AFT-CHR	Shows-how	DIS,D
CO1,CO2,CO3, CO7,CO8	Advocate for a thoughtful reflection on the findings of recent research studies on nomograms in paediatric patients, articulating a deep appreciation for the significance of these tools in enhancing clinical practice and improving patient outcomes, while fostering a commitment to their application in healthcare settings.	3	Experiential-Learning4.5	AFT-VAL	Shows-how	CBL

Practical Training Activity

Practical Training 4.1 Hands-On Approaches to Developmental Theories.

Activity details

Total learning hours: 2 hours

1. The teacher would first introduce key developmental theories through brief presentations and discussions. (30 mins)

Then, they would divide participants into small groups to create role-play scenarios that illustrate different stages of development, encouraging active participation. (30 mins)s)

2. The teacher would circulate to provide guidance, facilitate discussions, and ensure everyone understands the theories. (30 mins)

After the activities, the teacher would lead a debrief session to reflect on the experiences and insights gained.

Finally, they would provide resources for further exploration of the theories in real-world contexts. (30 mins)

Expected competency: Understand key developmental theories related to human growth, and apply this to real world context like health care and education.

Practical Training 4.2 Developmental Milestones
Activity details **Total learning hours: (2 hours)** 1. The teacher would start by outlining key developmental milestones for various age groups, using visual aids like charts or slides. They would then demonstrate specific milestones, such as gross and fine motor skills, through hands-on activities or videos. (1 hour) 2. Next, the teacher would engage participants in group discussions to share their observations and experiences related to these milestones. Participants would then work in pairs to create timelines, plotting milestones based on provided age ranges.The teacher would facilitate sharing of these timelines, offering insights and corrections as needed. Finally, they would summarize the importance of recognizing these milestones in supporting child development. (1 hour) **Expected competency: Understand developmental milestones, recognize individual variations, able to detect issues early.**
Practical Training 4.3 Growth Evaluation
Activity details. **Total learning hours: 2 hours** 1. The teacher would begin by explaining the purpose and importance of standardized assessment tools for growth and development. They would then introduce specific tools, such as growth charts and developmental checklists, showing participants how to use them effectively. (1 hour) 2. Next, the teacher would conduct a mock assessment with a volunteer, demonstrating how to record measurements and observations accurately. Participants would then pair up to practice using the tools on each other, applying what they learned. The teacher would circulate to provide feedback and answer questions during the practice sessions. Finally, they would conclude with a discussion on interpreting results and implications for planning interventions. (1 hour) **Expected competency: Students will be able to interpret findings, improve practical assessment skills and develop skills in planning intervention**.
Practical Training 4.4 Holistic Growth Assessment

Activity details: **Total learning hours: 3 hours** The teacher would begin by introducing Unani concepts of growth and development, explaining their philosophical foundations and key principles. 1. They would then facilitate small group discussions where participants explore case studies or examples of Unani practices related to child development. (30 mins) The teacher would demonstrate practical assessment techniques rooted in Unani medicine, such as pulse diagnosis or temperament assessment. 2. Participants would engage in role-playing exercises to practice these evaluation methods with each other.(1 hour) 3.The teacher would organize a workshop to offer guidance, clarify concepts, and encourage reflections on their experiences. Finally, the session would conclude with a group discussion on integrating Unani concepts into modern developmental assessments and practices. (1.5 hours) **Expected competency: Students will gain insight into classical concept of growth and development, apply classical assessment methods to recognize developmental stages and imbalances.**
Practical Training 4.5 Nomograms in Growth Assessment.
Activity details: **Total learning hours: 1 hour** The teacher would begin by explaining what nomograms are and their relevance in paediatric assessments, particularly for growth and development measurements. They would present interactive examples of nomograms, showing how to use them to assess parameters like height, weight, and BMI in children. (30 mins) Participants would then engage in hands-on activities, using sample data to plot points on nomograms and interpret the results. The teacher would facilitate small group discussions to analyse the implications of their findings on clinical decisions. (30 mins) **Expected competency: Students will understand how to interpret and utilize nomograms for clinical decision making and growth assessment, enhancing their ability to track and analyze patient growth trends effectively**.
Experiential Learning Activity

Experiential-Learning Learning 4.1: Genetic Effects and Ethical Choices.
Activity details: **Total activity hours: 2 hours** **1. Case Studies:** Analyze real-life or simulated cases of children with growth disorders linked to genetic factors. This would help students understand the medical, emotional, and ethical aspects of managing these disorders. (1 hour) **2. Role-Playing:** Participate in role-playing exercises where students take on the roles of healthcare providers, patients, and family members. This helps them empathize with the patients' experiences and understand the ethical considerations involved in treatment decisions. (1 hour) By engaging in these activities, students gain a deeper, more empathetic understanding of the complexities involved in managing genetic growth disorders, while also honing their professional skills. **Expected competency:** By engaging in these activities, students gain a deeper, more empathetic understanding of the complexities involved in managing genetic growth disorders, while also honing their professional skills.
Experiential-Learning Learning 4.2: Early Intervention for Developmental Delays.
Activity details: **Total activity hours: 2 hours** **1. Role-Playing Scenarios**: Students can assume roles of different stakeholders (child, parents, paediatrician, therapist) in a simulated discussion about a child missing developmental milestones. This allows them to explore different perspectives and practice empathy-driven communication. (30 mins) **2. Case Study Analysis:** Analyze real or fictional case studies where children have missed developmental milestones. Students would identify the emotional effects on the child and family, the challenges faced, and discuss the benefits and timing of early interventions. (1 hour) **3. Small Group Discussions:** Break into smaller groups to reflect on how delayed milestones can affect a child's social, cognitive, and emotional development, then reconvene to share insights. They can also explore the psychological impact on parents, such as feelings of guilt, stress, or anxiety. (30 mins) **Expected competency: Students will understand the impact of delayed milestones and the advantages of early interventions.**
Experiential-Learning Learning 4.3: Anthropometric Measurements and Interpretation

Activity details:

Total activity hours: 3 hours

1. **Practical Measurement Training**: Practice measuring height, weight, and head circumference using standard medical equipment. This hands-on experience ensures they know how to take accurate measurements. (1 hour)

2. **Simulated Patient Assessments:** Work with simulated patients or peers to take measurements and record data. This helps them understand the practical aspects of data collection in a clinical setting. (1hour)

3. **Data Analysis and Interpretation**: Compare their collected data with standardized growth charts and developmental benchmarks. This teaches them how to interpret the measurements and assess whether a child's growth is within a healthy range.

Ethical Reflection: Engage in discussions about the ethical considerations of sharing and interpreting growth data, especially concerning patient confidentiality and parental concerns. (1 hour)

These activities will not only strengthen their practical skills but also emphasize the critical role of accurate measurement and thoughtful data interpretation in ensuring optimal paediatric care.

Expected competency: students will acquire skills in measuring growth parameters and analyzing the results using growth charts.

Experiential-Learning Learning 4.4: Impact of Temperament on Growth.

Activity details:

Total activity hours 3 hours

1. Students can use temperament assessment tools in hypothetical scenarios or case studies to evaluate and discuss how temperament influences growth and development. (1 hour)

2. Conduct workshops where students develop intervention strategies tailored to children with different temperaments. They can role-play these interventions, considering how to best support each child's unique needs. (2 hours)

By engaging in these activities, students can gain a nuanced understanding of how temperament influences a child's development and how to consider these factors in their professional practice.

Expected competency: Students will understand the role of temperament in a child's development and gain insights on how to apply this knowledge in managing individual growth and development needs.
Experiential-Learning Learning 4.5: Nomograms in Paediatric Care.
Activity details: **Total activity hours: 3 hours** **1. Research Review:** Analyze and summarize recent research studies on pediatric nomograms. This involves understanding the methodology, results, and implications of these studies. (1 hour) **2. Group Discussions:** Engage in group discussions to share insights and reflect on the importance of nomograms in clinical practice. This encourages collaborative thinking and diverse perspectives. (1 hour) **3. Case Study Applications:** Apply findings from research studies to hypothetical or real case studies to see how nomograms can enhance patient assessment and outcomes. (1 hour) **Expected competency: Students will gain insight into the application of nomogram in paediatric care and learn how to interpret them.**
Modular Assessment

Assessment	**Hour**
Instructions: Conduct a structured modular assessment. Assessment will be for 25 marks for this module. Keep structured marking patten. Use different assessment methods in each module for the semester. Keep a record of the structured pattern used for assessment. Calculate the Modular grade point as per Table 6 C. **Summary of Marks Distribution** LAQ:10 P-PRF: (Practical performance): 5 SBA-Scenario-Based Assessment: 5	2

C-VC (Clinical-video clips):5

Methods and Marks Distribution

LAQ:10

Content Knowledge (4 marks): Assess the depth of understanding, accuracy, and relevance of the information provided.

Structure and Organization (2 marks): Evaluate the clarity of the introduction, body, and conclusion. Look for logical flow and coherence.

Analysis and Critical Thinking (2 marks): Check for the ability to analyze information, present arguments, and provide insights or interpretations.

Language and Presentation (1 mark): Consider the use of proper grammar, vocabulary, and overall presentation (neatness, formatting).

P-PRF: (Practical performance) : 5

Description: Students demonstrate how to perform anthropometric measurements (e.g., height, weight, head circumference) and plot them on growth charts.

Marks Distribution:

Accuracy of measurements (3 marks)

Correct plotting on growth charts (2 marks)

SBA-Scenario-Based Assessment: 5

Description: Use standardized developmental screening tools (e.g., Denver Developmental Screening Test) in simulated scenarios to assess a child's development.

Marks Distribution:

Correct use of the tool (3 marks)

Interpretation of results (2 marks)

C-VC: Clinical video cases

Clip Selection: Choose video clips that showcase children at various developmental stages (infancy, toddlerhood, preschool).

Observation Guide: Create a checklist or guided questions for students to focus on specific milestones (e.g., motor skills, language development). Discussion: After viewing, facilitate a discussion where students share their observations and insights. **Marks Distribution:** **Observation Tasks (2 mark)** Criteria: Completeness of the checklist or guided questions, and relevance of observations made. **Case Studies (3 mark)** Criteria: Depth of analysis, identification of developmental issues, and quality of proposed interventions. Or Any practical in converted form can be taken for assessment . (25 marks) OR Any of the experential as portfolio/ reflections/ presentations can be taken as an assesment . (25 marks)	
Semester No : 5	
Module 5 : نشونما Nushu wa numa-2 (Growth and Development) – 2	
Module Learning Objectives (At the end of the module, the students should be able to) 1. Describe short stature, sexual maturation, precocious and delayed puberty including their causes, assessment methods, psychosocial impacts, and appropriate management strategies. 2. Comprehend developmental delay and perform comprehensive developmental assessment using Tanner staging. 3. Assess sexual maturation and its disturbances. 4. Discuss diagnostic test, management plans and nutritional interventions for short stature.	
Unit 1 قصیرالقامت کانقطہ نظر Qaseer al qamat ka nuqta-i-nazar (Approach to Short Stature)	

5.1.1.درجہ بندی(Darjah Bandī) Classification

5.1.2.تشخیص کاطریقہ (Tashkhīṣ ka Ṭarīqah) Diagnostic approach

5.1.3.عام اسباب(Ām Asbāb) Common causes

5.1.4.علاج(ʿIlāj) Management

References: 44

3A	3B	3C	3D	3E	3F	3G
CO1,CO2,CO3, CO7,CO8	Discuss Short stature including its normal variants, pathological causes and management.	1	Lecture	CAN	Knows-how	L&PPT
CO1,CO2,CO3, CO7,CO8	Demonstrate the practical skills involved in performing diagnostic tests, implementing management plans, and executing nutritional interventions for short stature	3	Practical5.1	PSY-GUD	Shows-how	D,CBL
CO1,CO2,CO3, CO7,CO8	Organize a critical analysis of recent research journals on short stature, focusing on the emotional and ethical implications of diagnosis, management, and treatment plans. Facilitate a reflective group discussion to encourage deeper understanding and appreciation of the findings, fostering an empathetic approach to patient care and highlighting the importance of sensitive communication in practice	3	Experiential-Learning5.1	AFT-SET	Shows-how	CBL,DIS

Unit 2 سن بلوغت Sinn-i-Bulughat (Puberty)

5.2.1.بلوغت مبکر(Bulūghat Mubakkir) Precocious puberty

5.2.2.بلوغت ابطاء،اقسام اور اسباب(Bulūghat Ibṭāʾ, Aqsām aur Asbāb) Delayed Puberty Types and causes

5.2.3.ثانوی جنسی تغیرات(Thānawī Jinsī Taghayyurāt) Secondary sexual characteristics

5.2.4.علاج(ʿIlāj) Treatment

References: 63

3A	3B	3C	3D	3E	3F	3G
CO1,CO2,CO3, CO7,CO8	Analyze and compare central (gonadotropin-dependent) and peripheral (gonadotropin-independent) precocious puberty, differentiate between constitutional delay of puberty (CDGP) and pathological delay, and evaluate the typical onset and variation of secondary sexual characteristics in boys and girls, including underlying causes, management strategies, and the role of hormonal therapies such as GnRH analogs.	2	Lecture	CAN	Knows-how	L&PPT
CO1,CO2,CO3, CO7,CO8	Demonstrate the practical skills involved in conducting clinical evaluations and performing laboratory investigations to diagnose precocious and delayed puberty	2	Practical5.2	PSY-MEC	Shows-how	LRI,CBL
CO1,CO2,CO3, CO7,CO8	Justify an in-depth discussion of clinical studies involving children with precocious and delayed puberty, fostering reflection on the emotional and ethical significance of clinical evaluation and laboratory investigations	4	Experiential-Learning5.2	AFT-VAL	Shows-how	DIS,LRI

Unit 3 تاخر نمو Taakhur i namu (Developmental Delay)

5.3.1.اقسام(Aqṣām) Types

5.3.2.جائزہ کا طریقہ(Jāʾizah ka Ṭarīqah) Assessment

5.3.3.ابتدائی مداخلت(Ibtidāʾī Mudākhalāt) Early intervention strategies

5.3.4.توقعات اور نتائج(Tawaqqʿāt aur Natāʾij) Prognosis and long-term Outcomes

References: 19

3A	3B	3C	3D	3E	3F	3G
CO1,CO2,CO3, CO7,CO8	Describe developmental delays with its types , early intervention strategies, prognosis and long term outcomes.	1	Lecture	CAP	Knows-how	L&PPT
CO1,CO2,CO3, CO7,CO8	Plan an engaging interactive workshop where participants actively engage in hands-on activities and utilize visual aids to effectively demonstrate the causes of developmental delays. This session will facilitate collaborative peer discussions that allow participants to synthesize insights and enhance understanding through practical applications, encouraging them to skilfully create, perform, and demonstrate their knowledge in real-time.	3	Practical5.3	AFT-SET	Knows-how	W,CBL
CO1,CO2,CO3, CO7,CO8	Advocate the importance of diagnosing and planning interventions for cases of developmental delay through simulation, fostering a deeper emotional understanding of the impact on children and families.	3	Experiential-Learning5.3	AFT-VAL	Shows-how	SIM

Unit 4 طبعی جنسی نمو واضطرابات Al-Numū al-Ṭabʿī Jinsī Iḍṭirābāt (Normal Sexual Maturation and Its Disturbances)

5.4.1. Tanner stages

5.4.2. Hormonal changes

References: 44

3A	3B	3C	3D	3E	3F	3G
CO1,CO2,CO3, CO7,CO8	Evaluate patterns of sexual maturation to distinguish between normal variants and clinically significant disturbances requiring intervention.	1	Lecture	CAN	Knows-how	L&PPT
CO1,CO2,CO3, CO7,CO8	Demonstrate the normal Tanner stages of sexual development, highlighting the corresponding hormonal changes in both males and females through video clipping	2	Practical5.4	PSY-GUD	Shows-how	L_VC,CBL
CO1,CO2,CO3, CO7,CO8	Analyze a thoughtful analysis of clinical case studies involving adolescents at various Tanner stages, reflecting on the psychosocial impacts of their development. Advocate for appropriate interventions, fostering a deeper emotional understanding of the challenges faced by these adolescents and highlighting the significance of Tanner staging in providing compassionate and effective paediatric care.	3	Experiential-Learning5.4	AFT-SET	Shows-how	CD,DIS

Practical Training Activity

Practical Training 5.1 Nutritional and Diagnostic Strategies for Short Stature.

Activity details:

Total learning hours: 3 hours

1. The teacher will demonstrate short stature evaluation using case scenarios where students will review medical histories and growth charts. (1 hour)

2. The teacher will guide the students in measuring height and interpreting growth charts with mock data. He will also present Lab results (e.g., thyroid tests, growth hormone levels) for interpretation. (1 hour)

3. The teacher will also design management plans for hypothetical cases, and addressing nutritional deficiencies. The teacher along with the student will discuss nutritional interventions using sample meal plans and supplementation strategies for growth support. (1 hour) **Expected competency: Students will learn to identify appropriate diagnostic approaches and management strategies for short stature including the role of nutritional interventions in promoting optimal growth**.
Practical Training 5.2 Puberty Disorder Assessment and Investigation.
Activity details: **Total learning hours: 2 hours** 1. The teacher will guide students in history taking by reviewing early signs of puberty, family history, and associated symptoms like rapid growth. (30 mins) He will demonstrate how to assess early sexual development, present mock growth charts for interpretation. (30 mins) 2.The teacher and students will discuss laboratory investigations such as LH, FSH, estradiol /testosterone levels, and GnRH stimulation tests using sample lab results. (30 mins) The teacher will provide case-based learning to help students create differential diagnosis, discussing central versus peripheral causes of precocious puberty and related management steps. (30 mins) **Expected competency: Students will understand the key components of clinical evaluation and laboratory tests used to diagnose precocious and delayed puberty equipping them to formulate effective management plans based on the findings.**
Practical Training 5.3 Interactive Approach to Developmental Delays.
Activity details: **Total learning hours: 3 hours** 1. The teacher will facilitate an interactive workshop where students will gather and analyse various research papers on recent advances in developmental delays. (1 hour) 2. Under the teacher's guidance, participants will explore early detection tools, including genetic screening, neuroimaging, and biomarkers for developmental disorders, using visual aids to enhance their understanding. (1 hour)

3. They will also examine the impact of environmental factors, prenatal exposure, and nutrition on neurodevelopment, supported by relevant visuals. (30 mins) The session will conclude with a collaborative peer discussion, allowing students to share insights and deepen their collective understanding. (30 mins) **Expected competency: Students will gain insights into the multifactorial causes of developmental delays, enhancing their ability to identify and address these factors in clinical practice.**
Practical Training 5.4 Understanding Tanner Stages.
Activity details: **Total learning hours: 2 hours** To demonstrate the Tanner stages of sexual development for both males and females, the teacher will: 1. Use visual aids like diagrams or models showing the 5 Tanner stages for males (genital and pubic hair development) and females (breast and pubic hair development). (30 mins) 2. Show example case studies with descriptions of each stage for both genders. Provide photographs or illustrations (without patients) to help students visually differentiate between stages. (1 hour) 3. Have students practice assessing Tanner stages using mock data or descriptions in case scenarios. (30 mins) Guide students in recording findings and explaining the relevance of Tanner staging in evaluating normal and abnormal pubertal progression. **Expected competency: Students will gain an understanding of the characteristics associated with each Tanner stage, enabling them to assess sexual maturation and identify any potential developmental concerns in adolescents.**
Experiential Learning Activity
Experiential-Learning Learning 5.1: Recent advances Short Stature
Activity details: **Total activity hours: 3 hours**

1. Students will actively engage with the current research journals on short stature to enhance their understanding of diagnostic criteria and treatment options. (1.5 hours) 2. They will critically analyze management plans and collaborate in group discussions to deepen their insights and apply theoretical knowledge to real-world scenarios. (1.5 hours) This process will foster critical thinking and teamwork, enabling students to develop evidence-based approaches to patient care **Expected competency: Students will acquire up-to-date knowledge of diagnostic techniques and management strategies, nutritional interventions for short stature.**
Experiential-Learning Learning 5.2: Clinical Studies on Precocious and Delayed Puberty
Activity details: **Total activity hours: 4 hours** 1. Students will discuss clinical studies of children with precocious and delayed puberty actively participating in case discussions and analysing real-world clinical data. (1.5 hours) 2. They will conduct clinical evaluations, interpret laboratory investigations, and assess growth patterns, gaining hands-on experience in diagnosing these conditions. (1.5 hours) Engaging in collaborative analysis will enhance their understanding of the implications of early and delayed puberty on physical and psychological development. 3. Finally, students will develop management plans based on the findings, integrating theoretical knowledge with practical application. (1 hour) This approach will cultivate critical thinking and prepare students for future clinical practice in paediatrics. **Expected competency: Students will gain insights into the clinical presentation and underlying causes of precocious and delayed puberty enabling them to develop effective strategies based on evaluation findings.**
Experiential-Learning Learning 5.3: Diagnosis and Intervention for Developmental Delays.
Activity details: **Total activity hours: 3 hours**

1. Through simulated cases of developmental delay, students will actively engage in diagnosing and planning interventions, mimicking real clinical scenarios. (1.5 hours)

2. They will practice taking patient histories, conducting assessments, and interpreting developmental milestones, emphasizing the importance of early and accurate diagnosis. (1.5 hours)

By formulating intervention plans, students will explore treatment strategies and learn how to individualize care.

The simulation will also enhance their decision-making skills in a risk-free environment. Ultimately, this hands-on experience will improve their ability to identify delays early and implement effective, evidence-based interventions.

Expected competency: students will gain insights into the primary indicators of developmental delay and acquire the skills to formulate tailored intervention plans using simulated case examples.

Experiential-Learning Learning 5.4: Tanner Stages and Psychosocial Development.

Activity details:

Total activity hours: 3 hours

1. Students will analyze clinical case studies of adolescents at different Tanner stages to understand the physical and psychosocial impacts of puberty.

By discussing real-life scenarios, students will learn to recognize the emotional and psychological challenges associated with early or delayed development. (1.5 hours)

2. They will explore appropriate interventions, such as counselling and support, tailored to the adolescents' developmental stage.

This hands-on approach will reinforce the importance of Tanner staging in identifying growth and development patterns in paediatric care. Ultimately it will enhance their ability to provide holistic, age-appropriate care. (1.5 hours)

Expected competency: students will gain insight into the psychosocial implications of development at various tanner stages and acquire the skills to implement appropriate intervention.

Modular Assessment

Assessment	**Hour**

Instructions: Conduct a structured modular assessment. Assessment will be for 25 marks for this module. Keep structured marking patten. Use different assessment methods in each module for the semester. Keep a record of the structured pattern used for assessment. Calculate the Modular grade point as per Table 6 C **Summary of marks distribution:** **SAQ: 10** **M-POS , M-CHT: : 10 marks** **P-VIVA : 5 marks** **Total: 25 marks** **MARKS AND ASSESSMENT METHODS**: **SAQ: 10:** Content Knowledge (4 marks): Assess the depth of understanding, accuracy, and relevance of the information provided. Structure and Organization (2 marks): Evaluate the clarity of the introduction, body, and conclusion. Look for logical flow and coherence. • Analysis and Critical Thinking (2 marks): Check for the ability to analyze information, present arguments, and provide insights or interpretations. • Language and Presentation (1 mark): **2. M-POS , M-CHT- 10 Marks** Students create a chart or poster that visually represents key concepts related to one of the topics (short stature, puberty, sexual maturation, or developmental delays). **Criteria for Assessment:** Clarity and accuracy of information (4 marks) Visual appeal and organization (3 marks)	2

Ability to convey complex ideas (3 marks) **Implementation Tips** Provide students with guidelines on what to include in their charts and posters, such as key statistics, developmental milestones, or common conditions. **VIVA: 5 MARKS** • Review the topics covered in class and prepare questions that assess students' understanding and critical thinking. • Ensure questions are varied in difficulty, allowing for both basic recall and higher-order thinking. OR Any practical in converted form can be taken for assessment. (25 marks) OR Any of the experiential as portfolio/ reflections/ presentations can be taken as an assessment. (25 marks)	
Module 6 : تدابیر و انتعاش نومولود (Tadabīr wa Intea'ash Naumaulood) Newborn Care and Neonatal Resuscitation	
Module Learning Objectives (At the end of the module, the students should be able to) 1. Describe the comprehensive Knowledge of Perinatal care by understanding maternal factors influencing neonatal outcome, care during delivery, nursing care and application of evidence-based practices to improve perinatal health 2. Describe the examination procedures of neonates, Apgar score, indication of neonatal resuscitation, instruments required during neonatal resuscitation and procedures of neonatal resuscitation. 3. Describe appropriate newborn feeding, supplementary and complementary feeding, and addressing the nutritional need of healthy newborn. 4. Describe newborn feeding in special cases such as preterm infant, Intrauterine growth restriction (IUGR), Low Birth Weight (LBW) and customised feeding plans for optimum growth and development of these types of infants. 5. Demonstrate the process of Neonatal Examination and its clinical interpretation	

6. Conduct complete process of neonatal resuscitation
7. Demonstrate the feeding techniques required for special case infants.

Unit 1 تدابیر دوران ولادت Tadabīr duran-e-Wilāda (Perinatal care)

6.1.1. Foetal Screening tests

6.1.2. تدابیر دوران ولادت Tadabīr duran-e-Wilāda (Care during labour and routine delivery).

References: 36,44,79

3A	3B	3C	3D	3E	3F	3G
CO1,CO6,CO7, CO8	Describe the care during labour and routine delivery, role of tools and techniques used during delivery.	2	Lecture	CE	Knows-how	L&PPT
CO1,CO6,CO7, CO8	Apply neonatal screening practices in enhancing perinatal health, as well as the critical role of tools and techniques used during perinatal care in achieving better outcomes.	4	Practical6.1	PSY-MEC	Shows-how	PER,SIM,DIS,D,CBL
CO1,CO6,CO7, CO8	Conduct routine prenatal visits, monitor maternal and foetal health, and detect high-risk pregnancies	3	Experiential-Learning6.1	PSY-GUD	Does	D-BED,SIM,D-M
CO1,CO6,CO7, CO8	Conduct newborn care at labour room.	3	Experiential-Learning6.2	PSY-GUD	Does	DIS,CBL,SIM

Unit 2 تدابیر و امتحان نومولود Tadabīr wa Imtehan-e- Nau Mawlūd (Newborn Care and Assessment)

6.2.1. Nursing care

6.2.2. Infant mother bonding

6.2.3. Kangaroo Mother care (KMC)

6.2.4. Resuscitation **References:** 44,47,79						
3A	**3B**	**3C**	**3D**	**3E**	**3F**	**3G**
CO1,CO6,CO7, CO8	Describe the indication for neonatal resuscitation, correct technique for clearing the airway using suction, importance of positive pressure ventilation (PPV), how to stabilize the newborn following successful resuscitation, ethical considerations involved in newborn resuscitation, particularly in cases of extreme prematurity or significant congenital abnormalities.	2	Lecture	CE	Knows-how	L&PPT
CO1,CO6,CO7, CO8	Describe the neonatal care, nursing care, Infant mother bounding and kangaroo Mother care (KMC) process of neonatal examination and neonatal Resuscitation.	2	Lecture	CE	Knows-how	L&PPT
CO1,CO6,CO7, CO8	Perform the neonatal examination and its clinical interpretation.	2	Practical6.2	PSY-ORG	Shows-how	D-BED,DIS,PER
CO1,CO6,CO7, CO8	Demonstrate how to provide immediate care after birth, including drying, warming, positioning, suctioning, and stimulating the newborn.	2	Practical6.3	PSY-GUD	Shows-how	DIS,SIM,D
CO1,CO6,CO7, CO8	Demonstrate how to position and clear the airway of a newborn.	2	Practical6.4	PSY-MEC	Shows-how	D-M,SIM,DIS

CO1,CO6,CO7, CO8	Demonstrate the techniques used during neonatal resuscitation.	2	Practical6.5	PSY-GUD	Shows-how	SIM,DIS,D-M
CO1,CO6,CO7, CO8	Identify the common causes of respiratory distress and asphyxia in newborns that necessitate resuscitation.	3	Experiential-Learning6.3	CAN	Does	CBL,PSM,PER
CO1,CO6,CO7, CO8	Establish the need for resuscitation using the Apgar score	3	Experiential-Learning6.4	CC	Does	CD,SIM,CBL,DIS
CO1,CO6,CO7, CO8	Perform bag-mask ventilation on a newborn depending upon severity of aphasia using proper technique, ensuring adequate seal and appropriate oxygen concentration.	3	Experiential-Learning6.5	PSY-GUD	Does	D-M,DIS,PBL
CO1,CO6,CO7, CO8	Analyze the key components of post-resuscitation care, including monitoring for hypothermia, hypoglycaemia, and apnoea.	3	Experiential-Learning6.6	CAN	Does	DIS,CBL,SIM

Unit 3 رضاعت نومولود (Raḍā'at naumaulood) Newborn feeding

6.3.1. رضاعت پستانی Raḍā'at Pistani (Breast feeding)

6.3.2. Supplementary feeding

6.3.3. فطام Fiṭām (Weaning /Complementary feeding).

References: 6,44,47

3A	3B	3C	3D	3E	3F	3G
CO1,CO6,CO7, CO8	Describe the nutritional requirements of newborns, recommended feeding frequency for newborns, mastering techniques of breast feeding, benefits of Breast feeding, Problems related to breast	3	Lecture	CE	Knows-how	L&PPT

	feeding, contraindications of breast feeding, indication of formula feeding, types of formula available for newborn, problem associated with formula feeding, Complementary feeding and addressing the nutritional need of healthy newborn.					
CO1,CO6,CO7, CO8	Identify the impact of breast milk, formula feeding, and mixed feeding on neonatal health outcomes.	2	Practical6.6	CAN	Shows-how	D-M,CBL,DIS
CO1,CO6,CO7, CO8	Demonstrate the correct preparation, handling, and storage of formula, ensuring hygiene and safety standards.	2	Practical6.7	PSY-MEC	Shows-how	DIS,PBL,D-M
CO1,CO6,CO7, CO8	Identify the factors to be consider during planning the complementary feeding.	2	Practical6.8	CAN	Shows-how	DIS,PER,CBL
CO1,CO6,CO7, CO8	Manage common breastfeeding challenges, such as nipple pain, engorgement, or low milk supply.	3	Experiential-Learning6.7	AFT-SET	Does	PSM,PER,CBL,DIS
CO1,CO6,CO7, CO8	Counsel parents or caregivers how to bottle-feed correctly, including positioning the baby and pacing feedings to avoid overfeeding or underfeeding.	2	Experiential-Learning6.8	AFT-CHR	Does	PBL,D-M
CO1,CO6,CO7, CO8	Identify the signs of formula intolerance or allergy, and understand when to consider alternative formulas or feeding methods.	2	Experiential-Learning6.9	CAN	Does	PER,CBL,DIS
CO1,CO6,CO7, CO8	Create the complementary feeding plan.	2	Experiential-Learning6.10	CS	Does	PER,CBL
Unit 4 خاص حالات میں غزائی معمولات(Khas halat m ghizai mamoolat) Feeding practices in special cases						

6.4.1. Preterm Infant

6.4.2. Low Birth Weight (LBW)

6.4.3. Intrauterine Growth Restriction (IUGR)

References: 4,5,6,44

3A	3B	3C	3D	3E	3F	3G
CO1,CO6,CO7, CO8	Interpret the unique nutritional requirements of preterm, low birth weight (LBW), and intrauterine growth-restricted (IUGR) newborns, including increased caloric, protein, and micronutrient needs, different nutritional supplements (e.g., vitamin D, iron, calcium) required for these infants and the types of specialized formulas available.	2	Lecture	CE	Knows-how	L_VC
CO1,CO6,CO7, CO8	Describe the importance of early and appropriate nutrition in promoting growth, preventing complications, and improving outcomes in preterm, LBW, and IUGR infants, feeding-related complications (e.g., necrotizing enterocolitis, feeding intolerance, gastroesophageal reflux) and the protocols for managing them.	2	Lecture	CE	Knows-how	L&PPT
CO1,CO6,CO7, CO8	Discuss the benefits of breast milk and human milk fortification (HMF) for preterm and LBW infants, emphasizing its role in immunity, digestion, and neurodevelopment.	3	Practical6.9	PSY-MEC	Shows-how	DIS,PER,CBL

CO1,CO6,CO7, CO8	Discuss long-term feeding strategies, including transitioning to regular feeding and introducing complementary foods based on developmental needs.	3	Practical6.10	PSY-MEC	Shows-how	PER,PrBL,CBL,DIS
CO1,CO6,CO7, CO8	Demonstrate proper techniques for alternative feeding methods, such as tube feeding, cup feeding, and syringe feeding.	2	Practical6.11	PSY-MEC	Shows-how	D-M,DIS,TBL,SIM
CO1,CO6,CO7, CO8	Calculate and adjust feeding volumes and frequency based on the infant's weight, growth, and tolerance to feeding.	3	Experiential-Learning6.11	CAP	Does	CBL
CO1,CO6,CO7, CO8	Interpret specialized growth charts to monitor the growth of preterm, LBW, and IUGR infants, and assess developmental milestones in relation to feeding practices.	3	Experiential-Learning6.12	CAP	Does	PBL,DIS

Unit 5 نومولود کی منتقلی (Naumaulood ki Muntaqli) Neonatal Transportation

6.5.1. Sick Newborn

6.5.2. Documentation at the time of referal

References: 5,6,8

3A	3B	3C	3D	3E	3F	3G
CO1,CO6,CO7, CO8	Describe indications to initiate transfer to a neonatal intensive care unit (NICU), protocols, technique and tools required during neonatal transport.	2	Lecture	CE	Knows-how	L&PPT
CO1,CO6,CO7, CO8	Discuss the role of Neonatal transport team (NNT) for effective neonatal transport	4	Practical6.12	PSY-MEC	Knows-how	RP,SIM,PER,DIS

CO1,CO6,CO7, CO8	Evaluate the indication or condition of neonate which required for neonatal resuscitation and neonatal transport.	6	Experiential-Learning6.13	CE	Does	PER,DIS,CBL

Practical Training Activity

Practical Training 6.1 **Neonatal Screening.**

Total learning hours (4 Hours)

1. Teacher will give overview on Importance of Neonatal screening and critical role of tools and techniques used during delivery in achieving better outcome. (60 minutes)

2. Hands-On Demonstration of Neonatal Screening Techniques: Heel Prick Test Simulation Demonstration Activity:

Use a simulated newborn mannequin/doll.

Demonstrate the proper way to collect blood via heel prick using lancets and filter paper.

Show how samples are dried, labeled, and sent for lab analysis.

Example Disorders Detected: Congenital hypothyroidism, PKU.

Skills Practiced: Safe blood collection, handling neonatal distress, sample labeling.

3. Pulse Oximetry Screening for Critical Congenital Heart Defects (CCHDs): Demonstration Activity

Use a portable pulse oximeter on a mannequin/doll.

Show how pre- and post-ductal oxygen saturation is measured (right hand vs. foot).

Interpret results and discuss when to refer for further cardiac evaluation.

Example Disorder: Detecting Coarctation of the Aorta, Tetralogy of Fallot.

4. Bilirubin Screening for Neonatal Jaundice: Demonstration Activity

Use a mock transcutaneous bilirubin meter on a newborn mannequin.

Compare bilirubin levels with standard treatment thresholds.

Discuss the importance of early phototherapy or exchange transfusion.

Example Case: A newborn at 36 hours with yellowing skin—how to proceed?

5. Case-Based Discussion & Group Analysis

Assign groups real-world or simulated neonatal screening case studies: Each group presents:

The condition suspected based on test results.

Management plan (confirmatory tests, early interventions).

Long-term impact of early vs. delayed screening.

6. Reflection & Assessment

Short quiz or checklist evaluation on neonatal screening procedures.

Discussion on improving neonatal care in low-resource settings.

Practical Training 6.2 **Neonatal Examination.**

Total learnng hours (2 Hours)

1. Teacher will demontrate neonatal examination process. (30 minutes)

2. Begin with a detailed demonstration of the neonatal examination process, including all essential components.

Procedure: (60 minutes)

Setup: Use a neonatal manikin or live volunteers (if appropriate) to demonstrate the examination.

Demonstration Steps:

General Assessment: Explain how to assess the newborn's overall appearance, color, and tone (e.g., alertness, muscle tone, posture).

Vital Signs: Demonstrate how to measure vital signs, including heart rate, respiratory rate, temperature, and blood pressure.

Head and Neck Examination: Show how to examine the head for shape, fontanelles, and any abnormalities; assess the neck for range of motion and any masses.

Chest Examination: Demonstrate auscultation of breath sounds, inspection of the chest wall, and palpation of the rib cage.

Abdominal Examination: Show how to palpate the abdomen for size, shape, and organ enlargement; assess for any masses or tenderness.

Genital and Rectal Examination: Explain the importance of examining the genitalia and rectum for abnormalities, and demonstrate the techniques safely.

Skin Examination: Highlight how to assess the skin for jaundice, rashes, or any birthmarks.

Neurological Examination: Discuss and demonstrate reflex testing (e.g., Moro reflex, rooting reflex) and general neurological tone.

3. Developmental Milestones: Briefly mention milestones expected in the first days and weeks of life.

4. Students will practice to fill the case record form and then discuss there findings and there clinical relevance (30 minutes)

Practical Training 6.3 **Immediate Newborn Care**

Total learning Hours (2 hours)

1. Teacher will demonstrate the process of immediate care after birth of baby. (30 minutes)

2. Use high-fidelity neonatal manikins to simulate the birth process and teach learners the steps of immediate newborn care, including drying, warming, positioning, suctioning, and stimulation.

Procedure (60 minutes)

Simulation Setup: Set up a simulated delivery room with a neonatal manikin. Present a scenario where a newborn is delivered and requires immediate care. The manikin should be programmable to simulate different conditions (e.g., a vigorous baby, a baby with respiratory distress, etc.).

Step-by-Step Care: Guide learners through each step:

Drying: Teach learners how to quickly dry the newborn with a clean, warm towel to prevent heat loss. Emphasize the importance of thorough drying to stimulate the baby and reduce evaporative heat loss.

Warming: Demonstrate the use of radiant warmers or skin-to-skin contact to keep the baby warm, explaining the importance of thermal regulation to prevent hypothermia.

Positioning: Show how to properly position the baby (head in a neutral or slightly extended position) to ensure an open airway and facilitate breathing.

Suctioning: Demonstrate how to gently suction the mouth and nose (if necessary) using a bulb syringe or suction catheter, avoiding over-suctioning which can cause vagal stimulation and bradycardia.

Stimulation: Demonstrate safe techniques to stimulate the newborn if spontaneous breathing does not occur, such as gentle rubbing of the back or flicking the soles of the feet.

Interactive Practice: Learner's practice each of these steps on the neonatal manikin, receiving feedback from the instructor to ensure proper technique.

3. Response to Complications: Introduce scenarios where students may need to respond to complications, such as meconium-stained fluid or an infant with poor tone. Learner's practice adapting their care based on these conditions. (30 minutes)

Practical Training 6.4 **Airway Management.**

Total learning hours (2 hours)

1. Teacher will give the overview of airway managemnet and demonstrate the process of airway management on model. (30 minutes)

2. Create multiple skills stations where students practice airway management techniques, including positioning, airway opening, and ventilation support.

Procedure (60 minutes)

Station 1: Positioning and Airway Opening: Learners practice the head-tilt/chin-lift and jaw thrust techniques on neonatal manikins. They also practice using positioning aids, like a rolled towel under the shoulders, to maintain the proper airway alignment.

Station 2: Ventilation: Learner's practice providing positive pressure ventilation using a BVM on manikins, ensuring that the airway is properly positioned before delivering breaths.

3. Evaluation and Feedback: Instructors evaluate each learner's technique at both stations, providing feedback on airway positioning, chin-lift technique, and the effectiveness of ventilations (e.g., watching for chest rise). (30 minutes)

Practical Training 6.5 **Neonatal Resuscitation.**

Total learning hours (2 hours)

1. Teacher will give overview and demonstrate the process of neonatal resuscitation. (30 minutes)

2. Begin with a thorough demonstration of the neonatal resuscitation techniques, using high-fidelity manikins or simulators that mimic real neonatal conditions.

Procedure: (60 minutes)

Setup: Prepare a resuscitation station equipped with a neonatal manikin, bag-valve-mask (BVM) apparatus, suction device, and other resuscitation tools (e.g., laryngoscope, endotracheal tubes).

Demonstration Steps:

Initial Assessment: Demonstrate how to assess the newborn's condition immediately after birth (e.g., checking for breathing, heart rate, and tone).

Positioning: Show how to position the newborn correctly on a flat surface, ensuring the head is in a neutral position for optimal airway alignment.

Airway Management:

Demonstrate the head-tilt/chin-lift manoeuvre and jaw thrust technique to open the airway.

Show how to use a suction device to clear the airway if necessary.

Ventilation Techniques:

Demonstrate positive pressure ventilation using a BVM, ensuring a proper seal and checking for chest rise.

If needed, demonstrate intubation procedures, including laryngoscopy and placing an endotracheal tube, emphasizing the importance of confirming tube placement.

Chest Compressions:

Demonstrate the technique for providing chest compressions, including proper hand positioning and the correct compression rate and depth.

Explain the compression-to-ventilation ratio for neonatal resuscitation.

3. Medications: Briefly discuss the use of medications during resuscitation and how to administer them. (30 minutes)

Practical Training 6.6 **Formaula feeding.**

Total Learning Hours (2 Hours)

1. Teacher will discuss the formula feeding and demonstrate preparation, handling, and storage of formula feed. (45 minutes)

2. Students are provided with formula preparation materials, storage containers, and a checklist of safety protocols. They follow a step-by-step demonstration, practicing accurate measurement, mixing techniques, and safe handling of formula to avoid contamination. Students then review proper storage guidelines, including temperature control and storage durations. This activity emphasizes critical safety measures, helping students develop the skills necessary for safe formula preparation and storage to protect neonatal health. (75 minutes)

Practical Training 6.7 **Impact of types of feeding on neonate.**

Total learning hours (2 hours)

1. Teacher will give overview and demontrate types of feeding in neonates. (30 minutes)

Hands-On Feeding Demonstration & Nutritional Impact Analysis

2. Breastfeeding Techniques & Benefits Simulation (20 minutes): Demonstration Activity

Use dolls or breastfeeding models to demonstrate correct latch and hold.

Show how skin-to-skin contact enhances milk production.

Discuss breastfeeding challenges (e.g., low supply, tongue-tie).

3. Formula Feeding Process & Nutritional Considerations (20 minutes): Demonstration Activity

Show how to measure and mix formula correctly.

Discuss common errors (over-dilution, improper sterilization).

Compare nutritional content of different formulas.

4. Mixed Feeding Discussion & Case Study Analysis (20 minutes)

5. Case Study Discussion: (30 minutes)

Assign groups infant case scenarios (e.g., preterm baby, mother with low milk supply).

Each group decides on the best feeding approach based on health status.

Compare growth and immunity differences between feeding methods.

Practical Training 6.8 **Complementary feeding.**

Total learning hours (2 hours)

1. Teacher will discuss the factors which influence the complementry feeding (45 minutes)

2. Students are divided into groups, each assigned specific factors such as nutritional needs, age-appropriate textures, cultural food preferences, allergy considerations, and feeding frequency based on these factors perform the following activity. (60 minutes)

3. Nutritional Planning & Case Study Discussion: Case Study Analysis:

Groups receive different infant scenarios (e.g., preterm baby, underweight baby, allergy-prone baby).

Each group designs an appropriate meal plan.

Present findings & discuss barriers to optimal feeding (e.g., poverty, cultural beliefs).

4. Reflection & Assessment (15 minutes)

Short quiz or group presentations on complementary feeding factors.

Discussion on challenges in low-resource settings.

Practical Training 6.9 **Human Milk Fortification (HMF).**

Total learning hours (3 hours)

1. Teacher briefly discuss the impact of breast milk and human milk fortification (HMF) for preterm and Low Birth Weight (LBW) infants. (60 minutes)

2. Engage learners in case-based discussions that illustrate the benefits of breast milk and HMF in improving the outcomes of preterm and LBW infants.

Procedure

3. Case Presentation: Present a clinical case of a preterm or LBW infant who is being transitioned to breast milk with HMF. Discuss the infant's feeding plan, nutritional needs, and expected outcomes. (60 minutes)

4. Discussion of Benefits: Guide learners through a discussion of how breast milk supports immunity (e.g., via antibodies and anti-infective properties), digestion (e.g., being easier to digest than formula), and neurodevelopment (e.g., due to long-chain polyunsaturated fatty acids and other key nutrients). (30 minutes)

5. Decision-Making: Ask learners to decide on an appropriate feeding plan based on the case details. Should breast milk be fortified, and how much fortifier should be added? What complications could arise from improper fortification, such as undernutrition or feeding intolerance? (15 minutes)

6. Interactive Learning: Facilitate group discussion on the short- and long-term benefits of human milk fortification, using evidence-based guidelines to support decisions. (15 minutes)

Practical Training 6.10 **Long-Term Feeding Strategies.**

Total learning hours (3 hours)

1. Teacher will briefly discuss the long term feeding strategies based on developmental needs of infants or neonates. (60 minutes)

2. Engage students in case-based discussions to illustrate different long-term feeding strategies for preterm and low birth weight (LBW) infants, emphasizing the importance of individualized care based on developmental and nutritional needs.

Procedure

3. Case Presentation: Present a case of a preterm or LBW infant who has reached 6 months corrected age and is ready to transition to complementary feeding. Discuss the infant's developmental milestones, growth trajectory, and nutritional requirements. (60 minutes)

4. Discussion of Feeding Strategies: Facilitate a discussion on how to gradually transition from fortified breast milk or formula to complementary foods. Learners will consider: (30 minutes)

When to introduce different food textures and types (e.g., purees, soft solids).

How to ensure adequate intake of essential nutrients like iron, calcium, and vitamins.

How to avoid common feeding challenges, such as choking risks or feeding aversions.

5. Interactive Learning: Learners work together to create an individualized feeding plan for the infant, considering their growth status, developmental needs, and family context. They discuss how and when to adjust the feeding plan based on the infant's progress. (30 minutes)

Practical Training 6.11 **Feeding Techniques.**

Total learning hours (2 hours)

1. Teacher will demonstrate proper techniques for alternative feeding methods through visual aid and discuss its indication and contraindications. (45 minutes)

2. Begin with a comprehensive demonstration of each feeding technique (tube feeding, cup feeding, syringe feeding) using realistic models or simulated infants.

Procedure: (60 minutes)

Setup: Use anatomical models, doll simulators, or neonatal manikins to represent infants. Prepare the necessary feeding equipment (e.g., feeding tubes, syringes, cups).

Tube Feeding Demonstration:

Explain Indications: Discuss when tube feeding is appropriate (e.g., inability to suck, prematurity, medical conditions).

Demonstrate Procedure: Show the correct technique for inserting a nasogastric or orogastric tube, ensuring to measure the tube length, lubricate the end, and confirm placement through auscultation or aspiration.

Feeding Administration: Demonstrate how to administer the formula or breast milk through the tube, checking for residual volume and ensuring the infant is positioned correctly.

Cup Feeding Demonstration:

Explain Indications: Discuss when cup feeding is beneficial, such as for preterm infants who are learning to suck.

Demonstrate Procedure: Show the proper technique of holding the cup, positioning the infant, and allowing the milk to flow into the infant's mouth without forcing it.

Syringe Feeding Demonstration:

Explain Indications: Discuss the use of syringe feeding, particularly for infants with feeding difficulties.

3. Demonstrate Procedure: Show how to prepare the syringe, position the infant, and deliver milk slowly into the mouth, ensuring the infant is able to swallow effectively. (15 minutes)

Practical Training 6.12 **Neonatal transport team (NNT)**

Total learning hours (4 hours)

1. Teacher will discuss the role of Neonatal transport team (NNT). (60 minutes)

2. Procedure:

Scenario Analysis: Divide participants into small groups and assign each group a neonatal transport scenario.

Team Role Discussion: Within each group, participants identify the specific roles of NNT members (e.g., transport nurse, respiratory therapist, neonatologist), focusing on communication, stabilization, and equipment setup. (90 minutes)

Step-by-Step Process: Each group outlines the transport steps, highlighting essential actions taken by the NNT, such as initial stabilization, continuous monitoring, and family communication. (30 minutes)

3. Group Presentation and Discussion: (60 minutes)

Each group presents their scenario and discusses how the NNT ensures safe transport.

Facilitator-led discussion on the importance of teamwork, protocol adherence, and risk management in neonatal transport.
Experiential Learning Activity
Experiential-Learning Learning 6.1: **Prenatal care.**
Total learning hours (3) **1.** Organize a session for students to observe experienced practitioners conducting newborn care in the labour room and then practice the skills. **Observation**: Schedule a time for students to observe experienced nurses or neonatologists as they perform newborn care in the labour room. (60 minutes) **Hands-On Practice**: After observation, give students time to practice newborn care techniques on mannequinor in simulations, applying what they observed. (90 minutes) **2. Mentorship**: Pair students with experienced practitioners to guide them as they practice newborn care, allowing for immediate feedback and support. (30 minutes)
Experiential-Learning Learning 6.2: **Newborn care.**
Total learning hours (3 hours) 1. Hands-On Newborn Care Simulation Immediate Care After Birth: Simulation Activity (90 minutes) Receive the newborn (mannequin/doll) from the "mother." Dry the baby with a warm towel. Provide skin-to-skin contact and assess breathing. Delayed cord clamping and cutting. Perform APGAR scoring at 1 and 5 minutes. 2. Case-Based Discussion & Decision-Making (90 minutes) Groups receive real-life scenarios (e.g., preterm baby, meconium-stained amniotic fluid, low APGAR score).

Each group demonstrates appropriate newborn care steps. Debriefing session to discuss best practices and challenges.
Experiential-Learning Learning 6.3: **Respiratory distress and asphyxia in newborns.**
Total leraning hours (3 hours) Students work in small groups to identify common causes of respiratory distress and asphyxia in newborns that may require resuscitation. Each group is provided with case scenarios or symptom checklists and reviews factors like prematurity, birth trauma, infections, and congenital anomalies. They discuss how each cause contributes to respiratory distress and asphyxia, followed by a brief presentation of their findings. This activity enhances students' ability to recognize critical signs and underlying causes, improving their readiness for timely intervention in newborn resuscitation scenarios.
Experiential-Learning Learning 6.4: **Newborn assessment.**
Total learning hours (3 Hours) Students observe or engage in a simulated newborn assessment using the Apgar score to identify the need for resuscitation. Students evaluate a newborn's appearance, pulse, grimace response, activity, and respiration, assigning a score for each category. Based on the total Apgar score, participants discuss whether resuscitation is necessary and outline the appropriate steps if intervention is required. This hands-on activity helps students develop confidence in using the Apgar score to assess neonatal well-being and make critical decisions regarding immediate care.
Experiential-Learning Learning 6.5: **Bag-Mask Ventilation Techniques**
Total learning hours (3 hours) 1. Begin with a detailed demonstration of the bag-mask ventilation technique, highlighting the importance of proper technique and equipment. **Procedure**: (2 hours) **Setup**: Use a neonatal manikin and a self-expanding bag (e.g., a neonatal bag with a mask) equipped with oxygen. **Demonstration Steps**:

Equipment Overview: Introduce the equipment used, including the bag, mask, and oxygen supply. Discuss the importance of ensuring the equipment is functioning properly before use.

Positioning: Demonstrate the proper positioning of the newborn on a flat surface, ensuring the head is in a neutral position to maintain airway patency.

Mask Placement: Show how to select the correct-sized mask and demonstrate the proper placement on the newborn's face (covering the mouth and nose, avoiding the eyes).

Creating an Adequate Seal: Illustrate the technique for creating a good seal using the "E-C clamp" technique, where the thumb and index finger form a "C" around the mask while the remaining fingers pull the mandible forward.

Ventilation Technique: Demonstrate how to provide positive pressure ventilation, including the rate of ventilation (e.g., 40-60 breaths per minute) and the appropriate volume of air to deliver. Discuss the importance of watching for chest rise as a sign of effective ventilation.

Oxygen Concentration: Explain how to connect the bag to an oxygen source and ensure the appropriate oxygen concentration (usually 21% in room air, but can be increased if needed).

2. Monitoring: Briefly discuss how to monitor the newborn's heart rate and oxygen saturation during bag-mask ventilation. (1 hours)

Experiential-Learning Learning 6.6: **Post-Resuscitation.**

Total learning hours (3 hours)

1. Use high-fidelity simulation to create scenarios where students can practice post-resuscitation care and monitoring techniques.(2 hours)

Simulation Setup: Create scenarios with manikins that simulate newborns requiring post-resuscitation care, including various conditions (e.g., hypothermia, hypoglycaemia).

Hands-On Practice: Allow learners to practice:

Monitoring vital signs (heart rate, respiratory rate, temperature).

Performing blood glucose checks and interpreting results.

Assessing for signs of apnoea and implementing appropriate interventions (e.g., stimulation or bag-mask ventilation).

2. Feedback: Provide immediate feedback after each simulation on techniques and decision-making. (1 hours)

Experiential-Learning Learning 6.7: **Breastfeeding challenges.**
Total learning hours (3 hours) **1.** Use case scenarios to apply knowledge and problem-solving skills to real-world breastfeeding challenges. **Procedure**: **Scenario Development**: Create diverse breastfeeding case scenarios that highlight common challenges (e.g., a mother experiencing nipple pain, another dealing with engorgement). **Group Discussions**: Divide learners into small groups and present each case scenario. Have groups discuss: Possible causes of the challenge. Appropriate management strategies. How to support the mother emotionally and practically. **2. Presentation**: Each group presents their findings and solutions to the larger group for discussion.
Experiential-Learning Learning 6.8: **Bottle feeding**
Total learning hours (2 hours) **1.** Use baby dolls or manikins for students to practice proper bottle-feeding techniques. **Demonstration**: An instructor demonstrates correct positioning and pacing techniques using a baby doll: Proper positioning (e.g., holding the baby at an angle). Showing how to control the flow of milk by tilting the bottle. Observing the baby's cues (e.g., signs of hunger or fullness). **Hands-On Practice**: Learner’s practice feeding the baby doll in pairs or small groups, focusing on: Correct positioning. Techniques for pacing the feeding (e.g., stopping to burp the doll). **2. Feedback**: Instructors provide real-time feedback and correction as learners practice.

Experiential-Learning Learning 6.9: **Formula feeding intolerance.**
Total learning hours (2 hours) **1.** Utilize case studies that depict various scenarios of infants showing signs of formula intolerance or allergies to facilitate group analysis and decision-making. **Procedure**: (60 minutes) **Case Development**: Create diverse case scenarios involving infants with different signs of intolerance or allergy (e.g., a case with vomiting, another with rashes). **Group Work**: Divide students into small groups and assign each group a case to analyse. They should discuss: The signs and symptoms presented. Possible causes and risk factors. Recommendations for alternative formulas or feeding methods. **2. Presentation**: Each group presents their case findings and management suggestions to the larger group for discussion. (60 minutes)
Experiential-Learning Learning 6.10: **Complementary Feeding Plan.**
Tital learning hours (2 hours) **1.** Guide students in creating a personalized complementary feeding plan for a infant. **Procedure**: (60 minutes) **Scenario Creation**: Provide a case study of an infant, including age, dietary preferences, and any allergies or intolerances. **Plan Development**: In small groups, students will: Assess the infant's nutritional needs based on age and growth. Develop a weekly complementary feeding plan that includes: Food variety (fruits, vegetables, grains, proteins). Texture progression (purees, mashed, soft pieces). Portion sizes and feeding frequency. **2. Presentation**: Each group presents their feeding plan to the class, explaining their food choices and reasoning. (60 minutes)

Experiential-Learning Learning 6.11: **Infants feeding.**
Total learning hours (3 hours) Students practice calculating and adjusting feeding volumes and frequency for infants based on weight, growth rate, and feeding tolerance. Given a set of case scenarios, participants assess an infant's weight and recent growth data to determine optimal feeding volumes. They also review signs of feeding tolerance or intolerance, adjusting the feeding plan accordingly. This activity enables students to apply nutritional principles in personalized feeding plans, ensuring that infants receive adequate nutrition for healthy growth and development.
Experiential-Learning Learning 6.12: **Growth of preterm.**
Total activity hours (3 hours) Participants use specialized growth charts for preterm, low birth weight (LBW), and intrauterine growth restriction (IUGR) infants to monitor growth patterns and assess developmental milestones. Working with case studies, they plot growth data, evaluate trends, and discuss any deviations that may suggest adjustments in feeding practices. Students also review key developmental milestones to understand how feeding needs evolve with growth. This activity helps students apply growth and developmental monitoring skills, enabling tailored nutritional support for vulnerable infants.
Experiential-Learning Learning 6.13: **Neonatal resuscitation and neonatal transport.**
Total learning hours (6 hours) 1. Utilize at least 6 real-life or simulated case scenarios to help learners identify indications for neonatal resuscitation and transport. **Procedure**: **Case Scenario Development**: Create diverse case studies depicting neonates with varying conditions (e.g., a preterm infant with respiratory distress, a full-term infant with meconium aspiration). **Group Work**: Divide students into small groups and assign each group a case to analyze. They should: (3 hours) Identify the specific indications for resuscitation and transport. Discuss appropriate interventions based on the condition presented.

Presentation: Each group presents their case findings, emphasizing the rationale for resuscitation or transport. (3 hours)	
Modular Assessment	
Assessment	**Hour**
Instructions: Conduct a structured modular assessment. Assessment will be for 75 marks for this module. Keep structured marking patten. Use different assessment methods in each module for the semester. Keep a record of the structured pattern used for assessment. Calculate the Modular grade point as per Table 6 C. **T-EW (Theory Essay Writing)** Conduct a theory exam having **one essay writing** question from any unit of this module **(20 Marks)** **P-VIVA (Practical Viva)** Conduct a practical viva **(5 Marks)** **CL-PR (Class Presentation)** Content of the presentation (5 marks) Organisation: Structure and Coherence (2.5*2= 5 Marks) Delivery: Engagement and Clarity (2.5*2= 5 Marks) Visual Aids: Design and Relevance (2.5*2= 5 Marks) Question and Answer session (5 Marks) **Mini-CEX (Assess clinical skills in a real-time setting)** History-Taking and Physical Examination (10 Marks) Clinical Reasoning and Diagnosis (5 Marks) Communication Skills (2.5 Marks) Professionalism and Attitude (5 Marks) Feedback and Self-Reflection (2.5 Marks)	6

Or Any practical in converted form can be taken for assessment. (40 marks) and Any of the experiential as portfolio/ reflections/ presentations can be taken as an assessment. (35 marks)	

Semester No : 6

Module 7 : نومولودسقیم(Maulood Saqeem) Sick Newborn

Module Learning Objectives

(At the end of the module, the students should be able to)

1. Describe the characteristics of high-risk infants, including preterm, low birth weight, and infants with congenital abnormalities, and identify the factors contributing to their vulnerability.
2. Describe the physiological mechanisms of thermoregulation in neonates and the importance of maintaining a neutral thermal environment for optimal growth and development, especially in high-risk and preterm infants.
3. Discuss the most common surgical disorders in neonates, such as congenital diaphragmatic hernia, gastroschisis, and intestinal atresia, and understand the principles of surgical intervention and postoperative care.
4. Identify common challenges in maintaining thermoregulation in high-risk infants and discuss appropriate interventions such as the use of incubators, radiant warmers, and kangaroo care to prevent hypothermia or hyperthermia.
5. Evaluate the importance of early screening and monitoring in neonatal follow-up, focusing on conditions Tracheoesophageal Fistula with oesophageal atresia, Anorectal malformation, Diaphragmatic Hernia, Hirschsprung's diseases, Urogenital anomalies, NEC (Necrotising Enterocolitis), Congenital Labour emphysema, Volvulus, Phimosis, Paraphimoses and Hypospadias.
6. Identify the key components of neonatal follow-up care, including developmental monitoring, nutrition management, and addressing neurodevelopmental and physical health outcomes in high-risk infants.

7. Appraise the role of multidisciplinary care in managing high-risk infants, including neonatologists, paediatric surgeons, and other healthcare professionals, to ensure comprehensive care from the neonatal intensive care unit (NICU) through follow-up.

Unit 1 خطرے سے دوچار نوزائدہ (Khatre se do-char nauzaeda) High Risk Infant

7.1.1. Low Birth Weight

7.1.2. یرقان نومولود (Yarqān-i-Nau Maulood) Neonatal Jaundice

7.1.3. اختناق الولادت (Ikhtenaq al wiladat) Birth Asphyxia

7.1.4. طفل خدیج (Tifl Khadeej) Prematurity

7.1.5. تعدیہ (Ta'adiya) Infection

7.1.6. Intrauterine Growth Restriction (IUGR)

References: 4,5,6,44,79

3A	3B	3C	3D	3E	3F	3G
CO1,CO6,CO7, CO8	Differentiate between the outcomes of preterm LBW and term LBW infants.	1	Lecture	CAN	Knows-how	L&PPT
CO1,CO6,CO7, CO8	Compare and contrast different causes of neonatal jaundice based on history, examination, and investigations.	1	Lecture	CAN	Knows-how	L&PPT
CO1,CO6,CO7, CO8	Assess the short-term and long-term complications of birth asphyxia and the effectiveness of therapeutic interventions such as neonatal resuscitation and hypothermia therapy.	1	Lecture	CE	Knows-how	L_VC,L&PPT
CO1,CO6,CO7, CO8	Describe the steps to prevent hypothermia immediately after birth, such as skin-to-skin contact, the use of plastic wraps, and pre-warmed resuscitation rooms.	1	Lecture	CE	Knows-how	L&PPT

CO1,CO6,CO7, CO8	Modify care protocols based on the condition of the LBW neonate, such as adjusting feeding methods for preterm vs. term LBW babies.	2	Practical7.1	PSY-ADT	Shows-how	SIM,DIS,D-M,CBL
CO1,CO6,CO7, CO8	Manage phototherapy settings based on bilirubin levels and neonate condition, and modify care based on response to treatment.	2	Practical7.2	PSY-ADT	Shows-how	SIM,D,D-M,CBL,DIS
CO1,CO6,CO7, CO8	Evaluate the monitoring techniques used for high-risk infants (e.g., heart rate, respiratory rate, oxygen saturation, blood pressure) and their importance in early detection of complications.	4	Experiential-Learning7.1	CE	Does	D-BED,CBL,DIS
CO1,CO6,CO7, CO8	Display the Low birth weight (LBW), Intrauterine Growth Restriction (IUGR) resuscitation and Phototherapy in neonatal jaundice.	4	Experiential-Learning7.2	PSY-MEC	Does	D,SIM,DIS
CO1,CO6,CO7, CO8	Identify the criteria for discharging high-risk infants from the NICU and the role of multidisciplinary teams in ensuring a safe transition to home.	4	Experiential-Learning7.3	PSY-ADT	Does	PER,SIM,CBL,DIS
CO1,CO6,CO7, CO8	Develop a comprehensive care plan for a preterm neonate, including respiratory support, nutrition, and neurodevelopmental follow-up.	1	Lecture	CS	Knows-how	L&PPT ,L&GD
CO1,CO6,CO7, CO8	Differentiate between bacterial, viral, and fungal infections in neonates based on clinical and diagnostic criteria.	1	Lecture	CAN	Knows-how	L&PPT ,L&GD

CO1,CO6,CO7, CO8	Assess the role of antenatal monitoring, neonatal care strategies, and postnatal interventions in managing IUGR.	1	Lecture	CE	Knows-how	L&PPT ,L
CO1,CO6,CO7, CO8	Perform effective bag-mask ventilation and chest compressions for a neonate with birth asphyxia.	2	Practical7.3	PSY-MEC	Shows-how	CBL,D-M,SIM,DIS
CO1,CO6,CO7, CO8	Develop and implement a comprehensive care plan for a preterm neonate, integrating thermal support, respiratory management, feeding strategies, and developmental care.	2	Practical7.4	PSY-ORG	Shows-how	D,D-M,SIM,DIS
CO1,CO6,CO7, CO8	Develop and implement a comprehensive care plan for an Intrauterine Growth Restriction (IUGR), incorporating nutritional support, growth monitoring, and parental counseling.	2	Practical7.5	PSY-ORG	Shows-how	DIS,SIM,RP,D
Unit 2 توازن حرارت (tawazun hararat) Thermoregulation 7.2.1. Physiological mechanisms involved in thermoregulation in neonates 7.2.2. Clinical features of hypothermia in neonates 7.2.3. Prevention hypothermia immediately after birth **References:** 6,44						
3A	**3B**	**3C**	**3D**	**3E**	**3F**	**3G**
CO1,CO6,CO7, CO8	Discuss the concept of the “neutral thermal environment (NTE)” and its significance in maintaining optimal temperature for neonates.	2	Practical7.6	PSY-MEC	Shows-how	D-M,SIM,DIS

CO1,CO6,CO7, CO8	Demonstrate the various interventions to maintain thermoregulation in neonates, including the use of incubators, radiant warmers, and heated mattresses.	2	Practical7.7	PSY-MEC	Shows-how	D-M,CBL,SIM
CO1,CO6,CO7, CO8	Assess the measurement of body temperature in neonates (e.g., axillary, rectal, skin probes) and discuss the accuracy and appropriateness of each method and complication of hyperthermia in neonates, including dehydration, cardiovascular instability, and the impact on neurological outcomes.	4	Experiential-Learning7.4	PSY-MEC	Does	D,DIS,CBL,D-BED
CO1,CO6,CO7, CO8	Counsel the parents how to recognize signs of hypothermia and hyperthermia and when to seek medical attention.	3	Experiential-Learning7.5	AFT-CHR	Does	DIS,RP
CO1,CO6,CO7, CO8	Describe the physiological mechanisms involved in thermoregulation in neonates, including non-shivering thermogenesis and the role of brown adipose tissue and understand the clinical features of hypothermia in neonates, including metabolic acidosis, hypoglycaemia, and increased mortality risk.	1	Lecture	CE	Knows-how	L&PPT ,L

Unit 3 مراجعت نومولود (Muraje-at naumaulood) Neonatal follow up

7.3.1. Significance of neonatal follow-up

7.3.2. Key components of a neonatal follow-up program

7.3.3. Criteria for referring neonates to specialized follow-up programs

References: 4,5,44

3A	3B	3C	3D	3E	3F	3G
CO1,CO6,CO7, CO8	Evalute the purpose and significance of neonatal follow-up care in ensuring the long-term health and development of high-risk infants and understand the role of follow-up programs in the early detection of developmental delays, growth abnormalities, and other complications in neonates.	2	Lecture	CE	Knows-how	L&PPT
CO1,CO6,CO7, CO8	Demonstrate the key components of a neonatal follow-up program, including growth monitoring, developmental screening, neurodevelopmental assessments, and nutritional evaluation	2	Practical7.8	PSY-MEC	Shows-how	CBL,DIS,D-M,SIM
CO1,CO6,CO7, CO8	Discuss the multidisciplinary approach to follow-up care, involving neonatologists, developmental paediatricians, nurses, therapists (physical, occupational, speech), and social workers.	2	Practical7.9	PSY-MEC	Shows-how	DIS,SIM,RP
CO1,CO6,CO7, CO8	Justify the criteria for referring neonates to specialized follow-up programs, including preterm infants, infants with low birth weight, congenital anomalies, or those requiring intensive care.	3	Experiential-Learning7.6	AFT-SET	Does	DIS,CBL
CO1,CO6,CO7, CO8	Discuss the importance of individualized follow-up care based on the infant's specific risk factors, including medical, neurological, and developmental needs.	4	Experiential-Learning7.7	PSY-MEC	Does	PER,CBL,DIS

Unit 4 (جراحتی مسائل(بروقت تشخیص اور حوالگی)Jarahati masa-el (bar waqt tashkheesh aur hawalgi) Surgical problems (Early diagnosis &Referral)

7.4.1. Tracheoesophageal Fistula with esophageal atresia

7.4.2. Anorectal malformation

7.4.3. Diaphragmatic Hernia

7.4.4. Hirschsprung's diseases

7.4.5. Urogenital anomalies

7.4.6. Necrotizing Enterocolitis (NEC)

7.4.7. Congenital Labor emphysema

7.4.8. Volvulus

7.4.9. Phimosis, Paraphimoses and Hypospadias

References: 44

3A	3B	3C	3D	3E	3F	3G
CO1,CO6,CO7, CO8	Describe the surgical problems such as Tracheoesophageal Fistula with oesophageal atresia, Anorectal malformation, Diaphragmatic Hernia, Hirschsprung's diseases, Urogenital anomalies, NEC (Necrotising Enterocolitis), Congenital Labour emphysema, Volvulus, Phimosis, Paraphimoses and Hypospadias	5	Lecture	CE	Knows-how	L&PPT ,L_VC
CO1,CO6,CO7, CO8	Demonstrate the complication of Tracheoesophageal Fistula with oesophageal atresia, impact on newborn health.	3	Practical7.10	PSY-MEC	Shows-how	D-M,DIS,SIM
CO1,CO6,CO7, CO8	Demonstrate the complication of Anorectal malformation, Diaphragmatic Hernia, and its feeding techniques.	2	Practical7.11	PSY-MEC	Shows-how	SIM,DIS,D-M
CO1,CO6,CO7, CO8	Demonstrate feeding challenges in Hirschsprung's diseases.	2	Practical7.12	PSY-MEC	Shows-how	D-M,L_VC

CO1,CO6,CO7, CO8	Demonstrate the complication of Urogenital anomalies, NEC (Necrotising Enterocolitis), Congenital Labour emphysema.	3	Practical7.13	PSY-MEC	Shows-how	D-M,SIM,D,DIS,L_VC
CO1,CO6,CO7, CO8	Demonstrate complication of Volvulus, Phimosis, Paraphimoses and Hypospadias and impact on newborn health.	2	Practical7.14	PSY-GUD	Shows-how	DIS,D,D-M,SIM
CO1,CO6,CO7, CO8	Assess surgical cases and follow referral protocol.	3	Experiential-Learning7.8	PSY-ADT	Does	PER,CBL,SIM,DIS
CO1,CO6,CO7, CO8	Counsel families in understanding the importance of early detection and engage in empathetic communication when discussing the diagnosis and management of congenital conditions such as Tracheoesophageal Fistula, Anorectal Malformation, and Diaphragmatic Hernia.	3	Experiential-Learning7.9	AFT-VAL	Does	SIM,RP,DIS
CO1,CO6,CO7, CO8	Demonstrate sensitivity to the emotional impact that diagnoses like Hirschsprung's Disease, NEC, and Volvulus have on families, providing reassurance and support throughout the child's treatment and care process.	3	Experiential-Learning7.10	PSY-MEC	Does	DIS,D,RP
CO1,CO6,CO7, CO8	Appraise the ethical considerations and parental concerns when recommending surgical interventions for Urogenital Anomalies, Phimosis, Paraphimosis, and Hypospadias, advocating for clear and compassionate communication.	4	Experiential-Learning7.11	AFT-SET	Does	RP,DIS,SIM
Practical Training Activity						

Practical Training 7.1 **Low birth weight (LBW) neonates.**
Total learning hours (2 hours) 1. Teacher Briefly discuss the needs of Preterm LBW and Term LBW or Video Presentation of thermoregulation and feeding techniques. (30 minutes) Hands-On Demonstration – Feeding Adaptations for LBW Neonates 2. Breastfeeding and Alternative Feeding Techniques: Simulation Activity: (20 minutes) Demonstrate direct breastfeeding support for a stable term LBW baby. Show cup feeding for babies unable to latch. Use a syringe or spoon for extremely weak neonates. 3. Enteral Feeding via Nasogastric Tube (For Preterm LBW Neonates): Demonstration Activity: (20 minutes) Show how to insert and secure a nasogastric (NG) tube. Demonstrate gravity feeding using expressed breast milk. Explain signs of feeding intolerance (vomiting, bloating, apnea). 4. Kangaroo Mother Care (KMC) for LBW Babies: Simulation Activity: (20 minutes) Demonstrate proper KMC positioning. Explain how KMC helps in weight gain, temperature regulation, and bonding. Show how to monitor oxygen saturation and feeding cues during KMC. 5. Case-Based Group Discussions & Problem-Solving: Assign real-life or simulated scenarios (e.g., preterm LBW with feeding intolerance, term LBW with weak suck reflex): Groups decide on: (20 minutes) Appropriate feeding method (breastfeeding, NG tube, cup feeding). Adjustments in care (KMC, fortification, feeding frequency). Present solutions and receive feedback. 6. Reflection & Assessment (10 minutes) Checklist evaluation of feeding techniques.

Group discussion on challenges in LBW care.
Practical Training 7.2 **Neonatal Hyperbilirubinemia.**
Total learning hours (2 hours) 1. Teacher Brief discuss on neonatal Hyperbilirubinemia and process of Phototherapy through Video Demonstration: (30 minutes) Hands-On Demonstration – Adjusting Phototherapy Settings 2. Initiating and Adjusting Phototherapy: Simulation Activity: (20 minutes) Place the mannequin/doll under the phototherapy light. Set distance (30–50 cm) and intensity as per guidelines. Use a mock bilirubin level chart to decide: Standard phototherapy for moderate jaundice. Intensive phototherapy for severe jaundice. Adjust light intensity and duration based on follow-up bilirubin levels. 3. Neonatal Monitoring During Phototherapy: Simulation Activity: (20 minutes) Monitor temperature every 2–4 hours to prevent overheating. Protect the eyes using neonatal eye shields. Check hydration status (monitor urine output and weight loss). Assess bilirubin levels every 4–6 hours to determine response. 4. Modifying Care Based on Neonate's Response: Case Study Discussion: (30 minutes) Assign groups different neonate case scenarios (e.g., preterm with worsening jaundice, term baby responding well). Each group modifies phototherapy settings accordingly: Reduce intensity or discontinue if bilirubin levels drop below threshold. Increase duration or use double lights if bilirubin remains high.

Initiate hydration therapy (oral/IV) for dehydrated neonates. Present care plan and justify decisions. 4. Reflection & Assessment (20 minutes) Checklist evaluation on correct phototherapy adjustments. Short quiz on bilirubin thresholds and management. Discussion on optimizing phototherapy in resource-limited settings.
Practical Training 7.3 **Neonatal Resuscitation.**
Total learning hours (2 hours) 1. Teacher Briefly introduce neonatal resuscitation and Video Demonstration of neonatal resuscitation process. (40 minutes) Hands-On Demonstration – Bag-Mask Ventilation (BMV) 2. Initiating BMV for a Non-Breathing Neonate: Simulation Activity: (20 minutes) Position the neonate in sniffing position (slight neck extension). Use bulb syringe/suction to clear the airway. Select the correct mask size and form a proper seal. Deliver 40–60 breaths per minute, using the “squeeze-release” technique. Observe chest rise to confirm effective ventilation. Hands-On Demonstration – Neonatal Chest Compressions 3. When and How to Perform Chest Compressions: Simulation Activity: (20 minutes) Locate the lower third of the sternum. Use the two-thumb encircling technique. Apply gentle but firm pressure (one-third chest depth). Maintain a 3:1 compression-to-ventilation ratio (90 compressions + 30 breaths per minute).

Continue until HR >60 bpm, then resume BMV if needed.

4. Case-Based Scenarios & Role-Playing: Groups receive different birth asphyxia cases (e.g., preterm baby, meconium-stained amniotic fluid).

Each group: (40 minutes)

Assesses the neonate (breathing, HR, color).

Performs BMV or starts chest compressions as needed.

Reassesses and modifies interventions based on response.

Debriefing session: Discuss challenges, errors, and improvements.

Practical Training 7.4 **Care plan of preterm neonates.**

Total learning hours (2 hours)

1. Teacher will Briefly explain Preterm Neonatal Needs like common challenges in preterm neonates and multidisciplinary approach such as Role of neonatologists, nurses, nutritionists, and therapists. (30 minutes)

Hands-On Demonstration – Implementing a Preterm Neonate's Care Plan

2. Thermal Support: Simulation Activity: (20 minutes)

Demonstrate Kangaroo Mother Care (KMC) for stable preterm neonates.

Set up an incubator or radiant warmer for unstable preterms.

Monitor temperature every 2–4 hours to ensure warmth.

3. Respiratory Management: Simulation Activity: (20 minutes)

Assess respiratory distress (grunting, nasal flaring, retractions).

Demonstrate CPAP application for mild distress.

Show oxygen therapy adjustments based on SpO_2 monitoring.

Position the neonate (slight head tilt) to open airways.

4. Feeding Strategies: Simulation Activity: (20 minutes)

Demonstrate nasogastric (NG) tube feeding for babies <34 weeks. Practice cup/spoon feeding for babies with weak suck. Simulate expressed breast milk (EBM) feeding using a syringe. Monitor feeding tolerance (no bloating, vomiting). 5. Developmental Care: Simulation Activity: (20 minutes) Practice proper nesting positioning for comfort. Adjust lighting & noise levels to mimic intrauterine conditions. Demonstrate gentle handling & skin-to-skin contact. 6. Reflection & Assessment: Group reflection on challenges in caring for preterm neonates. (10 minutes)
Practical Training 7.5 **Intrauterine Growth Restriction (IUGR).**
Teacher learning hours (2 hours) 1. Teacher will brief Lecture IUGR Neonate Needs and multidisciplinary management: Role of neonatologists, dietitians, lactation consultants. (40 minutes) Hands-On Demonstration – Implementing an IUGR Neonate's Care Plan 2. Nutritional Support: Simulation Activity (20 minutes) Assess the baby's ability to breastfeed (suck-swallow-breathe coordination). Demonstrate breast milk expression & supplementation using a cup or spoon. Practice nasogastric (NG) tube feeding for weak feeders. Discuss formula options (fortified breast milk, preterm formula if needed). Monitor feeding tolerance (watch for signs of aspiration or intolerance). 3. Growth Monitoring: Simulation Activity (20 minutes) Weigh the baby and record daily weight gain. Measure length and head circumference weekly.

Plot growth on the appropriate chart and assess trends.

Identify red flags (e.g., stagnant growth, excessive weight loss).

4. Parental Counseling: Simulation Activity (20 minutes)

Role-play a counseling session where students act as healthcare providers.

Teach parents how to recognize feeding issues (poor latch, weak sucking).

Explain the importance of regular follow-ups to track growth and neurodevelopment.

Provide emotional support (address parental anxiety about IUGR risks).

5. Reflection & Assessment (20 minutes)

Short quiz on IUGR management guidelines.

Group discussion on challenges in post-discharge care.

Practical Training 7.6 **Neutral thermal environment (NTE).**

Total learning hours (2)

1. Treacher will discuss Neutral thermal environment (NTE) and demonstrate tools and techniques used in this process. (40 minutes)

2. Simulation-Based Learning with Incubators and Radiant Warmers: Use neonatal manikins in high-fidelity simulations with temperature regulation equipment like incubators and radiant warmers. Learners will practice setting and adjusting temperatures in response to the neonate's condition and environment. (60 minutes)

3. Group discussion on the indication, contraindication and linitations of these tools and techniques. (20 minutes)

Practical Training 7.7 **Thermoregulation.**

Total learning hours (2 hours)

1. Conduct live demonstrations where an instructor/ Faculty explains and demonstrates each device (incubator, radiant warmer, heated mattress), showing how to set them up, adjust them, and monitor the neonate's temperature. (40 minutes)

2. Then students will identify and write its indication, learn how to operate according to clinical condition, linitation of these tools. (20 minutes)

3. Case-Based Learning: Present case studies where learners must decide which intervention to use based on the neonate's condition. These cases can range from premature infants at risk for hypothermia to term infants recovering from surgery who need precise temperature control. (60 minutes)
Practical Training 7.8 **Multidisciplinary approach to follow-up care.**
Total learning hours (2 hours) 1. Teacher will discuss multidisciplinary approach to neonatal follow-up care. (30 minutes) 2. Role-playing exercises where students take on the roles of different professionals in a follow-up care scenario. They collaborate to address the physical, developmental, and social needs of a neonate. (60 minutes) 3. After role playing feedback and discussion on ultidisciplinary approach to neonatal follow-up care. (30 minutes)
Practical Training 7.9 **Neonatal follow-up program.**
Total learning hours (2 Hours) 1. Teacher will Briefly discuss neonatal Follow-Up Program. (20 minutes) Hands-On Demonstration – Key Follow-Up Assessments 2. Growth Monitoring: Simulation Activity (20 minutes) Weigh the neonate and plot weight-for-age on a growth chart. Measure length and compare with standard percentiles. Assess head circumference to check brain growth. Interpret growth trends and discuss appropriate interventions. 3. Developmental Screening: Simulation Activity (20 minutes) Use Denver Developmental Screening Test (DDST) or Ages & Stages Questionnaire (ASQ) to assess: Gross motor skills (e.g., head control, sitting). Fine motor skills (e.g., grasping, reaching). Language development (e.g., cooing, babbling).

Social skills (e.g., smiling, recognizing faces). Interpret results and discuss if intervention is needed. 4. Neurodevelopmental Assessment: Simulation Activity (20 minutes) Assess primitive reflexes (e.g., Moro, rooting, grasp). Evaluate muscle tone (hypotonia vs. hypertonia). Observe spontaneous movements and postural reactions. Document findings and recommend follow-up as needed. 5. Nutritional Evaluation: Simulation Activity (20 minutes) Assess breastfeeding latch and milk transfer (use a feeding doll). Evaluate formula-fed infants (discuss formula choice and preparation). Review complementary feeding introduction (for infants >6 months). Identify signs of feeding difficulties and malnutrition. 6. Case-Based Group Discussions & Problem-Solving: Groups are assigned different neonatal follow-up cases (e.g., preterm baby with growth faltering, term baby with developmental delay). (20 minutes) Each group: Conducts growth, developmental, neuro, and nutrition assessments. Interprets results and develops a care plan. Discusses when to refer for specialized intervention. Debriefing session: Compare findings and recommendations.
Practical Training 7.10 **Tracheoesophageal Fistula with oesophageal atresia.**
Total Learning hours (3 Hours) 1. Teacher will discuss and model or video ddemonstration on tracheoesophageal Fistula with oesophageal atresia. (60 minutes)

2. Materials Needed: Infant mannequin or neonatal simulator with features replicating Tracheoesophageal Fistula (TEF) and oesophageal atresia, suction equipment, simulated feeding equipment, and respiratory monitoring tools. (90 minutes)

Procedure:

Set up a neonatal simulator programmed with symptoms of TEF and oesophageal atresia, such as choking, cyanosis, and difficulty swallowing.

Learners will observe the signs of respiratory distress and cyanosis, simulating the newborn's difficulty in feeding and risk of aspiration.

Demonstrate how to position the newborn, monitor vital signs, and apply suction to manage immediate respiratory complications.

Emphasize the need for urgent surgical intervention and the importance of post-surgical care and monitoring.

3. Reflect on the management strategies and importance of quick intervention for such life-threatening conditions. (30 minutes)

Discuss how TEF and oesophageal atresia impact a newborn's health, highlighting the complications and challenges.

Practical Training 7.11 **Anorectal malformation and Diaphragmatic Hernia.**

Total learning hours (2 hours)

1. Teacher will duscuss and model or video demonstration on anorectal malformation and diaphragmatic Hernia. (30 minutes)

2. Materials Needed: Infant mannequins or simulators configured with characteristics of Anorectal Malformation and Diaphragmatic Hernia, nasogastric (NG) tube for feeding, feeding syringes, and small baby bottles. (60 minutes)

Procedure:

Anorectal Malformation: Demonstrate complications like abdominal distension and inability to pass stool. Practice using NG feeding to prevent strain on the abdominal area. Emphasize small, frequent feeds to reduce discomfort.

Diaphragmatic Hernia: Simulate respiratory distress, where lung compression impacts feeding. Demonstrate the positioning of the newborn in an elevated position to ease breathing and practice slow NG or bottle feeding to avoid aspiration.

3. Reflect on recognizing signs of feeding intolerance and respiratory distress. (20 minutes)

Discuss how these conditions affect feeding and digestion, the need for gentle feeding techniques, and positioning to minimize complications.

Practical Training 7.12 Demonstrate feeding challenges in Hirschsprung’s diseases.

1. Teacher will introduce and demonstrate on model for feeding Hirschsprung's diseases.

2. Infant mannequin, feeding syringes, various types of formula (including thickened and standard), a scale for monitoring weight, and a chart for recording feeding responses and bowel movements.

Set Up: Introduce the infant mannequin with simulated signs of Hirschsprung's Disease (e.g., abdominal distension, poor weight gain).

Demonstration:

Initial Feeding: Use a feeding syringe to simulate feeding the infant with a thickened formula. Discuss the rationale for thickened feeds to reduce the risk of aspiration and improve digestive comfort.

Monitor Responses: After feeding, assess the mannequin for signs of feeding intolerance (such as abdominal distension or discomfort). Encourage participants to record observations on a chart.

Bowel Movement Simulation: Discuss the challenges of bowel movements in Hirschsprung's Disease and simulate a bowel movement scenario (e.g., discussing the potential for constipation or faecal impaction).

3. Debrief:

Discuss the implications of Hirschsprung's Disease on feeding and nutrition, including the importance of frequent monitoring and adjustments to feeding techniques.

Encourage reflection on how these challenges affect the overall care and management of infants with Hirschsprung's Disease.

Practical Training 7.13 **Urogenital anomalies, Necrotising Enterocolitis (NEC) and Congenital Labour emphysema.**

Total learning hours (3 hours)

1. Teacher will discuss and video demonstration of Urogenital anomalies, Necrotising Enterocolitis (NEC) and Congenital Labour emphysema. (60 minutes)

2. Materials Needed: Infant mannequins or simulators, clinical assessment tools (e.g., stethoscope, pulse oximeter), feeding syringes, and simulation equipment (e.g., oxygen supply, suction device). (90 minutes)

Demonstration: Simulate a scenario involving a newborn with a urogenital anomaly Necrotizing Enterocolitis (NEC), Congenital Labor Emphysema. Discuss the signs of urinary obstruction or infection.

Assessment: Practice performing a physical assessment, focusing on the abdomen.

Intervention: Discuss and simulate feeding adjustments, emphasizing the importance of discontinuing oral feeds and starting IV fluids. Use a feeding syringe to demonstrate how to provide IV fluids in case of NEC.

Management: Demonstrate the use of supplemental oxygen and suctioning to manage airway clearance in congenital labour emphysema.

3. Debrief: (30 minutes)

Discuss how each condition impacts the newborn's health and the necessary interventions.

Reflect on the importance of early recognition and intervention in managing these complications.

Practical Training 7.14 Volvulus, Phimosis, Paraphimoses and Hypospadias.

Total learning hours (2 hours)

1. Teacher will discuss and video demonstration of Volvulus, Phimosis, Paraphimoses and Hypospadias. (30 minutes)

2. Materials Needed: Infant mannequins, anatomical models, clinical assessment tools (e.g., stethoscope, pulse oximeter), and simulation equipment (e.g., syringe, bandages). (60 minutes)

Volvulus:

Scenario: Simulate a mannequin exhibiting signs of intestinal obstruction due to volvulus (e.g., abdominal distension, vomiting).

Demonstration: Discuss the importance of immediate assessment and potential surgical intervention. Practice palpating the abdomen and auscultating for bowel sounds.

Phimosis:

Demonstration: Present a case of phimosis where the foreskin cannot be retracted, leading to potential complications.

Intervention: Discuss conservative management options and the importance of hygiene. Use anatomical models to demonstrate the anatomy involved.

Paraphimosis:

Scenario: Show a mannequin with paraphimosis, where the retracted foreskin cannot return to its normal position, causing swelling and pain.

Management: Demonstrate how to gently reduce paraphimosis using lubrication and gentle compression, emphasizing the urgency of this situation.

Hypospadias:

Demonstration: Present a mannequin with hypospadias, highlighting the location of the urethral opening.

Discussion: Talk about potential complications such as urinary obstruction and the need for surgical correction, along with its impact on urination and sexual function in later life..

3. Reflect on the importance of early recognition and management of these complications in newborns. (30 minutes)

Discuss how these conditions impact the newborn's health, including pain, potential for infection, and the need for surgical interventions

Experiential Learning Activity

Experiential-Learning Learning 7.1: **High-risk infants.**

Total learning hours (4)

1. Arrange clinical rotations or observational sessions in Neonatal Intensive Care Units (NICUs) where students can observe healthcare professionals monitoring at least 4 cases of high-risk infants. (3 hours)

Procedures

Observation: Learners are paired with experienced neonatologists or NICU nurses to observe the continuous monitoring of high-risk infants using monitors that track heart rate, respiratory rate, oxygen saturation (via pulse oximetry), and blood pressure.

Real-Time Interpretation: Learners watch how the healthcare team interprets the data in real time and responds to any deviations from normal parameters, such as bradycardia, desaturation, or hypotension.

2. Reflective Discussion: After the observation, students discuss what they saw with their mentor, focusing on how the monitoring data helped in the early detection of complications, such as respiratory distress or cardiovascular instability. (1 hours)

Experiential-Learning Learning 7.2: **Low birth weight (LBW), Intrauterine Growth Restriction (IUGR) Resuscitation and Phototherapy in neonatal jaundice.**

Total learning hours (4 hours)

1. Utilize high-fidelity neonatal manikins in a simulated environment to practice the resuscitation of LBW and IUGR infants.

2. Preparation: Students are briefed on the unique challenges of resuscitating LBW and IUGR infants, including their respiratory fragility, temperature regulation difficulties, and susceptibility to hypoglycaemia. (90 minutes)

3. Resuscitation Scenario: A manikin representing an LBW or IUGR infant is used in a scenario where the infant requires immediate resuscitation. Learners follow the **Neonatal Resuscitation Program (NRP) guidelines**, focusing on: (30 minutes)

Clearing the airway.

Positive pressure ventilation (PPV) for respiratory support.

Chest compressions and, if necessary, medication administration.

4. Emphasis on Adjustments for LBW/IUGR: Highlight specific adaptations required for resuscitating LBW/IUGR infants, such as more delicate ventilation pressure settings, monitoring for hypothermia, and early glucose management. (60 minutes)

After each scenario, students debrief and receive feedback from instructors.

5. Workshop on Phototherapy for Neonatal Jaundice: Organize a hands-on workshop that focuses on the application and management of phototherapy in neonatal jaundice. (60 minutes)

Experiential-Learning Learning 7.3: **Safe Transitions.**

Total learning hours (4 hours)

1.,Use real or simulated case studies of high-risk infants preparing for discharge to facilitate group discussions on the discharge criteria and the role of multidisciplinary teams in ensuring a safe transition to home.

2. Case Presentation: Present learners with detailed case studies of high-risk infants approaching discharge. Each case should include medical details, developmental progress, and family circumstances (e.g., an infant with bronchopulmonary dysplasia or an infant recovering from neonatal seizures). (60 minutes)

3. Group Analysis: In small groups, learners discuss whether the infant meets the discharge criteria and what additional steps need to be taken to ensure a safe transition home. Criteria to discuss include: (60 minutes)

Medical stability: Is the infant's medical condition stable enough for home care?

Feeding and growth: Is the infant feeding adequately and gaining weight?

Family education: Are the parents equipped with the knowledge and resources needed to care for the infant at home?

Follow-up care: Has the multidisciplinary team coordinated appropriate follow-up with paediatricians, developmental specialists, and therapists?

4. Collaborative Planning: Students work together to develop a safe discharge plan, incorporating input from various healthcare disciplines and considering the infant's specific needs. (60 minutes)

5. Debriefing: After the case discussions, learners share their discharge plans with the group and receive feedback on their decision-making process and collaboration. (60 minutes)

Experiential-Learning Learning 7.4: **Hyperthermia.**

Total learning hours (4 hours)

1. Organize clinical observation sessions where learners observe neonates in NICUs, focusing on temperature monitoring and the management of hyperthermia.

Procedures

Clinical Rounds: Students accompany neonatologists or NICU nurses during clinical rounds, paying close attention to how body temperature is measured and recorded in neonates using different methods. (90 minutes)

Observation of Thermoregulation Interventions: Students observe how thermoregulation is maintained through the use of incubators, radiant warmers, and skin probes. They also see how interventions are made when a neonate is either hypothermic or hyperthermic. (90 minutes)

2. Case Discussion: After observation, learners engage in reflective discussions with their mentor about the cases they observed. They discuss the appropriateness of the temperature measurement method used, the complications of hyperthermia, and the management strategies employed. (60 minutes)

Experiential-Learning Learning 7.5: **Parent Counselling.**

Total learning hours (3 hours)

1. Use role-playing exercises where learners take on the role of healthcare providers, and facilitators or other learners act as parents. This allows learners to practice counseling parents on recognizing the signs of hypothermia and hyperthermia.

Procedures: (2 hours)

Scenario Setup: Create scenarios where parents of a newborn are concerned about their baby's body temperature. The learners, acting as healthcare providers, must explain the signs of hypothermia (e.g., cold skin, lethargy, poor feeding) and hyperthermia (e.g., flushed skin, irritability, rapid breathing) and provide clear instructions on when to seek medical attention.

Counselling Focus:

Signs of Hypothermia: Teach parents to recognize signs such as cold or bluish skin, reduced activity, difficulty feeding, shivering (though rare in neonates), and lethargy.

Signs of Hyperthermia: Instruct parents to look for signs like flushed skin, excessive crying, rapid breathing, sweating, or difficulty waking the baby.

When to Seek Help: Emphasize the need for medical attention if the baby is excessively cold or warm, is not feeding well, is unresponsive, or shows any signs of distress.

2. Feedback: After the role-play, provide feedback to the learners on their communication clarity, empathy, and ability to convey important health information. (60 minutes)

Experiential-Learning Learning 7.6: **Referral Criteria.**

Total learning hours (3 hours)

1. Use real or simulated case studies of neonates to highlight the various criteria for referring infants to specialized follow-up programs.

Procedures

Case Review: Present learners with diverse neonatal cases, such as a preterm infant, an infant with congenital heart disease, or an infant with severe neonatal jaundice. Each case should include relevant clinical details and outcomes.

Discussion: In small groups, learners analyse each case and identify the factors that make the infant a candidate for specialized follow-up care. They must justify their decisions based on criteria such as:

Preterm infants: Infants born before 37 weeks of gestation.

Low birth weight (LBW): Infants weighing less than 2.5 kg at birth.

Congenital anomalies: Infants born with structural or functional anomalies (e.g., congenital heart disease, cleft palate).

NICU graduates: Infants who required prolonged intensive care or mechanical ventilation.

Experiential-Learning Learning 7.7: **Individualized follow-up**

Total learning hours (4 hours)

Materials Needed: Case study handouts of different infants with varying risk factors (e.g., preterm birth, congenital anomalies, neurological concerns), markers, and poster boards.

Procedure: (90 minutes)

Case Study Distribution: Divide participants into small groups and distribute case studies that include an infant's medical history, risk factors, and specific needs.

Discussion: Each group discusses the unique challenges and requirements for follow-up care based on the case study provided. Encourage them to consider:

Medical Needs: What ongoing medical assessments are necessary?

Neurological Needs: What monitoring or interventions might be required for neurological development?

Developmental Needs: How can the follow-up care support the infant's growth and milestones?

Care Plan Creation: Each group develops a personalized follow-up care plan outlining specific actions, timelines, and referrals to specialists. They should consider interdisciplinary approaches, including paediatricians, neurologists, and therapists. (30 minutes)

Presentation and Reflection: Groups present their care plans to the larger group. After the presentations, engage in a reflective discussion about the importance of tailored care, potential barriers to implementation, and the impact of individualized follow-up on long-term outcomes. (90 minutes)

Debrief: (30 minutes)

Discuss how individualized follow-up care can improve health outcomes and development for infants with specific risk factors.

Reflect on the importance of collaboration among healthcare providers and families in creating effective care plans.

Experiential-Learning Learning 7.8: **Surgical case and follow referal protocol.**

Total learning hours (3 hours)

1. Procedure: (60 minutes)

Scenario Distribution: Divide participants into small groups and provide each group with a set of scenario cards depicting different patient presentations (e.g., appendicitis, inguinal hernia, non-surgical cases like viral gastroenteritis).

Case Analysis: Each group analyses the scenarios to determine which cases require surgical intervention. They should discuss the signs and symptoms that led to their decisions.

Referral Protocol: After identifying surgical cases, groups will reference the referral protocol flowchart to outline the steps for referring these cases, including:

Initial assessment and documentation

Contacting the surgical team

Providing necessary patient information and history

Following up on the referral

2. Presentation and Discussion: (90 minutes)

Each group presents their identified surgical cases and explains the rationale behind their decisions. They should also outline the referral steps they would take for each case.

Facilitate a group discussion on the importance of timely referrals and the implications of missed or delayed referrals in surgical cases.

3. Debrief: (30 minutes)

Reflect on the critical role of recognizing surgical cases and the effective execution of referral protocols.

Discuss the importance of interprofessional communication and collaboration in managing surgical patients.

Experiential-Learning Learning 7.9: **Congenital Anomalies.**

Total lerning hours (3 hours)

1. Procedure: (2 hourd)

Scenario Assignment: Divide participants into small groups and provide each group with a role-play scenario card detailing a family's background and their infant's diagnosis.

Role-Play: One participant takes on the role of a healthcare provider, while others act as family members. The provider must communicate the diagnosis and the importance of early detection, while addressing the family's concerns and emotions.

Communication Techniques: Encourage participants to use empathetic communication techniques such as active listening, validating feelings, and providing clear, compassionate information.

2. Feedback and Reflection: (30 minutes)

After each role-play, participants provide constructive feedback to each other on their communication styles and effectiveness in conveying the importance of early detection.

Participants can jot down key takeaways and personal reflections on how they can improve their communication with families.

3. Debrief: (30 minutes)

Discuss the challenges faced when communicating difficult news and the strategies that can help in fostering a supportive environment for families.

Reflect on the importance of empathy in healthcare communication, especially when dealing with sensitive topics related to congenital conditions.

Experiential-Learning Learning 7.10: **Emotional impact on child.**

Total learning hours (3 hours)

1. Procedure: (2 hours)

Scenario Assignment: Divide participants into small groups and distribute scenario cards that outline a family's situation related to each diagnosis, including their emotional state and concerns.

Role-Play: In each group, one participant acts as the healthcare provider, while others portray family members. The provider must engage with the family, acknowledging their emotions and providing reassurance and support.

Key Techniques: Encourage providers to use active listening, validate family concerns, and offer clear information about the condition and treatment process, while maintaining an empathetic demeanour.

2. Feedback and Reflection: (30 minutes)

After the role-play, participants discuss what strategies worked well in providing emotional support and what could be improved.

Each participant writes down their reflections in their journals, focusing on how they can enhance their sensitivity and support for families in similar situations.

3. Debrief: (30 minutes)

Discuss common emotional responses families may experience when facing serious diagnoses and the importance of providing reassurance and support throughout the care process.

Reflect on how empathy and effective communication can positively impact families' experiences during their child's treatment.

Experiential-Learning Learning 7.11: **Urogenital Anomalies.**

Total lerning hours (4 hours)

Materials Needed: Scenario cards detailing different patient cases (e.g., Urogenital Anomalies, Phimosis, Paraphimosis, Hypospadias) with ethical dilemmas and parental concerns.

Guidelines for ethical considerations and communication strategies.

Reflection sheets for participants.

1. Procedure: (2 hours)

Scenario Assignment: Divide participants into small groups and provide each group with a scenario card outlining a case involving a recommended surgical intervention and the associated ethical concerns (e.g., risks vs. benefits, parental anxiety about surgery).

Role-Play: In each group, one participant takes on the role of the healthcare provider, while others act as parents expressing their concerns. The provider must navigate the conversation, addressing ethical considerations and parental worries while advocating for the recommended intervention.

Focus on Communication: Encourage providers to use compassionate communication techniques, actively listen to parental concerns, and provide clear information about the surgery's necessity, risks, and expected outcomes.

2. Feedback and Reflection: (1 hour)

After the role-play, groups discuss the challenges faced in addressing ethical considerations and parental concerns.

Each participant writes their reflections on what they learned about effective communication and ethical practice in surgical recommendations.

3. Debrief: (1 hour)

Discuss the common ethical dilemmas encountered in pediatric surgical cases and how to approach them sensitively. Reflect on the importance of transparency and empathy in fostering trust between healthcare providers and families.	
Modular Assessment	
Assessment	**Hour**
Instructions: Conduct a structured modular assessment. Assessment will be for 75 marks for this module. Keep structured marking patten. Use different assessment methods in each module for the semester. Keep a record of the structured pattern used for assessment. Calculate the Modular grade point as per Table 6 C. **T-EW (Theory Essay Writing)** Conduct a theory exam having **one essay writing** question from any unit of this module **(20 Marks)** **P-MOD (Practical Model)** Conduct a practical examination in which **5 models** kept for spotting **(1*5=5)** **CL-PR (Class Presentation)** Content of the presentation (5 marks) Organisation: Structure and Coherence (2.5*2= 5 Marks) Delivery: Engagement and Clarity (2.5*2= 5 Marks) Visual Aids: Design and Relevance (2.5*2= 5 Marks) Question and Answer session (5 Marks) **C-VC (Clinical Video case)** Clinical Knowledge and Understanding: Accuracy of Diagnosis and Depth of Analysis (5 Marks) Case Presentation Quality: Video content and organisation (5 Marks) Communication Skills: Clarity and engagement (5 Marks) Reflection and Discussion: Critical Reflection and Response to Questions (10 Marks)	6

Or Any practical in converted form can be taken for assessment. (35 marks) and Any of the experiential as portfolio/ reflections/ presentations can be taken as an assessment. (40 marks)	

Module 8 : نفسیاتی واخلاقی امراض Nafsīyātī wa AkhlāqiAmrāẓ (Psychological and Behavioral Disorders)

Module Learning Objectives

(At the end of the module, the students should be able to)

1. Describe the Concept of psychological disorders according to Classical principles (Mizāj, Akhlāṭ, Ṭabīʿat.) and its management.
2. Illustrate the role of nutritional education in changing eating behaviours.
3. Appraise the early signs and symptoms of psychological disorders and their classical interventions.
4. Assess sleep disorders and manage them using Classical interventions.
5. Discuss the characteristics and symptoms of behavioural and conduct disorders in children, such as ADHD (Attention deficit/Hyperactivity disorder),Temper tantrums, and to explore classical medicine approaches for their management.

Unit 1 امراض نفسیاتی کا یونانی نظریہ (Concept of psychological disorders in classical medicine.)

8.1.1. امراض نفسیاتی اور یونانی نظریہ (Amrāẓ Nafsīyātī wa Unānī Nazriya)

8.1.2. یونانی اصول (Unani Uṣūl/ Mizāj, Akhlāṭ, Ṭabīʿat) Unani Principle

8.1.3. Classical medicine in child psychology.

References: 40,47

3A	3B	3C	3D	3E	3F	3G
CO1,CO2,CO3, CO5,CO7,CO8	Describe the concept of psychological disorders in children in the Classical system and their management.	1	Lecture	CAP	Knows-how	L&PPT

CO1,CO2,CO3, CO5,CO7,CO8	Apply skills relevant to the assessment and management of psychological disorders disorders through recent research advancements	2	Practical8.1	PSY-GUD	Shows-how	DIS,RP,W
CO1,CO2,CO3, CO5,CO7,CO8	Motivate the students to engage in community service and outreach programs that promote mental health awareness and provide support for children and families affected by psychological disorders, cultivating a profound commitment to social responsibility and empathy	4	Experiential-Learning8.1	AFT-CHR	Does	W,FV

Unit 2 اضطرابات اکل Iḍṭirābāt al-Akl (Eating disorders)

8.2.1. بولیموس/جوع البقر (Jūʿ al-Baqar/ Būlīmūs) Bulimia

8.2.2. بطلان اشتہا (Buṭlān-i-Ishtihā) Anorexia

8.2.3. فساد شہوت (Fasād al-Shahwa) Pica

8.2.4. اجترار علاج (Ijtirār, ʿIlāj) Rumination

References: 30,31,41,42,52,63

3A	3B	3C	3D	3E	3F	3G
CO1,CO2,CO3, CO5,CO7,CO8	Describe Classical concept of Iḍṭirābāt al-Akl - (eating disorders in children.	1	Lecture	CC	Knows-how	L&PPT
CO1,CO2,CO3, CO5,CO7,CO8	Demonstrations of strategies for nutritional education in eating behaviour disorders.	2	Practical8.2	PSY-GUD	Shows-how	CBL,DIS

CO1,CO2,CO3, CO5,CO7,CO8	Appraise a simulation that inspires children to appreciate the importance of making healthy food choices, fostering a strong sense of responsibility and commitment to their well-being.	3	Experiential-Learning8.2	AFT-VAL	Does	DIS,RP
Unit 3 اضطراب نوم/ذاتویہ Dhātawiyyah/ Iḍṭirāb al-Naūm (Sleep disorders)) 8.3.1. ذاتویہ (Dhātawiyyah) Autism 8.3.2. اضطراب النوم (Iḍṭirāb al-Naūm) Sleep Disorders **References:** 38,64						
3A	**3B**	**3C**	**3D**	**3E**	**3F**	**3G**
CO1,CO2,CO3, CO5,CO7,CO8	Describe in-depth overview of Zataviyyah (Autism), Sleep disorders and its screening tools, management in Classical Medicine.	1	Lecture	CE	Knows-how	L&PPT
CO1,CO2,CO3, CO5,CO7,CO8	Demonstrate the application of investigations such as polysomnography and actigraphy in diagnosing sleep disorders, enabling participants to skillfully implement management strategies in Classical Medicine	3	Practical8.3	PSY-GUD	Shows-how	DIS,D,SIM
CO1,CO2,CO3, CO5,CO7,CO8	Analyze and Interpret a thoughtful exploration of research journals on sleep disorders, emphasizing the importance of regimental therapies such as Naṭūl and Dalak and foster deep emotional engagement through hands-on experiences.	3	Experiential-Learning8.3	AFT-VAL	Does	D,DIS,SIM,CBL,BL
Unit 4 اخلاقی امراض Akhlāqi Amrāẓ (Behavioral Disorders) 8.4.1. Attention Deficit Hyperactivity Disorder (ADHD)						

8.4.2. Oppositional defiant disorder (ODD)

8.4.3. Conduct Disorder

8.4.4.مزاج غاضب(MizājGhāḍib) Temper Tantrum

8.4.5. Breath holding

References: 33,44

3A	3B	3C	3D	3E	3F	3G
CO1,CO2,CO3, CO5,CO7,CO8	Diagnose and manage strategies for Attention Deficit Hyperactivity Disorder (ADHD), Oppositional Defiant Disorder (ODD), and Conduct Disorder.	2	Lecture	CC	Knows-how	L&PPT
CO1,CO2,CO3, CO5,CO7,CO8	Evaluate recent advances in the management of behavioural disorders.	3	Practical8.4	CE	Shows-how	SIM,RP,L_VC
CO1,CO2,CO3, CO5,CO7,CO8	Discuss and present on the management of behavioural disorders through classical medicine.	3	Experiential-Learning8.4	AFT-SET	Does	PBL,PER,SIM

Practical Training Activity

Practical Training 8.1 Advancements in Psychological Disorders

Activity details:

Total learning hours: 2 hours

Teacher will instruct the students to:

1. Provide recent research articles on psychological disorders for critical review.

Guide participants in evaluating the research methods, results, and conclusions.(30 mins)

Arrange small-group discussions for participants to debate the findings and share insights.(30 mins) 2. Facilitate role-play exercises where participants apply research to mock assessment scenarios.(30 mins) Lead interactive activities to practice creating treatment plans based on the findings. Conclude with a group reflection on practical applications of the research. 30 mns) **Expected competency: It enhances the knowledge of recent research, improves critical evaluation skills, helps in application of research to practice, it helps in improving collaborative discussion.**
Practical Training 8.2 Nutritional Behavior Shaping.
Activity details **Total learning hours: 2 hours** **Practical Instructions for Demonstrating Nutritional Education's Role** **Teacher will instruct the students to:** **1. Develop Educational Content:** Create clear, engaging materials (handouts, presentations and info graphics) that highlight key nutrition concepts and healthy eating practices. (30 mins) **Incorporate Interactive Activities**: Plan hands on activities, such as, meal planning exercises, or food label reading sessions. (30 mins) **2. Use Real Life Examples:** Share success stories or case studies that illustrate positive changes in eating behaviours due to nutritional education. (30 mins) **Encourage Participation:** Facilitate discussions and Q&A sessions to address questions and concerns. (30 mins) **Expected competency: Students understand the impact of nutritional knowledge and the promotion of long-term healthy eating habits through skill development in nutritional counselling.**
Practical Training 8.3 Polysomnography and Actigraphy in Sleep Disorders.
Activity detail: Total learning hours: 3 hours The teacher will instruct the students to:

1. Select Relevant Literature: Choose 2-3 key studies or reviews on polysomnography and actigraphy related to sleep disorders. (1 hour)

2. The teacher will explain the Polysomnography what it measures, and its applications in diagnosing sleep disorders (e.g., sleep apnoea) as well as describe how actigraphy works, its advantages, and limitations compared to polysomnography. (1 hour)

3. Summarize Key Points: Recap the importance of these investigations in diagnosis and treatment. Discuss potential challenges and recent advancements in sleep investigations and classical management. (30 mins)

Provide Additional Resources: Share handouts or links for further reading on sleep disorders and investigation techniques. (30 mins)

Expected competency: Students will gain insight into understanding the role of polysomnography and Actigraphy in Sleep Disorder.

Practical Training 8.4 Managing Behavioural Disorders

Activity details:

Total learning hours: 3 hours

Practical Instructions:

The teacher will instruct the students to

1. Present recent advances in management strategies through a brief lecture or multimedia presentation. (1 hour)

2. Divide participants into small groups and assign them different behavioural disorders to focus on during role-playing exercises, where participants act out interventions and assessments related to their assigned disorders. (1 hour)

3. Guide participants in collaborative discussions after each role-play to analyze what strategies were effective and why. Encourage groups to develop and share treatment plans based on their role-playing experiences. (30 mins)

Conclude with a reflection session, allowing participants to discuss how they can implement these strategies in their practice (30 mins)

Expected competency: Students will be able to identify and evaluate contemporary treatment strategies for behavioural disorders and articulate their implications for clinical practice.

Experiential Learning Activity

Experiential-Learning Learning 8.1: Child Mental Health Promotion.

Activity details:

Total activity hours: 4 hours

1. Participate in Workshops: Organize and conduct workshops in schools or community centers to educate peers and families about mental health issues and available resources. (2 hours).

2. Create Awareness Campaigns: Develop campaigns (posters, social media, events) that raise awareness about mental health, focusing on destigmatization and providing resources for families (1.5 hours).

3. Reflective Practice: Participate in reflection sessions where students discuss their experiences, insights, and the impact of their work on both themselves and the community.(30 mins).

Expected competency: Students will demonstrate improved knowledge of mental health issues in children, develop practical skills in communication and advocacy.

Experiential-Learning Learning 8.2: Healthy eating habits-Education

Activity details:

Total activity hours: 3 hours

1. Engage in fun games that challenge them to identify healthy vs. unhealthy food options, such as food sorting activities or quizzes. (1 hour)

2. Create Meal Plans: Work in small groups to develop balanced meal plans that incorporate a variety of food groups, considering nutritional value and portion sizes. (1 hour)

3. **Role-Playing Scenarios:** Act out scenarios where they make food choices in different settings (e.g., at home, school, or a restaurant), discussing the implications of their choices on health. (30 mins)

Reflective Discussions: Conclude with group discussions reflecting on their experiences, emphasizing how making informed food choices contributes to overall well-being and personal responsibility. (30 mins)

Expected competency: This experiential learning activity allows students to practice and refine their communication skills, understand child centric approaches, ensuring they can effectively educate children about healthy food choices.

Experiential-Learning Learning 8.3: Classical Approaches to Sleep Disorders
Activity details: **Total activity hours: 3 hours** **The teacher will instruct the students to:** **1. Journal Review Sessions:** Read and analyze selected research articles on sleep disorders, focusing on studies related to Naṭūl and Dalak therapies. Discuss findings in small groups to deepen understanding. (1 hour) **2. Hands-On Demonstrations:** Participate in demonstrations of Natul and Dalak techniques. (1 hour) **3. Case Study Analysis:** Work with real-life case studies where these therapies have been applied, discussing outcomes and the emotional and physical impacts on patients. (30 mins) **Group Discussions**: Facilitate peer discussions after activities to reflect on personal experiences, insights gained, and the emotional aspects of working with individuals affected by sleep disorders. (30 mins) **Expected competency: By following these steps, students will be able to critically assess the literature regarding the role of Naṭūl and Dalak in treating sleep disorders and demonstrate practical knowledge of these therapies effectively.**
Experiential-Learning Learning 8.4: Behavioral Disorders and Classical Medicine.
Activity details: **Total activity hours: 3 hours** **1. Group Discussions:** Participate in structured group discussions where students explore various approaches in classical medicine for managing behavioural disorders, sharing knowledge and experiences from clinical classes. (1 hour) **2. Simulation:** Students will interact with simulated pediatric patients (either through virtual simulations or mannequin-based setups) to diagnose and manage behavioral and Conduct Disorder. (1 hour) **3. Reflective Sharing:** Share personal reflections on their experiences in clinical classes, discussing challenges faced and insights gained related to the management of behavioural disorders. (30 mins)

4. Collaborative Problem-Solving: Work in small groups to develop treatment plans for hypothetical cases, integrating classical medicine principles and addressing various aspects of care. Conclude with a feedback session where students provide constructive feedback on presentations and discussions, followed by a reflective session to discuss how these insights can influence their future practice. (30 mins) **Expected competency: By following these steps, students will engage in an enriching experiential learning process, fostering a deeper understanding of behavioural disorders and their management through Unani medicine. Critical evaluation of treatment approaches, insight into patient centred care.**	
Modular Assessment	
Assessment	**Hour**
Instructions: Conduct a structured modular assessment. Assessment will be for 25 marks for this module. Keep structured marking patten. Use different assessment methods in each module for the semester. Keep a record of the structured pattern used for assessment. Calculate the Modular grade point as per Table 6 C. **Summary of Marks Distribution** **SAQS: 5** **CBA: Case-Based Assessment: 10** **C-INT: Conducting Interviews: 5** **C-VC (Clinical-video clips): 5** **1.SAQS**: 5 marks Description **Be Clear and Specific** **Use Open-Ended Prompts**: 2 **CBA**-Case-Based Assessment:(10 marks) Description: Students analyze a case study involving a child with a psychological or behaviorual disorder, discussing diagnosis, management, and treatment.	2

Marks Distribution: Identification of key issues (4 marks) Diagnostic reasoning (3 marks) Suggested management plan (3 marks) **Marks Distribution:** Communication skills (2 marks) Empathy and rapport building (2 marks) Application of knowledge (1 mark) 3. **C-INT: Conducting Interviews:** (5 marks) Description: Students conduct simulated interviews to gather histories from patients (played by peers or actors) and assess psychological concerns. **Marks Distribution:** Use of appropriate questioning techniques (3 marks) ability to gather relevant information (2 marks) **4. C-VC: Clinical video cases (5 marks)** **Select Disorders or Cases** Choose a range of psychological and behavioural disorders Consider using real or hypothetical case studies for analysis. **Gather or Create Video Clips** **Sources:** Use existing educational videos or documentaries. **Marks Distribution**	

Create a rubric to evaluate students understanding based on: Accuracy of information 1 Depth of analysis 2 Application of theoretical concepts:1 Communication skills :1 Or Any practical in converted form can be taken for assessment. (25 marks) OR Any of the experiential as portfolio/ reflections/ presentations can be taken as an assessment. (25 marks)	

Paper No : 2(امراض اطفال عمومی دوم)Amraze Atfal Umoomi Dowem) General Pediatrics -Part 2)

Semester No : 3

Module 9 : مناعت کے اصول و ضوابط و افعال)Manaat ke usool wa zawabit wa afaal) Principles of Immunization and Function of Immune System

Module Learning Objectives

(At the end of the module, the students should be able to)

1. Describe the components of the immune system
2. Discuss the function of antibodies and immunoglobulins
3. Identify and differentiate between immune responses
4. Describe1 the principles of immunization
5. Identify and classify adverse effects following immunization (AEFI)

Unit 1 تعارف مناعتی نظام)Taaruf-i Manaati nizam) Introduction to the Immune System.

9.1.1. Innate vs. Adaptive Immunity

9.1.2. Key immune organs and cells involved in the response

9.1.3. Functions of antibodies and immunoglobulins

References: 44,63

3A Course Outcome	3B Learning Objective (At the end of the (lecture/practical training /experiential learning) session, the students should be able to)	3C Notional learning Hours	3D Lecture/ Practical Training/ Experiential Learning	3E Domain / Sub Domain	3F Level (Does/Shows how/Knows	3G Teaching Learning Methods

					how/Know)	
CO1,CO3,CO5	Describe the differences between innate and adaptive immunity.	1	Lecture	CC	Knows-how	L&PPT
CO1,CO3,CO5	Discuss the roles of key immune organs (e.g., lymph nodes, spleen) and cells (e.g., T-cells, B-cells) in the immune response.	2	Practical9.1	AFT-REC	Shows-how	DIS,LRI,CBL,PBL,D
CO1,CO3,CO5	Illustrate the functions of antibodies and immunoglobulins in immune defences.	3	Experiential-Learning9.1	AFT-REC	Does	TBL,DIS,D,DL,PER

Unit 2 مدافعتی ردعمل اور زود حساسیت (Mudafi-ati radde amal aur zood-hassasiyat) Immune Responses and Hypersensitivity

9.2.1. Mechanisms of immune responses

9.2.2. Types of hypersensitivity reactions (Type I-IV)

References: 44,63

3A	3B	3C	3D	3E	3F	3G
CO1,CO3,CO5	Describe and classify the four types of hypersensitivity reactions (Type I-IV)	2	Lecture	CE	Knows-how	FC
CO1,CO3,CO5	Identify different types of hypersensitivity reactions (Type I-IV) based on clinical presentation, investigations and patient history.	4	Practical9.2	CAN	Shows-how	RP,W,D-M,SIM,D
CO1,CO3,CO5	Explore and present the common clinical conditions associated with each hypersensitivity type, such as asthma or allergic rhinitis.	6	Experiential-Learning9.2	AFT-SET	Does	D,W,CBL,D-BED,SIM

Unit 3 مناعت کے اصول و جدید مناعتی خاکہ (Manat ke usul wa jaded manati khaka) Immunization Principles and Updated Schedule:

9.3.1. Overview of immunization principles.

9.3.2. Recent updates to national and global immunization schedules.

9.3.3. Vaccination strategies for different populations.

References: 44,63

3A	3B	3C	3D	3E	3F	3G
CO1,CO3,CO5	Describe the principles of immunization and how vaccines work to prevent diseases	1	Lecture	CC	Knows-how	L&PPT
CO1,CO3,CO5	Demonstrate Simulation exercises on planning immunization drives based on updated schedules	2	Practical9.3	CAP	Shows-how	SIM,RP,TUT,RLE,D
CO1,CO3,CO5	Conduct vaccination sessions or clinics, analysing immunization coverage data	2	Experiential-Learning9.3	CAP	Does	W,D-BED,RP,D,RLE

Unit 4 تمنیع کے بعد منفی اثر التعارف، تقسیم، تشخیص اور انتظام وعلاج (Tamnee k bad manfi asrat-Ta-aaruf, Taqseem, Tashkheesh aur intzam/ ilaj) Adverse Effects Following Immunization (AEFI) - Introduction and Classification,diagnosis& management:

9.4.1. Definition and significance of AEFI.

9.4.2. Classification of AEFI. (Mild, Severe, Serious)

9.4.3. Diagnostic approaches.

9.4.4. Clinical management and follow-up for AEFI cases.

References: 44,63

3A	3B	3C	3D	3E	3F	3G

CO1,CO3,CO5	Describe the concept of Adverse Events Following Immunization and its importance in public health.	1	Lecture	CAN	Knows-how	L&PPT
CO1,CO3,CO5	Classify manage and refer adverse events following Immunization into mild, severe, and serious reactions, based on clinical presentations of patient.	2	Practical9.4	AFT-REC	Shows-how	PT,CBL,SDL,TUT,D
CO1,CO3,CO5	Evaluate and present cases of Adverse Events Following Immunization and develop the skills to asses, manage and document AEFIs	2	Experiential-Learning9.4	AFT-REC	Does	BS,CBL,SIM,RLE

Practical Training Activity

Practical Training 9.1 Immune Response Regulation

ELISA (for cytokine & immunoglobulin detection) (Total Time Duration: 2 hours)

Procedure:

1. Cytokine Detection (Time Duration 1 hour)

The teacher will demonstrate ELISA (Enzyme-Linked Immunosorbent Assay) to detect specific cytokines (e.g., IL-2, IL-6, TNF-α) in a blood sample.

Interpret the role of cytokines in mediating immune responses (inflammatory vs. anti-inflammatory).

2. Immunoglobulin Detection (Time Duration 1 hour)

Use an ELISA kit to quantify levels of different immunoglobulin classes (IgG, IgM, IgA) in a sample.

The teacher Discuss the clinical significance of immunoglobulin levels, especially in primary immunodeficiencies or allergies (e.g., elevated IgE in allergic reactions).

Practical Training 9.2 Diagnosis of Hypersensitivity Reactions:.

Activities: (Total time Duration: 4 hours)

1. Case-Based Learning: (Time Duration:1 hour)

Allergy Clinic:

Set up or visit an allergy clinic where students can observe and participate in diagnosing and managing hypersensitivity reactions in real-time.

Patient Examination:

The teacher will conduct physical examinations focusing on signs of hypersensitivity, such as urticaria, angioedema, eczema, etc.

History Taking:

Role-play sessions to practice detailed history taking for allergic conditions.

2. Diagnostic Procedures:(Time Duration:1 hour)

Skin Prick Testing:

Teach students how to conduct and interpret skin prick tests for identifying allergen sensitivities.

Serum IgE Levels: Introduce methods for obtaining and analysing IgE levels.

3. Emergency Management:(Time Duration:1 hour)

Anaphylaxis Management:

The teacher will conduct workshops on the step-by-step management of anaphylaxis, including epinephrine administration, airway management, and IV fluids.

Simulation:

Use mannequins or virtual simulation tools to practice the management of acute hypersensitivity reactions.

Use of Autoinjector:

Demonstrate how to correctly use an epinephrine autoinjector (e.g., EpiPen).

4. Patient and Family Counselling:(Time Duration:1 hour)

Education Sessions:

Role-play scenarios on counseling families on home management, lifestyle adjustments, and emergency preparedness.

Practical Training 9.3 Techniques and Routes of Vaccine Administration

Activities: (Total time Duration: 2 hours)

The teacher should demonstrate the Introduction of common vaccine administration routes: Intramuscular (IM), Subcutaneous (SC), Intradermal (ID), and Oral.

Explain which vaccines are administered via each route (e.g., IM for DTP, SC for MMR, Oral for Rotavirus).

Discuss the rationale behind different routes based on vaccine composition and absorption needs.

1. Demonstration of Intramuscular (IM) Vaccine Administration:(Time Duration:40 mins)

Instructions:

Site Selection: Use the anterolateral thigh for infants under 12 months and the deltoid muscle for children over 1 year.

Needle Size and Angle: Teach appropriate needle size (e.g., 25mm, 22–25 gauge for infants) and angle (90 degrees).

Demonstration: Perform a step-by-step demonstration on a mannequin or simulated patient, showing:

Proper patient positioning.

Skin preparation with an alcohol swab.

Needle insertion at a 90-degree angle.

Vaccine delivery and removal of the needle.

Student Practice: Allow students to practice under supervision using mannequins or models.

2. Demonstration of Subcutaneous (SC) Vaccine Administration:(Time Duration:40 mins)

Instructions:

Site Selection: Use the outer aspect of the upper arm or thigh for subcutaneous injections (e.g., MMR).

Needle Size and Angle: Instruct on using a 16mm, 25-gauge needle and a 45-degree angle for SC injections.

Demonstration: Show how to:

Pinch the skin to lift the subcutaneous tissue.

Insert the needle at a 45-degree angle.

Inject the vaccine slowly and withdraw the needle.

Student Practice: Students should practice under supervision on models, emphasizing needle angle and slow injection technique.

3. Demonstration of Intradermal (ID) Vaccine Administration: (Time Duration:40 mins)

Learning Objective: To learn the technique of intradermal vaccine administration, especially for BCG vaccination.

Instructions:

Site Selection: Use the inner surface of the forearm for intradermal injections.

Needle Size and Angle: Use a 10mm, 26–27 gauge needle at a 10–15 degree angle.

Demonstration: Step-by-step guidance on:

Stretching the skin and inserting the needle with the bevel up at a shallow angle.

Injecting a small volume of vaccine to create a wheal (a small raised area of the skin).

Avoiding injection too deep to prevent subcutaneous administration.

Practical Training 9.4 Adverse Events Following Immunization.

Activities: (Total time Duration: 2 hours)

1. Recognition and Classification:(Time duration:20 mins)

Teach students to identify common AEFI such as fever, swelling, and anaphylaxis.

Categorize AEFI into mild (localized reactions), moderate (febrile seizures), and severe (anaphylaxis).

2. Immediate Response:(Time duration:30 mins)

The teacher should demonstrate management of anaphylaxis (administer epinephrine, airway management).

Teach seizure control (e.g., diazepam administration) and stabilization of the child.)

3. AEFI Documentation:(Time duration:20 mins)

The teacher will show how to fill out AEFI reporting forms, including vaccine batch, event details, and follow-up care.

Train students in reporting systems and protocols.

4. Monitoring Post-Immunization:(Time duration:20 mins)

Practice observing children for 15-30 minutes post-vaccination, focusing on early signs of severe reactions.

5. Communication and Counseling:(Time duration:30 mins)

Teach how to provide pre-vaccination counseling about potential AEFI and post-event care.

Emphasize calm and clear communication when addressing caregiver concerns.

Experiential Learning Activity

Experiential-Learning Learning 9.1: Immune System Organs and Immune Response

Activities: (Total Time Duration: 3 hours)

1. Immune System Anatomy Exploration:(Time Duration:1 hour)

Conduct a lab session using models and diagrams to identify and describe the major components of the immune system.

Instructions:

Provide labelled diagrams and 3D models of lymphatic organs.

Divide students into groups and assign each group to present on a specific organ, highlighting its function in the immune response.

2. Simulating Immune Responses:(Time Duration:1 hour)

Role-play or simulation of an immune response to an infection (e.g., bacterial invasion).

Instructions:

Assign roles (e.g., antigen, B-cell, T-cell) to students to illustrate how the immune response is activated and how cells communicate.

Use props (e.g., colored balls for pathogens) to enhance visualization of immune interactions.

3. Laboratory Diagnostics and Interpretation:(Time Duration:1 hour)

Analyze blood samples to interpret immune function and diagnose conditions.

Instructions:

Provide students with hypothetical lab results (e.g., CBC, immunoglobulin levels) and guide them through interpreting the results.

Discuss how these findings relate to clinical conditions like allergies or immunodeficiencies.

Experiential-Learning Learning 9.2: Hypersensitivity Reactions

Activities:(Total time Duration: 6 hours)

1. Classification Workshop:(Time Duration:2 hours)

Activity: Conduct a workshop to classify and discuss the different types of hypersensitivity reactions.

Instructions:

Provide case scenarios for each hypersensitivity type.

In groups, students classify reactions based on clinical presentations and mechanisms.

Discuss findings as a class, emphasizing key characteristics of each type.

2. Recognition and Assessment:(Time Duration:1.5 hours)

Activity: Simulation of clinical presentations of hypersensitivity reactions.

Instructions:

Use standardized patients or simulated patients, to present cases of allergic reactions (e.g., anaphylaxis, urticaria).

Train students to assess symptoms, perform physical examinations, and identify critical signs.

Discuss differential diagnoses with a focus on distinguishing between types of hypersensitivity reactions.

3. Emergency Management Training:(Time Duration:1.5 hours)

Activity: Role-play scenarios for managing acute hypersensitivity reactions.

Instructions:

Simulate a case of anaphylaxis in a pediatric patient.

Practice administering epinephrine, providing airway management, and monitoring vital signs.

Discuss post-management care and follow-up procedures.

4. Case-Based Learning:(Time Duration:1 hour)

Activity: Analyze clinical case studies of hypersensitivity reactions.

Instructions:

Present cases involving different hypersensitivity types, including patient history, clinical presentation, and laboratory findings.

Guide students in diagnosing the type of hypersensitivity and formulating a management plan.

Encourage discussion on potential complications and the importance of follow-up.

Experiential-Learning Learning 9.3: Vaccine Types and Immunization Principles with Updated Schedules.

Activities (Total time Duration: 2 hours)

1. Practical Demonstration of Vaccine Types (Time duration:30 mins)

Activity: Organize a hands-on session demonstrating various vaccines available in clinical practice.

Instructions:

Provide physical samples or visual representations of different vaccines.

Students will identify their categories (live attenuated, inactivated, etc.) and discuss their usage.

2. Working with Immunization Schedules:(Time duration:30 mins)

Activity: Use real or simulated patient profiles to create personalized immunization schedules based on the latest guidelines.

Instructions:

Assign case studies of pediatric patients with varying ages, health conditions, and vaccination history.

Students will apply current immunization guidelines to develop vaccination plans for each case.

3. Vaccine Administration Techniques:(Time duration:30 mins)

Activity: Role-play the proper administration of vaccines using mannequins or simulated arms.

Instructions:

Assign students to practice intramuscular, subcutaneous, and oral vaccine administration techniques.

Supervise and assess their ability to administer vaccines accurately and safely.

4. Case Studies in Contraindications:(Time duration:30 mins)

Activity: Present case scenarios where contraindications or precautions to vaccines are relevant.

Instructions:

Facilitate group discussions on how to handle patients with contraindications (e.g., immunocompromised, allergic to vaccine components).

Students will make decisions on delaying or modifying vaccination schedules.

Experiential-Learning Learning 9.4: Adverse Events Following Immunization.

Activities (Total time Duration: 2 hours)

1. Case-Based Learning on AEFI:(Time duration:30 mins)

Activity: Provide students with real-life or simulated case studies involving AEFI.

Instructions:

Present cases with varying severity, from mild fever to severe anaphylaxis.

Have students diagnose the type of AEFI and propose appropriate management strategies, including when to escalate care.

Discuss the differential diagnosis to exclude non-vaccine-related causes of symptoms.

2. AEFI Management Simulation:(Time duration:45 mins)

Activity: Simulate the management of severe AEFI, such as anaphylaxis.

Instructions:

Conduct a mock scenario where a pediatric patient experiences a severe reaction post-vaccination.

Students will practice emergency response protocols, including administration of epinephrine, airway management, and patient stabilization.

3. Reporting AEFI Exercise:(Time duration:45 mins)

Activity: Train students on the correct process for documenting and reporting AEFI to health authorities.

Instructions:

Provide a simulated AEFI event.

Students will complete a mock AEFI report form, ensuring that all relevant details are captured accurately.

Emphasize the importance of timely reporting and maintaining a transparent relationship with public health authorities.

Modular Assessment

Assessment	Hour
Instructions: Conduct a structured modular assessment. Assessment will be for **25 marks**. Keep a structured marking pattern. Use different assessment methods in each module for the semester. Keep a record of the structured pattern used for assessment. Calculate the Modular grade point as per Table 6 C. **Marks Distribution (Total 25 Marks)** **Role-Play Simulation (5 marks)** **Description:** Students act out scenarios where they must explain immunization benefits to a “patient” or “parent.” **Purpose:** Evaluates ability to communicate complex immunological concepts clearly. 5 Marks **Short Answer Questions (SAQs) – 10 Marks** **Purpose:** Assess students understanding and ability to articulate core concepts. **Structure:** 5 SAQs, 2 marks each, covering each unit in detail. **Example Questions:** Unit 1: Define antigen and antibody and their role in the immune response. Unit 2: Describe primary and secondary immune responses. Unit 3: Explain the concept of herd immunity and its importance. Unit 4: Briefly outline the classification of AEFIs. 10 Marks **Case-Based Questions (CBQs) – 6 Marks** **Purpose:** Test applied knowledge and critical thinking skills in real-life scenarios. **Structure:** 2 case-based scenarios, 3 marks each. **Example Case Scenarios:**	2

Unit 3: A mother brings her child for vaccination and is concerned about AEFI. Describe how you would explain the importance of immunization and address common concerns. Unit 2: A patient with an egg allergy needs an influenza vaccine. Describe how you would proceed, considering potential hypersensitivity. 6 Marks **Reflective Writing Task – 4 Marks** Purpose: Assess students ability to reflect on and synthesize concepts from across the module and to connect theoretical knowledge with real-world implications. Structure: A short reflective response where students address how immunization impacts public health and how understanding the immune system and AEFI supports safe immunization practices. **Example Task:** Prompt: In a brief paragraph (100-150 words), reflect on how an understanding of the immune system, immune responses, and AEFI contributes to the success of immunization programs and public health. Describe how this knowledge might help address vaccine hesitancy among patients. Any practical in converted form can be taken for assessment. (25 marks) **OR** Any of the experiential as portfolios/ reflections/ presentations can be taken as an assessment. (25 marks)	
Module 10 : حفاظت جدرینہ، بارد ترسیل اور جدرینہ کی اقسام (Hifazate judreena, Barid Tarseel aur judreena ki aqsam) Vaccine Preservation, Cold Chain, and Vaccination Types.	
Module Learning Objectives (At the end of the module, the students should be able to) 1. Describe the importance of vaccine preservation 2. Describe the components and functioning of the cold chain system	

3. Apply guidelines for vaccine storage, handling, and transport
4. Differentiate between standard and optional vaccines
5. Discuss vaccine shelf life and cold chain maintenance

Unit 1 حفاظت جدرینہ کا تعارف اور بارد ترسیل (Hifazate hudreena ka taaruf aur barid tarseel) Introduction to Vaccine Preservation and Cold Chain

10.1.1. Importance of maintaining the cold chain for vaccine efficacy

10.1.2 Key elements of the vaccine preservation process.

References: 44,63

3A	3B	3C	3D	3E	3F	3G
CO3,CO7,CO8	Describe the importance of vaccine preservation and the cold chain system for vaccine efficacy.	1	Lecture	CC	Knows-how	L&PPT
CO3,CO7,CO8	Discuss the factors that impact vaccine preservation.	2	Practical10.1	AFT-RES	Shows-how	TUT,RLE,SIM,W
CO3,CO7,CO8	Analyze the consequences of cold chain failures on vaccine potency.	2	Experiential-Learning10.1	CAN	Does	DIS,SIM,RLE,CBL

Unit 2 بارید ترسیل ک آلات، بارد ترسیل کی مرمت، اور حرارت کی نگرانی (Barid tarseel k Aalat, barid tarseel ki marammat, aur Hararat ki nigrani) Cold Chain Equipment ,cold chain repair and Temperature Monitoring

10.2.1. Overview of cold chain equipment (refrigerators, coolers, etc.)

10.2.2. Methods for monitoring temperature in cold chain maintenance

10.2.3. Strategies for maintaining cold chain equipment and repairing faults

References: 44,63

3A	3B	3C	3D	3E	3F	3G
CO3,CO7,CO8	Illustrate the different types of cold chain equipment used in vaccine storage (e.g., refrigerators, freezers).	1	Lecture	CC	Knows-how	L&PPT
CO3,CO7,CO8	Explore and recall the methods and tools for monitoring temperature in cold chain management.	2	Practical10.2	PSY-MEC	Shows-how	TUT,SIM,D
CO3,CO7,CO8	Apply key temperature thresholds for the preservation of various vaccines.	3	Experiential-Learning10.2	CAP	Does	W,PER,DIS,SIM,D

Unit 3 ذخیرہ اندوزی، اسکہ سمبھالنا اور اسکی منتقلی کے لیے رہنما خطوط (Zakheera andozi, usko sanbhalna aur uski muntaqli k liye rahnuma khutoot) Guidelines for Vaccine Storage, Handling, and Transport

10.3.1. WHO and national guidelines for vaccine storage

10.3.2. Best practices for handling and transportingvaccines.

References: 44,63

3A	3B	3C	3D	3E	3F	3G
CO3,CO7,CO8	Describe the WHO and national guidelines for vaccine storage, handling, and transport.	1	Lecture	CC	Knows-how	L&PPT
CO3,CO7,CO8	Discuss the importance of following best practices for vaccine handling to prevent spoilage.	2	Practical10.3	PSY-GUD	Shows-how	D,PBL
CO3,CO7,CO8	Identify common errors in vaccine transport that can lead to a breakdown in the cold chain.	3	Experiential-Learning10.3	CAN	Does	PER,RP,DIS,SIM

Unit 4 مروجہ اور اختیاری جدرینہ (Muravvajah aur ikhtiyari judreena) Standard and Optional Vaccines.

10.4.1. Overview of mandatory standard vaccines (DPT, MMR, Hep B, etc.)

10.4.2. Target populations and vaccination schedules for standard vaccines

10.4.3. Definition and examples of optional vaccines

References: 44,63

3A	3B	3C	3D	3E	3F	3G
CO3,CO7,CO8	Describe the standard (mandatory) vaccines and their target populations (e.g., DPT, MMR, Hep B).	1	Lecture	CC	Knows-how	L&PPT
CO3,CO7,CO8	Discuss the role of optional vaccines and their importance in specific populations.	2	Practical10.4	PSY-GUD	Shows-how	RP,CBL,DIS,SIM
CO3,CO7,CO8	Identify vaccination schedules for both standard and optional vaccines.	3	Experiential-Learning10.4	AFT-SET	Does	RP,CBL

Unit 5 تاریخ اختتام، مدت استعمال، بقا اور سرد ترسیل کا نظام (Tareekh e ikhtetam, muddate istemal/ baqa aur sard tarseel ka intezam) Vaccine Expiry, Shelf Life, & Cold chain maintenance

10.5.1. Shelf life and expiry monitoring for vaccines

References: 44,63

3A	3B	3C	3D	3E	3F	3G
CO3,CO7,CO8	Describe the importance of monitoring vaccine expiry dates and shelf life.	1	Lecture	CC	Know	L&PPT
CO3,CO7,CO8	Discuss strategies for maintaining cold chain equipment and addressing breakdowns.	2	Practical10.5	PSY-GUD	Shows-how	W,SIM

CO3,CO7,CO8	Identify key steps to repair cold chain equipment and ensure vaccine safety during failures.	2	Experiential-Learning10.5	AFT-RES	Does	W,RP

Practical Training Activity

Practical Training 10.1 Vaccine storage and transport.

Activities (Total time Duration: 2 hours)

1. Vaccine Storage Exercise (Time Duration: 1 Hour)

Activity: The teacher will organize a hands-on session where students learn to store vaccines correctly.

Instructions:

- Assign students to categorize vaccines based on their storage requirements.
- Supervise them as they place vaccines in the appropriate sections of a refrigerator/ice line refrigerator and maintain an accurate storage log.

2. Vaccine Transport Simulation (Time Duration: 1 Hour)

Activity: Practice the proper techniques for vaccine transportation.

Instructions:

- Use insulated containers and cold boxes to demonstrate vaccine transport.
- Students will pack vaccines and maintain cold chain integrity during a simulated transport scenario, ensuring temperature stability throughout the process.

Practical Training 10.2 Vaccine Preservation.

Activities (Total time Duration: 2 hours)

1. Demonstration of Cold Chain Equipment:(Time Duration: 45 mins)

Activity: The teacher will provide a hands-on demonstration of different types of cold chain equipment.

Instructions:

Introduce students to various cold chain devices like refrigerators, cold boxes, vaccine carriers, and ice packs.

Allow students to inspect and operate the equipment to understand its components and functions.

2. **Operation and Maintenance Practice::(Time Duration: 45 mins)**

Activity: Simulate daily operations and maintenance of cold chain equipment.

Instructions:

Assign students to practice turning on, loading, and setting temperature controls on cold chain equipment.

Teach them basic maintenance routines, such as defrosting refrigerators and cleaning vaccine carriers.

3. Temperature Monitoring Exercise::(Time Duration: 30 mins)

Activity: Conduct a session on temperature monitoring techniques.

Instructions:

Equip students with thermometers and electronic data loggers.

The teacher will instruct them to take and log temperature readings at regular intervals, ensuring that the temperature remains within the recommended range for vaccine storage.

Practical Training 10.3 Vaccine Preservation.

Activities (Total time Duration: 2 hours)

1. Demonstrate Temperature Sensitivity of Vaccines:(Time Duration: 1 Hour)

Activity: The teacher will use mock vaccines and temperature-sensitive indicators to show how deviations from the recommended storage temperatures affect vaccines.

Instructions:

The teacher will show how to monitor the refrigerator temperature using thermometers or data loggers.

Demonstrate how to document temperature variations and identify when vaccines should be discarded due to temperature breaches.

2. Demonstrate the Effect of Light Exposure:(Time Duration: 1 Hour)

Activity: Show how exposure to light can degrade certain vaccines.

Instructions: Students will practice identifying vaccines that are sensitive to light (e.g., oral polio vaccines) and demonstrate how to store them in opaque containers or dark areas to prevent exposure.

Practical Training 10.4 Role of optional vaccines.

Activities (Total time Duration: 2 hours)

1. Demonstration of Optional Vaccines Overview: (Time Duration:30 mins)

Activity: Provide an overview of the most commonly used optional vaccines.

Instructions:

- Show students the vaccines that are optional and not included in routine immunization programs, such as HPV, Rotavirus, and Hepatitis A.
- Discuss their indications, efficacy, and the specific populations they are recommended for.

2. Role-Playing Exercise on Patient Identification:(Time Duration:1 Hour)

Activity: Simulate clinical scenarios where students need to identify specific populations eligible for optional vaccines.

Instructions:

- Create case studies involving children with chronic illnesses, immunodeficiency, or geographic risk, and ask students to determine which optional vaccines should be recommended.

3. Counseling Parents on Optional Vaccines:(Time Duration:30 mins)

Activity: Role-play a counseling session where students explain the importance of optional vaccines to a parent or caregiver.

Instructions:

- Assign students to counsel parents on the benefits, potential side effects, and necessity of optional vaccines.
- Focus on addressing common concerns or misconceptions and guiding parents toward informed decision-making.

Practical Training 10.5 Cold Chain Management Strategies.

Activities (Total time Duration: 2 hours)

1. **Cold Chain Equipment Inspection (Time Duration 30 mins)**

Activity: Conduct a hands-on inspection of various cold chain equipment (refrigerators, freezers, and coolers) to identify maintenance needs and ensure they are functioning correctly.

2. Cold Chain Monitoring and Documentation (Time Duration 30 mins)

Activity: Practice using temperature monitoring devices to track and document temperature changes over time in a simulated cold chain environment.

3. Scenario-Based Problem Solving (Time Duration 30 mins)

Activity: Engage in scenario-based exercises where students must respond to simulated cold chain breakdown situations (e.g., power outage, equipment malfunction) and outline their action plans.

4. Cold Chain Equipment Maintenance Training (Time Duration 30 mins)

Activity: Participate in a workshop on the maintenance and troubleshooting of cold chain equipment, including cleaning, calibration, and identifying common issues.

Experiential Learning Activity

Experiential-Learning Learning 10.1: Cold Chain Failures.

Activities (Total time Duration: 2 hours)

1. Case Studies on Cold Chain Failures:(Time Duration: 1 Hour)

Activity: Analyze real-life case studies where cold chain failures occurred and their impact on vaccine effectiveness.

Students will review case studies involving cold chain breaches and discuss the outcomes, including vaccine wastage and disease outbreaks.

Facilitate group discussions to explore the consequences for public health and healthcare systems.

2. Simulated Cold Chain Failure Scenario:(Time Duration: 1 Hour)

Activity: Simulate a scenario involving a cold chain failure (e.g., power outage, equipment malfunction).

Students will work in teams to respond to the simulated failure, identifying the problem and implementing corrective actions.

Discuss the immediate steps to take, including the assessment of vaccine potency, documentation of the incident, and notification of relevant authorities.

Experiential-Learning Learning 10.2: Vaccine Transport.

Activities (Total time Duration: 3 hours)

1. Identifying Common Transport Errors:(Time Duration: 1.5 Hours)

Activity: Engage students in a discussion on common errors in vaccine transport.

Instructions:

Students will present case studies or scenarios where cold chain failures occurred due to transport errors (e.g., improper packing, failure to use insulated containers, or long transit times).

Encourage students to identify and discuss these common mistakes and their consequences.

2. Simulated Transport Scenario:(Time Duration: 1.5 Hours)

Activity: Simulate a vaccine transport scenario.

Instructions:

Students will participate in a mock transport exercise where they must plan and execute the transport of vaccines, considering factors such as temperature control and packing methods.

Discuss the challenges encountered and how they were addressed to maintain cold chain integrity.

Experiential-Learning Learning 10.3: Cold Chain Protocols.

Activities (Total time Duration: 2 hours)

1. Overview of Cold Chain Fundamentals:(Time Duration: 2 Hours)

Activity: Introduce the principles of cold chain management.

Instructions:

2-3 Students will deliver a lecture or presentation on the importance of maintaining the cold chain for vaccines, detailing how temperature variations can affect vaccine potency.

Discuss relevant guidelines and standards from organizations like WHO and CDC.

2. Cold Chain Protocol Implementation:(Time Duration: 1 Hour)

Activity: Simulate the implementation of cold chain protocols.

Instructions:

Create scenarios for students to practice establishing and following cold chain protocols in different settings (e.g., clinics, mobile vaccination units).

Have students role-play scenarios that require them to apply cold chain principles during vaccine administration.

Experiential-Learning Learning 10.4: Vaccine Schedules

Activities (Total time Duration: 3 hours)

1. Vaccine Schedule Case Studies (Time Duration: 30 mins)

Activity: Students analyse case studies representing patient profiles (age, health conditions, travel history) to determine the appropriate vaccination schedules.

2. Interactive Role-Playing (Time Duration: 1 Hour)

Activity: In pairs or small groups, students role-play as healthcare providers and patients discussing vaccination options, concerns, and schedules.

3. Vaccine Schedule Chart Creation(Time Duration: 30 mins)

Activity: Groups create a visual chart or infographic detailing standard and optional vaccines, including recommended ages, doses, and timing.

4. Field Visits to Immunization Clinics(Time Duration: 1 Hour)

Activity: Organize field trips to local immunization clinics to observe the administration of vaccines and how healthcare providers implement vaccine schedules.

Experiential-Learning Learning 10.5: Effective Cold Chain Management

Activities (Total time Duration: 2 hours)

1. Cold Chain Equipment Audit (Time Duration 40 mins)

Activity: Conduct a hands-on audit of cold chain equipment in a simulated or real environment, assessing operational effectiveness and identifying maintenance requirements.

2. Temperature Monitoring Workshop (Time Duration 40 mins)

Activity: Participate in a workshop on using temperature monitoring devices (e.g., data loggers, thermometers) to record and analyze temperature data over time.

3. Role-Playing Emergency Response Scenarios (Time Duration 40 mins)

Activity: Engage in role-playing exercises that simulate cold chain breakdown scenarios, where students must respond as a team to address the failure (e.g., power outage, equipment malfunction).	
Modular Assessment	
Assessment	**Hour**
Instructions: Conduct a structured modular assessment. Assessment will be for **25 marks**. Keep structured marking patten. Use different assessment methods in each module for the semester. Keep a record of the structured pattern used for assessment. Calculate the Modular grade point as per Table 6 C. **Marks Distribution** **Cold Chain Process Mapping (5 marks)** **Description:** Students create a process map of the cold chain logistics from vaccine production to administration. **Purpose:** Assesses understanding of the step-by-step cold chain process and its importance in vaccine preservation. **Short Answer Questions (SAQs) – 10 Marks** **Purpose:** Assess students' understanding and ability to explain core concepts. **Structure:** 5 SAQs, 2 marks each, covering each unit. **Case-Based Questions (CBQs) – 6 Marks** **Purpose:** Test applied knowledge and critical thinking in real-life scenarios related to cold chain management and vaccine handling. **Structure:** 2 case-based questions, 3 marks each. **Example Case Scenarios:** **Unit 2:** You discover that a refrigerator used to store vaccines has been operating above the recommended temperature. Explain how you would handle the vaccines and the steps to restore safe storage. **Unit 3:** While transporting vaccines to a remote clinic, an unexpected delay occurs. Describe the procedures you would follow to maintain proper storage conditions during transit.	2

Diagram Analysis – 4 Marks **Purpose:** Assess students' ability to interpret and analyze visual information related to cold chain and vaccine management. **Structure:** Provide a diagram or chart showing a cold chain storage process, and ask students to analyze or interpret key elements. **Example Task:** Analyze a cold chain equipment temperature monitoring chart, identifying potential temperature breaches and explaining their impact on vaccine effectiveness. **Total: 25 Marks** Any practical in converted form can be taken for assessment. (25 marks) **OR** Any of the experiential as portfolios/ reflections/ presentations can be taken as an assessment. (25 marks)	

Module 11 : بچوں میں نئے ابھرنے والے لیکن جدرینہ سے قابل انسداد قشعی بیماریاں (Bachon m naye ubharne wali lekin judreena se qabile insedad Qashbi bimaryan) Emerging, Common and Vaccine-Preventable Viral Infections in Pediatrics.

Module Learning Objectives

(At the end of the module, the students should be able to)

1. Discuss the epidemiology, transmission, and pathogenesis of major infectious viral diseases in paediatric populations.
2. Identify the clinical presentation, diagnostic criteria, and complications of common paediatric viral infections.
3. Describe the importance of vaccination in preventing viral infections and discuss immunization schedules relevant to paediatric viral diseases.
4. Develop appropriate management and treatment plans for children diagnosed with viral infections, including supportive care, antiviral therapies, and monitoring.
5. Analyse the role of public health strategies in controlling and preventing viral outbreaks, including surveillance, vector control, and isolation protocols.
6. Evaluate the complications and long-term sequelae of paediatric viral infections, such as chronic lung disease, neurological deficits, or immunosuppression.

7. Discuss the global and national efforts toward viral disease eradication and control, focusing on diseases like poliomyelitis and rubella.

Unit 1 قسمی امراض طفحیہ بیرونی، اور عہد طفلی کے امراض (Qasbi amraze tafahiya bairooni, aur ahde Tifli k amraz) Viral Exanthems and Childhood Diseases

11.1.1. حمیقا Ḥumayqa (Chickenpox)

11.1.2. حصبہ Ḥaṣba (Measles)

11.1.3. German Measles (Rubella, Three-Day Measles)

11.1.4. ورم اصل الاذن Warm e Aslul Uzn (Mumps)

References: 39,40,42,63

3A	3B	3C	3D	3E	3F	3G
CO1,CO2,CO3, CO5	Describe the etiology, transmission, clinical features, complications, and prevention of Chickenpox and Measles, including the role of MMR vaccination.	2	Lecture	CC	Knows-how	L,L&PPT ,L_VC
CO1,CO2,CO3, CO5	Diagnose and manage complications of Chickenpox and Measles, emphasizing clinical presentation and vaccination strategies.	4	Practical11.1	PSY-GUD	Shows-how	SIM,CBL,RP,D,D-BED
CO1,CO2,CO3, CO5	Identify complications, management, and prevention of Chickenpox and Measles through clinical care and vaccination outreach.	5	Experiential-Learning11.1	AFT-SET	Does	SIM,RP,CBL,D-BED,SDL
CO1,CO2,CO3, CO5	Describe the pathophysiology, clinical features, complications, and prevention of Rubella and Mumps, with emphasis on risks in pregnancy and the role of MMR vaccination.	2	Lecture	CC	Knows-how	L,L&PPT

CO1,CO2,CO3, CO5	Diagnose Rubella and Mumps using clinical and serological findings, manage their complications, and highlight the role of vaccination in prevention.	4	Practical11.2	PSY-GUD	Shows-how	SIM,PER,RP,D-BED,CBL
CO1,CO2,CO3, CO5	Identify complications and congenital risks of viral illnesses like Rubella and Mumps, and discuss their prevention through immunization and management through supportive care.	5	Experiential-Learning11.2	PSY-GUD	Does	W,SIM,CD,CBL,RP

Unit 2 جدرینہ سے قابل انسداد، قشبی دماغی امراض (judreena se qabile insdad, qashbi dimaghi Amraz) Neurological and Vaccine-Preventable Viral Infections

11.2.1. استرخاء Istarkha (Poliomyelitis)

11.2.2. Japanese Encephalitis

11.2.3. داءالکلب Hydrophobia (Rabies)

References: 44,47,55,63

3A	3B	3C	3D	3E	3F	3G
CO1,CO2,CO3, CO5	Describe the epidemiology, transmission, clinical features, and prevention of Poliomyelitis and Japanese Encephalitis, including vaccination strategies.	2	Lecture	CC	Knows-how	L&PPT ,L_VC,L&GD,L
CO1,CO2,CO3, CO5	Conduct clinical and laboratory diagnosis of poliomyelitis and Japanese Encephalitis, participate in AFP surveillance, and manage complications and neurological assessment.	4	Practical11.3	AFT-RES	Shows-how	CBL,D,SIM,PSM,RP
CO1,CO2,CO3, CO5	Identify clinical findings, prevention, and rehabilitation of poliomyelitis and Japanese Encephalitis through immunization drives, community education, vector control, and patient support.	5	Experiential-Learning11.3	CAN	Does	PSM,CBL,D-BED,DIS,SIM

CO1,CO2,CO3, CO5	Describe the Transmission and clinical features (furious and paralytic rabies), Review post-exposure prophylaxis (PEP) protocols and vaccination strategies.	1	Lecture	CC	Knows-how	L,L&PPT
CO1,CO2,CO3, CO5	Demonstrate comprehensive rabies prevention and management, including wound care, vaccine and immunoglobulin administration, exposure risk assessment, and ICU collaboration for suspected cases.	2	Practical11.4	PSY-GUD	Shows-how	CD,SIM,RP,CBL
CO1,CO2,CO3, CO5	Participate in rabies prevention and management through awareness programs, case discussions, and hands-on experience with bite exposures and PEP decision-making.	3	Experiential-Learning11.4	AFT-SET	Does	SIM,CBL,D-BED,FV,CD
Unit 3 نئے وقوع پزیر قشبی تعدیہ (Naye waqoo pazer qashbi taadiya) Emerging Viral infections 11.3.1. حمی دنج Humma E Danj(Dengue Fever) 11.3.2. Chikungunya Fever **References:** 34,44,63,68						
3A	**3B**	**3C**	**3D**	**3E**	**3F**	**3G**
CO1,CO2,CO3, CO5	Describe the epidemiology and transmission of Aedes mosquitoes, and understand the pathophysiology and clinical phases of dengue fever from both Unani and conventional medicine perspectives.	2	Lecture	CC	Knows-how	L_VC,L,L&PPT
CO1,CO2,CO3, CO5	Participate in dengue management and prevention through clinical care, disease monitoring, and community education on early detection and vector control.	3	Practical11.5	PSY-GUD	Shows-how	RP,CD,D,PER,CBL

CO1,CO2,CO3, CO5	Participate in the clinical management and public health prevention of dengue, including monitoring disease progression, managing severe cases, and engaging in community education on early diagnosis and vector control.	4	Experiential-Learning11.5	PSY-GUD	Does	CBL,SIM,PBL,D-BED,BL
CO1,CO2,CO3, CO5	Describe the epidemiology, transmission, and clinical features of Chikungunya, and differentiate it from other febrile illnesses like dengue and Zika.	1	Lecture	CC	Knows-how	L&PPT ,L&GD,L
CO1,CO2,CO3, CO5	Identify the clinical and community-based management of pediatric Chikungunya, focusing on prolonged joint symptoms, prevention strategies, home care education, and case-based discussions.	4	Experiential-Learning11.6	PSY-GUD	Does	SIM,DIS,CBL
CO1,CO2,CO3, CO5	Demonstrate assessment and management of Chikungunya, including musculoskeletal examination, treatment principles (usool e ilaj wa ilaj), and patient education on symptom relief.	3	Practical11.6	PSY-GUD	Shows-how	SIM,PER,CBL,D

Practical Training Activity

Practical Training 11.1 Chickenpox and Measles.

Activities (Total time Duration: 4 hours)

1. Clinical Examination and Diagnosis:(Time Duration: 1 Hour)

Activity: The teacher will Conduct clinical examination of paediatric cases or use simulated patient scenarios.

Instructions: Demonstrate clinical diagnosis by recognizing key symptoms:

Chickenpox: The teacher will discuss vesicular rash that progresses from macules to papules to vesicles.

Measles: The teacher will discuss koplik spots, maculopapular rash, cough, coryza, and conjunctivitis.

Ensure students take comprehensive patient histories, focusing on vaccination status, exposure risk, and symptom onset

2. Differential Diagnosis:(Time Duration: 1 Hour)

Activity: Case-based discussion of differential diagnosis.

Instructions: The teacher will present various paediatric cases with febrile rashes and ask students to differentiate between chickenpox, measles, rubella, mumps, and other viral infections.

Focus on specific clinical features and history to narrow down the diagnosis.

3. Infection Control:(Time Duration: 1 Hour)

Activity: Simulation of infection control measures during an outbreak.

Instructions:

Role-play a scenario where a child with measles or chickenpox visits the clinic. Teach students how to isolate patients to prevent disease spread.

Instruct students on how to counsel families on hygiene practices, quarantine measures, and follow-up care.

4. Complication Management:(Time Duration: 1 Hour)

Activity: Simulated management of complications.

Instructions: Present cases involving complications such as measles with pneumonia, or chickenpox with secondary bacterial infection.

Teach students how to manage these complications with supportive care, antiviral therapy and specialist referral.

Practical Training 11.2 Rubella and Mumps

Activities (Total time Duration: 4 hours)

1. Clinical Case Discussion on Congenital Rubella Syndrome (CRS):(Time Duration: 1 Hour)

Activity:

Present a case of an infant with cataracts, congenital heart disease (PDA), and sensorineural hearing loss.

The teacher will discuss differential diagnoses, confirmatory tests (Rubella IgM/IgG), and long-term management.

2. Immunization Counseling Role-Play:(Time Duration: 1 Hour)

Activity:

A student plays a pediatrician counseling a hesitant parent about the MR/MMR vaccine.

Address common myths, vaccine schedule, contraindications, and importance in preventing CRS.

Mumps

3. Bedside Examination of a Child with Parotitis:(Time Duration: 1 Hour)

Activity:

Examine a child with parotid gland swelling and discuss findings (tenderness, erythema, Stensen's duct involvement).

Compare with other conditions like bacterial parotitis or lymphadenopathy.

4. Case Scenario: Complications of Mumps & Management:(Time Duration: 1 Hour)

Activity:

Present a simulated case of a child with mumps and acute scrotal pain.

Ask students to diagnose mumps orchitis, explain supportive management, and discuss long-term consequences.

Practical Training 11.3 Management of poliomyelitis and Japanese Encephalitis.

Activities (Total time Duration: 4 hours)

1. Clinical Assessment and History Taking (Time Duration: 1 Hour)

Instructions: Train students to collect detailed patient history including vaccination status, recent travel, and neurological symptoms (e.g., paralysis in poliomyelitis, fever, and confusion in encephalitis).

Simulated Patients: Use simulated cases for history-taking exercises.

Group Discussions: Facilitate discussions on differential diagnoses based on patient presentations.

2. Neurological and Physical Examination (Time Duration: 2 Hours)

Instructions: Teach students to perform focused neurological exams to identify signs such as acute flaccid paralysis (**poliomyelitis**) and altered mental status (**encephalitis**),

Hands-on Practice: Practice neurological exams on mannequins or real patients.

Video Demonstrations: Use videos to illustrate typical presentations.

3. Public Health Interventions and Reporting (Time Duration: 1 Hour)

Instructions: Guide students on AFP (poliomyelitis) and encephalitis surveillance and rabies exposure reporting.

Problem-Based Learning (PBL): Assign case scenarios for reporting and outbreak control.

Field Training: Expose students to real-world public health interventions.

Practical Training 11.4 Management of Rabies.

Activities (Total time Duration: 2 hours)

1. Simulated Case of Suspected Rabies Exposure & PEP Administration:(Time Duration: (Time Duration: 1 Hour)

Activity:

Present a simulated case of a child bitten by a stray dog.

Ask students to classify the wound (Category I, II, III) and decide on appropriate PEP measures (washing, vaccination, rabies immunoglobulin).

The teacher demonstrate proper wound care and discuss intradermal vs. intramuscular rabies vaccine administration.

2. Role-Play on Rabies Prevention & Counseling:(Time Duration: 1 Hour)

Activity:

The teacher will conduct a role-play where one student acts as a pediatrician and another as a parent of a child bitten by a pet dog.

The pediatrician should counsel on wound care, vaccination schedules, myths vs. facts, and the importance of animal vaccination.

Practical Training 11.5 Management of Dengue.

Activities (Total time Duration: 3 hours)

1. Clinical Assessment and History Taking (Time Duration: 1 hour)

Teach students to gather detailed patient history, focusing on recent travel to endemic areas, exposure to mosquito bites, and presenting symptoms such as fever, rash, joint pain, and bleeding tendencies.

Simulated Patients/Role-Playing: Use simulated or real-life cases to practice history-taking, focusing on identifying warning signs of severe dengue.

Group Discussions: Engage in interactive group discussions on differential diagnoses (e.g., distinguishing between dengue and other febrile illnesses).

2. Physical Examination and Assessment of Severity(Time Duration: 30 mins)

Train students to conduct physical examinations, focusing on signs like rash, dehydration, hepatomegaly, joint swelling, and signs of bleeding. Teach them to classify cases based on severity (e.g., dengue with warning signs, severe dengue).

Hands-on Practice: Use real or simulated patients to practice physical exams, including identifying the characteristic rash, joint swelling, and assessing for bleeding tendencies.

Video Demonstrations: Show video tutorials on clinical presentations of severe dengue, warning signs.

3. Fluid Management and Supportive Care (Time Duration: 30 mins)

Instruct students on managing fluid therapy for patients with dengue, particularly in cases of dengue haemorrhagic fever (DHF) and dengue shock syndrome (DSS).

Simulated Skill Stations: Set up fluid management scenarios, where students practice calculating and administering fluids based on guidelines for different severities of dengue.

Role-Playing Exercises: Simulate clinical scenarios to teach response to warning signs of shock or haemorrhage, reinforcing decision-making for critical care.

4. Prevention, Vector Control, and Patient Counselling (Time Duration: 1 Hour)

Educate students on prevention methods including mosquito control measures, patient education, and counselling on the use of repellents and protective clothing to reduce exposure to Aedes mosquitoes.

Community Health Engagement: Organize field visits to observe vector control programs or vaccination campaigns.

Demonstrations and Role Plays: Simulate patient counselling sessions where students teach families about prevention strategies, vector control, and the importance of early detection of warning signs.

Practical Training 11.6 Management of Chikungungya.

Activities (Total time Duration: 3 hours)

1. Clinical Case Discussion on Chikungunya Fever:(Time Duration:1 Hour)

Activity: Present a case of a pediatric patient with fever, rash, and joint pain. Discuss differential diagnosis (Dengue, Leptospirosis, etc.), laboratory investigations, and management protocols.

2. Outbreak Investigation and Public Health Response:**(Time Duration:1 Hour)**

Activity: Simulate a Chikungunya outbreak scenario in a locality. PG students will identify risk factors, discuss vector control strategies, and formulate a public health intervention plan.

3. Bedside Demonstration of Symptomatic Management and Patient Counseling(Time Duration:1 Hour)

Activity: In a clinical setting, demonstrate hydration therapy, analgesia, and joint care for a Chikungunya patient. Conduct a role-play on counseling parents about disease course, complications, and prevention.

Experiential Learning Activity

Experiential-Learning Learning 11.1: Management of Chickenpox and Measles.

Activities (Total time Duration: 5 hours)

1. Clinical Observation and Patient Interaction: (Time Duration: 1 Hour)

Allow students to interact with paediatric patients suffering from chickenpox and measles, focusing on recognizing clinical signs such as rashes, fever and understanding the progression of each disease.

Clinical Rotations: Organize rotations in paediatric wards where students observe and manage cases of these viral infections under supervision.

Simulated Patients/Standardized Patients: Use simulated cases with varying presentations for students to practice identifying clinical symptoms and taking patient histories.

2. Diagnosis and Physical Examination: (Time Duration: 1 Hour)

Students to perform physical examinations, focusing on identifying vesicular lesions (chickenpox), maculopapular rashes (measles). Teach them to differentiate these diseases based on clinical findings.

Bedside Teaching: Provide students opportunities to conduct supervised physical exams on patients in hospital settings, focusing on detecting typical signs of these infections.

Simulation Labs: Use mannequins or high-fidelity simulation tools to mimic different disease presentations and reinforce diagnostic techniques.

3. Patient Management and Supportive Care: (Time Duration: 1 Hour)

Students manages pediatric cases with chickenpox, measles, rubella, or mumps, focusing on supportive care (antipyretics, hydration) and recognizing complications like encephalitis or pneumonia.

Role-Playing/Simulated Case Management: Simulate patient scenarios where students develop and execute management plans, including monitoring and treating complications.

Clinical Case Studies: Assign students real cases to follow through their clinical course, observing and documenting treatment and recovery.

4. Vaccination and Prevention Counseling: (Time Duration: 1 Hour)

Educate students on the importance of vaccination (MMR, varicella) and prepare them to counsel patients and families on vaccine schedules, side effects, and addressing concerns.

Field Work in Immunization Clinics: Involve students in vaccination drives or routine immunization clinics, allowing them to administer vaccines and counsel families on vaccination benefits.

Simulated Counselling Sessions: Use role-play to practice patient and caregiver counselling, addressing concerns related to vaccination, side effects, and disease prevention.

5. Management of Complications and Referrals:(Time Duration: 1 Hour)

Students identifies complications like encephalitis, pneumonia, orchitis, or congenital rubella syndrome and implement referral protocols for severe cases.

Simulation-Based Learning: Use critical care simulations to teach students how to manage complications and when to refer patients for specialized care.

Problem-Based Learning (PBL): Develop case scenarios where students engage in decision-making for managing complications, reinforcing clinical and referral pathways.

Experiential-Learning Learning 11.2: Rubella and Mumps

Activities (Total time Duration: 5 hours)

1. Simulated Case of Congenital Rubella Syndrome (CRS): (Time Duration: 1 Hour)

Students analyze clinical features (cataracts, PDA, hearing loss), interpret lab findings, and discuss management. (Assessment: Case-based discussion)

2. Field Visit to an Immunization Center: (Time Duration: 1 Hour)

Observe MR/MMR vaccine administration, cold chain management, and community outreach efforts. (Assessment: Logbook entry, faculty review)

Mumps:

1. Workshop on Mumps Complications: (Time Duration: 1 Hour)

Case-based discussions on orchitis, meningitis, and pancreatitis with hands-on lumbar puncture training. (Assessment: Group discussion, skill demonstration)

2. Role-Play on Vaccine Counseling: (Time Duration: 1 Hour)

Simulated parent counseling on MMR vaccination, addressing concerns and misinformation. (Assessment: Faculty feedback on communication skills)

3. Rubella & Mumps Combined: (Time Duration: 1 Hour)

Outbreak Response Simulation – Students manage a mock outbreak in a school/hospital, tracing contacts, implementing isolation, and planning vaccinations.

Experiential-Learning Learning 11.3: Poliomyelitis and Japanese Encephalitis

Activities (Total time Duration: 5 hours)

1. Poliomyelitis

Clinical Bedside Teaching: (Time Duation: 1 Hour)

Instructions:

Conduct bedside teaching in pediatric wards where students interact with patients presenting with suspected or confirmed poliomyelitis. Focus on history taking, neurological assessment (particularly motor and sensory deficits), and examination for acute flaccid paralysis (AFP).

Case-Based Learning (CBL):(Time Duation: 30 mins)

Use case discussions where students review the clinical course of poliomyelitis patients, analyzing vaccination history, clinical features, and management protocols. Include discussion on differential diagnosis with other causes of AFP.

Simulation and Skills Training:(Time Duation: 1 Hour)

Engage students in practical sessions for administering oral polio vaccines (OPV) and inactivated polio vaccines (IPV). This includes hands-on training in vaccination techniques and public health roles in immunization campaigns.

2. Japanese Encephalitis (JE):

Clinical Rotations and Bedside Teaching:(Time Duation: 1.5 Hour)

Instruct students during rotations in pediatric neurology or intensive care units where they can observe patients with encephalitis. Emphasize clinical recognition of altered sensorium, seizures, and neurological sequelae in JE.

Problem-Based Learning (PBL):(Time Duation: 1 Hour)

Conduct problem-solving sessions where students are presented with real-life scenarios of JE patients. They will analyze diagnostic dilemmas, management of acute encephalitis, and long-term rehabilitation strategies.

Experiential-Learning Learning 11.4: Management of Rabies.

Activities (Total time Duration: 3 hours)

1. Bedside and Emergency Room Teaching:(Time Duration: 1 Hour)

Students observe and engage in emergency management of suspected rabies cases. Focus on clinical signs of rabies infection, rapid assessment, and administration of post-exposure prophylaxis (PEP).

2. Simulation-Based Learning:(Time Duration: 1 Hour)

Use high-fidelity simulations to train students in managing animal bites, PEP protocols, wound care, and the administration of rabies immunoglobulins (RIG).

3. Community-Based Learning:(Time Duration: 1 Hour)

Students participate in rabies prevention programs, dog vaccination drives, and community awareness activities. This includes understanding the epidemiology of rabies and its public health importance.

Experiential-Learning Learning 11.5: Management of Dengue.

Activities (Total time Duration: 4 hours)

1. Clinical Bedside Teaching: (Time Duration:1 Hour)

Conduct bedside teaching in pediatric wards with students actively involved in the management of patients with Dengue Fever (DF) and Dengue Hemorrhagic Fever (DHF). Focus on clinical manifestations such as high-grade fever, rash, and bleeding tendencies.

Emphasize recognition of warning signs of severe dengue, including plasma leakage, shock, and organ dysfunction.

Guide students through monitoring patients using dengue-specific protocols, including fluid management, platelet counts, and hematocrit monitoring.

2. Case-Based Learning (CBL): (Time Duration:1 Hour)

Use real patient cases to discuss different stages of dengue infection: febrile, critical, and recovery phases. Explore clinical reasoning for management strategies at each stage, including timely recognition of severe dengue.

Facilitate discussions on differential diagnoses for febrile illnesses and the management of complications such as dengue shock syndrome.

3. Problem-Based Learning (PBL):(Time Duration:1 Hour)

Students are presented with a problem-based scenario on managing a dengue outbreak in a community. Focus on vector control measures, public health strategies, and patient care in limited-resource settings.

4. Simulation-Based Learning:(Time Duration:1 Hour)

Use simulation exercises to train students in managing dengue emergencies, including fluid resuscitation for shock, monitoring patients in critical care settings, and decision-making for platelet transfusions.

Experiential-Learning Learning 11.6: Management of Chikungunya.

Activities (Total time Duration: 4 hours)

1. Clinical Bedside Teaching: (Time Duration: 1 hour)

Students during clinical rounds observe and manage patients presenting with Chikungunya Fever. Focus on identifying joint pain, rash, and prolonged arthralgia, which are hallmarks of the disease in children.

Emphasize treatment of acute symptoms and long-term follow-up for chronic joint pain in pediatric patients.

2. Case-Based Learning (CBL):(Time Duration: 1 hour)

Use case discussions to explore the clinical features of Chikungunya, including its similarities and differences with other febrile illnesses like Dengue and Malaria. Discuss diagnostic approaches and the treatment of complications such as persistent joint symptoms.

3. Simulation-Based Learning:(Time Duration: 1 hour)

Train students on patient-centered management of Chikungunya through simulated cases, focusing on managing pain, hydration, and long-term rehabilitation for chronic joint symptoms.

4. Community and Public Health-Based Learning:(Time Duration: 1 hour)

Involve students in community education programs on Chikungunya prevention, vector control, and public health interventions. Facilitate discussions on the role of sanitation and mosquito control in limiting the spread of vector-borne diseases.

Modular Assessment

Assessment	Hour
Instructions: Conduct a structured modular assessment. Assessment will be for **50 marks**. Keep structured marking patten. Use different assessment methods in each module for the semester. Keep a record of the structured pattern used for assessment. Calculate the Modular grade point as per Table 6 C. **Outbreak Simulation Exercise (10 marks)** **Description**: Students participate in a simulated viral outbreak response, making decisions on containment measures, communication, and vaccination protocols. **Purpose:** Assesses decision-making, problem-solving skills, and ability to apply theoretical knowledge in a practical setting. **2. Short Answer Questions (SAQs) – 10 Marks** **Purpose:** Assess students' understanding of key concepts and ability to explain clinical and preventive aspects of the diseases. **Structure:** 5 SAQs, 2 marks each, covering each unit. **3. Case-Based Questions (CBQs) – 10 Marks** **Purpose:** Assess applied knowledge, critical thinking, and clinical decision-making in diagnosing and managing viral infections.	4

Structure: 2 case-based questions, 5 marks each, one from Unit 2 and one from Unit 3. **Example Case Scenarios:** **Unit 2:** A child is suspected to have Japanese Encephalitis after traveling to an endemic area. Describe the steps for diagnosis, the importance of vaccination, and preventive measures for the community. **Unit 3:** A young child presents with a high fever and joint pain. Describe the diagnostic steps you would follow for suspected dengue and how you would counsel the family on home care and hydration. **Practical Skills Demonstration – 10 Marks** **Purpose:** Evaluate practical skills related to vaccine preparation, administration, and infection control measures. **Structure:** Practical assessment stations or demonstrations, 5 marks each for two stations. **Example Tasks:** **Station 1:** Demonstrate proper steps for vaccine storage and handling, including reading and recording refrigerator temperature. **Station 2:** Demonstrate vaccine administration techniques (using a dummy arm) for pediatric vaccines such as the measles or polio vaccine, including counseling parents on post-vaccine care. **Extended Response/Essay Question – 5 Marks** **Purpose:** Assess students' ability to synthesize information, critically analyze, and discuss preventive and public health strategies. **Structure:** One detailed question covering comparative analysis across units. **Example Task:** Compare and contrast the complications, preventive measures, and vaccination protocols for measles, mumps, and dengue fever. Discuss how community health measures can help reduce transmission. **6. OSCE (Objective Structured Clinical Examination) Scenario – 5 Marks** **Purpose:** Assess clinical reasoning and patient counseling skills in a practical, real-world scenario. **Structure:** One OSCE station, 5 marks, involving a standardized patient interaction focused on patient education. **Example Task:**	

Scenario: A parent is concerned about the risk of rabies after a dog bite. Explain the importance of post-exposure prophylaxis, answer any questions, and outline the follow-up plan, including vaccine schedules and side effects. **Total: 50 Marks** Any practical in converted form can be taken for assessment. (25 marks) **and** Any of the experiential as portfolios/ reflections/ presentations can be taken as an assessment. (25 marks)	

Semester No : 4

Module 12 : امراض تنفس میں تعدیہ ویروسی مزمن Chronic, and Respiratory Viral Infections in Pediatrics

Module Learning Objectives

(At the end of the module, the students should be able to)

1. Develop the ability to diagnose, manage, and provide comprehensive care for children with HIV, including the use of antiretroviral therapy, prevention of opportunistic infections, and addressing the psychosocial aspects of living with HIV.
2. Recognize and manage congenital and acquired CMV infections in children, focusing on early diagnosis, treatment, and prevention of long-term sequelae such as hearing loss and developmental delays.
3. Identify the clinical features, diagnostic methods, and management strategies for infectious mononucleosis in children, including supportive care and the recognition of potential complications like splenic rupture.
4. Diagnose, prevent, and manage of RSV infection in children, emphasizing early identification of high-risk infants and the use of supportive treatments such as oxygen therapy and ventilation.
5. Appraise knowledge and skills to diagnose, treat, and prevent COVID-19 in children, including understanding the clinical spectrum from mild cases to severe pediatric COVID-19 manifestations, and applying infection control measures.

Unit 1 Chronic and Opportunistic Viral Infections

12.1.1. Pediatric HIV / AIDS

12.1.2. Cytomegalovirus (CMV)

12.1.3. Infectious Mononucleosis (Epstein-Barr Virus)

References: 34,44,63,68

3A	3B	3C	3D	3E	3F	3G
CO1,CO2,CO3, CO5	Describe the epidemiology, transmission, pathophysiology, and clinical staging of pediatric HIV infection.	1	Lecture	CC	Knows-how	L,L&GD,L_VC,L&PPT
CO1,CO2,CO3, CO5	Conduct clinical and laboratory assessments of pediatric HIV patients, administer ART, and manage opportunistic infections and treatment-related complications.	3	Practical12.1	PSY-MEC	Shows-how	SIM,CBL,RP
CO1,CO2,CO3, CO5	Participate in comprehensive pediatric HIV care, including ART management, PMTCT outreach, psychosocial support, and advanced case management.	3	Experiential-Learning12.1	AFT-RES	Does	DG,CBL,PBL,SIM
CO1,CO2,CO3, CO5	Describe the epidemiology, pathogenesis, and clinical manifestations of CMV infection across age groups, with emphasis on congenital infection and its complications.	1	Lecture	CC	Knows-how	L&PPT ,L
CO1,CO2,CO3, CO5	Describe the epidemiology, transmission, pathophysiology, and clinical presentation of EBV infection causing infectious mononucleosis.	1	Lecture	CC	Knows-how	L&PPT ,L

CO1,CO2,CO3, CO5	Assess, diagnose, and manage congenital CMV in infants through clinical evaluation, laboratory testing, antiviral therapy, and participation in sensory screening programs.	2	Practical12.2	PSY-MEC	Shows-how	SIM,W,CBL,D
CO1,CO2,CO3, CO5	Perform clinical assessment and manage complications of infectious mononucleosis, including cases requiring hospitalization.	1	Practical12.3	PSY-MEC	Shows-how	DIS,D,CBL,SIM
CO1,CO2,CO3, CO5	Participate in the diagnosis, management, and follow-up of congenital CMV, applying treatment principles, supporting public health prevention, and engaging in multidisciplinary care for affected children.	3	Experiential-Learning12.2	AFT-RES	Does	W,DIS,PER,CBL,SIM
CO1,CO2,CO3, CO5	Observe and manage infectious mononucleosis in children, participate in differential diagnosis discussions, educate families, and address potential complications and long-term effects.	2	Experiential-Learning12.3	AFT-RES	Does	RLE,SIM,CBL,DIS

Unit 2 ویروسی تنفس امراض تعدیہ Viral Respiratory Infections

12.2.1. نزلہ وزکام Nazlawa Zukham (Respiratory Syncytial Virus (RSV) Infection

12.2.2. Severe Acute Respiratory Syndrome (SARS – Covid 19)

References: 39,44,51,55,63

3A	3B	3C	3D	3E	3F	3G
CO1,CO2,CO3, CO5	Describe the epidemiology, transmission, pathophysiology, and clinical features of RSV infection in children, integrating Unani and conventional medicine perspectives.	1	Lecture	CC	Knows-how	L&GD,L,L&PPT

CO1,CO2,CO3, CO5	Demonstrate clinical assessment and management of pediatric RSV infection, including supportive care and respiratory support techniques.	2	Practical12.4	CAP	Shows-how	PBL,SIM,CBL,DIS
CO1,CO2,CO3, CO5	Participate in the diagnosis, prevention, and community education of RSV infections in young children, with emphasis on high-risk groups and public health measures.	2	Experiential-Learning12.4	AFT-RES	Does	PER,CBL
CO1,CO2,CO3, CO5	Describe the epidemiology, transmission, pathophysiology, and clinical manifestations of COVID-19 in children, including perspectives from Unani and conventional medicine.	1	Lecture	CC	Knows-how	L,L&GD,L&PPT
CO1,CO2,CO3, CO5	Demonstrate clinical assessment and management of pediatric COVID-19 cases, apply treatment principles, and participate in vaccination and home-based care programs.	2	Practical12.5	CAP	Shows-how	W,D-BED,CBL,PER,DIS
CO1,CO2,CO3, CO5	**SARS Covid-19:** Observe and assist in public health initiatives related to COVID-19 prevention, including vaccination drives and public awareness campaigns.	3	Experiential-Learning12.5	AFT-RES	Does	D-BED,CBL,SIM,DIS
Practical Training Activity						
Practical Training 12.1 Management of HIV / AIDS						
Activities (Total time Duration: 3 hours) **1. Clinical Assessment and History Taking:(Time Duration: 1 Hour)**						

Teach students to gather detailed patient history focusing on risk factors such as maternal HIV status (for pediatrics HIV), immunosuppression, and exposure history. Emphasize signs like recurrent infections, lymphadenopathy, and fever.

Simulated Patients/Case Studies: Use simulated cases for practice in history-taking, focusing on HIV exposure.

2. Physical Examination:(Time Duration: 1 Hour)

Train students to perform a thorough physical examination, including evaluation of lymphadenopathy, hepatosplenomegaly, and skin/mucosal manifestations of immunodeficiency in HIV.

Hands-on Practice: Provide opportunities to examine real or simulated patients to identify physical manifestations of these infections.

Video Tutorials: Use clinical video resources to demonstrate typical findings such as oral thrush in HIV or jaundice in CMV.

3. Management & Prevention of HIV infection:(Time Duration: 1 Hour)

Teach students the management of pediatric HIV (ART initiation and monitoring)

Role-Playing/Simulations: Simulate clinical scenarios to guide students through initiating and managing ART, monitoring side effects, and educating caregivers.

Practical Training 12.2 Management of CMV Infection.

Activities (Total time Duration: 2 hours)

1. Case-based discussion (CBD) & Lab Diagnosis Practical: (Time Duration: 1 Hour)

Analyze congenital and perinatal CMV cases, including clinical presentation, diagnosis, and management.

Interpret PCR results, CMV IgM/IgG titers, and viral load reports.

2. Antiviral Therapy Workshop:(Time Duration: 30 mins)

Prescribe and monitor ganciclovir/valganciclovir for symptomatic cases.

3. Infection Control Simulation:(Time Duration: 30 mins)

Demonstrate hand hygiene and preventive strategies in NICUs and pediatric wards.

Practical Training 12.3 Management of Infectious Mononucleosis.

Activities:**(Total Time Duration: 1 hour)**

1. Case-Based Discussion & Lab Diagnosis & Interpretation: (Time Duration:30 mins)

The teacher will analyze a case with fever, pharyngitis, and lymphadenopathy and discuss differential diagnosis and complications.

Interpret CBC, peripheral smear (atypical lymphocytes), Monospot test, and EBV serology.

2. Clinical Examination,Management & Counseling :(Time Duration:30 mins)

The teacher will demonstrate lymph node examination, hepatosplenomegaly assessment, and throat examination.

Discuss supportive care, avoidance of contact sports, and patient education.

Practical Training 12.4 Management of RSV infection.

Activities (Total time Duration: 2 hours)

1. Clinical Case-Based Discussion on RSV Bronchiolitis:(Time Duration: 1Hour)

Present a case of an infant with cough, wheezing, tachypnea, and subcostal retractions.

Discuss differential diagnosis (e.g., pneumonia, asthma), interpretation of investigations (RSV antigen test, CXR), and treatment strategies (oxygen therapy, nebulization, supportive care).

2. Hands-on Training in Airway Management for RSV-Induced Respiratory Distress: (Time Duration: 1 Hour)

Simulate a case of severe RSV bronchiolitis requiring airway support.

Students will practice nasal suctioning, high-flow nasal cannula (HFNC) setup, and oxygen therapy using mannequins or real cases under supervision.

Practical Training 12.5 Management of SARS COVID-19.

Activities (Total time Duration: 2 hours)

1. Clinical Case Management of Pediatric COVID-19:(Time Duration: 1 Hour)

Present a case of a child with fever, cough, and difficulty breathing.

Discuss differential diagnosis (e.g., RSV, influenza), laboratory findings (RT-PCR, inflammatory markers), and management based on severity (mild, moderate, severe).

2. Infection Control and PPE Simulation:(Time Duration: 1 Hour)

Activity:

Conduct a hands-on session on donning and doffing PPE, hand hygiene, and isolation protocols in a simulated COVID-19 ward.

Discuss aerosol precautions during procedures like nebulization and intubation.

Experiential Learning Activity

Experiential-Learning Learning 12.1: Management of HIV.

Activities (Total time Duration: 3 hours)

1. Clinical Bedside Teaching:(Time Duration: 1 Hour)

Conduct bedside teaching sessions where students manage pediatric patients with HIV. Focus on history taking, identifying clinical signs such as failure to thrive, recurrent infections, and developmental delays.

Emphasize antiretroviral therapy (ART) regimens and the management of common opportunistic infections in HIV-positive children.

2. Simulation-Based Learning:(Time Duration: 1 Hour)

Use simulation sessions to train students in breaking bad news to parents about a child's HIV diagnosis, counselling for ART adherence, and managing emergencies related to opportunistic infections.

3. Public Health and Community-Based Learning:(Time Duration:1 Hour)

Organize field visits to pediatric HIV care centers and ART clinics to provide hands-on exposure to public health interventions, including PMTCT programs, community outreach, and stigma reduction campaigns.

Experiential-Learning Learning 12.2: Management of CMV Infection.

Activities:(Total Time Duration: 3 hours)

1. Clinical Bedside Teaching:(Time Duration: 1 Hour)

In pediatric wards, instruct students in recognizing and managing congenital CMV infection and perinatal CMV infections. Focus on clinical presentations such as sensorineural hearing loss, developmental delays, and jaundice.

Students identifies common complications, including neurodevelopmental impairment, hepatosplenomegaly, and retinitis.

2. Case-Based Learning (CBL) & Diagnostic Workshops:(Time Duration: 1 Hour)

Use real patient cases to explore the diagnostic approach to congenital CMV, including the role of PCR, urine CMV culture, and imaging (ultrasound or MRI) for neurological involvement.

Discuss the management of symptomatic CMV infection and its long-term follow-up.

Diagnostic Workshops: Provide hands-on sessions for interpreting diagnostic tests such as CMV PCR, CMV serology (IgM, IgG), and imaging findings in symptomatic children.

3. Simulation and Communication Skills:(Time Duration: 1 Hour)

Train students in communicating the diagnosis of congenital CMV to parents, explaining the prognosis, and discussing the importance of early intervention for neurodevelopmental outcomes.

Experiential-Learning Learning 12.3: Management of Infectious Mononucleosis (Epstein-Barr Virus)

Activities:(Total Time Duration: 2 hours)

1. Clinical Bedside Teaching:(Time Duration: 1 Hour)

Students identifies the classic triad of symptoms (fever, pharyngitis, and lymphadenopathy) in children with infectious mononucleosis. Teach physical examination skills such as palpating enlarged lymph nodes and splenomegaly.

Discuss the differential diagnosis with other causes of lymphadenopathy and the role of supportive care in management.

2. Case-Based Learning (CBL) & Simulation-Based Learning:(Time Duration: 1 Hour)

Use case discussions to explore diagnostic approaches, including the use of monospot tests, Epstein-Barr virus (EBV) serology (IgM, IgG), and interpretation of complete blood counts (CBC) showing atypical lymphocytes.

Discuss complications such as splenic rupture, autoimmune hemolytic anemia, and prolonged fatigue.

Simulation-Based Learning:

Simulate clinical cases where students manage patients with infectious mononucleosis, focusing on counseling about activity restrictions due to splenomegaly and recognizing signs of complications.
Experiential-Learning Learning 12.4: Management of RSV Infection.
Activities (Total time Duration: 2 hours) **1. Case-based learning (CBL):(Time Duration:1 Hour)** Present case studies of infants with bronchiolitis due to RSV, highlighting differential diagnoses, complications such as respiratory failure, and treatment plans, including hydration and respiratory support. **2. Public Health and Community-Based Learning:(Time Duration:1 Hour)** Arrange community health visits or presentations to understand the epidemiology of RSV infection, preventive strategies for high-risk infants, and public health measures.
Experiential-Learning Learning 12.5: Management of SARS-COVID-19
Activities (Total time Duration: 3 hours) **1. Case-Based Learning (CBL):(Time Duration: 1 Hour)** Use real or simulated COVID-19 cases to analyze clinical scenarios that highlight challenges in diagnosing and managing COVID-19 in pediatric patients, including complications like MIS-C. Discuss the differential diagnosis for COVID-like symptoms and address the role of diagnostic tests (e.g., RT-PCR, rapid antigen tests, serology) in confirming SARS-CoV-2 infection. **2. Simulation-Based Learning:(Time Duration: 1 Hour)** Use simulation to train students in managing pediatric COVID-19 cases in critical care settings, including intubation, ventilator management, and administration of antiviral or immunomodulatory therapy. Simulate scenarios that focus on crisis resource management during pandemics, including triage protocols, use of personal protective equipment (PPE), and infection control practices in pediatric wards.

3. Public Health and Community-Based Learning:(Time Duration: 1 Hour) Include opportunities to understand the broader public health response to COVID-19 in children, such as vaccination strategies, school reopening policies, and managing mental health issues related to the pandemic.	
Modular Assessment	
Assessment	**Hour**
Instructions: Conduct a structured modular assessment. Assessment will be for **25 marks** per credit. Keep structured marking patten. Use different assessment methods in each module for the semester. Keep a record of the structured pattern used for assessment. Calculate the Modular grade point as per Table 6 C. **Case-Based Discussions (5 marks)** **Description:** Students analyze case scenarios, each focused on a different infection (e.g., HIV, CMV, RSV, SARS-CoV-2). They discuss aspects like transmission, diagnosis, treatment, and patient counseling. **Purpose:** Assesses clinical reasoning, knowledge of disease management, and communication skills. **Flowchart of Infection Pathways (5 marks)** **Description:** Students create flowcharts illustrating the infection pathways of each virus, showing how it affects the host's immune system and progresses chronically or acutely. **Purpose:** Evaluates understanding of viral mechanisms and pathophysiology. **Role-Play Simulation on Patient Counseling (5 marks)** **Description:** Students simulate counseling for patients diagnosed with chronic or respiratory viral infections, explaining treatment and preventive measures. **Purpose:** Tests communication skills and empathy in explaining complex information to patients. **Journal Reflection on Chronic Infections (5 marks)**	2

Description: Students write a reflective piece discussing the societal and psychological impacts of chronic infections like HIV and CMV, including stigma, long-term treatment, and quality of life. **Purpose:** Encourages empathy and a holistic view of chronic infections' impact on individuals and communities. **Disease Timeline Creation (2 marks)** **Description:** Students create a timeline showing the progression stages of infections like HIV or SARS-CoV-2, from initial exposure to disease stages and chronic impacts. **Purpose:** Assesses understanding of disease progression and critical phases of viral infections. **Concept Mapping (3 marks)** **Description:** Students develop a concept map linking these infections, illustrating similarities and differences in transmission, clinical features, and prevention strategies. **Purpose:** Tests ability to identify connections and distinctions between different viral infections. **Total 25 Marks** Any practical in converted form can be taken for assessment. (25 marks) **OR** Any of the experiential as portfolios/ reflections/ presentations can be taken as an assessment. (25 marks)	

Module 13 : Pediatric Emergencies.

Module Learning Objectives

(At the end of the module, the students should be able to)

1. Describe the pathophysiology, clinical presentation, and progression of paediatric emergencies, including shock, status epilepticus, arrhythmias, traumatic brain injury, and allergic reactions.
2. Conduct a systematic assessment of critically ill paediatric patients using the ABCDE approach, ensuring prompt identification and prioritization of life-threatening conditions like arrhythmias, severe dehydration, and volvulus.

3. Identify early warning signs of deterioration in paediatric patients during emergencies and describe the appropriate escalation of care, including the initiation of basic and advanced life support.
4. Describe the principles and protocols for stabilization and resuscitation in paediatric emergencies, such as acid-base imbalance, electrolyte imbalance, and anaphylaxis, ensuring adherence to evidence-based guidelines.
5. Conduct effective management and interventions for paediatric emergencies, including the administration of fluids, medications, and performing necessary procedures for conditions like status epilepticus, shock, and poisoning.
6. Identify the need for timely referral to specialized care or surgical intervention, such as in cases of traumatic brain injury, volvulus, and intussusception, ensuring appropriate coordination with specialized departments.
7. Describe the essential steps involved in pre-transport stabilization, ensuring the patient's vital functions are maintained and managed during transfer to higher care or specialized units.
8. Conduct post-emergency follow-up and monitoring protocols, ensuring early detection of complications and successful recovery from emergencies like acid-base imbalances, shock, and electrolyte disturbances.

Unit 1 Cardiovascular Emergencies

13.1.1. Pediatric Basic & Advanced Life Support

13.1.2. Arrhythmias

13.1.3Shock

References: 44,63

3A	3B	3C	3D	3E	3F	3G
CO1,CO3,CO5, CO6	Describe pediatric BLS and ALS algorithms and the pharmacology of emergency resuscitation medications.	2	Lecture	CC	Knows-how	L,L_VC,L&GD,L&PPT
CO1,CO3,CO5, CO6	Demonstrate BLS and ALS techniques in pediatric patients, including chest compressions, ventilation, defibrillation, and cardiac monitoring.	4	Practical13.1	PSY-GUD	Shows-how	CD,SIM,CBL,RP

CO1,CO3,CO5, CO6	Participate in simulation and team-based resuscitation drills for pediatric cardiac arrest, emphasizing decision-making, leadership, and communication.	3	Experiential-Learning13.1	AFT-RES	Does	TBL,RP,D,SIM,CBL
CO1,CO3,CO5, CO6	Describe types and pathophysiology of pediatric arrhythmias and principles of ECG interpretation.	1	Lecture	CC	Knows-how	L,L&PPT
CO1,CO3,CO5, CO6	Describe the types, pathophysiology, and hemodynamic responses of pediatric shock.	1	Lecture	CC	Knows-how	L,L&PPT
CO1,CO3,CO5, CO6	Demonstrate ECG interpretation, emergency arrhythmia management, and administration of antiarrhythmic therapies using simulation.	2	Practical13.2	PSY-GUD	Shows-how	CBL,W,SIM
CO1,CO3,CO5, CO6	Perform clinical assessment and initiate emergency management of pediatric shock, including fluid resuscitation and use of vasoactive agents in simulation.	2	Practical13.3	PSY-GUD	Shows-how	CBL,D-BED,SIM
CO1,CO3,CO5, CO6	Identify clinical management and case analysis of pediatric arrhythmias to develop decision-making skills.	2	Experiential-Learning13.2	CAN	Does	CD,DIS,CBL
CO1,CO3,CO5, CO6	Conduct clinical assessments to identify early signs of shock in pediatric patients through simulation and case-based learning.	5	Experiential-Learning13.3	AFT-RES	Does	RLE,PT,CBL,SIM
Unit 2 Neurological Emergencies 13.2.1. Traumatic Brain Injury (TBI) 13.2.2. Status Epilepticus						

References: 44,60,63						
3A	**3B**	**3C**	**3D**	**3E**	**3F**	**3G**
CO1,CO3,CO5, CO6	Describe the pathophysiology, classification, and management principles of pediatric traumatic brain injury, including ICP control and complications.	2	Lecture	CC	Knows-how	L&PPT ,L_VC
CO1,CO3,CO5, CO6	Develop proficiency in neurologic assessment and ABC management of pediatric TBI, using stabilization techniques to prevent secondary brain injury.	4	Practical13.4	PSY-MEC	Shows-how	CBL,SIM,D,D-BED
CO1,CO3,CO5, CO6	Develop skills in managing pediatric traumatic brain injury through simulation and case reflection, focusing on rapid assessment, stabilization, and early intervention.	5	Experiential-Learning13.4	AFT-RES	Does	RLE,CBL,SIM,TBL,D-BED
CO1,CO3,CO5, CO6	Describe the pathophysiology, classification, causes, pharmacologic treatment, and complications of pediatric status epilepticus.	2	Lecture	CC	Knows-how	L_VC,L,L&PPT
CO1,CO3,CO5, CO6	Conduct rapid assessment and emergency management of pediatric status epilepticus, including airway care, seizure control, medication administration, and IV/IO access.	4	Practical13.5	CC	Shows-how	CBL,RP,D-BED
CO1,CO3,CO5, CO6	Diagnose pediatric status epilepticus and idntify its management.	5	Experiential-Learning13.5	CAN	Does	SIM,CBL,RLE
Unit 3 Gastrointestinal Emergencies 13.3.1. Volvulus & Intussusception						

13.3.2.قلت الماء (Qillat-ul maa) Severe Dehydration,Electrolyte Imbalance

References: 34,44,63

3A	3B	3C	3D	3E	3F	3G
CO1,CO3,CO5, CO6	Describe the pathophysiology, clinical features, complications, and diagnostic methods of volvulus and intussusception	1	Lecture	CC	Knows-how	L_VC,L&PPT ,L&GD
CO1,CO3,CO5, CO6	Develop skills to systematically examine pediatric abdomens, recognize surgical red flags, and utilize point-of-care ultrasound to identify volvulus or intussusception.	2	Practical13.6	PSY-GUD	Shows-how	DIS,CD,D-BED,CBL
CO1,CO3,CO5, CO6	Gain hands-on experience in diagnosing and managing volvulus and intussusception through simulations, case reflections, and clinical rotations in pediatric emergency and surgical settings.	3	Experiential-Learning13.6	AFT-RES	Does	PT,CD,SIM,CBL,D
CO1,CO3,CO5, CO6	Describe the causes, pathophysiology, classification, and physiological effects of severe dehydration in pediatric patients.	1	Lecture	CC	Knows-how	L_VC,L&PPT ,L
CO1,CO3,CO5, CO6	Conduct comprehensive hydration assessment and perform tailored fluid and electrolyte management in pediatric patients.	2	Practical13.7	PSY-GUD	Shows-how	D-BED,CBL
CO1,CO3,CO5, CO6	Evaluate pediatric severe dehydration and shock, focusing on fluid resuscitation and complication monitoring.	3	Experiential-Learning13.7	CE	Does	PT,DL,SIM,CBL

Unit 4 Allergic ,Toxicological Emergencies& Metabolic derangements

13.4.1. Allergic & Anaphylactic Emergencies

13.4.2. Accident & Poisoning

13.4.3. Acid-Base imbalance

References: 34,44,63

3A	3B	3C	3D	3E	3F	3G
CO1,CO3,CO5, CO6	Describe the pathophysiology, clinical features, and pharmacologic management of allergic reactions and anaphylaxis, including the role of histamine and epinephrine.	1	Lecture	CC	Knows-how	L_VC,L&GD,L&PPT
CO1,CO3,CO5, CO6	Develop skills to rapidly assess and manage anaphylaxis, including early recognition, epinephrine administration, airway support, and emergency care.	2	Practical13.8	PSY-GUD	Shows-how	PBL,D,SIM,CBL,D-BED
CO1,CO3,CO5, CO6	Identify and manage anaphylaxis through simulation exercises and analysis of real-life case discussions.	3	Experiential-Learning13.8	CAN	Does	SDL,D,RP,CD,CBL
CO1,CO3,CO5, CO6	Discuss common causes, toxicology principles, and emergency management protocols for pediatric poisoning, including decontamination and antidote use.	1	Lecture	CC	Knows-how	L,L&PPT
CO1,CO3,CO5, CO6	Describe acid-base physiology, classification of disorders, and interpretation of blood gas and electrolyte disturbances in pediatric patients.	1	Lecture	CC	Knows-how	D,L,L&PPT
CO1,CO3,CO5, CO6	Develop skills to rapidly assess and manage pediatric accidents and poisonings, including airway protection, decontamination, and basic life-saving interventions.	2	Practical13.9	PSY-GUD	Shows-how	D-BED,SIM,D,CD,PT

CO1,CO3,CO5, CO6	Develop skills to interpret and manage acid-base disturbances in pediatric emergencies through ABG analysis, fluid therapy, and ongoing monitoring.	2	Practical13.10	PSY-GUD	Shows-how	CBL,PT,D
CO1,CO3,CO5, CO6	Discuss the importance of critical thinking and teamwork in managing pediatric poisoning and trauma through simulations and reflection on real-world case outcomes.	3	Experiential-Learning13.9	AFT-RES	Does	SIM,CD,CBL
CO1,CO3,CO5, CO6	Participate in case discussions and clinical management of complex pediatric acid-base imbalances in acute care settings.	3	Experiential-Learning13.10	AFT-RES	Does	CD,CBL,SIM
Unit 5 Pre-Transport and Referral Protocols 13.5.1. Pre-Transport Stabilization 13.5.2. Timely Referral to Appropriate Department **References:** 44,63						
3A	**3B**	**3C**	**3D**	**3E**	**3F**	**3G**
CO1,CO3,CO5, CO6	Describe and apply stabilization principles, clinical criteria, and equipment use for the safe transport of critically ill pediatric patients.	1	Lecture	CAP	Knows-how	L_VC,L&PPT
CO1,CO3,CO5, CO6	Develop skills to perform rapid pediatric assessments and secure essential devices to ensure stability and safety during patient transport.	2	Practical13.11	PSY-MEC	Shows-how	CBL,SIM,D

CO1,CO3,CO5, CO6	Demonstrate pediatric pre-transport stabilization through simulations, clinical observation, and case-based reflections on inter-hospital transfers.	2	Experiential-Learning13.11	PSY-GUD	Shows-how	CBL,PBL,RP,D,SIM
CO1,CO3,CO5, CO6	Discuss the criteria, red flags, and referral pathways for timely and appropriate transfer of pediatric patients to specialized care for continuity and improved outcomes.	1	Lecture	CC	Knows-how	L&PPT ,L
CO1,CO3,CO5, CO6	Develop the ability to assess referral needs, communicate effectively with specialists, and document comprehensive transfer-of-care for pediatric patients.	2	Practical13.12	PSY-MEC	Shows-how	PT,W,PER,D
CO1,CO3,CO5, CO6	Discuss timely pediatric referrals through multidisciplinary discussions, clinical observations, and reflections on real-world coordination and outcomes.	2	Experiential-Learning13.12	AFT-RES	Does	D,RP,CBL,PER

Practical Training Activity

Practical Training 13.1 BCLS & ACLS

Activities: (Total Time Duration: 4 hours)

1. Skill Stations:(Time Duration: 30 mins)

Practice each step of BLS in skill stations using manikins.

2. Simulated Scenarios:(Time Duration: 45 mins)

Engage in real-time simulated pediatric arrest scenarios to practice quick decision-making and teamwork.

3. Hands-on Practice:(Time Duration: 45 mins)

Ensure repetitive practice to master compression rate, depth, and ventilation techniques on manikins. **Pediatric Advanced Life Support (ALS)** **1. Hands-on Training:(Time Duration: 1 hour)** Practice intubation and use of supraglottic airways in pediatric patients. **2. Simulation Drills & Mock Codes:(Time Duration: 1 hour)** Engage in high-fidelity simulation scenarios that include pediatric cardiac arrest, arrhythmias, and administering medication. **Mock Codes:** Participate in team-based ALS mock code simulations to reinforce team dynamics and communication under pressure.
Practical Training 13.2 Arrhythmias management.
Activities:(Total Time Duration: 2 hours) **1. ECG Workshops:(Time Duration: 1 Hour):**The teacher will conduct ECG interpretation workshops focused on identifying pediatric arrhythmias. **2. Case-Based Discussions & Simulation of Arrhythmia Management:(Time Duration: 1 Hour):**Engage in case discussions to cover common pediatric arrhythmias and their management strategies. **Simulation of Arrhythmia Management:**Use simulation-based arrhythmia scenarios to practice identifying and treating rhythm disturbances.
Practical Training 13.3 Management of Shock.
Activities:(Total Time Duration: 2 hours) **1. Fluid Resuscitation Simulation:(Time Duration: 1 Hour):**The teacher will demonstrate fluid resuscitation techniques, including IV and intraosseous access, in a simulated environment. **2. Shock Scenarios & Drug Administration Practice:(Time Duration: 1 Hour): (Time Duration: 1 Hour):** Engage in simulated scenarios of shock management, including sepsis and trauma-induced shock. Drug Administration Practice: Practice the correct administration of vasopressors and inotropes in managing shock.
Practical Training 13.4 Emergency Management of Peadiatric Traumatic Brain Injury.

Activities:**(Total Time Duration: 4 hours)**

1. Skill Stations:(Time Duration: 1 Hour)

The teacher will demonstrate neurological examination, including assessing GCS, pupil reactions, and cranial nerve function.

2. Immobilization Techniques:(Time Duration: 1 Hour)

Learn and practice cervical spine immobilization techniques using spinal boards and neck braces.

3. Simulation Scenarios:(Time Duration: 1 Hour)

Participate in TBI case simulations to practice management from initial assessment to stabilization, including airway protection and ICP monitoring.

4. Imaging Interpretation:(Time Duration: 1 Hour)

Practice interpreting CT and MRI scans of pediatric TBI cases to identify intracranial hemorrhages, fractures, or swelling.

Practical Training 13.5 Emergency management of Status Epilepticus.

Activities (Total Time Duration: 4 hours)

1. Seizure Recognition:(Time Duration: 1 Hour): Participate in case-based learning or videos to identify different types of seizures and status epilepticus.

2. Drug Administration:(Time Duration: 1 Hour): The teacher will demonstrate the administration of first-line (benzodiazepines) and second-line (phenytoin, levetiracetam) anticonvulsants in a simulated environment.

3. Airway Management:(Time Duration: 1 Hour): Learn airway protection techniques in patients with ongoing seizures, including intubation if needed.

4. Continuous Monitoring & Post-Episode Care:**(Time Duration: 1 Hour):**Practice setting up continuous EEG monitoring and recognize patterns indicating status epilepticus.

Post-Episode Care:Engage in learning about the post-status epilepticus care, including addressing the underlying cause and neuroprotective strategies.

Practical Training 13.6 Management of Volvulus & Intussusception.

Activities (Total Time Duration: 2 hours)

1. Clinical Assessment:(Time Duration: 1 Hour)

The teacher will conduct a thorough history and physical examination focusing on symptoms such as abdominal pain, vomiting, and stool characteristics.

The teacher will demonstrate the use of scoring systems (e.g., Alvarado score) for diagnosis and decision-making.

2. Diagnostic Procedures & Management Techniques:(Time Duration: 1 Hour)

Perform and interpret abdominal ultrasound and X-ray findings consistent with volvulus or intussusception.

Participate in the discussion of differential diagnoses for acute abdominal pain in children.

Management Techniques:

Demonstrate the steps of resuscitation, including IV fluid administration and electrolyte management.

Learn to insert a nasogastric tube and discuss its role in decompression.

Discuss the indications for surgical intervention and participate in surgical simulations if possible.

Practical Training 13.7 Severe Dehydration.

Activities (Total Time Duration: 2 hours)

1. Clinical Evaluation:(Time Duration: 1 Hour): The teacher will conduct a focused history and examination to assess hydration status and identify the severity of dehydration.

Use standardized assessment tools, such as the WHO dehydration classification.

2. Fluid Management & Monitoring:(Time Duration: 1 Hour): Calculate fluid requirements based on weight and severity of dehydration using appropriate formulas.

Demonstrate the preparation and administration of Oral Rehydration Solutions (ORS) and IV fluids, discussing indications for each.

Monitoring:

Establish a monitoring plan for vital signs, urine output, and clinical status during and after fluid therapy.

Recognize signs of improvement or deterioration and adjust treatment accordingly.

Practical Training 13.8 Allergic and anaphylactic emergencies.

Activities (Total Time Duration: 2 hours)

1. Clinical Assessment:(Time Duration: 1 Hour)

Conduct thorough histories to identify potential allergens and previous allergic reactions.

Perform physical examinations to recognize signs such as urticaria, angioedema, respiratory distress, and cardiovascular instability.

2. Management Techniques & Post-Management Monitoring:(Time Duration: 1 Hour)

Demonstrate the use of an epinephrine auto-injector (e.g., EpiPen) and explain its pharmacodynamics and indications.

Practice the sequence of actions in managing an anaphylactic reaction, including airway management and adjunctive treatments (antihistamines, corticosteroids).

Post-Management Monitoring: Learn to monitor patients for rebound symptoms and identify when further treatment or observation is necessary.

Practical Training 13.9 Accident and Poisoning.

Activities (Total Time Duration: 2 hours)

1.Clinical Evaluation:(Time Duration: 1 Hour)

The teacher will demonstrate the severity of injuries and potential poisoning through history-taking and physical examination.

Utilize scoring systems to classify the severity of poisoning (e.g., Glasgow Coma Scale).

2. Management Techniques & Referral and Follow-Up:(Time Duration: 1 Hour)

The teacher Demonstrate resuscitation techniques for trauma and poisoning cases, including airway management and intravenous access.

Learn to administer activated charcoal when appropriate and understand the indications and contraindications for its use.

Referral and Follow-Up:

Discuss the need for referral to poison control centers or specialized units for severe cases and the role of follow-up care.

Practical Training 13.10 Acid-Base Imbalance.

Activities (Total Time Duration: 2 hours)

1. Clinical Assessment:(Time Duration: 1 Hour)

The teacher will conduct comprehensive histories and physical examinations to identify potential causes of acid-base imbalances.

The teacher will recognize and demonstrate clinical manifestations such as altered mental status, respiratory distress, and electrolyte disturbances.

2. Diagnostic Skills & Management Techniques:(Time Duration: 1 Hour)

Interpret arterial blood gases (ABG) and electrolyte panels, understanding compensatory mechanisms and acid-base disturbances.

Management Techniques:

Demonstrate fluid and electrolyte management strategies tailored to specific acid-base disorders.

Learn to apply appropriate interventions based on the underlying cause, including oxygen therapy, bicarbonate administration, or diuretics.

Practical Training 13.11 Pre-Transport Stabilization.

Activities:(Total Time Duration: 2 hours)

1. Assessment of Patient:(Time Duration: 1 Hour)

Conduct a systematic evaluation of the pediatric patient, including vital signs, airway, breathing, and circulation (ABCs).

Utilize appropriate scoring systems (e.g., Pediatric Assessment Triangle) to assess the severity of the patient's condition.

2. Stabilization Techniques:(Time Duration: 30 mins)

Demonstrate basic life support (BLS) techniques, including airway management (e.g., jaw thrust, suctioning) and oxygen supplementation.

Learn the use of emergency medications, including indications and dosages for common pediatric emergencies (e.g., epinephrine for anaphylaxis, atropine for bradycardia).

3. Communication and Handoff:(Time Duration: 30 mins)

Develop skills in effective communication with the transport team, ensuring all critical information is conveyed for continuity of care.

Participate in simulated handoff scenarios to practice transferring care in emergencies.

Practical Training 13.12 Timely Referral to Appropriate Department.

Activities:(Total Time Duration: 2 hours)

1. Assessment of Need for Referral:(Time Duration: 1 Hour)

Evaluate patients to determine indications for referral, including severity of illness, specialized care needs, and resource availability.

Utilize referral guidelines and protocols relevant to pediatric emergencies.

2. Referral Process & Interdisciplinary Collaboration:(Time Duration: 1 Hour)

Learn the steps in the referral process, including documentation, providing clinical information, and ensuring appropriate transport arrangements.

Demonstrate effective communication strategies when discussing referrals with parents, caregivers, and specialty teams.

Interdisciplinary Collaboration:

Participate in simulated case discussions with interdisciplinary teams to practice collaborative decision-making in referrals.

Experiential Learning Activity

Experiential-Learning Learning 13.1: BCLS & ACLS.

Activities: (Total Time Duration: 3 hours)

1. Simulated Scenarios:(Time Duratiion: 30 mins)

Participate in hands-on training using manikins to practice chest compressions, airway management, and rescue breathing for pediatric patients.

2. CPR Skills:(Time Duratiion: 45 mins)

Perform high-quality cardiopulmonary resuscitation (CPR) using appropriate compression ratios and ventilation techniques for infants and children.

3. AED Use:(Time Duratiion: 45 mins)

Demonstrate the correct use of an automated external defibrillator (AED) in pediatric cases.

Advanced Life Support (ACLS):

1. Team-Based Simulations::(Time Duratiion: 30 mins)

Engage in team-based ACLS scenarios where trainees alternate roles as team leaders and responders, practicing the management of pediatric cardiac arrest.

2. Airway Management::(Time Duratiion: 45 mins)

Practice advanced airway management techniques including bag-mask ventilation, endotracheal intubation, and laryngeal mask airway (LMA) insertion.

3. Post-Resuscitation Care::(Time Duratiion: 45 mins)

Learn post-resuscitation care strategies such as monitoring, temperature control, and neurological assessments.

Experiential-Learning Learning 13.2: Management of Arrhythmias,

Activities (Total Time Duration: 2 hours)

1. Recognition of Arrhythmias:(Time Duration: 40 mins): Interpret pediatric ECGs to identify common arrhythmias such as bradycardia, tachycardia, supraventricular tachycardia (SVT), and ventricular fibrillation. **2. Pharmacological Management:(Time Duration: 40 mins):**Learn to administer antiarrhythmic drugs (e.g., adenosine, amiodarone) based on specific arrhythmias, understanding drug mechanisms and dosages. **3. Long-Term Management:(Time Duration: 40 mins):**Discuss the principles of long-term management for arrhythmias, including the use of pacemakers and implantable cardioverter-defibrillators (ICDs).
Experiential-Learning Learning 13.3: Management of Shock.
Activities:(Total Time Duration: 5 hours) **1. Clinical Assessment:(Time Duration: 2 hours):**Practice rapid assessment of pediatric patients in shock, focusing on vital signs, mental status, perfusion, and pulse quality. **2. Resuscitation Techniques:(Time Duration: 1 hour):**Perform fluid resuscitation techniques, including calculating fluid requirements and administering IV boluses in hypovolemic and septic shock. **3. Advanced Management:(Time Duration: 1 hour):**Practice the use of inotropes, vasopressors (e.g., dopamine, norepinephrine), and mechanical ventilation in the management of refractory shock. **4. Monitoring:(Time Duration: 1 hour):**Learn the use of invasive monitoring (central venous pressure, arterial lines) and non-invasive tools to assess the response to therapy.
Experiential-Learning Learning 13.4: Management of Traumatic Brain Injury.
Activities:(Total Time Duration: 5 hours) **1. Initial Assessment and Stabilization:(Time Duration: 1.5 Hours)** Conduct a thorough clinical evaluation using the Glasgow Coma Scale (GCS) for pediatric patients to assess the level of consciousness. Learn to perform immediate airway, breathing, and circulation (ABC) assessment and stabilization in patients with suspected TBI. **2.Neuroimaging and Diagnostics:(Time Duration: 1 Hour)**

Gain experience in requesting and interpreting CT scans/MRI to evaluate the extent of brain injury.

Practice using bedside neurological assessments (e.g., pupillary response, motor reflexes) to monitor changes in condition.

3.Management of Raised Intracranial Pressure (ICP):(Time Duration: 1.5 Hours)

Learn interventions such as elevating the head, hyperventilation, and mannitol administration to manage increased ICP in critical cases.

Practice maintaining hemodynamic stability through fluid management, monitoring blood pressure, and preventing hypoxia.

4. Post-Injury Care:(Time Duration: 1 Hour)

Understand the principles of rehabilitation and long-term care for children with TBI, including physiotherapy and cognitive rehabilitation programs.rol.

Practice dosing, timing, and side effect management of antiepil

Experiential-Learning Learning 13.5: Management of Status Epilepticus.

Activities:(Total Time Duration: 5 hours)

1.Recognition and Initial Response:(Time Duration: 1.5 Hours): Learn to recognize prolonged seizures (lasting more than 5 minutes) and diagnose status epilepticus based on clinical signs.

Practice immediate airway protection, maintaining oxygenation, and administering IV benzodiazepines (e.g., lorazepam, diazepam) for initial seizure cont

2.Seizure Monitoring and Diagnostics:(Time Duration: 1.5 Hours): Perform bedside monitoring of vital signs (pulse, oxygen saturation) and ensure the patient's airway is protected during seizures.

Gain experience with the use of EEG for ongoing seizure monitoring and identifying seizure foci in refractory cases.

3. Pharmacological Management:((Time Duration: 1 Hour): Learn the stepwise use of anticonvulsants (e.g., phenytoin, levetiracetam, phenobarbital) if initial benzodiazepine therapy fails.

4. Post-Epileptic Care:(Time Duration: 1 Hour): Understand the principles of neurological monitoring and intensive care management post-seizure, including fluid and electrolyte balance, glucose monitoring, and neuroprotection.

Experiential-Learning Learning 13.6: Management of Volvulus & Intussusception.

Activities (Total Time Duration: 3 hours)

1. Recognition and Diagnosis:(Time Duration: 1 Hour)

Clinical Evaluation: Conduct thorough clinical assessments to identify signs of volvulus and intussusception, such as abdominal pain, distension, and changes in bowel habits.

Imaging Techniques: Gain hands-on experience in ordering and interpreting abdominal X-rays and ultrasounds to visualize bowel obstruction or the classic "target sign" associated with intussusception.

2. Emergency Stabilization:(Time Duration: 1 Hour)

Fluid Resuscitation: Practice intravenous fluid resuscitation techniques in patients showing signs of dehydration or shock due to bowel obstruction.

Gastric Decompression: Learn the procedure for nasogastric tube insertion to decompress the stomach in cases of acute abdominal pain and distension.

3. Management, Intervention & Post-Operative Care:(Time Duration: 1 Hour)

Non-Surgical Reduction: Participate in supervised practice of air or contrast enema reduction techniques for intussusception.

Surgical Interventions: Observe or assist in surgical procedures such as laparotomy or laparoscopic approaches for volvulus, focusing on bowel viability assessment and resection if necessary.

Post-Operative Care:

Post-Surgical Monitoring: Learn to monitor post-operative patients for complications, including infection, anastomotic leaks, and bowel function recovery.

Nutritional Management: Understand and practice the guidelines for initiating feeding after surgery, assessing tolerance and dietary needs.

Experiential-Learning Learning 13.7: Severe Dehydration.

Activities (Total Time Duration: 3 hours)

1. Assessment of Dehydration:(Time Duration: 1 Hour): Clinical Evaluation: Conduct thorough assessments to determine dehydration status using clinical signs (e.g., capillary refill time, skin turgor, and vital signs) and calculating fluid deficit.

Laboratory Interpretation: Gain experience in interpreting lab results (electrolytes, BUN, creatinine) to evaluate the severity of dehydration and any associated electrolyte imbalances.

2.Fluid Resuscitation:(Time Duration: 1 Hour): Oral Rehydration Therapy (ORT): Learn the principles of administering oral rehydration solutions (ORS) and assess patient tolerance and hydration status during treatment.

Intravenous Fluid Administration: Practice calculating and administering IV fluids for severe dehydration, including isotonic fluids and adjusting rates based on ongoing losses.

3.Monitoring and Management:(Time Duration: 1 Hour): Ongoing Assessment: Develop skills in monitoring vital signs, urine output, and clinical status to evaluate response to treatment and fluid resuscitation.

Management of Electrolyte Imbalances: Learn how to identify and correct common electrolyte disturbances associated with severe dehydration, including sodium and potassium levels.

Experiential-Learning Learning 13.8: Allergic and anaphylactic emergencies.

Activities (Total Time Duration: 3 hours)

1. Recognition and Assessment:(Time Duration: 1 Hour)

Conduct a thorough clinical assessment of patients presenting with allergic reactions and anaphylaxis, including identifying symptoms such as urticaria, angioedema, and respiratory distress.

Utilize standardized assessment tools (e.g., the anaphylaxis severity score) to evaluate the severity of the allergic reaction.

2. Immediate Management:(Time Duration: 1 Hour)

Practice the administration of first-line treatments for anaphylaxis, including epinephrine injection (intramuscular) and other adjunctive therapies (e.g., antihistamines, corticosteroids).

Learn airway management techniques in cases of severe respiratory compromise due to anaphylaxis.

3.Monitoring and Follow-up Care:(Time Duration: 1 Hour)

Develop skills in continuous monitoring of vital signs and clinical status post-intervention to identify potential biphasic reactions.

Understand the importance of patient and caregiver education on avoiding allergens and recognizing early signs of anaphylaxis.

Experiential-Learning Learning 13.9: Accident and Poisoning.

Activities (Total Time Duration: 3 hours) **1. Initial Assessment:(Time Duration: 1Hour):** Conduct thorough evaluations of pediatric patients with accidental injuries or suspected poisoning, including history taking, physical examination, and assessing the mechanism of injury. **2.Triage and Stabilization:(Time Duration: 1Hour):** Learn to prioritize interventions based on the severity of injuries and the type of poisoning, including airway management, breathing support, and circulation stabilization (ABC). **3.Decontamination and Treatment**:**(Time Duration: 1Hour):** Gain experience in administering activated charcoal and performing gastric lavage when indicated, following specific protocols for various toxins. Understand the use of antidotes for specific poisonings (e.g., naloxone for opioids, acetycysteine for paracetamol overdose) and practice dosing and administration.
Experiential-Learning Learning 13.10: Acid-Base Imbalances.
Activities (Total Time Duration: 3 hours) **1.Clinical Assessment:(Time Duration: 1 Hour):**Conduct thorough assessments to identify signs and symptoms of acid-base imbalances, including respiratory distress, altered mental status, and metabolic disturbances. **2.Laboratory Interpretation:(Time Duration: 1 Hour):**Gain experience in interpreting arterial blood gas (ABG) results to identify and categorize acid-base disorders (e.g., metabolic acidosis, respiratory alkalosis). **3.Management Strategies,Monitoring and Follow-up:(Time Duration: 1 Hour):**Practice appropriate management techniques for different acid-base imbalances, including fluid resuscitation for metabolic acidosis, oxygen therapy for respiratory acidosis, and bicarbonate administration when indicated. **Monitoring and Follow-up:**Develop skills in continuous monitoring of clinical status and laboratory values to evaluate response to treatment and adjustment of management plans accordingly.
Experiential-Learning Learning 13.11: Pre-Transport Stabilization.
Activities:(Total Time Duration: 2 hours) **1.Initial Assessment & Stabilization Techniques:(Time Duration: 1 Hour)**

Conduct a thorough initial assessment of critically ill pediatric patients, focusing on airway, breathing, and circulation (ABC) priorities.

Use standardized tools (e.g., Pediatric Assessment Triangle) to rapidly assess the child's clinical status.

Stabilization Techniques:

Demonstrate and practice basic life support (BLS) and advanced life support (ALS) techniques, including airway management (e.g., bag-mask ventilation), intravenous access, and fluid resuscitation.

Gain experience in administering medications (e.g., epinephrine, atropine) as per Advanced Pediatric Life Support protocols for emergencies.

2. Monitoring & Communication:(Time Duration: 1Hour)

Develop skills in continuous monitoring of vital signs (heart rate, respiratory rate, oxygen saturation) and neurologic status during stabilization.

Practice using monitoring equipment, including pulse oximeters and ECG, to assess the patient's response to treatment.

Experiential-Learning Learning 13.12: Timely Referral to Appropriate Department.

Activities (Total Time Duration: 2 hours)

1. Identification of Needs & Referral Protocols:(Time Duration: 1 Hour)

Conduct assessments to identify clinical signs and symptoms that indicate the need for referral to specialized departments (e.g., surgery, intensive care, neurology).

Learn to categorize emergencies based on urgency and complexity to determine appropriate referral pathways.

Referral Protocols:

Gain knowledge of institutional referral protocols, including understanding when to involve multidisciplinary teams and specialists in patient care.

Practice using referral forms and electronic health record systems to facilitate timely and accurate communication of patient information.

2. Communication Skills & Follow-Up:(Time Duration: 1 Hour)

Engage in role-playing exercises to develop effective communication strategies for discussing patient needs with families and the receiving department.

Practice delivering concise and relevant information during handoffs, ensuring all critical details are conveyed.

Follow-Up:

Understand the importance of follow-up care and post-referral communication to ensure continuity of care. Learn how to document referrals and any subsequent actions taken in the patient's medical record.	
Modular Assessment	
Assessment	**Hour**
Instructions: Conduct a structured modular assessment. Assessment will be for **75 marks** per credit. Keep structured marking patten. Use different assessment methods in each module for the semester. Keep a record of the structured pattern used for assessment. Calculate the Modular grade point as per Table 6 C. **1. Simulation-Based Clinical Skills Assessment (15 marks)** **Description:** In a simulation lab, students manage a mock pediatric emergency scenario, such as status epilepticus or anaphylaxis, demonstrating appropriate responses according to Pediatric BLS and ACLS protocols. **Purpose:** Tests practical skills, decision-making, and adherence to protocols in a realistic, time-sensitive setting. **2. Structured Case-Based Discussions (CBD) (10 marks)** **Description:** Students participate in guided discussions on cases involving emergencies like arrhythmias or traumatic brain injury. The discussion includes assessment, prioritization of interventions, and consideration of potential complications. **Purpose:** Assesses clinical reasoning, problem-solving skills, and ability to discuss decision-making processes. **3. Oral Viva on GI Emergencies (8 marks)** **Description:** Students explain their approach to managing gastrointestinal emergencies like volvulus and intussusception in a viva setting, discussing diagnosis, differential diagnosis, and treatment priorities. **Purpose:** Evaluates depth of understanding and communication skills under verbal questioning. **4. Flowchart Creation for Emergency Management (6 marks)** **Description:** Students create flowcharts outlining steps for managing emergencies like severe dehydration and allergic reactions, detailing interventions at each stage.	6

Purpose: Assesses understanding of structured response protocols and sequence of interventions. **5. Role-Play on Parental Counseling (6 marks)** **Description:** Students engage in a role-play scenario where they counsel a “parent” on post-resuscitation care after a pediatric emergency, explaining steps taken and discharge instructions. **Purpose:** Tests communication skills and ability to translate technical information into understandable guidance for caregivers. **6. Concept Mapping for Emergency Recognition and Response (6 marks)** **Description:** Students create a concept map linking different pediatric emergencies, showing signs and symptoms, priority interventions, and preventive strategies. **Purpose:** Reinforces connections among various emergencies, focusing on rapid recognition and intervention. **7. Checklists for Emergency Preparedness (5 marks)** **Description:** Students complete a checklist of required steps and materials for managing pediatric emergencies, such as the equipment needed for Pediatric ACLS. **Purpose:** Evaluates knowledge of preparation and organization required for rapid emergency response. **8. Short Answer Questions (SAQs) (5 marks)** **Description:** Students answer short-answer questions about specific interventions for emergencies (e.g., fluid management in severe dehydration, medication use in status epilepticus). **Purpose:** Tests detailed understanding of specific emergency management techniques. **9. Case Reflection Journal (5 marks)** **Description:** Students reflect on a simulated emergency scenario, such as anaphylaxis or TBI, discussing what went well, challenges faced, and areas for improvement in their response. **Purpose:** Encourages critical self-reflection and awareness of improvement areas in emergency response skills. **10. Temperature Monitoring & Hypothermia Prevention in Trauma (4 marks)**	

Description: Students create a step-by-step plan for temperature management in pediatric TBI cases, addressing hypothermia prevention as part of trauma management. **Purpose:** Tests awareness of complications like hypothermia in trauma and reinforces preventive measures. **11. Group Presentation on Arrhythmias (5 marks)** **Description:** In small groups, students present on recognizing and managing pediatric arrhythmias, covering signs, symptoms, and treatment options. **Purpose:** Assesses collaborative learning, presentation skills, and ability to explain complex topics effectively. **Total 75 Marks** Any practical in converted form can be taken for assessment. (35 marks) **and** Any of the experiential as portfolios/ reflections/ presentations can be taken as an assessment. (40 marks)	

Semester No : 5

Module 14 : جرثومی تدیہ Jarsoomi Tadiya (Bacterial Infections I)

Module Learning Objectives

(At the end of the module, the students should be able to)

1. Describe the classical concept of ‘Ufūnat, types of Humma and their causes (asbab).
2. Conduct the clinical examination of the patient, and confirm the diagnosis by laboratory investigations.
3. Differentiate between various types of bacterial infections.
4. Identify the complications of bacterial infections and Formulate Uṣūl-i-‘Ilāj and ‘Ilāj (treatment) of the disease.
5. Discuss preventive measures (Al-Taqaddum bi’l Ḥifẓ) like hygiene, vaccination, and limited contact with infected persons. Recommend a balanced diet (Ilāj bi’l Taghdhiya).

Unit 1 عفونت کا نظریہ Ufūnat ka nazariya (Classical concept of Infections)

14.1.1. عفونت کا نظریہ (*Ufūnat* ka nazariya) classical Unani concept of Infection.

14.1.2. امراض معدیہ کا نظریہ *(Amrāḍ Mu'diya ka nazriya)* Concept of Infectious diseases.

14.1.3. Nazla Har ki Mahiyate marz, asbab, alamat, tashkis, ilaj ba lehaz darjate marz, Usul i ilaj wa ilaj.

14.1.4. Etiology and Epidemiology, Pathophysiology, Clinical Manifestations, Diagnosis, Differential Diagnosis, Management and Treatment, Prevention of Haemophilus influenzae type B (Hib) Disease.

References: 31,40,43,44,46,63

3A	3B	3C	3D	3E	3F	3G
CO1,CO2,CO3, CO4,CO6,CO8	Describe the concept of 'Ufūnat (Putrifaction) and Nazla-har (1 houir), and Explain Haemophilus infuenza in detail. (1 hour)	2	Lecture	CC	Knows-how	L,L&PPT
CO1,CO2,CO3, CO4,CO6,CO8	Analyze Asbab wa Alamat according to Aqsaam of Nazla and its Uṣūl-i-'Ilāj 'Ilāj and Tahaffuzi tadabeer with special context to H. Influenza.	4	Practical14.1	PSY-GUD	Shows-how	CBL,D,D-BED
CO1,CO2,CO3, CO4,CO6,CO8	Evaluate and diagnose cases of *Haemophilus influenzae*, assess prognosis and complications, and develop a comprehensive treatment plan with appropriate patient guidance.	4	Experiential-Learning14.1	AFT-VAL	Does	JC,CBL,CD

Unit 2 شہیقہ shahiqa (Whooping Cough) and Diphtheria

14.2.1. شہیقہ (shahiqa), Mahiyate marz, darjate marz, alamat, Usul i ilaj wa ilaj

14.2.2. Etiology and Epidemiology, Pathophysiology, Clinical Manifestations, Diagnosis, Differential Diagnosis, Management and Treatment, Prevention of Pertussis.

14.2.3. خناق *(Khunaq)* ke aqsam, alamat, tashkis, Usul i Ilaj wa Ilaj.

14.2.4. . Etiology and Epidemiology, Pathophysiology, Clinical Manifestations, Diagnosis, Differential Diagnosis, Management and Treatment, Prevention of Diphtheria.

References: 29,31,41,43,44,63

3A	3B	3C	3D	3E	3F	3G
CO1,CO2,CO3, CO4,CO6,CO8	Describe epidemiology, mahiyate marzi, stages (Daure Nazli, Daure Sually, Duare Naqahat), Uṣūl-i-'Ilāj, 'Ilāj and Tahaffuzi tadabeer of Shahiqua (Whooping cough) and Khunaq (Diphtheria).	2	Lecture	CC	Knows-how	L,L&GD,L&PPT
CO1,CO2,CO3, CO4,CO6,CO8	Demonstrate proficiency in identifying clinical features, complications, diagnosis and management of Shahiqua (pertusis). Perform emergency interventions and implement isolation measures for Khunaq (Diphtheria)cases following safety protocols.	4	Practical14.2	PSY-GUD	Shows-how	RLE,PBL,D,DIS,CD
CO1,CO2,CO3, CO4,CO6,CO8	Demonstrate examination techniques for suspected pertussis and Diphtheria cases, identifying clinical features and developing diagnostic approaches.	6	Experiential-Learning14.2	PSY-GUD	Shows-how	DIS,RP,D,PBL,CBL

Unit 3 Brucellosis and Leptospirosis.

14.3.1. . Etiology and Epidemiology, Pathophysiology, Clinical Manifestations, Diagnosis, Differential Diagnosis, Management and Treatment, Prevention and Control of Brucellosis(Malta Bukhar) and Leptospirosis.

References: 44,50,63,85

3A	3B	3C	3D	3E	3F	3G
CO1,CO2,CO3, CO4,CO6,CO8	Analyze the etiopathogenesis, evaluate comprehensive clinical manifestations, and design integrated treatment protocols for Brucellosis.	1	Lecture	CC	Knows-how	RP,L&PPT ,L

CO1,CO2,CO3, CO4,CO6,CO8	Illustrate the etiopathogenesis, evaluate phase-specific clinical manifestations, and design treatment protocols for Leptospirosis.	1	Lecture	CC	Shows-how	L,L&PPT
CO1,CO2,CO3, CO4,CO6,CO8	Demonstrate proficiency in classifying Brucellosis and assessing its progression, differentiating its causative factors, examining clinical features, and interpreting laboratory findings.	2	Practical14.3	CC	Knows-how	PBL,DL,LRI,D,CBL
CO1,CO2,CO3, CO4,CO6,CO8	Differentiate causative factors, examine clinical presentations, and interpret laboratory findings of Leptospirosis while demonstrating proficiency in assessing disease severity and progression.	2	Practical14.4	CAP	Shows-how	SIM,LRI,PAL,CBL,PER
CO1,CO2,CO3, CO4,CO6,CO8	Perform clinical examinations, analyze diagnostic investigations, and develop individualized treatment plans for patients with Brucellosis.	2	Experiential-Learning14.3	PSY-GUD	Does	DIS,CBL,PBL,SIM
CO1,CO2,CO3, CO4,CO6,CO8	Demonstrate competency in performing clinical examinations, analyze diagnostic investigations, and develop individualized treatment plans for Leptospirosis.	2	Experiential-Learning14.4	PSY-MEC	Does	SIM,DIS,CBL,PBL,PSM

Unit 4 کزاز Kuzāz (Tetanus)

14.4.1. کزاز *(Kuzāz)* ki Mahiyate marzi, aqsam, asbab, alamat, Usul i laj wa Ilaj.

14.4.2. Etiology and Epidemiology, Pathophysiology, Clinical Manifestations, Diagnosis, Differential Diagnosis, Management and Treatment, Prevention and Vaccination of Tetanus.

References: 31,43,44,63

3A	3B	3C	3D	3E	3F	3G

CO1,CO2,CO3, CO4,CO6,CO8	Analyze and synthesize knowledge of Kuzaz (Tetanus) from classical Unani literature, evaluating its types, mahiyate marz, alamat, Uṣūl-i-'Ilāj, 'Ilāj, and complications. (1 hour). explain the modern concept of Tetanus, its prevention and complications. (1 hour)	2	Lecture	CC	Knows-how	L,L&GD,L&PPT
CO1,CO2,CO3, CO4,CO6,CO8	Illustrate tetanus pathogenesis and its correlation with clinical features, while analyzing prognostic factors and developing prevention strategies.	4	Practical14.5	PSY-MEC	Knows-how	SIM,PER,CBL,DIS
CO1,CO2,CO3, CO4,CO6,CO8	Demonstrate competency in tetanus diagnosis and its hospital-based management.	2	Experiential-Learning14.5	PSY-GUD	Does	SIM,RP,D,C_L,CBL
CO1,CO2,CO3, CO4,CO6,CO8	Develope and implement effective community education programs, counseling for tetanus prevention through vaccination and wound management.	4	Experiential-Learning14.6	AFT-VAL	Does	FV,D,PrBL,RP,TPW

Unit 5 Anaerobic Infection

14.5.1. ورم اغشیہ دماغ *waram Aghshiya dimaagh* ke Asbab wa alamat, tashkis, Usul i Ilaj wa Ilaj.

14.5.2. Etiology and Types of Anaerobic Organisms, Epidemiology, Pathophysiology, Clinical Manifestation, Diagnosis, Differential Diagnosis, Management and Treatment, Prevention and Control, Complications, Prognosis of Meningococcal Infection.

14.5.3. عطاش (*Uṭūsh*) / تشنک (*Tashnak) Mahiyat,* alamat wa asbab, Ilaj.

References: 23,29,34,40,41,43,44,50,51,63,85

3A	3B	3C	3D	3E	3F	3G

CO1,CO2,CO3, CO4,CO6,CO8	Describe various anaerobic infections, with detailed explanation of Waram Aghshiya-e-Dimagh. (1 hour) and Uṭāsh/Tashnak, clinical presentations, diagnostic approaches, and treatment principles following Uṣūl-i-'Ilāj and 'Ilāj frameworks. (1 hour)	2	Lecture	CC	Knows-how	FC,L&PPT ,L
CO1,CO2,CO3, CO4,CO6,CO8	Demonstrate and differentiate clinical features of anaerobic infections, evaluate diagnostic tests, and design management plans (Uṣūl-i-'Ilāj and 'Ilāj).	4	Practical14.6	PSY-GUD	Shows-how	D,IBL,CBL,SIM,DIS
CO1,CO2,CO3, CO4,CO6,CO8	Conduct thorough patient examination and implement diagnostic protocols for anaerobic/meningococcal infections, maintain detailed medical records.	6	Experiential-Learning14.7	AFT-VAL	Does	CBL,D-BED,PER,PBL,SIM

Practical Training Activity

Practical Training 14.1 Haemophilus Influenza

Total learning hours (4)

1. The teacher will demonstrate examination methods for suspected *Haemophilus influenzae* cases with standardised patients. Students practice respiratory assessments and document findings(1 hour).

2. Vaccine Training: Train on administering the Hib vaccine, covering schedule, dosage, and contraindication. Preventive Measures: Implement dietary modifications (*Ilāj bi'l Ghidha*) and lifestyle changes for immunity(2 hours).

3. Case Analysis: Analyze well-documented cases with imaging and lab findings, focusing on clinical decisions(1 hour).**OR**

1. The teacher explains the classification of *Nazla*, focusing on its *Asbab wa Alamat* about *H. Influenza*, and demonstrates key diagnostic and preventive approaches(1hour).

2. Students analyze cases to identify types of *Nazla*, correlate symptoms with underlying causes, and suggest appropriate *Uṣūl-i-'Ilāj* and *Tahaffuzi Tadabeer* under guidance, integrating Unani principles with contemporary understanding(3 hours).
Practical Training 14.2 Clinical evaluation and assessment of Pertussis.
Total learning hour (4) 1. Teacher will present audio recordings of characteristic whooping cough sounds and video demonstrations of clinical examinations. 2. Students practice recognition of different stages using standardized case scenarios. Interactive workshops focus on specimen collection techniques using mannequins. Students develop management protocols based on case complexities, incorporating Unani treatment principles. The session concludes with team-based problem-solving exercises using complex case scenarios. (2 hours) 3. Simulation-Based Training + Clinical Photographs: Teacher will use high-fidelity simulation and extensive clinical photograph libraries to demonstrate classic presentations. session focuses on recognizing pseudomembranes and airway assessment using mannequins, involves emergency management protocols, including proper specimen collection and isolation procedures. Students practicing emergency interventions and developing management protocols. (2 hours)
Practical Training 14.3 Brucellosis Evaluation.
Total learning hours (2) 1. The teacher provides an overview of Brucellosis classification, causative factors, clinical features, and diagnostic methods using case studies and visual aids. (40 minutes). 2. Students analyze cases, classify the disease, perform simulated examinations to assess progression, and interpret lab findings under the teacher's guidance, linking them to clinical presentations. (80 minutes)
Practical Training 14.4 "Leptospirosis" Analysis and Progression.
Total learning hours (2) 1. The teacher introduces Leptospirosis through a brief lecture and case studies, highlighting causative factors, clinical signs, and lab findings. (30 min)

2. Students analyze cases, perform mock examinations to assess severity and interpret lab results under guidance, connecting findings to disease progression. (90 min)
Practical Training 14.5 Tetanus pathogenesis.
Total learning hours (4) 1. Teacher will guide students regarding analysing the pathgrnesis of tetanus. (40 min) 2. Using clinical case records and laboratory data, students will analyze tetanus pathogenesis in small groups. They will create pathophysiology flow charts linking C. tetani toxin mechanisms to specific symptoms. (2-3 cases real or virtual) (3 hours) 3. At the end of activity teacher will discuss key points. (20 min)
Practical Training 14.6 Anaerobic Infections Diagnosis and management.
Total learning hours (4) 1. The teacher will explain the clinical features of anaerobic infections through case discussions and demonstrations, highlighting distinguishing signs. (1 hour) 2. Students will observe and differentiate these features during simulated examinations, evaluate diagnostic tests provided by the teacher in different infections (2 hours), and design appropriate management plans, integrating Unani principles (Uṣūl-i-'Ilāj and 'Ilāj) and conventional approaches under guided supervision. (1 hour)
Experiential Learning Activity
Experiential-Learning Learning 14.1: Haemophilus Influenza Management.
Total learning hour (4) 1. Students undertake a structured literature review project focusing on H. influenza cases. (2 hours) They develop clinical protocols, and diagnostic approaches with Unani treatment principles. (1 hour).

2. Presentations to Teachers and peers for discussion and refinement of protocols. Students create patient education materials and emergency management algorithms for future reference. (1 hour)
Experiential-Learning Learning 14.2: Pertussis and Diphtheria
Total Learning hours (6) 1) Clinical Case Observation and Assessment: Students will shadow experienced practitioners in the outpatient department, observing real pertussis cases or simulations. They will practice taking detailed case histories, noting characteristic whooping cough patterns, and documenting physical findings under supervision. Students maintain reflective journals documenting their observations of patient symptoms, emotional states, and family dynamics. 2-3 cases (3 hours) 2) Case Scenario Analysis:Students will analyze video recordings of actual pertussis cases, discussing clinical features, diagnostic approaches, and treatment strategies in small groups. They will practice formulating Uṣūl-i-'Ilāj and 'Ilāj plans for various case scenarios, including identifying appropriate referral criteria. 2-3 cases (3 hours) OR Case Scenario Analysis:Students will analyze video recordings of actual diphtheria cases, or simulation, problem based learning given by the teacher.
Experiential-Learning Learning 14.3: Diagnosis and treatment of Brucellosis.
Students will demonstrate key clinical examination techniques, and discuss diagnostic investigations, and perform clinical examinations on simulated or standardized patients, analyze provided diagnostic reports, and collaborate to develop tailored treatment plans, focusing on patient-specific needs and disease management.
Experiential-Learning Learning 14.4: Diagnosis and treatment of Leptospirosis.
Total learning hours (2) Students will conduct clinical assessments of Leptospirosis patients, develop management plans, and monitor disease progression in clinical settings. (if the patient is unavailabe then the activity is carried out through case scenarios.) 2-3 cases.

Experiential-Learning Learning 14.5: Demonstrate tetanus management.	
Total learning hours (2) 1. The student independently assesses a simulated or standardized patient presenting with tetanus symptoms, identifying key diagnostic features. They evaluate provided clinical and laboratory data, demonstrate emergency management procedures, and outline a hospital-based care plan, including monitoring and interventions. (90 min) 2. students will recieve periodic feedback from the teacher. (30 min)	
Experiential-Learning Learning 14.6: Tetanus prevention.	
(Total activity time 4 hours) 1. Students will develop and deliver tetanus prevention education sessions in community settings. (2 hours). 2. Students will create culturally appropriate materials and conduct vaccination awareness programs. (2 hours).	
Experiential-Learning Learning 14.7: Anaerobic infections/ Meningococcal Infections.	
Total activity time (6 hours) 1. Conduct simulation sessions using mannequins to practice sample collection techniques for anaerobic cultures. (1 hour) 2. Role-play scenarios focusing on history taking and clinical decision making for suspected anaerobic infections. (1 hour) 3. Create mock patient records and practice documentation skills. (1 hour) 4. Evaluate the suspected patients of Anaerobic infection, Tashkhis (diagnose) and plan Usul-i-Ilaj wa Ilaj (treatment). at least two to three patients. (3 hours)	
Modular Assessment	
Assessment	**Hour**
Instructions— Conduct a structured Modular assessment. The assessment will be for 50 marks(25 marks per credit). Keep a structured marking pattern. Use different assessment methods in each module for the semester. Keep a record of the structured pattern used for	4

assessment. Calculate the Modular grade point as per Table 6 C. 1. Written Test – 10 Marks • Format: Short answer or case-based questions.(SAQ, LAQ) • Content: Covers any unit, from Ufūnat ka nazariya, Nazla Ḥārr, Shahiqua, Khunaq, Brucellosis, Kuzaz, Anaerobic and Meningococcal infections. • Marks Allocation: o Concepts and causes (5 marks) o Diagnosis and Unani treatment principles (5 marks) 2. Practical Examination – 20 Marks • Format: Clinical exam skills test. (OSCE) • Content: Perform examinations, diagnose cases, and advise Unani treatment plans for selected diseases. • Marks Allocation: o Clinical examination and reasoning (10 marks) o Treatment planning and management (10 marks) 3. Case Report Assignment – 10 Marks • Format: Written report on a case from any unit of the module, detailing patient history, differential diagnosis, and treatment approach.(Problem based assessment) • Marks Allocation: o Case analysis and diagnostic approach (5 marks) o Treatment plan and preventive advice (5 marks) 4. Viva Voce (Oral Exam) – 10Marks • Format: Oral exam on disease differentiation, prevention, and Unani management. • Marks Allocation:	

o Disease knowledge and differential skills (5 marks) o Preventive strategies and Unani concepts (5 marks) Or Any practical in converted form can be taken for assessment. (25 marks) and Any of the experiential as portfolio/ refelections / presentations can be taken as an assessment. (25 marks) Total Marks= 50	

Module 15 : II جرثومی تدیہ,Jarsoomi Tadiya II, (Bacterial Infections II)

Module Learning Objectives

(At the end of the module, the students should be able to)

1. Describe various types of acute and chronic bacterial infections.
2. Obtain detailed history and conduct physical examination and advise required lab investigations to reach the diagnosis.
3. dentify prognosis of certain bacterial infections their complications and refer the patient to appropriate higher center if required.
4. Plan Uṣūl-i-'Ilāj and 'Ilāj supportive and definitive treatment of certain bacterial infection.
5. Counsel the patients and relatives regarding treatment outcome and prevention.

Unit 1 ورم معدہ Waram Mi'da (Helicobactor Pylori)

15.1.1.ورم معدہ(Waram Mi'da), aqsaam, asbab, alamat, tashkhis, usul i ilaj and ilaj.

15.1.2. Etiology and Epidemiology, Pathophysiology, Clinical Manifestations, Diagnosis, Differential Diagnosis, Management and Treatment, Complications, Prevention and Control of Helicobacter Pylori.

References: 31,41,43,44,63,85

3A	3B	3C	3D	3E	3F	3G

CO1,CO2,CO3, CO4,CO6	Describe and analyze the pathogenesis, diagnostic approaches, clinical features, complications, and treatments of Warm-e-Meda, H. pylori infection.	1	Lecture	CC	Knows-how	L,L&PPT ,FC
CO1,CO2,CO3, CO4,CO6	Analyze and explain the epidemiology, pathogenesis, clinical features, diagnosis, treatment, and prevention of Epidemic Typhus.	1	Lecture	CC	Knows-how	L&PPT ,L
CO1,CO2,CO3, CO4,CO6	Demonstrate competency in interpreting Helicobactor pylori diagnostic tests, and other investigations.	2	Practical15.1	PSY-GUD	Shows-how	CD,D-BED,D
CO1,CO2,CO3, CO4,CO6,CO8	Examine, evaluate and manage cases of Epidemic Typhus through diagnostic approaches and formulate treatment plans, maintain follow-up records of patient outcome.	2	Practical15.2	PSY-GUD	Shows-how	DIS,PER,SIM,PBL,D
CO1,CO2,CO3, CO4,CO6	Examine, evaluate and manage cases of Epidemic Typhus through diagnostic approaches and formulate treatment plans, maintain follow-up records of patient outcome.	2	Experiential-Learning15.1	PSY-GUD	Does	CBL,RLE
CO1,CO2,CO3, CO4,CO6	Examine, evaluate and manage cases of Epidemic Typhus through diagnostic approaches and formulate treatment plans, maintain follow-up records of patient outcome.	2	Experiential-Learning15.2	AFT-VAL	Does	RLE,CBL,RP

Unit 2 سل و دق،تدرن Tadarrun, Sill wa Diq (Tuberculosis)

15.2.1. سل و دق،تدرن (Tadarrun, Sill wa Diq)، حمی دقیہ (Ḥummā Diqqiyya), Asbab, alamat, ذبول (Dhubul), ذوبان (Dhawbān), تدابیر مدقوق (tadabir madquq), regimen for tuberculosis patients, Usul i ilaj wa ilaj

15.2.2. Etiology and Epidemiology, Pathophysiology, Types of Tuberculosis, Clinical Manifestations, Diagnosis, Differential Diagnosis, Management and Treatment, Drug-Resistant Tuberculosis, Complications, Prevention and Vaccination, Prognosis of Tuberculosis.

References: 31,43,44,63

3A	3B	3C	3D	3E	3F	3G
CO1,CO2,CO3, CO4,CO6,CO8	Explain Humma Miwiyya (Typhoid Fever) including its etiology, epidemiology, pathogenesis, clinical features, diagnostic criteria, prevention, outbreak control, vaccination, complications, naqahat, and formulate Uṣūl-i-'Ilāj and 'Ilāj.	2	Lecture	CC	Knows-how	L,L&PPT
CO1,CO2,CO3, CO4,CO6	Differentiate and demonstrate various types of Ḥummayāt and explore the concepts of Tabrīd, Tarṭīb, Tanqiya, Taghdhiya, and Dāfi'-i-Ḥummā/Māni'-i-Ḥarārat advia in Ḥummā Mi'wiyya management.	2	Practical15.3	PSY-GUD	Shows-how	SIM,RLE,PBL,PER,DIS
CO1,CO2,CO3, CO4,CO6	Demonstrate proficiency to interpret the Widal test with precision and accuracy.	2	Practical15.4	PSY-GUD	Shows-how	DL,SIM
CO1,CO2,CO3, CO4,CO6	Evaluate and diagnose cases of Ḥummā Mi'wiyya through clinical examination, laboratory confirmation, and carryout proper documentation.	3	Experiential-Learning15.3	PSY-GUD	Does	SIM,CD
CO1,CO2,CO3, CO4,CO6	Design a Unani management plan for Ḥummā Mi'wiyya.	3	Experiential-Learning15.4	PSY-GUD	Does	CD,PBL,PL,D-BED,DIS

Unit 3 حمی معویہ Humma Mi'wiyya (Typhoid Fever)

15.3.1. حمی معویہ (Humma Mi'wiyya) ke asbab, alamat, tashkis, Usul i ilaj wa ilaj.

15.3.2. Etiology and Epidemiology, Pathophysiology, Clinical Manifestations, Stages of Typhoid Fever, Diagnosis, Differential Diagnosis, Management and Treatment, Complications, Prevention and Vaccination, Prognosis of Typhoid Fever. (Enteric Fever)

References: 30,31,34,43,44,50,51,61,63,71

3A	3B	3C	3D	3E	3F	3G
CO1,CO2,CO3, CO4,CO6	Describe the classical Unani concept of Sil wa diq (tuberculosis) and *analyze* the understanding of Humma e Diqqiya in comparison to recent medical interpretations, *demonstrating* a comprehensive link between classical and contemporary perspectives on tuberculosis.	2	Lecture	CAN	Shows-how	L&PPT ,L,L&GD,PL
CO1,CO2,CO3, CO4,CO6	Practice pediatric Tuberculosis (TB) diagnosis and management.	2	Practical15.5	AFT-VAL	Shows-how	LRI,CD,X-Ray,CBL
CO1,CO2,CO3, CO4,CO6	Recognize and apply childhood tuberculosis management with supportive hepatoprotective Unani medicines.	2	Practical15.6	AFT-VAL	Shows-how	CBL,DIS,PBL
CO1,CO2,CO3, CO4,CO6	Evaluate lab investigations, interpret, diagnose and plan treatment for Humma Diqqiyya, proper referral and followup of the case.	3	Experiential-Learning15.5	AFT-RES	Does	CD,PBL,LRI,DIS,RLE
CO1,CO2,CO3, CO4,CO6	Participate in National Health Programe and implement a community-based tuberculosis awareness program integrating Unani concepts of prevention and early detection.	3	Experiential-Learning15.6	AFT-VAL	Does	CD,RP,FV

Unit 4 جذام Judham (Leprosy)

15.4.1. جذام *(Judham)* ke Aqsam, Asbab, Alamat, tashkis, Awarzat, تدابیر مجزوم (Tadbir Majzum), regimen for leprosy patients, Usul i Ilaj wa Ilaj

15.4.2. Hansen Disease/ Leprosy: Etiology and Epidemiology, Pathophysiology, Types of Leprosy (e,g,, paucibacillary, multibacillary), Clinical Manifestations, Diagnosis, Differential Diagnosis, Management and Treatment, Complications, Prevention and Control, Prognosis of Leprosy.

References: 41,43,44,50,51,56,63

3A	3B	3C	3D	3E	3F	3G
CO1,CO2,CO3, CO4,CO6	Analyze classical Unani concepts of Judham (leprosy), including its types (Judham Khadri and Judham Uqadi), causes (Asbāb-i-Tafarruq-i-Ittiṣāl and other Asbāb), and clinical features, evaluating prognosis based on the ibteda and taqarroh phases.	1	Lecture	CAN	Knows-how	L_VC,L,L&PPT
CO1,CO2,CO3, CO4,CO6	Describe understanding of Judham (Leprosy) its investigation, diagnosis, and management, describing complications of untreated leprosy and proposing appropriate medical and surgical management strategies.	1	Lecture	CC	Shows-how	L,L&PPT
CO1,CO2,CO3, CO4,CO6	Diagnose and manage leprosy using tests, clinical evaluation, and therapeutic measures. (Tadabir-i Majzoom)	2	Practical15.7	PSY-GUD	Shows-how	DL,CD,D-BED,CBL
CO1,CO2,CO3, CO4,CO6	Perform a comprehensive neurological examination to assess and grade disability in leprosy patients.	2	Practical15.8	PSY-GUD	Shows-how	CD,D-BED,PBL
CO1,CO2,CO3, CO4,CO6	Evaluate and diagnose leprosy cases, formulate supportive care, and recommend referrals for definitive treatment under the National leprosy Eradication Programme.(NLEP).	3	Experiential-Learning15.7	PSY-GUD	Does	CD,LRI,PBL
CO1,CO2,CO3, CO4,CO6	Conduct patient education and counseling for newly diagnosed leprosy patients, addressing treatment adherence, self-care, and psychosocial support.	3	Experiential-Learning15.8	AFT-RES	Does	SIM,RLE,RP
Unit 5 آتشک Ātshak (Syphilis)						

15.5.1.آتشک,(Ātshak) ke مترادفات(mutradefat), mahiyate marz, asbab, Aqsam, alamat, tashkis, Darjate marz, Usul i Ilaj wa Ilaj.

15.5.2. Etiology and Epidemiology, Pathophysiology, Stages of Syphilis (Primary, Secondary, Latent, Tertiary), Clinical Manifestations, Diagnosis, Differential Diagnosis, Management and Treatment, Complications (e,g,, neurosyphilis, congenital syphilis), Prevention and Control, Prognosis of Syphilis.

15.5.3. Definition and Common Types of Nosocomial Infections, Etiology and Common Pathogens, Pathophysiology, Risk Factors, Clinical Manifestations, Diagnosis, Differential Diagnosis, Management and Treatment, Prevention and Infection Control Measures, Complications and Impact on Healthcare of Nosocomial Infections, and Opportunistic Infections.

References: 31,43,44,61,63

3A	3B	3C	3D	3E	3F	3G
CO1,CO2,CO3, CO4,CO6	Describe Atshak (syphilis) types, asbaab wa alaamat,Pathophysiology and its complications. (40 min)	1	Lecture	CC	Knows-how	L,L&PPT ,L&GD
CO1,CO2,CO3, CO4,CO6	Explore and identify the clinical features of Atshak (syphilis), congenital syphilis, and Hutchinson's triad, diagnose and create a management plan for a case of congenital syphilis.	2	Practical15.9	PSY-GUD	Shows-how	CBL,CD,D
CO1,CO2,CO3, CO4,CO6	Discuss and demonstrate Nosocomial Infection, its types ,prevalence in pediatrics age group and diagnosis.	1	Practical15.10	PSY-GUD	Shows-how	D,SIM,PBL
CO1,CO2,CO3, CO4,CO6	Describe various opportunistic infections in pediatrics and demonstrate the Oportunistics the help of clinical feartures their diagnosis and management.	1	Practical15.11	PSY-GUD	Shows-how	CBL,PBL,CD
CO1,CO2,CO3, CO4,CO6	Diagnose and evaluate suspected Atshak (syphilis) patients through clinical assessments and patient histories, and demonstrate and	2	Experiential-Learning15.9	PSY-GUD	Does	CD,D-BED

	interpret serological tests to apply laboratory findings in clinical management.					
CO1,CO2,CO3, CO4,CO6	Implement and evaluate interventions to reduce nosocomial infections in pediatric wards, integrating Unani principles of hygiene with infection control practices.	2	Experiential-Learning15.10	AFT-RES	Does	DIS,SDL,BS,RP,SIM
CO1,CO2,CO3, CO4,CO6	Describe nosocomial infections (pneumonia, bloodstream, UTI) with causes and prevention. and also describe HIV-related opportunistic infections (e.g., TB, candidiasis, toxoplasmosis) with etiology.	1	Lecture	CC	Knows-how	L&GD,L,CBL
Practical Training Activity						
Practical Training 15.1 "H. pylori Test Review"						
Total learning hours (2) 1. Teacher introduces H. pylori and its diagnostic methods, including serology and breath tests. (40 min) 2. Students analyze case studies with fictional patient histories and test results. Each group discusses the significance of the results and proposes management strategies. Afterward, they present their findings to the class, receiving feedback from the teacher and peers. This exercise enhances students' competency in interpreting H. pylori diagnostic tests and their implications for patient care. (80 min)						
Practical Training 15.2 "Typhus Diagnostics"						
Total learning hours (2) 1. The teacher will introduce common diagnostic tests, such as serological tests and PCR, and present case studies with relevant lab results for Epidemic Typhus.(40 min)						

2. Students will analyze the findings, formulate diagnosis, and discuss their clinical significance. Each group will then present their conclusions to the class, promoting discussion and reinforcing the integration of investigation results into clinical practice. This activity aims to enhance students' practical skills in diagnostics and management of Epidemic Typhus. (80 min)
Practical Training 15.3 Holistic Unani Approach to Fever Differentiation and Management
Total learning hours (2) 1. Teacher will demonstrate students will differentiate various types of Ḥummayāt (fevers) while applying Unani concepts like Tabrīd (cooling), Tarṭīb (regulation), Tanqiya (purification), Taghdhiya (nourishment), and Dāfi'-i-Ḥummā (anti-fever medications) for Ḥummā Mi'wiyya (intermittent fever). (1 hour) 2. The teacher will introduce the types of fevers and demonstrate techniques for managing them, including Dāfi'-i-Ḥummā (anti-fever medications). Students will then practice in groups, simulating fever management scenarios, followed by presentations to share their approaches and enhance collaborative learning in Unani fever management. (1 hour)
Practical Training 15.4 Interpreting the Widal Test.
Total learning hours (2) 1. The teacher will introduce the test's principles, emphasizing the significance of O and H antigens, and present sample results for analysis. (30 min) 2. Students will then work in pairs to discuss and interpret these results, considering the implications of varying antibody titers and factors that may influence diagnosis. Each pair will present their findings to the class, promoting collaborative learning. Students will accurately interpret Widal test results for diagnosing typhoid fever. This activity aims to equip students with the skills necessary to interpret Widal test results effectively in clinical practice. (90 min)
Practical Training 15.5 Tuberculosis (TB) Diagnostic Skills.
Total learning hours (2) 1. Teacher will demonstrate diagnostic techniques through interactive clinical skills training, guiding students in practical specimen collection, radiological interpretation, and clinical reasoning. (40 min)

2. Students will actively practice diagnostic skills, analyze clinical scenarios, and develop systematic approaches to tuberculosis assessment under faculty supervision. (80 min)
Practical Training 15.6 Hepatoprotective medicines in Tuberculosis.
Total learning hours (2) 1. The teacher demonstrates key Unani formulations, explaining their role in supporting liver health during tuberculosis treatment. (30 min) 2. Students apply these formulations in real or simulated cases, monitor liver function tests (LFTs), and assess patients' overall well-being. As they document the impact on LFTs and patient outcomes, students reflect on the hepatoprotective benefits and effectiveness of Unani support in TB care. The teacher facilitates discussions on observations, reinforcing the integration of Unani medicine in holistic TB management. (90 min)
Practical Training 15.7 Investigating Leprosy.
Total learning hours (2) 1. Students will engage with a video tutorial demonstrating immunological and Lepromin tests for leprosy diagnosis. The teacher will explain the procedures and interpretation of results, followed by a guided review of clinical features related to leprosy using case studies. (1 hour) 2. Students will analyze symptoms and make diagnostic decisions, then simulate the application of tadabir-i- majzoom (therapeutic measures) based on their findings. The session will conclude with a reflection on the importance of accurate diagnosis and treatment adherence. (1 hour)
Practical Training 15.8 Clinical examination of Leprosy cases.
Total learning hours (2) 1. The teacher will facilitate a comprehensive neurological examination to assess and grade disability in leprosy patients. (30 min). 2. Students will actively engage in performing the examination, practicing techniques to evaluate neurological function and understand the implications of their findings for patient care. (90 min)
Practical Training 15.9 Clinical Features of Syphilis.

Total learning hours (2) 1. The teacher will provide an overview of Atshak (syphilis), congenital syphilis, and Hutchinson's triad. Students will then assess a virtual patient case suspected of congenital syphilis, identifying and documenting key clinical features. After forming a diagnosis, they will create a management plan that includes treatment options and follow-up strategies. (1 hour) 2. Students will present their findings and management plans to the class for discussion. (1 hour)
Practical Training 15.10 Awareness of Nosocomial Infections.
Total learning hour (1) 1. The teacher will guide a discussion on nosocomial infections, covering their types, prevalence in pediatric patients, and diagnostic approaches. (20 min) 2. Students will review common types—like surgical site, urinary tract, and bloodstream infectionsand analyze case studies to understand contributing factors and diagnostic methods. This activity aims to build awareness of infection control and patient safety in pediatric care. (40 min)
Practical Training 15.11 Opportunistic Infections in Pediatrics.
Total learning hours (1) 1. The teacher will use visual aids, such as clinical images and diagnostic charts, to introduce pediatric opportunistic infections (OIs). Through a simulated patient scenario, the teacher will demonstrate identifying clinical features and diagnostic steps. (20 min) 2. Students will then analyze diagnostic images, interpret lab results, and create management plans, presenting their findings for group discussion and feedback. (40 min)
Experiential Learning Activity
Experiential-Learning Learning 15.1: Integrated Case Management Clinic.
Total learning hours (2)

1. Students examine actual/standardized patients presenting with suspected H. pylori. Students conduct examinations, select appropriate investigations, and develop treatment plans incorporating conventional and Unani approaches. (90 min) 2. Students present cases to teacher, justify their diagnostic and treatment decisions, and receive comprehensive feedback. (30 min)
Experiential-Learning Learning 15.2: Epidemic Typhus Clinical Decision.
Total learning hours (2) 1. Teacher presents complex case scenarios of Epidemic Typhus. (30 min) 2. Students analyze cases, develop comprehensive management plans integrating both systems, and present their reasoning to peers and teacher. Teacher facilitates discussion on treatment modifications, monitoring parameters, and follow-up protocols. (1 hour) 3. Students document their decision-making process and receive structured feedback on their clinical reasoning and plan development. (30 min)
Experiential-Learning Learning 15.3: Typhoid Case Management
Total learning hours (3) 1. student will evaluate a case of Ḥummā Mi'wiyya by reviewing a detailed patient case study. (1 hour). 2. Students will identify key clinical signs using a clinical examination guide, select appropriate laboratory tests, and complete the request forms. Students will compile their findings into a structured report and write a reflective summary on the challenges faced and how the resources enhanced their understanding. (2-3 cases, 2 hours)
Experiential-Learning Learning 15.4: Unani Therapeutic Planning for Ḥummā Mi'wiyya.
Total learning hours (3) 1. Students will develop comprehensive treatment plans for Ḥummā Mi'wiyya. incorporating Unani principles, implement them (2 hours). 2. Students will document patient responses, and modify treatments based on outcomes. They will maintain a portfolio of case management. (1 hour)
Experiential-Learning Learning 15.5: Diagnosis and Management of Humma Diqqiya

Total learning hours (3) 1. students will interpret lab tests findings, diagnose Humma Diqqiyya (Tuberculosis), and create a treatment plan. (2 hours) 2. Students will determine appropriate referral points and outline a follow-up strategy, focusing on comprehensive tuberculosis care. (1 hour)
Experiential-Learning Learning 15.6: Integrated Tuberculosis Awareness.
Total learning hour (3) 1. Students will participate in Tuberculosis surveillance, family contact screening, and the implementation of programs like Direct Observed Therapy, Short-course (DOTS) and Revised National Tuberculosis Control Programme (RNTCP), designing a Tuberculosis awareness initiative that integrates modern public health with Unani principles. (2 hours) 2. Student will create educational materials and community sessions, assessing program impact through surveys and presenting findings to peers and teacher. (1 hour)
Experiential-Learning Learning 15.7: Leprosy Case Diagnosis.
Total learning hours (3) 1. Students will utilize clinical case studies and pathology slides as their primary resourcess, evaluate and diagnose leprosy cases, providing clear justifications for their findings. (1 hour) 2. Student will formulate comprehensive supportive care plans and recommend appropriate referrals for definitive treatment under the National Leprosy Eradication Programme (NLEP).Students engaging in case-based discussions to enhance their understanding and application of the concepts. (1 hour) 3. Students will be engaged in the complex response of evaluating and diagnosing leprosy cases, developing proficiency in clinical assessments and justifications. (1 hour)
Experiential-Learning Learning 15.8: Education and Counseling for Leprosy.
Total learning hours (3)

1. Students will conduct patient education and counseling sessions for newly diagnosed leprosy patients, focusing on essential topics such as treatment adherence, self-care strategies, and psychosocial support. This activity will enable students to effectively communicate complex medical information in an accessible manner, fostering a supportive environment for patients. (2 hour) They will utilize role-playing scenarios and current literature to guide their counseling sessions, ensuring a holistic approach to patient care. 2. Students will demonstrate mechanisms of empathy and effective communication while conducting patient education and counseling for newly diagnosed leprosy patients, addressing their treatment needs and psychosocial support. (1 hour)
Experiential-Learning Learning 15.9: Atshak (Syphilis) Evaluation.
Total learning hours (2) 1. Each student will review a patient case with suspected Atshak (Syphilis), beginning with an assessment of the patient's history and clinical presentation, students will then perform a simulated interpretation of serological test results, identifying relevant findings for accurate diagnosis. (1 hour) Based on these results, 2. students will apply laboratory findings to develop a clinical management plan tailored to the patient, documenting each step for review. This activity aims to enhance diagnostic skills and link lab findings with effective patient care.(1hour)
Experiential-Learning Learning 15.10: Nosocomial Infections.
Total learning hours (2) 1. student will identify common sources of nosocomial infections in pediatric wards and propose interventions integrating modern infection control practices with Unani principles of hygiene. Students will implement a specific intervention, such as improved hand hygiene protocols or environmental cleaning techniques, and monitor its effectiveness over a simulated period. (1 hour). 2. Students will document outcomes, evaluate the intervention's success, and suggest improvements for future applications, emphasizing Unani and modern preventive approaches. (1 hour)
Modular Assessment

Assessment	**Hour**

Instructions— Conduct a structured Modular assessment. The assessment will be for 50 marks. Keep a structured marking pattern. Use different assessment methods in each module for the semester. Keep a record of the structured pattern used for assessment. Calculate the Modular grade point as per Table 6 C. Written Test – 10 Marks • Format: Short answer and case-based questions. • Content: Covers concepts and clinical aspects of diseases in each unit, including H. pylori infection, Typhus, Typhoid, Tuberculosis, Leprosy, Syphilis, and Nosocomial infections. • Marks Allocation: o Conceptual understanding of diseases (5 marks) o Unani-based diagnosis and treatment principles (5 marks) 2. Practical Examination – 20 Marks (Mini-CEX, BPA) • Format: Clinical examination and diagnosis. • Content: Demonstrate clinical examination, laboratory tests, and formulate treatment plans for selected cases. • Marks Allocation: o Examination and diagnostic skills (10 marks) o Treatment and management planning (10 marks) 3. Case Based assessment/Case Study Report – 10 Marks (CBA) • Format: Report on a specific disease, covering patient history, differential diagnosis, Unani treatment, and preventive strategies. • Marks Allocation: o Case analysis and diagnosis (5 marks) o Treatment plan and preventive advice (5 marks) 4. conducting interview(C-INT)/Viva Voce (Oral Exam) – 10 Marks • Format: Oral questions on differential diagnosis, preventive strategies, and Unani management.	4

• Marks Allocation: o Disease knowledge and differentiation (5 marks) o Preventive and Unani-based strategies (5 marks) o Or Any practical in converted form can be taken for assessment. (25 marks), and Any of the experiential as portfolio/ refelections / presentations can be taken as an assessment. (25 marks) Total Marks= 50	

Semester No : 6

Module 16 : طفیلی تعدیہ Tufaili Ta'dia (Parasitic Infections)

Module Learning Objectives

(At the end of the module, the students should be able to)

1. Describe different types of parasitic infections, and differentiate among them.
2. Conduct clinical examination to rule out diagnosis-of parasitic infection with the help of lab tests and other investigatios.
3. Identify prognosis, complications,and refer the case to higher health centre if required.
4. Formulate Uṣūl-i-'Ilāj and 'Ilāj in different phases of Humma Ajamiyya (Malaria), and other periodic fevers.
5. Counsel or educating communities on prevention strategies of these parasitic infections based on Al-Taqaddum bi'l Ḥifẓ

Unit 1 حمی اجامیہ Humma Ajamiyya (Malaria)

16.1.1. حمی اجامیہ (Humma Ajamiyya) ke asbab, alamat, darjat marz Naubat wa fatra, Bohran, usul i Ilaj wa Ilaj.

16.1.2. Introduction, Causes, Types, Transmission, Symptoms, Diagnosis, Treatment, Prevention, Complications, Epidemiology, Prognosis of Malaria.

16.1.3. عظم طحال (Izam-i-Ṭiḥāl) asbab, alamat, Usul i Ilaj wa Ilaj.

16.1.4. Definition, Causes, Pathophysiology, Clinical Features, Diagnosis, Treatment, Complications, Prevention, Epidemiology of tropical splenomegaly.

References: 41,43,44,46,61

3A	3B	3C	3D	3E	3F	3G
CO1,CO2,CO3, CO6,CO8	Describe Humma Ajamiyya and its characteristics, including asbaab wa alamat (Hummā Nāfiḍa), nawbati bukhar ki mahiyate marzi, fatra, nawbat, and *Al-Buḥrān*.(فترہ،نوبت، بحران)	1	Lecture	CC	Knows-how	L,L&PPT
CO1,CO2,CO3, CO6,CO8	Demonstrate the ability to prepare blood smears and perform microscopy for the identification of Plasmodium falciparum and Plasmodium vivax.	1	Practical16.1	PSY-GUD	Shows-how	D,DL
CO1,CO2,CO3, CO6,CO8	Analyze case studies related to Humma Ajamiyya, identifying key symptoms and appropriate management strategies into patient care.	2	Practical16.2	PSY-GUD	Shows-how	PT
CO1,CO2,CO3, CO6,CO8	Formulate treatment protocols for patients with tropical splenomegaly.	1	Practical16.3	CS	Does	CBL
CO1,CO2,CO3, CO6,CO8	Differentiate, diagnose, and manage cases of Humma Ajamiyya (Malaria) using classical and contemporary treatment regimens.	3	Experiential-Learning16.1	PSY-MEC	Does	CD,CBL,JC,PrBL
CO1,CO2,CO3, CO6,CO8	Formulate Uṣūl-i-'Ilāj and 'Ilāj of Ḥummā Nāfiḍa, Humma Naiba considering the various phases (Naubat and Fatra).	3	Experiential-Learning16.2	PSY-MEC	Does	CBL,CD,JC,RP
CO1,CO2,CO3, CO4	Describe the etiology, epidemiology, etiopathogenesis, clinical features, diagnosis, and complications of Humma Ajamiyya (Malaria) and Tropical Splenomegaly.	1	Lecture	CK	Knows-how	L,L&GD
Unit 2 دیپلفیل Da'al Fil (Filariasis)						

16.2.1.دہیلفیل Da’al Fil: Asbab, Tashkhis, Alamat, Aqsam, Ilaj, Tadabir for Da al fil.

16.2.2. Introduction, Causes, Life Cycle, Transmission, Types, Clinical Features, Diagnosis, Treatment, Prevention, Complications, Epidemiology of Filaria.

16.2.3. Etiology, Pathogenesis, Clinical Manifestations, Diagnosis, Differential Diagnosis, Management, Prognosis of tropical eosinophilia.

References: 29,31,41,43,44,46,63

3A	3B	3C	3D	3E	3F	3G
CO1,CO2,CO3, CO4,CO6	Describe Da'al Fil (Filariasis) and Tropical Eosinophilia, its asbaab wa alamat, mahiyate marzi, fatra, naubat, bohraan, Uṣūl-i-'Ilāj and 'Ilāj.	2	Lecture	CC	Knows-how	L,L&PPT
CO1,CO2,CO3, CO6,CO8	Demonstrate a comprehensive understanding of the etiopathogenesis, clinical features, and diagnosis of Da'al Fil (Filariasis), including its complications.	2	Practical16.4	CC	Shows-how	D-BED,CBL,CD
CO1,CO2,CO3, CO4,CO6	Apply Unani Uṣūl-i-'Ilāj and 'Ilāj principles to effectively manage Da'al Fil (Filariasis), focusing on symptom relief for lymphedema.	2	Practical16.5	PSY-MEC	Shows-how	PER,D-BED,CBL,DIS,D
CO1,CO2,CO3, CO6,CO8	Diagnose and differentiate cases of Tropical Eosinophilia by recognizing clinical features and management options.	3	Experiential-Learning16.3	PSY-GUD	Does	CBL,CD
CO1,CO2,CO3, CO6,CO8	Demonstrate competency in patients care for Tropical Eosinophilia using Uṣūl-i-'Ilāj and 'Ilāj principles.	3	Experiential-Learning16.4	CAP	Does	PBL,CD,CBL,IBL,PL

Unit 3 زحیر Zaḥīr Wabā'ī(Amebiasis)

16.3.1. زحیر (Zaḥīr Wabā'ī) Amebiasis Definition, Causes (Asbab), Pathophysiology (Mahiyat marzj), Types of Pechis, Signs and Symptoms (Alamat), Diagnosis (Tashkhis), Treatment Principles (Usool-e-Ilaj), Medicinal Treatment (Adviyah), Dietary Recommendations (Ghiza), Regimenal Therapy (Tadabir), Prognosis (Taqdeer), Prevention and Lifestyle Taqaddum bil Hifz of pechis, Amebiasis.

16.3.2. Etiology, Pathogenesis, Clinical Features, Diagnosis, Treatment, Complications, Prognosis, Prevention of hydatid cyst.

References: 43,44,46,50,57,61,63,68,85

3A	3B	3C	3D	3E	3F	3G
CO1,CO2,CO3, CO6,CO8	Describe Zaheer Amibiyae,or *Pechis*(Amebiasis,) it's asbab, alamat, tashkis , Uṣūl-i-'Ilāj and 'Ilāj.	1	Lecture	CC	Knows-how	L&PPT ,L
CO1,CO2,CO3, CO6,CO8	Describe epidemiology, etiopathogenesis, clinical features, diagnosis and complications of Amebiasis, with focus on amoebic liver abscess.	1	Lecture	CC	Knows-how	L&GD,PL,L&PPT ,L
CO1,CO2,CO3, CO6,CO8	Perform microscopic identification of Entamoeba histolytica and interpret laboratory findings in clinical contexts, particularly for extraintestinal amebiasis.	4	Practical16.6	PSY-GUD	Shows-how	L&PPT ,L
CO1,CO2,CO3, CO6,CO8	Perform comprehensive clinical examination of ameobiasis cases and formulate diagnostic plans.	3	Experiential-Learning16.5	AFT-RES	Does	DIS,CBL,D-BED,CD
CO1,CO2,CO3, CO6,CO8	Diagnose and formulate Unani treatment for ameobiasis.	3	Experiential-Learning16.6	AFT-VAL	Does	CBL,RP,PBL,JC

Unit 4 Giardiasis

16.4.1. Introduction and prevalance, Etiology, Pathogenesis, Transmission, Clinical Features, Diagnosis, Treatment, Prevention, Complications, Prognosis of Giardiasis.

References: 44,46,50,63,85

3A	3B	3C	3D	3E	3F	3G
CO1,CO2,CO3, CO6,CO8	Describe epidemiology, etiopathogenesis, clinical features, diagnosis and complications of Giardiasis.	2	Lecture	CAP	Knows-how	L&PPT ,JC,L
CO1,CO2,CO3, CO6,CO8	Diagnose Giardia cysts and trophozoites in stool and duodenal samples.	2	Practical16.7	PSY-GUD	Shows-how	CBL,PER
CO1,CO2,CO3, CO6,CO8	Evaluate and analyze a cases of giardiasis, applying diagnostic criteria and clinical reasoning to determine appropriate management strategies.	2	Practical16.8	PSY-MEC	Shows-how	CD,CBL,RP,RLE,D-BED
CO1,CO2,CO3, CO6,CO8	Differentiate giardia infection with malabsorption syndrome.	1	Experiential-Learning16.7	PSY-MEC	Does	CD,CBL
CO1,CO2,CO3, CO5,CO8	Examine and identify the case of giardiasis and plan Uṣūl-i-'Ilāj and 'Ilāj of Zaheer.	2	Experiential-Learning16.8	CE	Does	CBL,DIS,PSM,BS,RP
CO1,CO2,CO3, CO6,CO8	Counsel the patients with giardiasis and their parents on medication, hydration, nutrition, and preventive measures.	1	Experiential-Learning16.9	AFT-VAL	Does	DIS,RLE,PL,RP

Unit 5 کالازار Kalazar (Black Sickness)

16.5.1.کالازار(Kalazar) Black Sickness, Etiology, Pathogenesis, Clinical Features, Diagnosis, Treatment, Prevention, Prognosis, Complications of Kalazar.

References: 41,44,46,50,63,68

3A	3B	3C	3D	3E	3F	3G
CO1,CO2,CO3, CO6,CO8	Describe the pathophysiology of Ila sauda (Kala-azar), its etiological factors, clinical manifestations, and diagnostic approaches.	1	Lecture	CC	Knows-how	L,L&PPT
CO1,CO2,CO3, CO4,CO6	Discuss preventive control measures and therapeutic principles in Unani medicine for Kala-azar, including complications of Leishmaniasis.	1	Lecture	CC	Knows-how	L,L&PPT
CO1,CO2,CO3, CO4,CO6	Develop a differential diagnosis for cases with pyrexia, hepatosplenomegaly, and anemia to diagnose Kala-azar.	4	Practical16.9	PSY-MEC	Shows-how	LS,CD,RP,D-BED,PER
CO1,CO2,CO3, CO4,CO6	Demonstrate proficiency in recognizing clinical signs of Leishmania donovani infection.	2	Experiential-Learning16.10	PSY-MEC	Does	SDL,RP,CBL,D-BED,D
CO1,CO2,CO3, CO5,CO8	Design treatment plans for Leishmaniasis that incorporate Unani principles, dietary modifications, and modern therapies, including blood component therapy.	2	Experiential-Learning16.11	PSY-MEC	Does	DIS,CD,PER,D,CBL

Practical Training Activity

Practical Training 16.1 Microscopic Examination of Blood Smears.

Time Duration:1 Hour

1.Teacher will demonstrate how to prepare blood smears from samples and utilize microscopes to identify and differentiate between Plasmodium falciparum and Plasmodium vivax, (20 min)

2. student will do same under supervision and they will document their findings and discuss with teachers and peers.(40 min)
Practical Training 16.2 Case Study Analysis of Humma Ajamiyya.
Total learning hours (2 hour) 1. The students will analyze case studies on Humma Ajamiyya, identifying key symptoms and relevant clinical features. They will then develop appropriate management strategies and present their findings to the class. (1 hour) 2.The teacher will guide their analyses, facilitate discussions, and encourage questions to deepen understanding and enhance clinical skills. (1 hour)
Practical Training 16.3 Tropical Splenomegaly mnagement plan.
Total learning hours (1) 1. The teacher will introduce the condition and management strategies, then guide students as they analyze patient information to create comprehensive plans. (20 min) 2. Students will work in small groups to develop management plans for patients with tropical splenomegaly based on provided case studies.(40 min)
Practical Training 16.4 Demostration of diagnostic methods for filariasis.
Total learning hours (2) 1. Teacher will demonstrate a comprehensive understanding of the clinical features, and diagnosis of Da'al Fil (Filariasis), including its complications. (40 mins) 2. Students learn how to evaluate filariasis and document their findings. Afterwards, each group will share their insights with the class, fostering a deeper understanding of the disease. (80 mins)
Practical Training 16.5 Management of Da'al Fil (Filariasis)
Time Duration: 2 Hours 1.The teacher will introduce Unani Uṣūl-i-'Ilāj and 'Ilāj principles for managing Da'al Fil (Filariasis). Students will develop treatment plans for lymphedema, integrating Unani and modern therapies. The teacher will demonstrate leech therapy, covering handling, site selection, and patient care. Students will analyze

patient cases, practice leech therapy techniques, and present their plans to the class, explaining their rationale and expected outcomes, while receiving feedback to enhance their understanding of effective patient management.
Practical Training 16.6 Clinical Laboratory Integration Session.
Total learning hours (4) 1. Teacher guide students, how to diagnose extraintestinal amebiasis through various lab reports and imaging studies, demonstrating interpretation techniques.(1 hour) 2. Students practice analyzing different case scenarios with lab reports, particularly for extraintestinal amebiasis. (3 hours)
Practical Training 16.7 Clinical Interpretation of Giardiasis in Pediatric Cases.
Time Duration: 2 Hours Students will examine the clinical importance of identifying Giardia cysts and trophozoites in diagnosing giardiasis. The teacher will provide an overview of the condition, after which students will analyze sample slides in small groups, focusing on stool and duodenal aspirates. They will interpret their findings and discuss the implications for diagnosis and management. Each group will present their insights, highlighting how accurate identification influences clinical outcomes and patient care.
Practical Training 16.8 Case Evaluation of Giardiasis.
Total learning hour (2) 1. The teacher will guide the students in analyzing the information to identify key clinical features and potential complications. (30 min) 2. Students will examine and evaluate a case of giardiasis using provided patient histories, symptoms, and diagnostic test results. students will discuss their findings, apply diagnostic criteria, and develop comprehensive management strategies. Each group will then present their evaluations and recommendations to the class, fostering a collaborative learning environment where students can refine their clinical reasoning skills. (90 min)
Practical Training 16.9 Kala-zar (Black Sickness)

Total learning hours (4) 1. Teacher will present case studies of patients with pyrexia, hepatosplenomegaly, and anemia. Students will work in small groups to develop a differential diagnosis for these cases, using provided diagnostic criteria and clinical guidelines. (2 hours) 2. Each group will analyze the symptoms, consider potential underlying conditions, and discuss their reasoning. (1 hour) 3. After formulating their differential diagnoses, students will present their findings to the class for discussion and feedback, enhancing their diagnostic skills. (1 hour) **OR** 1. Students will participate in a journal club session focusing on recent research articles about visceral leishmaniasis. (2 hours) 2. They will analyze and present case studies from the literature, highlighting key features that distinguish visceral leishmaniasis from other conditions presenting with pyrexia, hepatosplenomegaly, and anemia. (2 hours)
Experiential Learning Activity
Experiential-Learning Learning 16.1: Clinical Management of Malaria.
Time Duration: 3 Hours 1. The students will be engaged in clinical settings individually to assess clinical case studies of Humma Ajamiyya, applying classical and modern treatment regimens while developing a compassionate approach towards patient care. (2-3 cases.)
Experiential-Learning Learning 16.2: Ḥummā Nāfiḍa/ Humma Naiba.
Total learning hours (3) 1. Students will work individually to develop treatment plans for patients in different phases of Ḥummā Nāfiḍa/ Humma Naiba, integrating Unani principles with patient care strategies. (2-3 cases)
Experiential-Learning Learning 16.3: Diagnosis and Differentiation of Tropical Eosinophilia
Total learning hours (3)

1. Students will review case studies of patients with suspected Tropical Eosinophilia. They will analyze the clinical features presented and utilize diagnostic criteria to differentiate this condition from other similar illnesses. After evaluating the cases, (2-3 cases) students will document their diagnoses and outline appropriate management options, reinforcing their understanding of the disease.
Experiential-Learning Learning 16.4: Patient Care for Tropical Eosinophilia.
Time Duration: 3 Hours 1. Students will develop a patient care plan for individuals diagnosed with Tropical Eosinophilia. They will integrate Uṣūl-i-'Ilāj and 'Ilāj principles into their management strategies, considering the unique needs of each patient. (2 hours) 2. Students will prepare a brief report detailing their proposed care plan and rationale, focusing on effective treatment approaches and patient support.
Experiential-Learning Learning 16.5: Clinical Examination and Diagnostic Planning for ameobiasis.
Total learning hour (3) 1. Students will conduct a comprehensive clinical examination of an ameobiasis case scenario, including patient history and physical assessments. They will then formulate a diagnostic plan outlining necessary laboratory tests and imaging studies. (2 hours) 2. After completing their examination and plan, students will present their findings to the class, highlighting key assessment points and justifying their diagnostic choices. This activity aims to enhance clinical skills and critical thinking in managing ameobiasis. (1 hour)
Experiential-Learning Learning 16.6: Managing ameobiasis with Unani Treatment.
Total learning hours (3) 1. Each student will assess a case of ameobiasis using provided patient histories and clinical findings. They will research the appropriate Unani treatment principles, including dietary recommendations, Unani drugs/formulations, and lifestyle modifications, to develop a comprehensive treatment plan with rationale for each intervention. (2 hours) 2. Students will present their plans to the class, emphasizing the application of Unani concepts in managing the condition. Finally, they will reflect on their experiences, discussing challenges faced and insights gained during the process. (1 hour)

Experiential-Learning Learning 16.7: Comparative Analysis of Giardia Infection and Malabsorption Syndrome.
Time Duration: 1 hour 1.Students will research and analyze the clinical features, diagnostic criteria, and treatment approaches for giardia infection and malabsorption syndrome. They will create a comparative chart that highlights the key differences in symptoms, laboratory findings, and management strategies. (40 min) 2. Following their analysis, students will present their findings in a brief report, emphasizing the importance of accurate differentiation in clinical practice and patient care. The teacher will provide feedback on their understanding and the clarity of their comparisons. (20 min)
Experiential-Learning Learning 16.8: Management Planning for Giardiasis
Time Duration: 2 hours 1. Students will examine a provided case of giardiasis and identify key clinical features. Using their understanding of Uṣūl-i-'Ilāj and 'Ilāj based on Zaheer principles, students will develop a comprehensive management plan to the specific case. (90 min) 2. Students will outline the rationale for each treatment choice, including dietary recommendations and Unani medicines. Finally, students will submit their treatment plans for evaluation. (30 min)
Experiential-Learning Learning 16.9: Counseling for Giardiasis Management.
Time Duration: 1 hour 1. Students will counsel patients with giardiasis and their parents on medication, hydration, nutrition, and prevention. They will review case studies and use counseling guidelines to structure their discussions. (30 min) 2. Students will then role-play counseling sessions, providing clear guidance on managing giardiasis effectively and reflecting on their experiences to enhance their skills. (30 min)
Experiential-Learning Learning 16.10: Clinical Recognition of Leishmania Donovani Infection.

Total learning hour (2) 1. Students will review case studies of pediatric patients suspected of leishmaniasis. They will analyze the clinical features and signs associated with Leishmania donovani infection, using provided assessment guidelines. After evaluating the cases, (1 hour). 2. Students will write a brief report summarizing their findings and interpretations, focusing on the clinical implications of recognizing these signs in pediatric patients. (1 hour)	
Experiential-Learning Learning 16.11: Treatment Plan Development for Leishmaniasis.	
Total learning hours (2) 1. Students will create treatment plans for Leishmaniasis that incorporate Unani principles, dietary modifications, and recent therapies, including blood component therapy. They will use provided guidelines to ensure their plans are holistic and evidence-based. (1 hour) 2.Students will present their proposals, explaining the rationale behind their chosen approaches and discussing the integration of different treatment modalities. (1 hour)	
Modular Assessment	
Assessment	**Hour**
Instructions— Conduct a structured Modular assessment. The assessment will be for 50 marks. Keep a structured marking pattern. Use different assessment methods in each module for the semester. Keep a record of the structured pattern used for assessment. Calculate the Modular grade point as per Table 6 C. Written Test – 20 Marks • Format: Short answer and case-based questions.(Theory open book test) • Content: Focus on key diseases (e.g., malaria, filariasis, kala-azar) from M16 units, covering etiology, pathogenesis, clinical features, and Unani treatments. • Marks Allocation:	4

o Core concepts of each disease (10 marks) theory case study assessment o Diagnostic and treatment knowledge (10 marks) 2. Practical Examination – 15 Marks (practical case taking- assessment) • Format: Clinical skills test, involving diagnostic procedures and treatment planning. • Content: Conduct a physical exam, interpret relevant lab findings, and devise Unani-based treatment plans for selected diseases. • Marks Allocation: o Clinical examination skills (5 marks) o Diagnostic reasoning (5 marks) (senario based assessment) o Treatment planning (5 marks) by record keeping assessment. 3. Case Study Assignment – 10 Marks • Creative writing: Written assignment on a specific case involving one of the diseases (e.g., tropical splenomegaly, giardiasis). • Content: Document patient history, perform differential diagnosis, outline treatment plan, and discuss potential complications. • Marks Allocation: o Case analysis and differential diagnosis (5 marks) Real life scenario o Treatment approach in Unani (5 marks) patient management problem. 4. Viva Voce (Oral Examination) – 5 Marks • Format: Oral questioning. (interaction assessment) • Content: Broad discussion on Module 16 diseases, emphasizing differential diagnosis, prevention, and Unani treatment methods. Or Any practical in converted form can be taken for assessment. (25 marks) **and**, Any of the experiential as portfolio/ refelections / presentations can be taken as an assessment. (25 marks), Total marks= 50	
Module 17 : دیدان امعاء Didan al Am'a' (Intestinal worm infestations)	

Module Learning Objectives

(At the end of the module, the students should be able to)

1. Demonstrate Unani concept of Dīdān al-Am‘ā’ (Helminthic infestation), and its types.
2. Conduct various types of tests to differentiate between the types of Dīdān al-Am‘ā’.
3. Formulate Uṣūl-i-‘Ilāj and ‘Ilāj of Dīdān al-Am‘ā’.
4. Describe mode of actions of Mukhrij-i-Dīdān-i-Am‘ā’, Qātil-i-Dīdān-i-Am‘ā’ قاتل دیدان امعاء(anti helminthic) and their dosage، and manage the complications of Intestinal infestations.

Unit 1 ‘حب القرع Ḥabb al-Qar (Tape worm)

17.1.1. حب القرع (*Ḥabb al-Qar),* Tape worm: Etiology, Life Cycle, Transmission, Clinical Features, Diagnosis, Treatment, Complications, Prevention, Prognosis of Tapeworm.

17.1.2. Etiology, Pathogenesis, Clinical Features, Diagnosis, Imaging and Neuroimaging, Treatment, Seizure Management, Complications, Prognosis, Prevention of neurocysticercosis that leads to seizure disorder.

References: 29,31,41,43,44,51,57,65,68

3A	3B	3C	3D	3E	3F	3G
CO1,CO2,CO3, CO5,CO8	Describe the lifecycle, pathophysiology, clinical features and complications of cestodes, tapeworm.	2	Lecture	CC	Knows-how	L,L&PPT
CO1,CO2,CO3, CO5,CO8	Discuss lifecycle of Tapeworm and demostrate clinical features, and possible complications.	2	Practical17.1	PSY-MEC	Shows-how	LRI,PT,D-BED,D,Mnt
CO1,CO2,CO3, CO5,CO8	Demonstrate and perform complete examination for the cases of tapeworm, hydatid disease.	2	Practical17.2	PSY-MEC	Shows-how	CBL,CD,DIS,D-BED

CO1,CO2,CO3, CO5,CO8	Examine and diagnose tapeworm cases accurately, confirm diagnosis of Tapeworm, provide essential advice to parents, and develop Uṣūl-i-‘Ilāj and ‘Ilāj protocols for treatment.	3	Experiential-Learning17.1	PSY-MEC	Does	CBL,CD,BS,DIS,RLE
CO1,CO2,CO3, CO5,CO8	Assess the clinical features of hydatid disease and neurocysticercosis, and document management protocol.	3	Experiential-Learning17.2	PSY-MEC	Does	CBL,RP,CD
Unit 2 حیات Ḥayyāt (Roundworm) 17.2.1. حیات *(Ḥayyāt)* roundworm: Etiology, Life Cycle, Transmission, Clinical Features, Diagnosis, Treatment, Complications, Prevention, Prognosis of roundworm. **References:** 19,27,28,29,31,34,43,44						
3A	**3B**	**3C**	**3D**	**3E**	**3F**	**3G**
CO1,CO2,CO3, CO5,CO8	Describe Roundworm (Ascaris lubricoides), and Whipworm (trichuriasis) it’s lifecycle, clinical features, complications, Usul-i ‘‘Ilāj and ‘Ilāj.	2	Lecture	CC	Knows-how	FC,L,L&PPT
CO1,CO2,CO3, CO5,CO8	Differentiate and diagnose cases of roundworm using pathological and radiological tests.	4	Practical17.3	PSY-MEC	Shows-how	PER,LRI,FC
CO1,CO2,CO3, CO5,CO8	Review and present current publicatios in Helminth Diagnostics.(Roundworm).	2	Experiential-Learning17.3	CE	Does	JC
CO1,CO2,CO3, CO5,CO8	Diagnose cases of roundworm and whipworm, and formulate Usul-i 'Ilāj and 'Ilāj.	4	Experiential-Learning17.4	CE	Does	D-BED,RP,CD,CBL
Unit 3 صغار Ṣighār (Threadworm)						

17.3.1.صغار,(Ṣighār) Thread worm (trichuriasis): Etiology, Life Cycle, Transmission, Clinical Features, Diagnosis, Treatment, Complications, Prevention, Prognosis of threadworm.

References: 44,46,50,59,61,63,71,74,76,78

3A	3B	3C	3D	3E	3F	3G
CO1,CO2,CO3, CO5,CO8	Describe threadworm (Enterobius Vermicularis), its lifecycle, clinical features, complications, Usul-i ‘‘Ilāj and ‘Ilāj.	2	Lecture	CC	Knows-how	L,L&PPT
CO1,CO2,CO3, CO5,CO8	Examine, diagnose and differentiate threadworm cases.	4	Practical17.4	PSY-MEC	Shows-how	CBL,CD,RLE
CO1,CO2,CO3, CO5,CO8	Develop a patient-centered approach by prioritizing and structuring treatment plans based on Unani principles for managing threadworm case.	2	Experiential-Learning17.5	AFT-CHR	Does	CBL,D,CD
CO1,CO2,CO3, CO5,CO8	Counsel parents on threadworm prevention, addressing hygiene concerns sensitively.	2	Experiential-Learning17.6	AFT-RES	Does	RLE,RP

Unit 4 مستدیرہ Mustadira (Hookworm)

17.4.1مستدیرہ,*(Mustadira)* hookworm (strongyloides): Etiology, Life Cycle, Transmission, Clinical Features, Diagnosis, Treatment, Complications, Prevention, Prognosis of hookworm.

17.4.2. Khitiya (Whipworm)

17.2.3. Sighar/ Charne/ chunuene (Pinworm)

References: 44,46,63

3A	3B	3C	3D	3E	3F	3G

CO1,CO2,CO3, CO5,CO8	Describe the etiology, pathophysiology, clinical features, complications, preventive measures, Usul-i 'Ilāj and 'Ilāj of Hookworm and Strongyloides infections.	2	Lecture	CC	Knows-how	L,L&PPT
CO1,CO2,CO3, CO5,CO8	Differentiate and diagnose hookworm cases through history, microscopic stool examination and hematological testing.	4	Practical17.5	PSY-MEC	Shows-how	SIM,CBL,RP,LRI,CD
CO1,CO2,CO3, CO5,CO8	Diagnose and formulate Usul-i 'Ilāj and 'Ilāj for hookworm infestation.	6	Experiential-Learning17.7	PSY-GUD	Does	CBL,PBL,CD
Unit 5 Cryptosporidiosis 17.5.1. Cryptosporidiosis: Etiology, Pathogenesis, Clinical Features, Diagnosis, Treatment, Prevention, Prognosis, Complications of Cryptosporidiosis. **References:** 44,46,50,63						
3A	**3B**	**3C**	**3D**	**3E**	**3F**	**3G**
CO1,CO2,CO3, CO5,CO8	Describe criptosporidiosis, its clinical features, complications, Usul-i ‘‘Ilāj and ‘Ilāj.	2	Lecture	CC	Knows-how	L&GD,L,L&PPT
CO1,CO2,CO3, CO5,CO8	Demonstrate step of diagnosis in cases of cryptosporidiosis.	4	Practical17.6	PSY-MEC	Shows-how	SIM,CBL,CD
CO1,CO2,CO3, CO5,CO8	Examine and diagnose the case of cryptosporidiosis, plan and formulate Usul-i ‘‘Ilāj and ‘Ilāj(treatment) of cryptosporidiosis.	2	Experiential-Learning17.8	PSY-MEC	Does	RLE,PBL,CD,CBL
CO1,CO2,CO3, CO5,CO8	Discuss and present cases of complex cryptosporidiosis.	2	Experiential-Learning17.9	PSY-MEC	Does	D,JC,CD
Practical Training Activity						

Practical Training 17.1 Patient examination for Tapeworm.
Total learning hours (2) 1. Demonstrate systematic examination, guide students through procedures and clinical examination (30 min) 2. Student Activity: Practice examination techniques, and learn to document findings. (2 -3 cases, 90 minutes)
Practical Training 17.2 Tapeworm, hydatid disease
Total learning hours (2) 1. Teacher will demostrate and supervise case examination, provide feedback on management. (30 min) 2. Student will obtain detailed history, perform examination, plan management for the cases of tapeworm, hydatid disease. (2-3 cases, 90 min)
Practical Training 17.3 Integrated Parasitological Diagnosis.
Total learning hours (4) 1. Differentiate and diagnose cases of roundworm using pathological and radiological tests.Students analyze real patient cases with varying presentations **OR** 2. Teacher presents a series of clinical cases with laboratory data and imaging findings. (30 min) Students work in small groups analyzing the findings, discussing differential diagnoses, and presenting their diagnostic conclusions. They learn to correlate clinical symptoms with laboratory findings and develop diagnostic algorithms for parasitic infections. (90 min) 3. Virtual Microscopy Session: Using digital microscopy platforms, teacher guides students through various specimens showing different stages of roundworm and whipworm. (30 min) 4. Students practice identification skills through virtual specimens, capturing and annotating important diagnostic features. This includes creating a digital portfolio of their findings. (90 min)
Practical Training 17.4 Interpretation for threadworm cases.

Total learning hours (4) 1. Teacher will demonstrate the history taking skills, clinical examination skills, how to interpret lab reports and how to justify the diagnosis of threadworm(30 min), and the students will perform the same. (90 min) 2. Laboratorytest:Tape Test: Demonstration / virtual presentation and practice of using clear adhesive tape on the perianal region, collecting eggs in the early morning. (1 hour) 3. Microscopic Examination: Students will identify threadworm eggs under a microscope. (30 min) 4. Simulated Patient/ family Interactions:Role-playing exercises in taking histories, discussing symptoms with parents, and plan treatment for the case of threadworm. (1 hour)
Practical Training 17.5 Interpretation for hookworm
Total leraning hours (4) 1. Teacher will demonstrate the history taking skills, clinical examination skills, how to interpret lab reports and justify the diagnosis of hookworm infestations. (30 min) 2. Students will learn how to interpret stool microscopy for hookworm .Fecal occult blood test for hidden blood loss.Complete blood count (CBC) to assess anemia and eosinophilia. Practical training in performing and interpreting CBC results for anemia assessment. (90 min) and 3. The teacher demonstrate through a virtual examination of stool samples and hematological data, using visual aids to show parasite identification, diagnostic criteria, and differential diagnosis. Students observe and analyze the slides, practice diagnosing based on simulated findings, and document their results, receiving guided feedback on accuracy and technique. (2 hours)
Practical Training 17.6 Diagnosis of sporidiosis.
Total activity time (4 hours) 1. Teacher will demonstrate the history taking skills, clinical examination skills, how to interpret lab reports (different detection methods)and how to justify the diagnosis of Cryptosporidiosis(30 min) 2. The students will repeat. (90 min)

3. The teacher demonstrates/use virtual aid for stool sample collection and preparation, guiding students through microscopic examination and parasite identification. (30 min) 4. Students practice these techniques using pre-prepared slides and engage in simulation exercises to identify Cryptosporidium, document their findings under supervision. (90 min)
Experiential Learning Activity
Experiential-Learning Learning 17.1: Diagnosis and treatment of Tapeworm cases.
Total learning hours (3) 1. Students perform patient examination, develop tapeworm treatment plans, and maintain follow-up records, formulate Usul-i 'Ilāj and 'Ilāj, document patient progress, (2 hours). 2. Students review their findings and participate in case discussions. (1 hour)
Experiential-Learning Learning 17.2: Management of tapeworm infestation.
Total activity hours (3) 1. Evaluate tapeworm infection cases in OPD/IPD settings, taking a complete history, conducting thorough examinations, and documenting findings in the prescribed format. Advise and interpret relevant investigations, devise a management plan incorporating Usul-i-Ilaj and Ilaj principles, and counsel patients and families. (2- 3 cases, 2 hours) 2. Plan follow-up care, maintain detailed case records, and present cases. (1 hour)
Experiential-Learning Learning 17.3: Research Paper Review.
(Total activity time 2 hours) 1. Critical analysis of recent research papers on diagnostic methods

OR Research Analysis Workshop: Students review current diagnostic research papers focusing on modern diagnostic techniques for helminth infections. (1 hour) 2. They prepare short presentations on new diagnostic methods, discussing their applicability. Teacher facilitates critical discussion on evidence-based diagnostic approaches. (1 hour)
Experiential-Learning Learning 17.4: Pediatric Parasitic (Roundworm) Infestations
Total learning hours (4) 1. Students perform patient examinations, develop treatment plans, and maintain follow-up records, formulate Usul-i 'Ilāj and 'Ilāj based on Unani principles, document patient progress, in Pediatric Parasitic (Roundworm) Infestations and participate in case discussions. (2-3 cases, 3hours) 2. Teacher provides immediate feedback on clinical reasoning, and documentation. (1 hour)
Experiential-Learning Learning 17.5: Threadworm Management.
Total learning hours (2) 1. Student will create a treatment plan for managing threadworm cases based on Unani principles. Begin with the etiology, symptoms, and complications associated with threadworm infections. Then, prioritize key Unani treatments (Usul-i 'Ilāj and 'Ilāj) to ensure a patient-centered approach. Write a treatment plan. (2-3 cases, 2 hours)
Experiential-Learning Learning 17.6: Empathetic Parent Counseling for Threadworm Prevention.
Total learning hours (2) 1. Student perform role-play counseling session with a parent concerned about child's threadworm infection. Demonstrate empathetic communication while explaining preventive measures. (90 min) 2. Teacher will assess professional tone, sensitivity, and patient comfort during the interaction, providing immediate feedback. (30 min)
Experiential-Learning Learning 17.7: Clinics for intestinal worm infestations.

Total learning hours (6) 1. Students examine and diagnose hookworm cases, adapting examination techniques and diagnostic methods. They will organize and formulate comprehensive Usul-i 'Ilāj (principles of treatment) and 'Ilāj (treatment), applying clinical reasoning to develop individualized plan. (2-3 cases, 2 hours) 2. Students will discuss in between peers regarding their formulations and evaluate mode of actions of Mukhrij-i-Dīdān-i-Am‘ā’, Qātil-i-Dīdān-i-Am‘ā’ (anti helminthic) and their dosage. (2 hours) 3. Students will manage the cases with complications of Intestinal infestations. (2 hours)
Experiential-Learning Learning 17.8: Case-Based Management / Simulation (cryptosporidiosis)
Total learning hour (2) 1. Students work on simulated case scenarios, performing examinations, diagnosing cryptosporidiosis, and developing individualized Usul-i 'Ilāj and ‘Ilāj plans. (90 min) 2. The teacher facilitates case discussions and role-play activities, providing real-time feedback and ensuring students adapt their treatment plans based on patient-specific factors for the case of cryptosporidiosis. (30 min)
Experiential-Learning Learning 17.9: Professional Values in Crypto-Care.
Total learning hours (2) Students will perform case management session demonstrating internalized professional values while handling a complex cryptosporidiosis case. They must exhibit consistent ethical decision-making, cultural sensitivity, and patient advocacy while formulating Unani treatment plans.
Modular Assessment

Assessment	**Hour**
Instructions— Conduct a structured Modular assessment. The assessment will be for 50 marks. Keep a structured marking pattern. Use different assessment methods in each module for the semester. Keep a record of the structured pattern used for assessment. Calculate	4

the Modular grade point as per Table 6 C. Module Assessment Plan (50 Marks) 1. Class presentation- 10 marks o Concepts of Dīdān al-Am‘ā’, lifecycle, diagnosis, and treatment in Unani. 2. Practical case taking assessment – 10Marks o Clinical exam, diagnostic demonstration, and treatment planning for helminthic cases. 3. Making of posters (Life cycle of Intestinal worms)- 10 marks 4. Ethics and Advocacy Assignment – 10 Marks o Ethical considerations and a deworming campaign proposal. 5. Structured LAQ – 10Marks Diagnosis, treatment and Preventive measures, Qatile Dīdān al-Am‘ā’wa Mukhrij Dīdān al-Am‘ā’ advia This assessment combines theoretical and practical skills across multiple methods. Or Any practical in converted form can be taken for assessment. (25 marks) and Any of the experiential as portfolio/ refelections / presentations can be taken as an assessment. (25 marks), Total Marks= 50	

Paper No : 3(امراض اطفال نظامی اول)Amraze Atfal Nizami awwal) Systemic Paediatrics First)

Semester No : 3

Module 18 : امراض نظام تنفس۔اولAmrād-i-Nizām i-Tanaffus- I (Respiratory Disorders- 1)

Module Learning Objectives

(At the end of the module, the students should be able to)

1. Perform comprehensive respiratory evaluation through Ruda'd (history), Imtihan (examination) and shows ability in using diagnostic tools and interpreting results of investigative findings to support diagnosis of respiratory diseases.
2. Evaluate common respiratory disorders in children, distinguish signs and symptoms, other critical indicators and timely referral of patient.
3. Design evidence-based management strategies and understand the use of classical and conventional pharmacologic treatments and non-pharmacologic interventions (e.g., Tadabir (lifestyle modifications), Ghidha (dietotherapy).
4. Counsel parent effectively, talk about respiratory conditions of their kids, and advice preventive measures.
5. Assess the effectiveness of treatment plans through follow-up evaluations and adjustment of management strategies as needed.
6. Efficient to the latest research, guidelines, and best practices in managing paediatric respiratory diseases.
7. Apply knowledge of vaccination (e.g., pneumococcal, influenza) and other preventive measures to reduce the incidence of lung diseases such as pneumonia in pediatric populations.
8. Discuss use of AI Tools in diagnosing different respiratory diseases.

Unit 1 نظام تنفس کی طبی تشخیص وخصوصی تشخیصی طریقہ کارNizām i- Tanaffus ki Tibbi Tashkhis wa Khususi Tashkhis-i-Tariqa-i-kar (Clinical evaluation of respiratory system and special diagnostic procedures

18.1.1 Clinical parameters for the assessment of respiratory diseases

18.1.2 Diagnostic procedures concerned with respiratory disorders in children

18.1.3 Concept of Tariqa-i-Tashkhis from classical text

18.1.4 Recent Guidlines

References: 19,20,21,31,34,39,43,44,63						
3A Course Outcome	**3B Learning Objective (At the end of the (lecture/practical training /experiential learning) session, the students should be able to)**	**3C Notional learning Hours**	**3D Lecture/ Practical Training/ Experiential Learning**	**3E Domain/ Sub Domain**	**3F Level (Does/Shows how/Knows how/Know)**	**3G Teaching Learning Methods**
CO1,CO2,CO4, CO5,CO6,CO7, CO8	Describe clinical parameters for the assessment of respiratory diseases in pediatrics and recommend proper diagnostic procedures.	2	Lecture	CC	Knows-how	L_VC,L&PPT
CO1,CO2,CO4, CO5,CO6,CO7, CO8	Describe the concepts of Tariqa-i-Tashkhis from classical text, review recent guidelines, and approaches to respiratory diseases.	1	Lecture	CE	Knows-how	L&PPT ,L&GD
CO1,CO2,CO4, CO5,CO6,CO7, CO8	Demonstrate classical concept of Tashkhis-i-mizaj of Ala-i-Tanaffus.	1	Practical18.1	AFT-SET	Shows-how	RP,DIS,PBL, D-BED,SIM
CO1,CO2,CO4, CO5,CO6,CO7, CO8	Demonstrate the Clinical evaluation of different respiratory diseases in hospital setting.	2	Practical18.2	AFT-RES	Shows-how	DIS,RP,D,CBL

CO1,CO2,CO4, CO5,CO6,CO7, CO8	Demonstrate various diagnostic tools and procedures in respiratory disorders.	1	Practical18.3	PSY-MEC	Shows-how	D,RP,W
CO1,CO2,CO4, CO5,CO6,CO7, CO8	Perform and interpret special diagnostic procedures used for respiratory problems.	1	Practical18.4	AFT-SET	Shows-how	SIM,W,TBL,CBL
CO1,CO2,CO4, CO5,CO6,CO7	Diagnose and present cases of respiratory disorder.	4	Experiential-Learning18.1	PSY-MEC	Does	JC,PL,CBL,PBL,SIM
CO1,CO2,CO4, CO5,CO6,CO7	Interpret chest X-rays, CT scans and other diagnostic reports of respiratory diseases.	2	Experiential-Learning18.2	CAN	Does	CBL,PL
CO1,CO2,CO4, CO5,CO6,CO7, CO8	Perform spirometry, pulse oximetry and montoux test.	1	Experiential-Learning18.3	PSY-MEC	Does	PL,SIM

Unit 2 تعدیہ امراض نظام تنفس اعلیٰ Ta‘diya Amrād-i- Nizām-i- Tanaffus A‘lā (Upper respiratory tract infections)

18.2.1 Definition, etiology, epidemiology, pathogenesis, clinical manifestation, diagnosis, treatment, complications of Upper respiratory tract infections

18.2.2 Different Infections of Upper respiaratory tract mentioned in classical text.

References: 19,31,34,39,42,44,63

3A	3B	3C	3D	3E	3F	3G

CO1,CO2,CO4, CO5,CO6,CO7, CO8	Describe upper respiratory tract infection (URTI), its pathophysiology, and clinical features, diagnostic tools, prevention and management along with Unani Classification.	1	Lecture	CC	Knows-how	L&PPT ,L&GD,FC,BS
CO1,CO2,CO4, CO5,CO6,CO7	Integrate diagnosis and management of Upper Respiratory Tract Infection (URTI) according to Unani as well as Conventional system of mendicine.	1	Practical18.5	CE	Shows-how	CBL,W,DIS,RP
CO1,CO2,CO4, CO5,CO6,CO7	Analyze complicated and uncomplicated URTIs, and the indications for referral.	1	Practical18.6	CE	Shows-how	W,RP,CBL,TBL
CO1,CO2,CO4, CO5,CO6,CO7	Analyse and manage cases of URTIs with Ilaj bil-Ghidha (dietotherapy), Tadabir (Inkibab, Tila, zimad, Takmid), and Ilaj bil-Dawa (pharmacological interventions)	2	Experiential-Learning18.4	CAN	Does	CBL,RP,W
CO1,CO2,CO4, CO5,CO6,CO7	Apply skills of nasopharyngeal suctioning in infants with severe congestion.	1	Experiential-Learning18.5	AFT-SET	Does	PL,SIM,W,RP
Unit 3 Foreign body in lower respiratory tract 18.3.1 Definition, epidemiology, types (acute, chronic), risk factors, clinical presentations, diagnostic evaluation, management and complications of Foreign Body Aspiration. **References:** 34,44,50,63						
3A	**3B**	**3C**	**3D**	**3E**	**3F**	**3G**

CO1,CO2,CO4, CO5,CO6,CO7	Describe foreign body aspiration and its epidemiology, types (acute, chronic), risk factors, clinical presentation, diagnostic evaluation, management and complications.	1	Lecture	CAN	Knows-how	BS,L_VC,L&P PT
CO1,CO2,CO4, CO5,CO6,CO7, CO8	Demonstrate prompt identification and emergency management plan for foreign body aspiration in children.	1	Practical18.7	PSY-MEC	Shows-how	DIS,CBL,SIM, RP,PER
CO1,CO2,CO4, CO5,CO6,CO7	Demonstrate key diagnostic techniques to rule out foreign body aspiration in lower respiratory tract	1	Practical18.8	PSY-MEC	Shows-how	TBL,W,SIM,C BL,D
CO1,CO2,CO4, CO5,CO6,CO7	Discuss the post-removal care for Foreign Body Aspiration cases.	1	Practical18.9	PSY-ADT	Shows-how	SIM,RP,DIS, W
CO1,CO2,CO4, CO5,CO6,CO7, CO8	Identify the types of foreign body aspiration and document managing protocol.	2	Experiential-Learning18.6	AFT-SET	Does	CBL,PL,SDL, SIM,ML
CO1,CO2,CO4, CO5,CO6,CO7, CO8	Interpret the cases of chronic aspiration and formulate the management protocol.	1	Experiential-Learning18.7	CE	Does	W,SIM,CD,R P,CBL
CO1,CO2,CO4, CO5,CO6,CO7, CO8	Present and document the safety guidelines for foreign body aspiration.	1	Experiential-Learning18.8	PSY-MEC	Does	SIM,RP,W,LS
Unit 4 Acute respiratory distress syndrome						

18.4.1 Definition of Acute Respiratory Distress Syndrome (ARDS), etiology, pathogenesis, pathophysiology, clinical presentations, diagnostic investigations, complications, management, and prognosis.

References: 34,44,46,50,63

3A	3B	3C	3D	3E	3F	3G
CO1,CO2,CO4, CO5,CO6,CO7, CO8	Describe ARDS, its etiology, pathogenesis, pathophysiology, clinical presentation, diagnostic investigations, complications, management, and prognosis.	1	Lecture	CAN	Knows-how	L&PPT ,FC,L_VC
CO1,CO2,CO4, CO5,CO6,CO7	Demonstrate diagnostic criteria through flow charts and the algorithm for evaluation of ARDS.	1	Practical18.10	PSY-MEC	Shows-how	C_L,W,CBL,GBL
CO1,CO2,CO4, CO5,CO6,CO7	Demonstrate oxygen delivery systems and different types of canulas and their application.	1	Practical18.11	PSY-MEC	Shows-how	CBL,D,DIS,SIM,W
CO1,CO2,CO4, CO5,CO6	Identify cases of respiratory distress syndrome.	1	Practical18.12	CAN	Does	CBL,W,DIS,SIM
CO1,CO2,CO4, CO5,CO6,CO7	Identify and document cases of Acute Respiratory Distress syndrome.	2	Experiential-Learning18.9	AFT-RES	Does	RP,PBL,CBL,SIM
CO1,CO2,CO4, CO5,CO6,CO7	Identify and discuss stages of the Respiratory distress, and appropriate management protocol.	1	Experiential-Learning18.10	CAN	Does	RP,SIM,CBL,C_L

CO1,CO2,CO4, CO5,CO6,CO7	Identify signs of respiratory fatigue in respiratory failure and referral.	1	Experiential-Learning18.11	CAN	Does	RP,DIS,LS,CBL,W
Unit 5 ورم شعبۃ الریہ وسعال صبیان Waram-i-Shu'bat-ur-Ri'a and Su'āl-i-Sibyan (Acute bronchiolitis and Acute Bronchitis) 18.5.1 Definition, etiopathogenesis, epidemiology, clinical features, diagnostic evaluation, differential diagnosis, treatment, prognosis, prevention of Acute Bronchiolitis and Acute Bronchitis 18.5.2 Concept of Waram-i-Shu'bat-ur-Ri'a and Su'āl-i-Sibyan under the heading of Tarif, Aqsam, Tariqa-i-Tashkhis, and Usul-i-Ilaj. **References:** 27,28,31,39,42,44,46,50,63						
3A	**3B**	**3C**	**3D**	**3E**	**3F**	**3G**
CO1,CO2,CO4, CO5,CO6,CO7	Describe acute bronchiolitis and acute bronchitis, its etiopathogenesis, epidemiology, clinical features, diagnostic evaluation, differential diagnosis, treatment, prognosis, and prevention.	1	Lecture	CE	Knows-how	L&GD,FC,L&PPT ,BL
CO1,CO2,CO4, CO5,CO6,CO7	Describe Tarif, Aqsam, Tariqa-i-Tashkhis, and Usul-i-Ilaj of Warm-i-Shobat-ur-Ri'a.	1	Lecture	CC	Knows-how	L&GD,L&PPT ,LS
CO1,CO2,CO4, CO5,CO6,CO7	Distinguise and interpret cases of acute bronchiolitis and acute bronchitis.	1	Practical18.13	PSY-MEC	Shows-how	CBL,SIM,PBL ,W,DIS
CO1,CO2,CO4, CO5,CO6,CO7, CO8	Formulate the management protocol for acute bronchiolitis and acute bronchitis.	1	Practical18.14	CS	Does	W,RP,DIS,PBL,CBL

CO1,CO2,CO4, CO5,CO6,CO7	Demonstrate how to assess for dehydration and intravenous fluid administration in children.	1	Practical18.1 5	PSY-MEC	Shows-how	SIM,D
CO1,CO2,CO4, CO5,CO6,CO7	Identify and manage cases of Acute Bronchiolitis and Acute Bronchitis.	2	Experiential-Learning18.1 2	CAN	Does	PER,X-Ray,SIM
CO1,CO2,CO4, CO5,CO6,CO7	Apply classical concept of Advia and Tadabir (with Mufrad and Murakkab Advia) mentioned in inflammatory condition of lungs such as Warm-i-Shobat-ur-Ri'a.	2	Experiential-Learning18.1 3	CAP	Does	LS,BS,PT,CBL

Unit 6 ذات الریہ Dhāt al-Ri'a (Pneumonias)

18.6.1 Definition, classification, etiology, pathogenesis, clinical manifestations, complications, diagnosis, treatment (WHO Criteria), prognosis, prevention and social awareness regarding pneumonia

18.6.2 Description of Dhāt al-Ri'a, its Tarif, Asbab, Ala'mat, Imtihan, and Ilaj.

References: 21,27,28,34,39,44,46,50,63

3A	3B	3C	3D	3E	3F	3G
CO1,CO2,CO4, CO5,CO6,CO7, CO8	Describe Pneumonia, its classification, etiology, pathogenesis, clinical manifestation, complications, diagnosis, **(WHO Criteria for Pneumonia)** treatment, factors suggesting need of hospitalization, prognosis, prevention and social awareness regarding pneumonia.	1	Lecture	CE	Knows-how	L&PPT ,L_VC,FC,BS
CO1,CO2,CO4, CO5,CO6,CO7	Describe different Aqsam, Asbab, Tariqa-i-Tashkhis including Alamat, Usul-i-Ilaj and Ilaj	1	Lecture	CC	Knows-how	L&GD,L&PPT

CO1,CO2,CO4, CO5,CO6,CO7	Adapt clinical skills according to conventional and classical methods of assessment for pneumonia.	2	Practical18.1 6	PSY-MEC	Shows-how	D,C_L,SIM,C BL
CO1,CO2,CO4, CO5,CO6,CO7	Analyze conventional and classical pharmacological interventions, Tadabir and techniques	2	Practical18.1 7	CAN	Shows-how	W,D,CBL,RP
CO1,CO2,CO4, CO5,CO6,CO7, CO8	Diagnose and manage pediatric patients of pneumonia with conventional as well as classical medicine and tadabir.	2	Experiential-Learning18.1 4	PSY-MEC	Does	W,CBL,LS,SI M
CO1,CO2,CO4, CO5,CO6,CO7	Perform emergency management of a pediatric patient with severe pneumonia in a simulated setting.	1	Experiential-Learning18.1 5	PSY-ORG	Does	CBL,RP,W,SI M,GBL
CO1,CO2,CO4, CO5,CO6,CO7	Identify complication of pneumonia and timely referral of the patient for advanced therapies.	1	Experiential-Learning18.1 6	CAN	Does	SIM,RP,W,CB L,C_L

Practical Training Activity

Practical Training 18.1 Classical concept of Tashkhis-i-Mizaj of Ala-i-Tanaffus, types of Nafs and Su'i Tanaffus.

One or more activities can be chosen (Total time- 1 hour)

1.Practical Demonstration and Role Play (20+40 min)

Teacher will demonstrate the assessment techniques mentioned in classical literature.(20 min)

Students will then pair up and take turns to perform the assessments on each other, focusing on:(5- 10 min per student)

Awaz: Evaluating voice quality and changes.

Nafs: Observing breathing patterns and rhythm.

Nabd: Palpating the pulse for quality and character.

Sina: Assessing the shape of the chest for abnormalities.

or

2. Case-Based Learning (CBL) (20+40 mins)

Provide detailed case scenarios describing symptoms like altered voice tone, breath sounds, and chest shape.

Guide students to classify the Mizaj (e.g., Damwi, Balghami) based on the given observations.

Discuss the Asbab (causes), Alamat (symptoms), Usul-i-Ilaj (principles of treatment), and Ilaj (treatment).

or

3. Role-Playing/Simulation (20+40 mins)

Assign roles to students as patients and physicians.

Provide the "patient" with symptoms like altered voice (awaz), irregular breathing patterns (nafs), or changes in chest shape (sina).

Observe the "physician" diagnosing the condition and recording findings.

Offer feedback on the interpretation of respiratory signs and Mizaj classification.

or

4. Small Group Discussion (SGD) - 20+40 mins

Divide the class into small groups and assign each group a specific aspect of Su'i Tanaffus (e.g., Asbab, Alamat, Usul-i-Ilaj).

Provide access to classical texts and modern references.

Ask each group to present their findings with clinical correlations.

Facilitate a discussion on how these principles can be integrated into modern practice.

or

5. Problem-Based Learning (PBL)- 20+40 mins

Present a problem statement describing a patient with complex respiratory symptoms.

Encourage students to identify the Mizaj and analyze the root cause of Su'i Tanaffus.

Guide them to formulate a management plan, including Tadabir (regimenal therapy) and Ilaj bil-Dawa (pharmacological interventions).

Practical Training 18.2 Clinical evaluation of different pediatric respiratory diseases.

One or more activities can be chosen (Total time 2 hours)

1. Demonstrative Session: (General respiratory examination)- (20 mins by teachers)

Teacher will begin with a demonstration of pediatric respiratory examination steps, including observation, palpation, percussion, and auscultation.

Emphasize differences in pediatric anatomy and physiology, such as smaller airway sizes, that influence the clinical approach.

Use a checklist covering inspection (e.g., nasal flaring, cyanosis), auscultation (breath sounds), and palpation (chest wall movement).

Invite students to practice on mannequins or peers under supervision. (5- 10 mins per model or student or patient) and/or

2. Case-Based Learning: (eg. Asthma in Pediatrics) (20m min per case)

Present a case scenario of a child with typical asthma symptoms (e.g., wheezing, shortness of breath).

Guide students in taking a focused history, emphasizing questions about triggers, family history, and nighttime symptoms.

Demonstrate the use of a stethoscope for identifying characteristic sounds (e.g., wheezing), and have students practice auscultation on mannequins with simulated wheezing sounds. or

3. Interactive Small Group Session: (eg. Pneumonia Assessment) -30 mins

Divide students in a group of two and provide a case of suspected pneumonia in a child, including symptoms such as cough, fever, and chest pain.

Teach students how to identify signs of respiratory distress and practice palpation techniques to assess chest expansion.

Guide them in detecting abnormal breath sounds, such as crackles or bronchial breath sounds, through auscultation. or

4. Role Play and Simulation: (eg. Foreign Body Aspiration) (30 mins)

Use a simulated case of a toddler with sudden onset of cough and stridor.

Discuss the risk factors and symptoms associated with foreign body aspiration in children.

Guide students in examining the patient for asymmetric breath sounds, diminished breath sounds on one side, and potential obstruction signs.

Facilitate a role-play scenario where students perform an emergency assessment and discuss when to refer to a specialist.
Practical Training 18.3 Various diagnostic tools and procedures in respiratory disorders.
One or more activities can be chosen (Total time 1 hour) **1. Demonstrative Session: Basic Diagnostic Tools and Techniques (30 mins)** Begin with an overview of each tool, demonstrating how it is used in pediatric patients and emphasizing age-appropriate techniques. (20 mins) Show the correct method for using pulse oximetry to measure oxygen saturation levels, using a finger or earlobe probe. (5 mins) Demonstrate peak flow measurement and explain how it's utilized in conditions like asthma. (5 mins) Allow students to practice using each tool under supervision, using mannequins or simulation software. (30 mins) or **2. Interactive Workshop: Chest X-ray Interpretation (30 mins)** Present sample X-rays demonstrating normal and abnormal pediatric lung patterns, including cases of pneumonia, bronchiolitis, and atelectasis. Use a systematic approach to reading X-rays, teaching students to assess lung fields, cardiac silhouette, and diaphragm position. Divide students into small groups and have them practice interpreting a series of pediatric chest X-rays, discussing findings with peers and instructors. or **3. Hands-On Practice: Spirometry and Lung Function Testing (20 mins per small procedure)** Begin with an introduction to spirometry, discussing the test's purpose, indications, and parameters such as FEV1 and FVC. Demonstrate the spirometry technique, emphasizing the need for proper coaching in pediatric patients to achieve accurate results. Allow students to practice performing spirometry on simulation models or volunteer participants, recording and interpreting results. or **4. Role-Playing and Simulation: Thoracocentesis for Pleural Effusion (60 mins)** Demonstrate the thoracocentesis procedure using a mannequin or virtual simulation, emphasizing needle insertion, fluid aspiration, and aseptic technique. Discuss common causes of pleural effusion in pediatric patients, such as infections and malignancies.

Allow students to practice the procedure on mannequins, focusing on anatomical landmarks and sterile technique.

Practical Training 18.4 Performing and interpreting investigations and procedures

One or more activities can be chosen (Total time 1 hour)

1. Simulated Practice: Bronchoscopy for Airway Assessment (30 mins)

Begin with a video or simulation of a bronchoscopy procedure, explaining the tool's components, insertion process, and visualization technique. (10 mins)

Demonstrate findings from different clinical conditions, such as bronchomalacia, foreign body presence, and laryngeal edema. (20 mins)

Allow students to practice with a bronchoscopy simulator, focusing on hand-eye coordination, navigating the airways, and recognizing normal vs. abnormal findings. (20- 30 mins)

or

2. Team-Based Learning: Blood Gas Analysis and Interpretation (30 mins)

Begin with a review of ABG parameters (e.g., pH, $PaCO_2$, PaO_2, HCO_3) and their significance in respiratory distress.

Present case studies with ABG results indicative of various conditions (e.g., respiratory acidosis, metabolic alkalosis) and discuss interpretation.

Have students work in teams to interpret ABG results, focusing on identifying acid-base imbalances and linking findings to respiratory conditions.

or

3. Case-Based Learning: Interpretation of Chest CT Scans in Complex Respiratory Conditions (30 mins)

Provide a selection of anonymized CT scans showing various pediatric respiratory pathologies.

Present a structured approach for interpreting CT scans, emphasizing lung parenchyma, airway structure, and mediastinal regions.

Divide students into small groups to examine the scans, discuss their findings, and correlate with possible diagnoses.

Have each group present their interpretations and compare them to actual diagnoses, reinforcing the impact of imaging in diagnostic decision-making.

or

4. Interactive Workshop: Pulmonary Function Tests and Spirometry (30 mins)

Begin with a demonstration of spirometry, explaining parameters like Forced Vital Capacity (FVC) and Forced Expiratory Volume (FEV1).

Allow students to practice using spirometers on simulation mannequins or volunteer participants, guiding them to achieve accurate results.

Provide a set of spirometry results for interpretation, instructing students on recognizing patterns that indicate obstructive or restrictive lung disease.

Discuss limitations of spirometry in younger pediatric patients and how to obtain reliable results in clinical settings..

Practical Training 18.5 Compare URTIs cases in Classical and conventional method of evaluation

One or more activities can be chosen (Total time- 1 hour)

1. Case Study Discussion: Comparative Diagnosis of Common Cold (Nazla/Zukam) (20 mins by teacher)

Teacher will present a case of a pediatric patient with common cold symptoms.

The instructer or techer will facilitate a discussion on Tariqa-i-Taskhis, comparing conventional signs and symptoms assessment with Unani approaches, which might include mizaj (temperament) assessment and Su'i Tanaffus (respiratory distress) categorization.

Highlight diagnostic factors like nasal discharge, fever, and throat examination in both approaches. or

2. Role-Play Activity: Management of Pharyngitis (Ilaj and Usul-i-Ilaj) (40 mins)

Divide students into pairs, where one role-plays as a doctor and the other as a patient presenting with pharyngitis.

The "doctor" discusses management options in both systems, including Unani Ilaj (herbal gargles, dietary adjustments) and conventional therapies (antibiotics if bacterial, throat lozenges).

Focus on explaining the Usul-i-ilaj principles, such as the balance of mizaj, lifestyle adjustments, and dietary recommendations in Unani, compared with symptomatic relief and antibacterial action in conventional medicine.

Rotate roles and conduct a debrief to address communication and patient comprehension. or

3. Hands-On Workshop: Identification of Unani and Conventional Medicines for Sinusitis (40 mins)

Provide students with a list of Unani herbal medications (e.g., Saussurea lappa for inflammation) and conventional treatments (e.g., antihistamines, decongestants).

Demonstrate and discuss how Unani treatments address root causes through Mizaj correction (temperament balancing) and immune support, while conventional medicine typically targets symptomatic relief.

Allow students to handle and examine samples (mock or labeled) of Unani herbs and discuss their uses, preparations, and dosage compared to pharmaceutical options. or

4. Small-Group Discussion: Diagnostic Criteria and Treatment Protocols for Otitis Media (40 mins)

Divide students into small groups to analyze a case of a child presenting with otitis media symptoms.

Have each group review and discuss diagnostic criteria from both perspectives: in conventional medicine, signs such as ear pain, fever, and tympanic membrane examination; in Unani, focus on pulse (nabd) findings, mizaj, and the overall constitution of the patient.

Assign each group to present recommended management steps, including Unani treatments like topical applications (e.g., olive oil with herbs) and dietary adjustments versus antibiotics and analgesics in conventional medicine.

Practical Training 18.6 Complicated and uncomplicated URTIs

One or more activities can be chosen (Total time- 1 hour)

1. Interactive Lecture with Case-Based Scenarios (20 mins)

Present a lecture on the diagnostic criteria for URTIs, including symptomatology, duration, risk factors, and initial management strategies.

Introduce case-based scenarios featuring common URTIs (e.g., sinusitis, pharyngitis) and discuss when they become complicated (e.g., persistent high fever, spread to surrounding tissues).

Engage students with “What would you do next?” questions to reinforce decision-making..

2. Small-Group Activity: Identification of Red Flags in URTIs (40 mins)

Divide students into small groups and provide each with a list of symptoms and clinical scenarios, such as persistent cough with blood-streaked mucus, stridor, or periorbital swelling.

Ask each group to categorize symptoms into “uncomplicated” and “complicated” and provide a rationale for their classification.

Groups then share their categorizations with the class, justifying their decisions. or

3. Role-Play: Patient Interaction and Referral Decision-Making (60 mins)

Conduct a role-play activity where one student acts as the healthcare provider, and another as a parent of a child with complicated URTI symptoms.

The “provider” explains the reasons for referral to a specialist, addressing concerns and explaining potential complications like peritonsillar abscess or mastoiditis.

Emphasize the importance of empathy and clarity in explaining why referral is necessary.

Rotate roles so that each student practices both parts. or

4. Hands-On Workshop: Physical Examination for Complicated URTIs (60 mins)

Set up workstations with mannequins or use peer-to-peer practice to simulate physical findings indicative of complications (e.g., tympanic membrane bulging for otitis media, sinus tenderness, neck stiffness for suspected meningitis).

Supervise students in conducting focused exams, observing for critical signs that suggest complications.

Debrief with students, discussing their findings and what those findings indicate regarding severity and need for escalation of care.

Practical Training 18.7 Management plan for foreign body aspiration

One or more activities can be chosen (Total time- 1 hour)

1. Interactive Lecture with Multimedia (Videos and Images)

Teacher will present a lecture covering signs and symptoms of foreign body aspiration, risk factors, and types of objects that may be aspirated.

Use videos and images to illustrate cases of foreign body aspiration and different removal techniques.

Discuss immediate interventions for complete and partial airway obstructions.

2. Simulation Exercise: Identifying and Managing Foreign Body Aspiration (40 mins)

Set up a pediatric manikin or high-fidelity simulator to represent a child with suspected foreign body aspiration.

Provide scenarios where the student assesses the child, determines the type of obstruction (complete or partial), and performs age-appropriate airway clearance techniques (e.g., back blows, chest thrusts, or abdominal thrusts).

Include a checklist to ensure students perform each step (e.g., calling for help, positioning the child, applying techniques). or

3. Small-Group Discussion: Recognizing Signs and Symptoms of Aspiration (30 mins per case)

Divide students into small groups and present them with different case studies detailing symptoms such as coughing, wheezing, stridor, or sudden respiratory distress.

Ask each group to identify which symptoms suggest foreign body aspiration and what their first response would be.

Rotate through each case, prompting groups to compare and discuss the severity of cases and appropriate responses. or

4. Role-Play: Communication with Caregivers During Emergencies (40 mins)

Set up a role-play scenario in which one student plays the role of the healthcare provider, and another plays the caregiver of a child experiencing foreign body aspiration.

The “provider” explains the steps they are taking, reassures the caregiver, and instructs them on what to do if aspiration happens again.

Focus on clear, calm, and supportive communication, highlighting the importance of empathy. or

5. Case Study Analysis: Identifying When Referral is Needed (20 mins)

Present students with case studies of foreign body aspiration where the child may require additional imaging, bronchoscopy, or surgical intervention.

Have students determine when they would refer a case and what indicators suggest the need for a specialist.

Discuss follow-up care, including managing any residual symptoms and preventive advice for caregivers.

Practical Training 18.8 Diagnosis of foreign body aspiration

One or more activities can be chosen (Total time- 1 hour)

1. Hands-On Workshop: Auscultation Techniques and Findings (60 mins)

Use auscultation manikins or real-life recordings of lung sounds associated with foreign body aspiration (e.g., unilateral wheezing, decreased breath sounds). (20 mins)

Have students practice identifying these sounds and documenting them as part of a respiratory examination. (10 mins per case)

Conduct a guided discussion on differentiating these findings from those of common respiratory conditions (e.g., asthma, pneumonia). or

2. Simulation Exercise: Radiologic Interpretation (X-Ray and CT) (20 mins per case)

Present a series of chest X-rays and CT scans, some with foreign bodies visible in the bronchial regions and others with different findings.

Guide students through identifying signs of foreign body presence (e.g., hyperinflation, atelectasis, mediastinal shift) and differentiating these from infections or other causes of obstruction.

Discuss when to proceed from X-ray to CT for clearer visualization. or

3. Small-Group Case Studies: Differential Diagnosis and Decision-Making (20 mins per case)

Divide students into small groups and present each group with different case studies where symptoms may resemble foreign body aspiration or other respiratory conditions like bronchiolitis, asthma, or bacterial pneumonia.

Ask students to discuss and document diagnostic steps they would take, indicating when they suspect foreign body aspiration and how they would confirm it.

Each group presents their approach and decision-making process to the larger group for discussion. or

4. Demonstration and Practice: Bronchoscopy as a Diagnostic Tool (60 mins)

Demonstrate the procedure of bronchoscopy using simulation equipment, explaining how it is used to visualize and, if needed, remove foreign bodies in the lower respiratory tract.

Discuss the indications, contraindications, and potential complications of bronchoscopy.

Allow students to practice on a simulation model to understand how foreign bodies appear in the bronchoscope and practice technique under supervision.

Practical Training 18.9 Post-removal care for foreign body aspiration

One or more activities can be chosen (Total time- 1 hour)

1. Simulation Exercise: Post-Removal Care Plan (30 mins)

Teacher will introduce the post removal care plan using a simulation model or case scenario, than students create a post-removal care plan, including:

Monitoring vital signs and respiratory status.

Managing potential complications (e.g., pneumothorax, airway edema).

Providing adequate pain management and supportive care.

Educating the family on signs of complications.

Encourage students to present their care plan and rationales to their peers.

or

2. Inpatient Rounds Role Play: Interprofessional Communication (30 mins)

Divide students into groups representing different healthcare roles (e.g., physician, nurse, respiratory therapist).

Create scenarios where they must discuss the post-removal care plan during an inpatient round.

Focus on how to effectively communicate the patient's needs, plan of care, and potential complications to the team.

Role-play various responses and questions that may arise during rounds.

or

3. Clinical Skills Workshop: Vital Signs Monitoring and Emergency Response (30 mins)

Provide a hands-on workshop where students practice taking vital signs (heart rate, respiratory rate, oxygen saturation) on simulation mannequins.

Discuss the normal ranges and what constitutes an emergency in the post-removal patient.

Conduct scenarios where students must respond to abnormal findings (e.g., desaturation, increased work of breathing) and initiate appropriate interventions.

or

4. Group Discussion: Complications and Management Strategies (30 mins)

Organize a group discussion on potential complications, including:

Airway edema

Infection

Bleeding

Pneumothorax

Have students research these complications and present their findings, including prevention and management strategies.

Encourage dialogue on how to incorporate this knowledge into post-removal care plans.

Practical Training 18.10 Dignostic criteria of Acute respiratory distress syndrome (ARDS).

One or ore activities can be chosen (Total time- 1 hour)

1.Flow Chart Creation for ARDS Evaluation (60 mins)

Divide students into small groups and provide them with poster boards and markers.

Each group will create a flow chart that includes:

Initial assessment parameters (history, physical examination, and laboratory findings).

Steps for evaluating oxygenation status and radiological findings.

Decisions regarding diagnosis and management based on the Berlin Definition.

Encourage groups to present their flow charts to the class for discussion and feedback.

or

2. Case-Based Learning: Algorithm Application (60 mins)

Present students with several case scenarios depicting children with respiratory distress.

Have students work in pairs to apply the algorithm for ARDS evaluation to each case.

Instruct students to discuss their reasoning for each step in the algorithm, including:

Assessing clinical criteria.

Determining severity based on the Berlin Definition.

Considering differential diagnoses.

Facilitate a class discussion to review each case and clarify any misconceptions.

or

3. Hands-On Workshop: Using Diagnostic Criteria in Clinical Simulations

Organize a hands-on workshop using simulation mannequins or standardized patients.

Set up scenarios where students must evaluate a child with suspected ARDS.

Require students to perform:

A thorough history and physical examination.

Vital signs monitoring and interpretation.

Decision-making based on the Berlin Definition and diagnostic criteria.

Provide feedback after each simulation to reinforce learning points.

or

4. Interactive Quiz: Knowledge Check on ARDS

Conduct an interactive quiz using platforms like **Kahoot or Quizizz** to engage students.

Include questions related to:

Key points of the Berlin Definition.

Steps in the flow chart for ARDS evaluation.

Clinical scenarios requiring algorithm application.

Discuss the correct answers as a class after the quiz.

Practical Training 18.11 Oxygen titration, canulas, and oxygen delivery system

One or more activities can be chosen (Total time- 1 hour)

1. Lecture and Discussion: Overview of Oxygen Delivery Systems (20 mins)

Deliver a lecture on various oxygen delivery systems (nasal cannula, simple face mask, non-rebreather mask, high-flow nasal cannula).

Discuss indications, flow rates, and oxygen concentrations delivered by each system.

Facilitate a discussion on the importance of oxygen therapy in managing respiratory conditions.

or/ and

2. Demonstration: Types of Cannulas and Oxygen Delivery Devices (10 mins)

Use actual oxygen delivery devices to demonstrate:

Nasal Cannula: Explain proper fitting and flow rate adjustments.

Simple Face Mask: Demonstrate securing the mask and assessing fit.

Non-Rebreather Mask: Show how to check reservoir bag inflation and mask sealing.

High-Flow Nasal Cannula: Discuss indications and how to set flow rates accurately.

Encourage students to practice with the devices under supervision.

or/ and

3. Hands-On Workshop: Pulse Oximetry Measurement (10 mins)

Provide pulse oximeters to each student or pair of students.

Instruct them on how to place the sensor on different fingers and obtain a reading.

Discuss the normal SpO_2 range and factors that may affect accuracy (e.g., peripheral circulation, nail polish).

Have students measure SpO_2 on each other and record their findings.

or/ and

4. Case-Based Learning: Titration of Oxygen Therapy (10 mins)

Present several case scenarios with varying SpO_2 levels (e.g., asthma exacerbation, pneumonia).

Have students work in small groups to determine the appropriate oxygen delivery system and flow rate for each case.

Instruct them to outline a plan for titrating oxygen therapy based on the given SpO_2 levels, considering safety and effectiveness.

Encourage groups to share their plans and rationale with the class.

or

5. Simulation Activity: Oxygen Therapy Management (10 mins)

Set up a simulation environment using manikins or standardized patients displaying respiratory distress.

Have students assess the patient, measure SpO_2, and choose the appropriate oxygen delivery system.

Students will titrate the oxygen based on SpO_2 readings, documenting their findings and interventions.

After each simulation, provide feedback and discuss areas for improvement.

Practical Training 18.12 Diagnosis of Respiratory Distress syndrome

One or more activities can be chosen (Total time- 1 hour)

1. Case-Based Learning: Patient Scenarios (60 mins)

Teacher will discuss how to diagnose a case of RDS, than divide students into small groups and provide each group with a detailed patient case study that includes symptoms, medical history, and examination findings.

Ask each group to discuss and construct a diagnosis based on the presented information, considering the possibility of RDS.

Encourage them to identify key indicators such as respiratory rate, oxygen saturation levels, and auscultation findings.

or

2. Hands-On Workshop: Clinical Examination Techniques

Teacher will demonstrate techniques for assessing respiratory distress, including:

Inspection (e.g., use of accessory muscles, retractions).

Palpation (e.g., tactile fremitus).

Percussion (e.g., assessing for dullness or hyperresonance).

Auscultation (e.g., identifying abnormal lung sounds).

Allow students to practice these techniques on standardized patients or manikins. or

3. Simulation Activity: Diagnostic Evaluation

Create a simulation environment where students assess a patient (manikin or standardized patient) exhibiting signs of respiratory distress.

Students will gather a complete history and perform a physical examination.

Assign specific diagnostic tests (e.g., chest X-ray, arterial blood gas analysis, complete blood count) for students to interpret.

Discuss the relevance of each test and how they contribute to the diagnosis of RDS.or

4. Group Discussion: Management Plans

After forming a diagnosis, groups will outline a management plan for the patient case.

Encourage them to consider pharmacological interventions (e.g., corticosteroids, bronchodilators), supportive care (e.g., oxygen therapy, mechanical ventilation), and potential referrals.

Groups present their management plans to the class, justifying their choices based on evidence and clinical guidelines.

Practical Training 18.13 Differential diagnosis for cases of acute bronchiolitis and acute bronchitis.

One or more activities can be chosen (Total time- 1 hour)

1. Case-Based Learning (CBL): Review and Analysis of Patient Cases (20+40 mins)

Teacher will discuss anonymized or simulated cases of pediatric patients presenting with respiratory symptoms that could indicate bronchiolitis or bronchitis. (20 mins)

Assign students to small groups to review each case and discuss the distinguishing features of each condition (e.g., wheezing, age of the patient, seasonality, history of viral infections).

Have each group present their differential diagnosis, justifying their conclusions based on clinical findings.

or

2. Simulation-Based Learning: Physical Examination Skills Practice (20+40 mins)

Set up a simulation station with pediatric mannequins programmed with different lung sounds associated with bronchiolitis and bronchitis.

Allow students to examine each mannequin, noting differences in lung sounds, respiratory rates, and accessory muscle usage.

Guide students to record their observations and discuss how the findings support a diagnosis of either bronchiolitis or bronchitis.

or

3. Differential Diagnosis Workshop: Comparative Charting and Group Discussion (20+40 mins)

Organize students into groups and have each group construct a comparative chart listing the distinguishing features of bronchiolitis and bronchitis (e.g., typical patient age, common pathogens, seasonality, physical findings, and imaging results).

After creating their charts, each group presents to the class. Facilitate a discussion on any areas of overlap or confusion and clarify through case examples.

or

4. Problem-Based Learning (PBL): Creating a Differential Diagnosis Algorithm (20+40 mins)

Present a complex case where symptoms might overlap between bronchiolitis and bronchitis.

Have students work in groups to create an algorithm that outlines a step-by-step diagnostic approach, including relevant questions to ask, physical examination techniques, and appropriate investigations (e.g., chest X-ray, blood tests).

Each group shares their algorithm, and the class discusses the effectiveness and practicality of each approach.

Practical Training 18.14 Acute bronchiolitis and acute bronchitis management

One or more activities can be chosen (Total time- 1 hour)

1. Case-Based Learning (CBL): Management Planning for Specific Cases (20+40 mins)

Teacher will Present and discuss detailed case scenarios of pediatric patients diagnosed with either acute bronchiolitis or acute bronchitis, including clinical history, physical examination findings, and relevant laboratory results. (20 mins)

In small groups, have students discuss and create a management plan for each case, considering aspects like supportive care, pharmacological treatments, and monitoring strategies.

Each group will present their management plan to the class, followed by a discussion on different approaches and evidence supporting their choices. (40 mins)

or

2. Simulation-Based Learning: Hands-On Management Techniques (20+40 min)

Set up simulation stations where students can practice administering oxygen therapy, nebulized treatments, and intravenous fluids using mannequins or simulation devices.

Include scenarios for both bronchiolitis and bronchitis, allowing students to assess and manage simulated patients appropriately.

Have instructors facilitate feedback sessions after each simulation, highlighting best practices and areas for improvement.

or

3. Group Workshop: Designing a Multidisciplinary Management Approach (60)

Divide students into groups, assigning each group a specific role within the multidisciplinary team (e.g., physician, nurse, respiratory therapist, dietitian).

Each group will create a management plan from their assigned role's perspective, considering how their discipline contributes to patient care for either condition.

Groups will then present their plans, emphasizing interprofessional collaboration and communication strategies.

or

4. Problem-Based Learning (PBL): Developing Evidence-Based Management Protocols (60 min)

Provide groups with recent clinical guidelines or research articles on the management of acute bronchiolitis and bronchitis.

Have students analyze the evidence, then create management protocols based on the guidelines, addressing various aspects such as symptom relief, medication use, and criteria for hospitalization.

Facilitate presentations and discussions about their protocols and the rationale behind their recommendations.

Practical Training 18.15 Assessment of dehydration

One or more activities can be chosen (Total time- 1 hour)

1. Demonstration: Assessing Dehydration (10 mins)

Demonstrate a systematic approach to assessing hydration status in a pediatric patient, focusing on:

Physical signs (skin turgor, mucous membranes, capillary refill time, fontanelle status in infants).

Vital signs (heart rate, blood pressure).

Behavioral assessment (level of consciousness, activity level).

Use a manikin or role-play with a peer to illustrate the assessment.

or/ and

2. Hands-On Practice: Assessing Dehydration in Small Groups (20 mins)

Divide students into small groups and provide them with manikins or patient scenarios.

Have each group practice assessing hydration status based on provided case studies, allowing them to apply the knowledge gained from the lecture and demonstration.

Instructors should provide feedback and clarify any misconceptions during the activity.

or/ and

3. Demonstration: Intravenous Fluid Administration Techniques (10 mins)

Demonstrate the steps for preparing and administering intravenous fluids, including:

Selecting appropriate IV access (e.g., peripheral IV, intraosseous access if necessary).

Calculating fluid requirements (using weight-based calculations).

Setting up the IV line and ensuring aseptic technique.

Monitoring the patient for adverse reactions during administration.

Discuss the importance of documentation and follow-up assessment.

or/ and

4. Hands-On Practice: IV Fluid Administration (20 mins)

In small groups, have students practice setting up and administering intravenous fluids on manikins or simulation models.

Emphasize the importance of correct technique, safety measures, and documentation.

Instructors should supervise and provide guidance during the practice session.

or

5. Simulation Exercise: Clinical Scenario of Dehydration and IV Administration (40 mins)

Create a simulation scenario where a child presents with respiratory distress and dehydration.

Students will assess the patient's hydration status, calculate fluid requirements, and perform intravenous fluid administration under simulated conditions.

Conduct a debriefing session after the simulation to discuss decisions made, challenges faced, and areas for improvement.

Practical Training 18.16 Assessment of Pneumonia

One or more activities can be chosen (Total time- 2 hours)

1. Demonstration: History-Taking and Physical Examination Techniques (20 mins)

Demonstrate effective history-taking focused on symptoms (e.g., cough, fever, dyspnea) and risk factors (e.g., smoking, previous respiratory illnesses).

Illustrate physical examination techniques, including inspection, palpation, percussion, and auscultation, specifically for pneumonia.

Use a manikin or a peer for the demonstration.

or

2. Hands-On Practice: History-Taking in Small Groups (40 mins)

Divide students into small groups and provide them with simulated patient scenarios (using standardized patients or role-play).

Each student will take turns conducting a focused history-taking session based on the presented scenario.

Instructors will provide feedback on communication techniques and content.

or

3. Group Activity: Physical Examination Skills Practice (30 mins)

In small groups, students will practice performing the physical examination techniques demonstrated earlier, focusing on:

Inspection for respiratory distress.

Palpation for tactile fremitus.

Percussion for dullness.

Auscultation for abnormal breath sounds (e.g., crackles, wheezes).

Each group will rotate among different stations to practice various skills.

or

4. Case-Based Learning: Differential Diagnosis and Management Plan (30 mins)

Provide students with clinical case scenarios that present signs and symptoms suggestive of pneumonia.

In groups, students will discuss the possible differential diagnoses, select appropriate diagnostic tests, and create management plans.

Each group will present their findings and receive feedback from instructors and peers.

or

5. Simulation Exercise: Clinical Assessment of Pneumonia (30 mins)

Conduct a simulation where students assess a standardized patient or high-fidelity manikin exhibiting signs of pneumonia.

Students will perform history-taking, physical examination, and interpret vital signs and laboratory results.

Instructors will observe and provide feedback during the simulation.

Practical Training 18.17 Pneumonia cases management.

One or more activities can be chosen (Total time- 2 hours)

1. Demonstration: Classical Techniques and Tadabir (30-mins)

Instructer demonstrate specific classical techniques (e.g., cupping, leech therapy) and their indications.

Explain how these techniques can be integrated with conventional treatments for specific conditions.

Discuss patient safety, ethical considerations, and evidence supporting these interventions.

and/or

2. Group Discussion: Analyzing Case Scenarios (60 mins)

Divide students into small groups and present them with clinical case scenarios that require treatment planning for common conditions (e.g., asthma, allergies).

Each group will analyze the scenarios, identifying appropriate conventional and classical pharmacological interventions, as well as potential Tadabir.

Groups will present their findings, justifying their choices based on clinical guidelines and evidence.

or

3. Hands-On Workshop: Pharmacological and Therapeutic Interventions (60 mins)

Organize a workshop where students practice preparing and administering various medications (e.g., inhalers, nebulizers) under supervision.

Include sessions on preparing herbal remedies used in classical medicine, ensuring safety and efficacy.

Discuss dosage calculations, potential interactions, and monitoring for side effects.

or

4. Case-Based Learning: Treatment Plan Formulation (30 mins per case)

Provide students with detailed patient cases presenting complex medical histories.

In groups, students will create treatment plans that discriminate between conventional pharmacological interventions, classical therapies, and appropriate Tadabir.

Each group will present their plans, discussing the rationale for their choices.

Experiential Learning Activity

Experiential-Learning Learning 18.1: Diagnosis of respiratory diseases
One or more activities can be chosen (Total time- 4 hours) **1. Case-Based Learning: Respiratory Disorder Diagnosis (30 mins)** Provide the student with a detailed patient case that includes symptoms, history, and initial examination findings. The student should use diagnostic procedures (e.g., auscultation, pulse oximetry, etc.) to identify the disorder. or **2. Simulation: Spirometry Testing (30 mins)** Utilize a spirometry simulator or practice with a spirometer on a mannequin. The student should perform the test, interpret the results, and relate them to potential respiratory disorders. or **3. Problem-Based Learning: Differential Diagnosis (30 mins)** Present the student with multiple case scenarios featuring similar respiratory symptoms. The student must use clinical reasoning to differentiate between disorders (e.g., asthma vs. COPD). or **4. Peer Learning: Group Discussion on Diagnostic Procedures (30 mins)** Organize a discussion session where the student prepares a presentation on specific diagnostic techniques (e.g., chest X-ray, CT scan) and leads a peer discussion. or **5. Journal Club: Review of Literature on Respiratory Disorders (2 hours)** Assign the student to select and present a recent research article related to respiratory diagnostics. The presentation should summarize the findings and discuss clinical implications.
Experiential-Learning Learning 18.2: Interpretation of investigations of respiratory disorders
One or more activities can be chosen (2 hours) **1: Hands-On Practice (60 mins)** Access a collection of at least 10 pediatric chest X-ray images and 5 CT scans through medical imaging databases or educational platforms. For each image, perform the following:

Identify anatomical structures and any abnormalities.

Note your observations and possible diagnoses on a worksheet.

Use resources like interpretation guidelines or books for comparison. or

2: Case-Based Learning (60 mins)

Choose 3–5 clinical case studies related to respiratory disorders in pediatrics (these can be found in medical literature or online case databases).

For each case, correlate the provided imaging (X-ray/CT) with the clinical presentation and laboratory findings.

Write a detailed report for each case that includes:

Patient demographics

Clinical symptoms

Imaging findings

Differential diagnoses

Suggested management plans. or

3: Peer Learning (two cases in 2 hours)

Present your case reports and image interpretations to a peer or mentor.

Discuss findings and receive constructive feedback on interpretations and clinical reasoning.

Prepare follow-up questions based on feedback to deepen your understanding.

Experiential-Learning Learning 18.3: Spirometry, pulse oximetry, montoux test

One or more activities can be chosen (Total time- 1 hour)

1: Hands-On Practice-Spirometry Testing (20 mins)

Find a volunteer or a simulated patient (this could be a peer) to perform the test.

Instruct the participant on how to properly perform the test (e.g., deep breath, seal lips around the mouthpiece, and exhale forcefully).

Conduct the spirometry test according to the guidelines (e.g., ATS/ERS).

Record the results and assess the readings (FEV1, FVC, FEV1/FVC ratio). or

2: Hands-On Practice-Pulse Oximetry Measurement (20 mins)

Use a pulse oximeter on yourself or a peer.

Ensure the probe is correctly positioned and wait for a stable reading.

Record the SpO2 percentage and heart rate.

Discuss factors that might influence readings.

3:Hands-On Practice with Reflection- Mantoux Test Administration (20 min)

Use a simulated patient (peer or model) to practice administering the test:

Clean the injection site with alcohol.

Administer 0.1 mL of purified protein derivative (PPD) intradermally.

Mark the site and provide instructions on what to expect.

After 48-72 hours, return to check the induration and record the measurement.

Experiential-Learning Learning 18.4: Management of URTIs with Unani Teatment

One or more activities can be chosen (Total time- 2 hours)

1. Case Study Review and Discussion (60 mins)

Provide students with a variety of case studies that illustrate different presentations of URTIs.

Divide students into small groups and assign each group a case to analyze.

Groups will identify symptoms, possible diagnoses, and appropriate management using Ilaj bil-Ghaza, Tadabir, and Ilaj bil-Dawa.

Each group presents their findings to the class.

or/ and

2. Role-Playing Patient Consultations (60 mins)

Pair students to role-play as patients and healthcare providers.

The "patient" presents symptoms of a URTI, and the "provider" must assess the case and recommend management using Ilaj bil-Ghaza, Tadabir, and Ilaj bil-Dawa.

After each role-play, partners give feedback on the consultation and management recommendations. or

3. Hands-On Workshop on Tadabir Techniques (60 mins).

Organize a workshop where students can practice techniques such as Inkibab (inhalation therapy), Tila (application of oils), Zimad (plaster), and Takmid (hot fomentation).

Use appropriate materials (e.g., essential oils, hot water) to demonstrate the techniques.

Allow students to practice on each other while ensuring safety measures.

Allocate 1 hour for the workshop.

Experiential-Learning Learning 18.5: Nasopharyngeal suctioning

One or more activities can be chosen (Total time- 1 hour)

1. **Simulation Practice (30 mins)**

Use a high-fidelity infant mannequin equipped for suctioning practice.

Follow a step-by-step guide to perform nasopharyngeal suctioning.

Focus on gentle handling and monitoring the mannequin's response.

Repeat the procedure multiple times for confidence.

or

2. **Peer Teaching (30 mins)**

Pair up with a fellow student. One will demonstrate nasopharyngeal suctioning while the other observes.

After the demonstration, switch roles.

Provide constructive feedback to each other on technique and comfort measures used.

or

3. **Role-Playing Scenarios (60 mins)**

Set up a role-playing scenario where one student acts as the healthcare provider and the other as the caregiver.

The provider explains the suctioning procedure to the caregiver and reassures them about the infant's comfort.

After the role-play, switch roles to ensure both practice teaching and performing. or

4. **Comfort Techniques Workshop**

Conduct a workshop on techniques to minimize discomfort (e.g., soothing voices, gentle touch).

Practice these techniques alongside the suctioning procedure.

Discuss the psychological impact of procedures on infants and how to mitigate stress.

Experiential-Learning Learning 18.6: Diagnosis of foreign body aspiration

One or more activities can be chosen (Total time- 2 hours)

1: Self-Directed Learning (60 mins)

Research and read at least three articles or guidelines on foreign body aspiration in children.

Summarize key points related to types of foreign bodies, typical signs of aspiration, and emergency management techniques.

or

2: Simulation Training for Identification and Management (60 mins)

Utilize a pediatric manikin designed for foreign body aspiration training.

Practice scenarios involving different foreign bodies (e.g., food, toys, coins) using the manikin.

Work in pairs to:

Identify signs of aspiration (coughing, wheezing, cyanosis).

Perform back slaps and the Heimlich maneuver on the manikin.

or

3: Peer Learning (20 mins per case per student)

Pair with a fellow student to take turns demonstrating the Heimlich maneuver and back slaps on a manikin.

Each student should:

Perform the procedure while explaining the rationale behind each step.

Observe and provide constructive feedback.

or

4: Case-Based Learning (60 mins)

Review a set of case studies detailing children with suspected foreign body aspiration.

For each case, discuss:

The type of foreign body and its location.

Signs and symptoms exhibited by the child.

Appropriate management steps, including back slaps and Heimlich maneuver.

Prepare a brief presentation summarizing findings for group discussion. or

5: Video Analysis

Watch instructional videos demonstrating the Heimlich maneuver and back slaps.

Take notes on key techniques, common mistakes, and safety measures.

Discuss observations with peers to reinforce learning.

Experiential-Learning Learning 18.7: Evaluation and management of Chronic foriegn body aspiration

One or more activities can be chosen (Total time- 1 hour)

1: Self-Directed Learning (60 mins)

Research and read at least three recent articles or guidelines on chronic aspiration in children.

Summarize key points related to causes, symptoms, diagnostic criteria, and management approaches.

or

2: Simulation-Based Learning (60 mins)

Utilize a pediatric manikin or standardized patient for clinical practice.

Conduct a focused examination, looking for signs such as:

Coughing or choking episodes.

Signs of respiratory distress.

Physical findings (e.g., wheezing, abnormal lung sounds). or

3: Case Studies (60 mins)

Review a set of clinical case studies of children with suspected chronic aspiration.

Discuss the clinical features, potential causes, and examination findings for each case.

Present findings to a group, highlighting key aspects of evaluation and management.

or

4: Imaging Interpretation Workshop (60 mins)

Gather a selection of imaging studies (X-rays, CT scans, etc.) related to cases of chronic aspiration.

In small groups, review the images and discuss findings, such as:

Evidence of aspiration pneumonia.

Structural abnormalities (e.g., tracheomalacia, anatomical anomalies).

Present interpretations to the larger group.

or

5: Role-Playing Scenarios (60 mins)

Create role-playing scenarios where one student acts as a healthcare provider, and another acts as a caregiver of a child with chronic aspiration.

Simulate a conversation addressing:

Diagnosis and clinical findings.

Management options and follow-up care.

Rotate roles and conduct multiple scenarios.

or

6: Hands-On Training for Management Techniques

Practice techniques such as:

Positioning for feeding.

Swallowing strategies and exercises.

Use of feeding tubes if necessary.

Utilize mannequins or models to simulate scenarios.

Experiential-Learning Learning 18.8: Awareness on Foriegn body aspiration

One or more activities can be chosen (Total time- 1 hour)

1: Research on Safety Guidelines (60 mins)

Research best practices for selecting safe toys and proper food cutting techniques for children.

Compile a list of guidelines and resources to be shared during the seminar.

or

2: Workshop (60 mins)

Attend a workshop focused on public speaking and presentation skills.

Practice presenting safety guidelines and educational strategies in small groups.

Receive constructive feedback from peers and instructors. or

3: Hands-On Learning (60 mins)

Prepare a set of various toys to illustrate safe versus unsafe options.

Conduct a live demonstration on proper food cutting techniques for different age groups.

Engage participants by allowing them to practice selecting toys and cutting food safely.

or

4: Role-Playing Scenarios (60 min per scenario)

Create scenarios where caregivers face decisions related to toy selection and food preparation.

In pairs, role-play as caregivers and children to navigate safety challenges.

Discuss feelings, concerns, and strategies after each role-play.

or

5. Simulation

Conduct a mock seminar with peers acting as caregivers and patients.

Present the developed content and engage participants in discussions and activities.

Seek feedback on clarity, engagement, and effectiveness of the presentation.

Experiential-Learning Learning 18.9: Acute respiratory distress syndrome evaluation

One or more activities can be chosen (Total time- 2 hours)

1. Case-Based Learning (CBL): Simulated Pediatric ARDS Case Studies (60 mins)

Present students with anonymized or simulated patient cases of pediatric ARDS, detailing clinical history, physical examination findings, and test results (e.g., chest X-ray, blood gases).

Divide students into small groups to discuss each case, focusing on key diagnostic criteria like the Berlin Definition (adjusted for pediatrics).

Guide students to determine a diagnosis, underlying cause (e.g., pneumonia, sepsis), and propose initial management steps (e.g., oxygen therapy, mechanical ventilation).

or

2. Simulation-Based Learning: Hands-On Practice with Oxygen Delivery Systems (20 mins)

Set up a simulation mannequin with respiratory distress parameters. Have students assess the SpO_2 and respiratory effort.

Provide scenarios that require different oxygen therapy modalities. For example, start with nasal cannula, then progress to CPAP or mechanical ventilation based on the mannequin's simulated response.

Instruct students on titrating oxygen levels and adjusting the device based on SpO_2 targets.

or

3. Role-Playing Activity: Emergency Response to Deterioration in Pediatric ARDS (40 mins)

Assign roles to students: one as the primary physician, others as nurses, respiratory therapists, and family members.

Provide a scenario where the simulated pediatric patient with ARDS worsens (e.g., increased respiratory rate, decreasing SpO_2).

The primary physician must communicate with the team to escalate treatment (e.g., switching from CPAP to mechanical ventilation) and address family members' concerns.

Debrief after the activity to discuss communication, teamwork, and critical decision points.

or

4. .Problem-Based Learning (PBL): Develop a Management Plan for Pediatric ARDS (40 mins)

Present a challenging ARDS case with complexities such as multiorgan involvement or limited response to initial interventions.

Divide students into groups to identify the key issues and brainstorm a structured management plan, covering aspects like oxygen therapy, fluid management, and pharmacological support (e.g., corticosteroids).

Facilitate group presentations where each team explains their management plan, followed by peer feedback.

Experiential-Learning Learning 18.10: Stages of Acute Respiratory Distress Syndrome

One or more activities can be chosen (Total time- 1 hour)

1. Case Scenario Simulation (60 mins)

Provide students with a set of clinical scenarios depicting varying degrees of respiratory distress (e.g., mild, moderate, severe).

Ask them to identify the stage of respiratory failure and recommend appropriate interventions (NIV, intubation, mechanical ventilation).

Facilitate a group discussion to compare their findings and rationale.or

2. Clinical Examination of Respiratory Distress (60 mins)

Use standardized patients or mannequins to simulate respiratory distress at different severity levels.

Ask students to perform a full respiratory examination, focusing on identifying clinical signs indicating the need for therapy escalation.

Provide feedback and discuss findings in groups. or

3. Interactive Flowchart Exercise (60 mins)

Divide students into small groups and ask them to create a flowchart that maps out the steps for escalating therapy from NIV to intubation and mechanical ventilation based on clinical scenarios.

Have each group present their flowchart and discuss the rationale behind their decisions. or

4. Role Play in Escalation Scenarios (60 mins)

Assign roles to students (e.g., healthcare provider, patient, family member) in scenarios requiring the discussion of therapy escalation.

Encourage students to role-play discussions about the rationale for moving from NIV to intubation.

Provide feedback on communication techniques and clarity of information provided.

Experiential-Learning Learning 18.11: Red flag sign for ARDS patients and referral

One or more activities can be chosen (Total time- 1 hour)

1. Hands-On Respiratory Assessment Workshop (60 mins)

Provide students with mannequins or standardized patients to practice respiratory assessments, focusing on identifying signs of fatigue.

Instruct them to listen for abnormal breath sounds, assess work of breathing, and evaluate oxygen saturation.

or

2. Case-Based Group Discussions (60 mins)

Present students with case studies of patients experiencing respiratory failure.

Facilitate small group discussions to identify signs of fatigue and criteria for ECMO referral.

Encourage groups to present their findings and rationale to the class.

or

3. Role Play on Communication with Families (60 mins)

Assign roles (e.g., healthcare provider, patient, family member) in scenarios where ECMO referral is considered.

Students role-play discussing the patient's condition, the need for ECMO, and the associated risks and benefits.

Provide feedback on communication effectiveness and clarity.

or

4. Research Review on ECMO Indications (60 mins)

Assign recent articles or guidelines related to ECMO criteria to small groups.

Each group reviews and summarizes their findings, focusing on signs of respiratory failure and fatigue.

Facilitate a class discussion to share insights and highlight key points.

or

5. Hands-On Simulation of ECMO Setup (60 mins)

Use a high-fidelity simulator or ECMO machine model to demonstrate how ECMO is initiated and managed.

Allow students to practice the setup and management tasks under supervision.

Discuss the clinical signs that would necessitate the initiation of ECMO.

Experiential-Learning Learning 18.12: Evaluation and management of Acute Bronchiolitis and Acute Bronchitis

One or more activities can be chosen (Total time- 2 hours)

1. Clinical Case Presentations (60 mins)

Prepare several clinical case vignettes that highlight key symptoms and findings of acute bronchiolitis and bronchitis.

In small groups, students will analyze the cases and present their evaluations, diagnoses, and management plans.

Facilitate class discussions after each presentation to discuss management strategies.

or/ and

2. Simulated Patient Encounters (60 mins).

Utilize standardized patients or high-fidelity simulators to create scenarios where students must assess respiratory symptoms.

Have students perform physical exams, interpret vital signs, and develop management plans.

or/ and

3. Hands-On Nebulizer Therapy Workshop (20 mins per case)

Set up a workshop where students can practice using nebulizers and discuss indications for use.

Provide demonstrations and allow students to administer treatments on simulators.

Discuss monitoring and adjustments based on patient responses.

Allocate 1 hour for this workshop.

or

4. Chest X-ray Interpretation Sessions (20 mins per case)

Provide a set of chest X-rays from patients diagnosed with acute bronchiolitis and bronchitis.

Students will analyze the images, identifying key features that differentiate the two conditions.

Facilitate a discussion on the implications of findings for management.

Experiential-Learning Learning 18.13: Warm-i-Shobat-ur-Ri'a and conventional pharmacotherapy.

One or more activities can be chosen (Total time- 2 hour)

1. Case-Based Learning Sessions (30 mins per case)

Present several clinical case scenarios involving patients with inflammatory lung conditions (e.g., acute bronchitis).

In small groups, students will identify suitable Mufrad and Murakkab Advia based on the case details.

Each group will present their selected treatments and rationale to the class.

or

2. Literature Review and Presentation (30 mins on continous basis)

Assign students to research classical texts (e.g., works of Ibn Sina) regarding the use of specific Mufrad and Murakkab Advia for lung inflammation.

Students will prepare presentations summarizing their findings. or

3. Comparative Analysis of Advia and Conventional Treatments (30 mins on continous basis)

Students will be divided into groups to research and compare selected Mufrad and Murakkab Advia with conventional treatments (e.g., antibiotics, anti-inflammatory drugs).

Each group will present their findings, focusing on mechanisms, efficacy, and side effects. or

4. Practical Application of Tadabir in Clinical Scenarios (30 mins per case)

Present a series of clinical scenarios where students must create a comprehensive management plan incorporating Mufrad and Murakkab Advia.

Students will include dietary recommendations, lifestyle modifications, and specific Tadabir (e.g., steam inhalation, chest physiotherapy).

Experiential-Learning Learning 18.14: Diagnosis and management of pneumonia.

One or more activities can be chosen (Total time- 2 hours)

1. Case-Based Learning (30 mins per case)

Provide students with several clinical case scenarios of children with pneumonia, detailing symptoms, history, and physical examination findings.

In groups, students will discuss and develop a differential diagnosis, followed by a diagnosis and a management plan using both conventional and Unani approaches.

or

2. Simulation of Patient Consultation (60 mins)

In pairs, one student acts as the physician while the other plays a caregiver of a child with pneumonia.

The "physician" will take a focused history and perform a brief physical examination, then provide a management plan that incorporates both conventional treatment (e.g., antibiotics) and classical medicine (e.g., Mufrad and Murakkab Advia).

or

3. Workshops on Diagnostic Techniques (60 mins)

Organize a workshop on how to perform relevant diagnostic tests, such as auscultation for lung sounds, chest X-ray interpretation, and pulse oximetry.

Include discussions on how these tests inform both conventional and Unani treatment decisions.

or

4. Pharmacology Review Session (30 mins in continous basis)

Students will research common pharmacological treatments for pneumonia in conventional medicine and their counterparts in Unani medicine (e.g., antibiotics vs. herbal remedies).

Each student will present their findings, focusing on mechanisms, efficacy, and side effects.

Experiential-Learning Learning 18.15: Red flag signs of Pneumonia.

One or more activities can be chosen (Total time- 1 hour)

1. Simulated Emergency Room Scenario (60 min)

Set up a simulation room to mimic an emergency department.

Use an actor or a high-fidelity mannequin to represent a child with severe pneumonia.

Provide vital signs and clinical scenarios (e.g., tachypnea, hypoxia).

Students will work in teams to assess the patient, administer oxygen, and develop a management plan (e.g., IV antibiotics, bronchodilators).

or

2. Role-Playing Different Emergency Roles (60 min)

Assign roles (e.g., physician, nurse, respiratory therapist) to students in a simulated scenario of a child with pneumonia.

Present a case where the child suddenly deteriorates, requiring immediate intervention.

Students must respond according to their roles, coordinating care and communicating effectively.

or

3. Case-Based Discussion (60 min)

Present students with case studies of pediatric patients who experienced respiratory emergencies secondary to pneumonia.

Facilitate a group discussion on the clinical presentation, management strategies, and outcomes.

Encourage students to identify red flags and discuss best practices in emergency management..

or

4. Mock Code Blue Simulation (60 min)

Simulate a "Code Blue" scenario where a child with pneumonia experiences respiratory failure.

Use a mannequin or an actor to represent the patient.

Students must initiate CPR, call for help, and prepare equipment for intubation or advanced airway management.

or

5. Emergency Preparedness Workshop (60 min)

In small groups, students will create emergency management protocols for different scenarios of pneumonia-related respiratory failure.

Each group will present their protocol, including assessment, intervention, and referral processes.

Experiential-Learning Learning 18.16: Pneumonia emergencies

One or more activities can be chosen (Total time- 1 hour)

1. Simulated Patient Assessment (60 mins)

Set up a simulation using a mannequin or standardized patient portraying a child with pneumonia.

Provide clinical scenarios that simulate deterioration (e.g., increased respiratory rate, altered mental status).

Students will perform a thorough assessment and document their findings.

Debrief the assessment process, focusing on critical signs that indicate deterioration.

or

2. Role-Playing Escalation Scenarios (60 min)

In pairs, students will role-play scenarios where a patient with pneumonia begins to deteriorate.

One student will act as the healthcare provider, while the other plays the patient or a family member.

The provider must decide when to escalate care based on the patient's condition and provide a rationale for their decision.

or

3. Case Study Analysis (60 min)

Provide students with detailed case studies of patients with pneumonia who experienced deterioration.

Facilitate a group discussion on the clinical signs, timing of intervention, and referral for advanced therapies.

Encourage students to identify factors that contributed to deterioration and appropriate response strategies.

or

4. Simulation of Rapid Response Team Activation (60 min)

Create a scenario where a pediatric patient with pneumonia suddenly deteriorates.

Students must recognize the situation and activate the rapid response team, simulating communication and coordination.

or

5. Referral Protocol Workshop (60 min)

Divide students into small groups and assign each a different case of pneumonia with varying levels of severity.

Each group must develop a referral protocol based on the patient's condition, including when and to whom to refer.

Present protocols to the class for discussion and feedback.

Modular Assessment

Assessment	**Hour**
Instructions: Conduct a structured modular assessment. Assessment will be for 50 marks. Keep a structured marking pattern. Use different assessment methods in each module for the semester. Keep a record of the structured pattern used for assessment. Calculate the modular grade point as per Table 6C. 1. Clinical Case Study Analysis (Case Based Assessment)	4

Description: Analyze a clinical case study related to a pediatric respiratory condition. Instructions (Example)-Provide students with a detailed case study of a child presenting with a respiratory issue (e.g., URTI or pneumonia). Ask students to identify key symptoms, suggest a diagnosis, and outline a management plan. Total Marks: 15 and Time: 1 hour Criteria and Marks distribution (15 marks) History Taking and Patient Interview- 3 marks Physical Examination Skills-3 marks Differential Diagnosis-2 marks Investigations-2 marks Diagnosis-2 marks Management Plan-2 marks Communication Skills-1 mark 2. OSCE (Objective Structured Clinical Examination) Stations Description: Set up multiple stations where students must demonstrate clinical skills and knowledge related to respiratory assessments. Instructions: Create stations focused on: Station 1: Examination and management of a child with URTI. Station 2: Assessment of a child with suspected foreign body aspiration. Station 3: Clinical evaluation of a patient with acute bronchiolitis. Station 4: Diagnosis and management of pneumonia. Each station should last 25 minutes and for 5 marks each, including time for the student to demonstrate skills and answer questions. Marks: 20 and Time: 1 hour Criteria and Marks (5 marks per station) History taking-1 mark	

Examination technique-1 mark Procedure execution-1 mark Clinical reasoning -1 mark Communication -1 mark 3. Group Discussion and Presentation Description: Facilitate a group discussion where students present on specific topics related to respiratory diseases. Instructions: Divide students into group of two student and assign each group a topic: Group 1: Pathophysiology of URTIs Group 2: Foreign body management strategies Group 3: Treatment approaches for bronchiolitis Group 4: Pneumonia management in pediatrics Each group has 30 minutes to prepare a 5-minute presentation followed by a Q&A session. Marks: 10 and Time: 1 hour 30 min (30 minutes preparation, 30 minutes presentation and 30 min discussion) Criteria Marks distribution (10 marks) Content knowledge-2 marks Contribution and initiative-2 marks Communication skill-2 marks Collaboration and team work-2 marks Critical thinking-2 marks 4. Peer Assessment and Feedback Description: Students will assess each other's presentations or clinical skills using a structured rubric. Instructions: After presentations, provide students with a rubric. Each student must evaluate at least two peers, providing constructive feedback. Collect all assessments for review and discussion.	

Marks: 5 and Time: 30 minutes Criteria and Marks distribution (5) Constructiveness of Feedback- 2 marks Respectfulness-1 mark Relevance -1 mark Self awareness -1 mark OR Any practical in converted form can be taken for assessment. (25 marks) and Any of the experiential as portfolios/ reflections/ presentations can be taken as an assessment. (25 marks)	

Module 19 : امراض نظام تنفس-دوم Amrād i-Nizām-i-Tanaffus -II (Respiratory Disorder- 2)

Module Learning Objectives

(At the end of the module, the students should be able to)

1. Describe definition, epidemiology, etiology, etiopathogenesis of different lung diseases in children.
2. Evaluate clinical features, formulate proper diagnosis and differentiate pathological conditions of respiratory system.
3. Conduct OPD sessions to enhance skills of interpreting chest X-rays, CT scans and other imaging techniques and to diagnose different respiratory disorders.
4. Demonstrate to collect samples and ensure proper labelling and transport for laboratory analysis
5. Formulate individualized care plans for patients, incorporating both pharmacological and non-pharmacological interventions of classical and conventional system.
6. Demonstrate interventions such as administering oxygen therapy, spirometry, airway clearance techniques, chest physiotherapy, and ensuring adequate hydration

7. Demonstrate effective communication skills in educating families about treatment adherence, and recognizing worsening symptoms.
8. Apply AI Tools in evaluating different respiratory diseases.

Unit 1 اتساع الشعب Ittisa‘ al Shu‘ab (Bronchiectasis)

19.1.1 Definition, etiopathogenesis, predisposing factors, clinical manifestation, diagnosis, treatment, prognosis of Bronchiectasis

19.1.2 Concept of Ittisa‘ al-Shu‘ab in classical text with its Tarif, Asbab, Tashkhis, Usul-i-Ilaj, and Ilaj.

References: 27,31,34,39,44,46,50,63

3A	3B	3C	3D	3E	3F	3G
CO1,CO2,CO4, CO5,CO6,CO7, CO8	Describe Ittisa‘ al Shu‘ab (Bronchiectasis) its etiopathogenesis, predisposing factors, clinical manifestation, diagnosis, treatment and prognosis.	1	Lecture	CE	Knows-how	L&GD,L&PPT
CO1,CO2,CO4, CO5,CO6,CO7, CO8	Demonstrate how to take focused history, diagnosis and management of bronchiectasis with the help of classical and conventional medicine.	1	Practical19.1	PSY-MEC	Shows-how	CBL,RP,SIM, DIS
CO1,CO2,CO4, CO5,CO6,CO7, CO8	Demonstrate techniques for airway clearance, Positive Expiratory Pressure (PEP) Device, Inhalation Therapy, and role of Chest Physiotherapy.	1	Practical19.2	PSY-MEC	Shows-how	D,CBL,SIM,R P,W
CO1,CO2,CO4, CO5,CO6,CO7	Observe and interpret of X-rays, CT scan, pulmonary function test, and sputum culture findings in bronchiectasis	1	Practical19.3	PSY-MEC	Shows-how	CBL,DIS,X-Ray,LRI,W
CO1,CO2,CO4, CO5,CO6,CO7	Conduct pulmonary function test, exercises using PEP devices, and airway clearance techniques on pediatric mannequins.	1	Experiential-Learning19.1	PSY-MEC	Does	SIM,RP

CO1,CO2,CO4, CO5,CO6,CO7	Diagnose and manage bronchiectasis with classical and conventional medicine and techniques.	2	Experiential-Learning19.2	PSY-MEC	Does	CBL,RP,PSM, DIS
Unit 2 ذات الجنب Dhāt al-Janb (Dry pleurisy) 19.2.1 Definition, etiology, pathology, pathogenesis, clinical features, diagnosis, differential diagnosis, treatment 19.2.2 Description of Dhāt al-Janb with its Aqsam, Asbab, Tariqa-i-Tashkhis, Awarizat, Buhran, Usul-i-ilaj, Parhez and Ghidhā-i Tadabir. **References:** 31,34,39,44,46,50,63						
3A	**3B**	**3C**	**3D**	**3E**	**3F**	**3G**
CO1,CO2,CO4, CO5,CO6,CO7	Describe Dhat Al-Janb (Pleurisy), its types, etiology, pathogenesis, clinical features, diagnosis, differential diagnosis, management including supportive care.	1	Lecture	CE	Knows-how	L&PPT ,L_VC,L&GD, BL
CO1,CO2,CO4, CO5,CO6,CO7	Demonstrate how to perform auscultation effectively, highlighting the significance of friction rubs and decreased breath sounds.	1	Practical19.4	PSY-MEC	Shows-how	D,Mnt,SIM,DIS,PL
CO1,CO2,CO4, CO5,CO6,CO7	Investigate the findings associated with dry pleurisy and interpret the diagnostic reports and imaging.	1	Practical19.5	AFT-SET	Shows-how	Mnt,DIS,D,CBL,SIM
CO1,CO2,CO4, CO5,CO6,CO7	Review and identify the cases of dry pleurisy by applying classical as well as conventional knowledge and skills.	1	Experiential-Learning19.3	CAN	Does	W,LS,PER,SIM,CBL
CO1,CO2,CO4, CO5,CO6,CO7, CO8	Formulate the management plan of dry pleurisy with the help of classical and conventional method of treatment.	1	Experiential-Learning19.4	CS	Does	CBL,SIM,W,LS

CO1,CO2,CO4, CO5,CO6,CO7	Discuss difference between normal and abnormal lung sound in patients of dry pleurisy	1	Experiential-Learning19.5	CC	Does	CBL,RLE,PL, SDL,SIM

Unit 3 ذات الجنب مائی Dhāt al-Janb Ma'i (Pleural effusion)

19.3.1 Definition, etiology, pathogenesis, clinical manifestations, diagnosis, differential diagnosis, treatment, complications of Pleural Effusion.

19.3.2 Concept of Dhāt al-Janb Ma'i, its Asbab, Tariqa-i-Tashkhis, and Ilaj in Classical literature.

References: 27,31,34,39,44,46,50,63

3A	3B	3C	3D	3E	3F	3G
CO1,CO2,CO4, CO5,CO6,CO7	Describe pleural effusion, its etiology, pathogenesis, clinical manifestations, diagnosis, differential diagnosis, treatment, complications.	1	Lecture	CC	Knows-how	BL,L&GD,L& PPT ,DIS
CO1,CO2,CO4, CO5,CO6,CO7	Analyze differential diagnosis for pleural effusion	1	Practical19.6	CAN	Shows-how	W,PL,LRI,RP, SIM
CO1,CO2,CO4, CO5,CO6,CO7	Interpret the investigations such as chest X-ray, ultrasound, CT Scan in cases of pleural effusion	1	Practical19.7	CE	Shows-how	W,CBL,Mnt,D IS,SIM
CO1,CO2,CO4, CO5,CO6,CO7	Demonstrate thoracentesis (pleural tap) and analyse the pleural fluid reports.	1	Practical19.8	PSY-MEC	Shows-how	SIM,D-M,D,RP,LRI
CO1,CO2,CO4, CO5,CO6,CO7	Observe and document the procedure of thoracentesis and chest tube insertion.	1	Experiential-Learning19.6	PSY-MEC	Shows-how	RP,SIM
CO1,CO2,CO4, CO5,CO6,CO7	Analyze and document the cases of pleural effusion and their management with classical and conventional method.	2	Experiential-Learning19.7	CAN	Does	SIM,LS,DIS, W,RP

Unit 4 تقیح صدر Taqayyuh-i-Sadr (Empyema thoracis)

19.4.1 Definition, epidemiology, etiology, clinical features, diagnosis, complications, treatment, prognosis of Empyema Thoracis

19.4.2 Taqayyuh-i-Sadr in classical text with Tarif, Asbab, Tariqa-i-Tashkhis, and Ilaj.

References: 27,28,31,34,39,44,46,50,60

3A	3B	3C	3D	3E	3F	3G
CO1,CO2,CO4, CO5,CO6,CO7, CO8	Describe empyma thoracis, its epidemiology, etiology, clinical features, diagnosis, complication, treatment, prognosis in classical and conventional medicine.	1	Lecture	CE	Knows-how	L_VC,L&PPT ,L&GD
CO1,CO2,CO4, CO5,CO6,CO7, CO8	Diagnose Empyema thoracis.	2	Practical19.9	PSY-MEC	Shows-how	TBL,D-BED,SIM,RP
CO1,CO2,CO4, CO5,CO6,CO7	Interpret and document investigations concerned with empyma thoracis.	1	Experiential-Learning19.8	CE	Does	DIS,LRI,CBL, W,X-Ray
CO1,CO2,CO4, CO5,CO6,CO7, CO8	Formulate diagnosis and management plan for the patient of Empyma with classical and conventional knowledge.	2	Experiential-Learning19.9	CS	Does	CBL,W,PER, RP,DIS

Unit 5 دبیلہ الریہ Dubayla al- Ri'a (Lung abscess)

19.5.1 Definition, etiology, pathogenesis, clinical manifestations, diagnosis, treatment, prognosis of Lung Abscess.

References: 27,34,44,46,50,63

3A	3B	3C	3D	3E	3F	3G

CO1,CO2,CO4, CO5,CO6,CO7, CO8	Describe lung abscess, its etiology, pathogenesis, clinical features? Explain the method of diagnosis, management strategies for lung abscesses, including medical and surgical interventions	1	Lecture	CE	Knows-how	L_VC,L&GD,L &PPT
CO1,CO2,CO4, CO5,CO7	Demonstrate a thorough respiratory examination, diagnosis and management in children having a lung abscess	2	Practical19.1 0	CAP	Shows-how	X-Ray,CBL,LRI, PBL,D
CO1,CO2,CO4, CO6,CO7	Observe and perform followed by documentation the drainage procedures under supervision.	1	Experiential-Learning19.1 0	PSY-MEC	Does	W,RP,TBL,SI M,CBL
CO1,CO2,CO4, CO5,CO6,CO7	Apply skills to diagnose and manage the lung abscesses cases.	2	Experiential-Learning19.1 1	PSY-ADT	Does	W,X-Ray,LS,CBL, DIS

Unit 6 ژ/Rabw (Bronchial asthma)

19.6.1 Definition, etiopathogenesis (excitatory and predisposing factors), pathophysiology, clinical features, clinical grading of exacerbation of acute asthma, diagnosis, differential diagnosis, complications, management

19.6.2 Rabw in classical text, its Aqsam, Asbab, Tariqa-i-Tashkhis, Usul-i-Ilaj, Ilaj, Parhez wa Mamnu'at.

19.6.3. Chronic obstructive pulmonary disease (COPD).

References: 27,28,31,34,39,44,46,50,63

3A	3B	3C	3D	3E	3F	3G

CO1,CO2,CO4, CO5,CO6,CO7, CO8	Describe the basic concepts of asthma, including its pathophysiology, predisposing factors, symptoms and signs, clinical grading of exacerbation and warning signs of acute asthma, key factors of diagnosis, differential diagnosis, and management plan.	1	Lecture	CE	Knows-how	L_VC,L&PPT ,L&GD,BS,BL
CO1,CO2,CO4, CO5,CO6,CO7	Describe Rabw, its Aqsam, Asbab, Tariqa-i-Tashkhis, Usul-i-Ilaj, Ilaj, Parhez wa Mamnua't with the conventional concept.	1	Lecture	CE	Knows-how	L_VC,L&PPT ,BL,C_L
CO1,CO2,CO4, CO5,CO6,CO7	Demonstrate the examination and investigation of the asthmatic patients	1	Practical19.1 1	AFT-VAL	Shows-how	D,W,GBL
CO1,CO2,CO4, CO5,CO6,CO7	Diagnose Rabw (Asthma) as per Unani medicine	2	Practical19.1 2	CAN	Shows-how	GBL,W,CBL, D
CO1,CO2,CO4, CO5,CO6,CO7	Discuss the importance of medication adherence, proper follow-up in case of asthma.	1	Practical19.1 3	CC	Shows-how	BS,RP,CBL,D IS,W
CO1,CO2,CO4, CO5,CO6,CO7	Diagnose and formulate personalized asthma management according to classical literature and conventional guidelines.	2	Experiential-Learning19.1 2	PSY-MEC	Does	W,PER,CBL, DIS,LS
CO1,CO2,CO4, CO5,CO6,CO7, CO8	Apply skills to manage acute asthmatic pediatric patient under guidance.	2	Experiential-Learning19.1 3	CAP	Does	RLE,RP,W,SI M,CBL
Unit 7 Cystic Fibrosis 19,7.1 Genetic basis, pathogenesis, pathology, clinical manifestations, diagnosis, management and treatment of Cystic Fibrosis.						

References: 44,46,50,63						
3A	**3B**	**3C**	**3D**	**3E**	**3F**	**3G**
CO1,CO2,CO4, CO5,CO6,CO7, CO8	Describe the cystic fibrosis, its signs and symptoms in different organs.	1	Lecture	CC	Knows-how	BS,FC,L&PPT
CO1,CO2,CO4, CO5,CO6,CO7, CO8	Describe the current treatment modalities for cyctic fibrosis with the role of a multidisciplinary care team.	1	Lecture	CC	Knows-how	L&PPT ,L&GD,L_VC, FC
CO1,CO2,CO4, CO5,CO6,CO7, CO8	Interpret the sweat chloride test, genetic testing, and newborn screening results.	1	Practical19.14	CE	Shows-how	CBL,W,RP,DIS
CO1,CO2,CO4, CO5,CO6,CO7	Demonstrate the evaluation and management plan for cystic fibrosis cases	1	Practical19.15	CAP	Shows-how	DIS,RP,SIM, CBL
CO1,CO2,CO4, CO5,CO6,CO7, CO8	Diagnosis and formulate management chart of Cystic Fibrosis.	2	Experiential-Learning19.14	PSY-MEC	Does	RP,LS,CBL,PER
CO1,CO2,CO4, CO5,CO6,CO7	Conduct airway clearance techniques in cystic fibrosis patients	1	Experiential-Learning19.15	CAP	Does	LS,SIM,W,CBL,D

CO1,CO2,CO4, CO5,CO6,CO7	Counsel the parent for lifestyle changes to support the child's health.	1	Experiential-Learning19.16	AFT-CHR	Does	RP,EDU,LS, GBL,W
Unit 8 Obstructive Sleep Apnea 19.8.1 Definition, mechanisms of Obstructive Sleep Apnea (OSA), its clinical manifestation, diagnostic tools, and the management plan. **References:** 34,44,46,50,63						
3A	**3B**	**3C**	**3D**	**3E**	**3F**	**3G**
CO1,CO2,CO4, CO5,CO6,CO7, CO8	Describe the mechanisms of Obstructive Sleep Apnea (OSA), its clinical manifestation and diagnostic tools used for OSA.	1	Lecture	CE	Knows-how	L&PPT ,L_VC,L&GD, FC
CO1,CO2,CO4, CO5,CO6,CO7, CO8	Demonstrate diagnostic technique for OSA patient.	1	Practical19.16	PSY-GUD	Shows-how	DIS,RP
CO1,CO2,CO4, CO5,CO6,CO7	Demonstrate pediatric polysomnography study (sleep study) and interpret the results, including the apnea-hypopnea index (AHI)	1	Practical19.17	PSY-MEC	Shows-how	DIS,D,CBL,W ,RP
CO1,CO2,CO4, CO5,CO6,CO7, CO8	Discuss and present diagnostic tools used for Obstructive sleep apnea (OSA).	1	Experiential-Learning19.17	CC	Does	SIM,DIS,RP, ML,W

CO1,CO2,CO4, CO5,CO6,CO7, CO8	Apply skills to evaluate cases of obstructive sleep apnea in pediatrics	1	Experiential-Learning19.18	CAP	Does	RP,DIS,RLE, SIM
CO1,CO2,CO4, CO5,CO6,CO7	Counsel patients and caregivers about lifestyle changes that can help to manage or reduce the severity of OSA.	1	Experiential-Learning19.19	AFT-CHR	Does	RP,GBL,W,TPW,PL

Practical Training Activity

Practical Training 19.1 Evaluation and managment of bronchiectasis

One or more activities can be taken (Total time- 1 hour)

1. Role Play and Simulation (60 mins)

Teacher first introduce the method of evaluation of bronchiectasis case and than pair-up students to take turns as the physician and patient.

Provide case scenarios (e.g., a child with fever, cough, and chest pain).

The "physician" takes a detailed history, focusing on the timeline, intensity, and nature of symptoms, lifestyle factors, and any past interventions.

Emphasize on listening actively and asking open-ended questions.

Record findings and discuss them with an instructor afterward.

or

2. Case-Based Discussion (30 mins)

Assign students different case studies of common ailments such as respiratory infections.

Have each group work through a case, listing differential diagnoses using both classical and conventional approaches.

For instance, in Unani, discuss Mizaj (temperament) assessment and its impact on disease manifestation; in conventional medicine, analyze pathology based on symptoms and lab results.

Present cases to peers, focusing on diagnostic reasoning.

or

3. Group Discussions on Management Plans (30 mins).

Organize students into groups and assign each group a different case with a condition manageable by both classical (Unani) and modern methods.

Each group outlines a management plan based on symptoms, diagnosis, and severity.

Include diet (Ilaj bil-ghiza), lifestyle changes (Tadabir), and modern pharmacological treatments, if applicable.

Encourage integration of techniques like Tila (Unani topical applications), Tadbeer (regimenal therapy), or Huqna (Unani enema therapy) alongside conventional methods like antibiotics or antipyretics when appropriate.

Practical Training 19.2 Managment techniques for Bronchiectasis

One or more activities can be chosen (Total time- 1 hour)

1. Demonstration and Practice on Manikins (10 mins)

Use pediatric manikins to demonstrate various airway clearance techniques, such as chest percussion, vibration, and assisted coughing.

Teacher will show each technique, explaining the importance of rhythm, pressure, and placement.

Have students practice each method under instructor supervision.

or

2. Hands-On Workshop with PEP Devices (20 mins)

Provide a variety of PEP devices (e.g., mask-type, mouthpiece-type) for students to learn and practice on each other or manikins.

Demonstrate how to properly assemble, fit, and use PEP devices on pediatric patients.

Emphasize the importance of patient positioning, device settings, and breathing techniques for effective use.

or

3. Simulation of Inhalation Therapy Techniques (10 + 10 mins):

Use a simulated setup or live demonstration with placebo medication for safe, hands-on experience.

Demonstrate how to administer medication through nebulizers and MDIs, including spacer techniques for pediatric patients.

Have students practice each device, understanding the technique's timing and breath coordination needed.

or

4. Role Play and Simulation for Chest Physiotherapy(CPT) (30 mins)

Use a role-play format where students alternate between playing the role of a healthcare provider and the child/caregiver.

Demonstrate CPT techniques, such as postural drainage, chest percussion, and vibration, on a pediatric manikin.

Students then practice under supervision, while focusing on using child-friendly communication to help relax the patient.

or

5. Case-Based Learning and Group Discussion

Provide case studies where students must assess respiratory needs and determine the most appropriate airway clearance technique or device.

Divide students into groups and assign each a case

Each group devises a treatment plan, choosing the most suitable airway clearance technique, PEP device, or inhalation therapy based on the patient's age, condition, and comfort.

Practical Training 19.3 Interpretation in bronchiectasis

One or more activities can be chosen (Total time- 1 hour)

1. Guided Interpretation Session with X-rays and CT Scans (10+ 10 mins)

Teacher will use real anonymized patient X-rays and CT scans with visible bronchiectasis indicators (e.g., bronchial wall thickening, mucus plugging, tram-track appearance).

He will present images and guide students through identifying characteristic features of bronchiectasis.

Discuss image orientation, abnormal shadowing, and signs of hyperinflation or other structural changes.

Divide students into small groups to collaboratively review images and mark areas of interest.

or

2. Pulmonary Function Test (PFT) Analysis Workshop (20 mins)

Provide sample PFT reports with spirometry results showing reduced FEV1, FVC, and FEV1/FVC ratios common in obstructive lung diseases.

Explain key terms (e.g., FEV1, FVC, PEF) and how to interpret values in pediatric patients.

Discuss how obstructive patterns are indicative of airway obstruction and increased airway resistance.

Have students work in pairs to analyze sample PFT results and explain their interpretation in the context of bronchiectasis.

or

3. Sputum Culture Observation and Interpretation (20 mins)

Present sample sputum culture reports with bacterial growth data, such as Pseudomonas aeruginosa or Haemophilus influenzae.

Discuss the types of pathogens commonly found in bronchiectasis patients and their implications.

Explain antibiotic susceptibility reports and how they guide treatment decisions.

Have students review sample reports and determine appropriate antibiotic regimens based on culture findings.

or

4. Case-Based Group Discussion for Integrative Diagnosis (40 mins)

Divide students into small groups and provide each with a pediatric bronchiectasis case, including X-ray/CT images, PFT results, and sputum culture findings.

Each group analyzes the case, discussing the interpretation of each diagnostic result.

Groups present their diagnostic reasoning, connecting imaging, PFT results, and sputum culture findings.

Facilitate a class discussion on the clinical management plan based on these integrated findings.

Practical Training 19.4 Auscultation in dry pleurisy

One or more activities can be chosen (Total time- 1 hour)

1. Instructor-Led Demonstration on Auscultation Techniques (10 mins)

Teacher will use a model or simulation to show correct stethoscope placement, explaining anterior and posterior chest positions and how to listen over intercostal spaces

He will demonstrate systematic auscultation, covering the lungs' upper, middle, and lower lobes on both sides.

Emphasize breathing instructions (e.g., slow, deep breaths through the mouth) and ensure students understand stethoscope handling.

or

2. Audio Playback of Breath Sounds (Simulated Learning) (10 mins)

Provide audio files of recorded breath sounds, including normal vesicular sounds, friction rubs, and decreased breath sounds.

Play audio clips and ask students to identify each sound type.

Discuss the sound characteristics: friction rubs as a scratchy or grating sound, often heard in pleuritis, and decreased breath sounds, which indicate reduced air movement and could suggest conditions like pleural effusion.

or

3. Peer Practice with Feedback (Hands-On Learning) (20 mins)

Pair students and have them take turns performing auscultation on each other or on a trained patient simulator.

Encourage students to follow a systematic approach, listening to each lobe, and practice identifying sound quality.

Instructors or teaching assistants provide real-time feedback, correcting any mistakes in stethoscope placement or technique.

or

4. Clinical Scenario Simulation (30 mins)

Present students with simulated cases, such as a child with a pleural friction rub or reduced breath sounds from pleural effusion, and discuss how to correlate findings with the patient's symptoms.

Divide students into small groups and assign each a case scenario.

Each group discusses the auscultation findings and possible diagnoses, considering clinical signs and symptoms.

Groups present their interpretations, connecting auscultation findings to potential respiratory conditions.

Practical Training 19.5 Evaluation of dry pleurisy.

One or more activities can be chosen (Total time- 1 hour)

1.Instructor-Led Clinical Demonstration on Dry Pleurisy Assessment (20 mins)

Instructor will Demonstrate inspection, palpation, percussion, and auscultation, guiding students in detecting the hallmark "friction rub" sound.

Discuss findings such as sharp, localized chest pain that worsens with inspiration, a common symptom of dry pleurisy.

or

2. Interactive Audio-Visual Session with Imaging and Clinical Case Studies (20 mins)

Present clinical case studies that include patient history, physical examination findings, and imaging like chest X-rays, CT scans, and ultrasound.

Show images and ask students to interpret specific findings, such as pleural thickening or lack of pleural effusion.

Discuss the limitations of imaging in dry pleurisy and highlight subtle findings, emphasizing when to consider further imaging or alternate diagnostic tests.

or

3. Small Group Activity for Interpreting Diagnostic Reports and Imaging (20 mins)

Divide students into small groups and provide each group with diagnostic reports and imaging associated with dry pleurisy cases.

Each group reviews reports like blood tests (e.g., CBC, CRP) and imaging findings, identifying key indicators such as elevated inflammatory markers.

Groups discuss their findings and present a diagnostic summary to the class, with a focus on interpreting non-specific imaging and lab results that point toward dry pleurisy.

or

4. Simulated Case Scenario Analysis (40 mins)

Present a case scenario involving a patient with symptoms suggestive of dry pleurisy, including sharp chest pain and auscultation findings.

:Have students work individually or in pairs to analyze the case, record their differential diagnoses, and prioritize diagnostic steps.

Provide imaging results and reports incrementally and ask students to adjust their diagnostic impression accordingly.

Discuss the final diagnosis, treatment approach, and follow-up plan as a group.

Practical Training 19.6 Differential diagnosis of Pleural effusion

One or more activities can be chosen (Total time- 1 hour)

Case-Based Group Discussion on Pediatric Pleural Effusion (60 mins)

Instruction: Divide students into small groups, assigning each group a case with a different underlying pediatric cause, such as parapneumonic effusion, etc

Procedure:

Teacher will guide the students about differential diagnosis of pleural effusion and provide each group with age-specific case details, including history, presenting symptoms, and relevant examination findings.

Instruct groups to identify possible causes, focusing on key pediatric considerations such as infections, systemic diseases, and congenital conditions.

Each group presents their differential diagnoses and supporting reasons, promoting peer discussion. or

Simulation Lab: Pediatric Chest Examination and Physical Findings (60 mins)

Instruction: Use a manikin or simulated pediatric patient to practice physical examination techniques, focusing on findings specific to pleural effusion.

Procedure:

Instructors guide students through inspection, palpation, percussion, and auscultation, emphasizing findings like reduced breath sounds, dullness to percussion, and pleuritic chest pain.

Students document and correlate physical findings with potential underlying causes.or

Hands-On Workshop: Interpreting Pediatric Diagnostic Reports (60 mins)

Instruction: Provide groups with sample pleural fluid analysis results, X-rays, ultrasound images, and blood tests.

Procedure:

At each station, students interpret findings to identify clues (e.g., high LDH indicating exudative effusion, X-ray showing unilateral effusion).

They list possible causes based on findings and link back to pediatric causes. or

Role-Play and Peer Feedback for History Taking and Diagnosis (60 mins)

Instruction: Students role-play as doctors and patients (with case instructions), focusing on pediatric symptoms, including recent illnesses, fever, travel history, and systemic disease signs.

Procedure:

Each “doctor” takes a history from the “patient” and forms a differential diagnosis based on responses.

Following the role-play, students give and receive feedback on their approach, emphasizing critical thinking.

Practical Training 19.7 Interpretation of investigations in pleural effusion

One or more activities can be chosen (Total time- 1 hour)

1. **Guided Image Interpretation Session (30 mins)**

Instruction: Lead students through a series of chest X-rays, ultrasounds, and CT scans showing pleural effusion, discussing the key identifying features.

- **Procedure**:
  - Teacher will Start with chest X-rays and explain signs like blunting of the costophrenic angle and meniscus sign.
  - Move to ultrasound and demonstrate how to identify fluid, emphasizing sensitivity in detecting smaller effusions.
  - Conclude with CT scans, explaining the added detail, such as loculated effusions or thickened pleura. or

1. **Case-Based Learning with Progressive Imaging Interpretation (30 mins)**

Instruction: Present a clinical case and give students images (chest X-ray, followed by ultrasound, then CT) as they develop their differential diagnosis.

- **Procedure**:
  - Provide a brief case history and an initial chest X-ray.
  - After students interpret the X-ray, introduce an ultrasound image and prompt them to adjust their differential.
  - Finally, present a CT scan for more detailed assessment, encouraging them to confirm their diagnosis. or

1. **Hands-On Workshop: Using Ultrasound Simulation for Pleural Effusion Detection (30 mins)**

Instruction: Utilize an ultrasound simulation device or a supervised session with an ultrasound machine on a volunteer or model with simulated pleural effusion.

- **Procedure**:
  - Teach students the ultrasound landmarks for identifying pleural fluid, positioning, and probe handling.
  - Allow them to visualize pleural effusion under supervision, focusing on echogenicity and fluid movement. or

1. **Comparative Image Analysis Workshop (30 mins)**

Instruction: Show side-by-side images of pleural effusion, pneumothorax, and pneumonia across imaging modalities.

- **Procedure**:

- Guide students in analyzing differences, focusing on key signs like the absence of lung markings in pneumothorax or the air bronchogram in pneumonia.
- Encourage students to create a comparison chart with distinguishing characteristics. or

1. **Small-Group Interactive Discussion on Diagnostic Imaging Flow for Pleural Effusion (30 mins)**

Instruction: Conduct a discussion where each group presents the pros, cons, and typical findings of one modality (chest X-ray, ultrasound, or CT).

- **Procedure**:
  - Assign each group a specific imaging modality to research and discuss indications and limitations in detecting pleural effusion.
  - Each group presents its findings, and the instructor highlights key points and clarifies misconceptions.

Practical Training 19.8 Thoracentesis and its interpretation

One or more activities can be chosen (Total time- 1 hour)

Demonstration with Anatomical Models or Simulators (20 mins)

Instruction: Use an anatomical model or thoracentesis simulator to demonstrate needle insertion, patient positioning, and fluid aspiration technique.

Procedure:

Teacher will demonstrate patient positioning (e.g., sitting, leaning forward).

Show site identification (e.g., above the rib to avoid neurovascular bundle).

Use sterile technique and explain each step, including needle insertion angle and depth.or

Role-Play and Simulation (20 mins)

Instruction: Pair students in groups where one acts as the “physician” performing the thoracentesis, and another as the “patient.” A third student can observe and provide feedback.

Procedure:

The “physician” discusses the procedure, indications, and potential risks with the “patient.”

The “physician” then guides through a simulated thoracentesis (e.g., explaining site marking, anesthesia, needle aspiration) on a model or phantom.

End with post-procedure care, checking for complications like pneumothorax.or

Guided Interpretation of Pleural Fluid Analysis (20 mins)

Instruction: Provide students with sample pleural fluid reports, including physical appearance, protein levels, LDH, glucose, pH, and cell counts. Review Light's criteria for differentiating transudative from exudative effusion.

Procedure:

Walk students through the criteria, explaining each parameter's significance.

Discuss specific case scenarios (e.g., heart failure, pneumonia, tuberculosis, malignancy) and how findings support a diagnosis.or

Case-Based Learning and Pleural Fluid Report Interpretation in Small Groups (60 mins)

Instruction: Divide students into small groups, each given a case study with pleural fluid findings (e.g., tuberculosis, malignancy).

Procedure:

Each group reviews the case and discusses pleural fluid findings to arrive at a diagnosis.

The instructor guides the discussion, asking questions to reinforce learning (e.g., "What finding suggests infection vs. malignancy?").

Practical Training 19.9 Evaluation of empyma thoracis cases

One or more activities can be chosen (Total time- 2 hours)

1. Role-Play in History Taking and Physical Examination (40 mins)

Teacher will demonstrate history taking and examination to the students than ask to role play

Divide students into pairs, assigning one as the clinician and the other as the patient (or vice versa) with a scripted scenario reflecting empyema symptoms.

The "clinician" conducts a focused history taking, covering symptoms (e.g., cough, chest pain, fever), risk factors, and previous medical history.

After history taking, they perform a physical examination focusing on respiratory assessment (e.g., auscultation for decreased breath sounds, dullness to percussion).

Switch roles and provide feedback on the effectiveness of questioning and examination techniques.

or

2. Small Group Work on Diagnostic Test Interpretation (20 mins)

Provide groups with patient scenarios that include results from chest X-rays, ultrasound, and laboratory tests (e.g., pleural fluid analysis).

Each group analyzes the test results, discussing the significance of findings (e.g., loculated fluid, white blood cell count, pH, and glucose levels).

Students should determine whether the findings support a diagnosis of empyema and propose next steps in management.

or

3. Simulation-Based Learning for Management Strategies (20 mins)

Use simulation technology to create scenarios where students must manage a patient with empyema.

Students work in small groups to assess the simulated patient, develop a management plan (including antibiotic selection, drainage options, etc.), and justify their choices.

Each group presents their plan to the class for discussion and critique.

Practical Training 19.10 Evaluation of Lung abcess cases

One or more activitiescan be chosen (Total time- 2 hours)

1. Demonstration and Practice of Respiratory Examination (20 mins)

Demonstrate a complete respiratory examination, emphasizing techniques specific to children.

Teacher will use a pediatric patient simulator or standardized patient to demonstrate examination techniques (inspection, palpation, percussion, and auscultation).

Highlight key findings associated with lung abscesses, such as decreased breath sounds, crackles, or dullness to percussion.

Allow students to practice the examination in pairs, providing feedback on their technique.

or

2. Small Group Work on Diagnostic Test Interpretation (20 mins)

Provide small groups with case scenarios that include chest X-rays, CT scans, and laboratory results (e.g., CBC, sputum culture).

Each group analyzes the diagnostic results, discussing the significance of findings such as air-fluid levels on imaging and white blood cell counts.

Students should determine whether the findings support a diagnosis of lung abscess and discuss potential differential diagnoses.

or

3. Case-Based Learning for Management Planning (20 mins)

Present a detailed case study of a child with a lung abscess, including history, examination findings, and diagnostic test results.

In small groups, students formulate a management plan, including considerations for antibiotics, drainage (if indicated), and supportive care.

Encourage groups to discuss the rationale for their chosen management strategies and any follow-up plans.

Practical Training 19.11 Evaluation of asthmatic patients

One or more activities can be chosen (Total time- 1 hour)

1. Demonstration of Asthma Examination Techniques (10 mins)

Demonstrate the key components of a respiratory examination specific to asthma

Teacher will use a patient simulator or standardized patient to demonstrate the examination techniques (inspection, palpation, percussion, auscultation).

Highlight important findings such as wheezing, prolonged expiration, and the use of accessory muscles.

Allow students to practice in pairs, focusing on correct techniques and recognizing signs of asthma exacerbation.

or

2. Game-Based Learning: Asthma Diagnosis Challenge (25 mins)

Organize a game where students work in teams to diagnose asthma based on clinical vignettes and diagnostic test results.

Prepare a set of clinical scenarios that describe different patients with asthma or asthma-like symptoms.

Each team receives a scenario and must identify key findings, propose a diagnosis, and justify their reasoning.

Use buzzers or clickers for teams to submit answers, fostering competition.

or

3. Hands-On Workshop: Investigating Asthma (25 mins)

Set up stations that cover various investigations, such as peak flow measurement, spirometry, and allergy testing.

At each station, provide an overview of the test, its indications, and how to interpret the results.

Students practice conducting peak flow measurements and spirometry on simulators or models, learning to recognize normal vs. abnormal results.

Discuss the role of allergy testing in identifying asthma triggers and its implications for management.

Practical Training 19.12 Diagnosis and Management of Rabw

One or more activities can be chosen (Total time- 2 hours)

1. Lecture and Discussion (20 mins)

Teacher will introduce key concepts from classical texts (e.g., Ibn Sina, Al-Razi) regarding Rabw, its causes, and its manifestations.

Discuss traditional management approaches, including dietary recommendations, herbal remedies, and lifestyle modifications.

Engage students by inviting questions and discussing the relevance of classical knowledge in contemporary practice.

or

2. Case Study Analysis: Rabw Diagnosis (30 mins)

Present students with clinical case studies based on classical descriptions of Rabw.

Divide students into small groups and provide each group with a different case study depicting a patient with asthma-like symptoms.

Each group reviews the case, identifies symptoms, and discusses how classical texts would interpret these findings.

Groups present their analyses and diagnostic reasoning to the class, referencing classical texts.

or

3. Interactive Workshop: Management Plans for Rabw (30 mins)

Organize a workshop where students develop management plans based on classical texts.

Each group selects a classical text reference that discusses Rabw management.

Students create a management plan that includes dietary guidelines, herbal treatments, and lifestyle recommendations derived from classical teachings.

Groups present their management plans, discussing the rationale behind their choices.

or

4. Game-Based Learning: Rabw Diagnosis and Management Challenge (30 mins)

Organize a game where students work in teams to diagnose and propose management strategies for Rabw based on classical teachings.

Prepare a set of scenarios reflecting different patients with Rabw symptoms.

Each team diagnoses the condition and outlines a management plan using classical references.

Teams compete to provide the most comprehensive and accurate responses, earning points for correct answers.

Practical Training 19.13 Medication adherence and follow up

One or more activities can be chosen (Total time- 1 hour)

1. Group Discussion on Identifying Triggers (60 mins)

Facilitate a group discussion where students brainstorm potential environmental and lifestyle triggers.

Teacher will give breif introduction of medication adherence than divide students into small groups and provide them with a list of potential triggers (e.g., allergens, pollution, stress).

Each group discusses how these triggers affect patients and brainstorm strategies to avoid them.

Groups present their findings to the class.

or

2. Role-Playing: Patient Education Scenarios (60 mins)

Organize role-playing sessions where students simulate patient and healthcare provider interactions.

Assign roles to students (e.g., healthcare provider, patient, and caregiver).

Provide scenarios where students must explain the importance of adherence, follow-up appointments, and avoiding triggers to the patient and their parent.

After each role-play, peers provide feedback on communication effectiveness and clarity of information.

or

3. Case Study Analysis: Medication Adherence and Follow-Up (60 mins)

Present students with case studies that highlight challenges in medication adherence and the importance of follow-up care.

Each group analyzes a case study and identifies factors contributing to non-adherence and missed follow-ups.

Groups propose solutions to improve adherence and strategies for effective follow-up.

Present findings to the class for discussion.

or

4. Educational Workshop: Creating Educational Materials (60 mins)

Organize a workshop where students design brochures or posters focusing on adherence, follow-up, and avoiding triggers.

Provide examples of educational materials and discuss key components (clarity, visuals, key messages).

In groups, students create their materials targeting a specific audience (e.g., children, parents).

Groups present their materials, explaining their approach and content.

Practical Training 19.14 Interpretation of sweat chloride test, genetic testing, and newborn screening results

One or more actvities can be chosen (Total time- 1 hour)

1. Group Case Study Analysis (30 mins per case

Teacher will introduce the tests and thier interpretations to the students and Divide them into small groups and provide each with a case study involving sweat chloride tests, genetic tests, and newborn screening results.

Each group analyzes the provided test results and discusses their implications for diagnosis and management.

Groups prepare a summary of their findings, including differential diagnoses and recommended follow-up actions.

Present findings to the class for discussion and feedback.

or

2. Hands-On Workshop: Interpreting Test Results (30 mins)

Conduct a workshop where students work with mock lab results for sweat chloride tests, genetic tests, and newborn screenings.

Provide mock test results (e.g., chloride levels, genetic mutations, newborn screening panels).

Students individually interpret the results, categorizing them as normal, abnormal, or inconclusive.

Discuss the interpretation in small groups, focusing on clinical implications.

or

3. Role-Playing: Counseling Parents on Test Results (30 mins)

Organize role-playing sessions where students practice delivering test results and counseling parents.

Assign roles (healthcare provider, parent, observer) and provide scenarios with different test outcomes.

Students role-play delivering results, addressing parental concerns, and providing follow-up recommendations.

After each session, peers provide feedback on communication style and clarity of information.

or

4. Discussion on Ethical Considerations (30 mins)

Facilitate a discussion on the ethical aspects of genetic testing, including informed consent, privacy, and potential psychological impacts.

Present scenarios related to genetic testing and screening (e.g., unexpected findings, carrier status).

Encourage students to discuss the ethical dilemmas involved and potential solutions.

Summarize key ethical considerations and best practices in patient communication.

Practical Training 19.15 Evaluation and management of cystic fibrosis

One or more activities can be chosen (Total time- 1 hour)

1. Case-Based Learning (30 mins)

Teacher will give brief idea of evaluation to the students and Divide them into small groups and present them with a case study of a pediatric patient with cystic fibrosis.

Each group reviews the case details, including patient history, symptoms, and diagnostic test results.

Students develop a detailed evaluation and management plan, including medication adherence, nutritional management, and pulmonary therapy.

Groups present their plans to the class for discussion and critique.

or

2. Simulation-Based Practice (30 mins)

Use high-fidelity mannequins or standardized patients to simulate a cystic fibrosis case.

Students conduct a thorough patient assessment, including respiratory examination, auscultation, and review of diagnostic results.

Students create and implement a management plan, demonstrating airway clearance techniques and discussing nutritional needs.

Instructors provide real-time feedback on clinical skills and decision-making.

or

3. Role-Playing for Patient Education (30 mins)

Organize role-playing sessions where students practice discussing cystic fibrosis management with a “patient” (another student) and their family.

Students take turns playing the roles of healthcare provider, patient, and family member.

Discuss the importance of medication adherence, lifestyle modifications, and regular follow-ups.

Peers provide feedback on communication effectiveness and clarity.

or

4. Discussion on Multidisciplinary Management Approaches (30 mins)

Facilitate a discussion on the roles of different healthcare professionals (e.g., pulmonologists, nutritionists, physical therapists) in the management of cystic fibrosis.

Present scenarios that require input from various specialists.

Discuss how interdisciplinary collaboration enhances patient care and outcomes.

Practical Training 19.16 Diagnostic method for Obstructive sleep apnea

One or more activities can be chosen (Total time- 1 hour)

1. Small Group Case Discussions (60 mins)

Present case studies of patients with suspected OSA.

Teacher will introduce diagnostic methods than divide students into small groups to discuss the cases, focusing on clinical features, potential risks, and appropriate diagnostic tasks.

Each group presents their findings and discusses the rationale for their chosen diagnostic approaches.

or

2. Hands-On Clinical Skills Practice (60 mins)

Instruction: Set up practice stations for hands-on activities, including:

Physical Examination: Practicing the physical exam relevant to OSA, including neck circumference, BMI assessment, and oral cavity examination.

Basic Sleep Study Setup: Demonstrating how to set up equipment for polysomnography or home sleep tests.

Procedure: Students rotate through the stations, performing tasks under the guidance of experienced clinicians.

or

3. Observational Learning with Supervised Sleep Studies (30 mins)

Arrange for students to observe a polysomnography study or home sleep apnea testing.

Students should take notes on the setup, monitoring process, and any patient interactions.

After the observation, conduct a debriefing session to discuss the observed procedures and results.

or

4. Role-Playing for Patient Education (60 mins)

Organize role-playing scenarios where students educate patients about OSA.

One student acts as the healthcare provider, and another as the patient.

Discuss the diagnosis, implications of OSA, treatment options, and lifestyle modifications.

Peers provide feedback on the clarity and effectiveness of the communication.

Practical Training 19.17 Polysomnography study in Obstructive sleep apnea

One or more activities can be chosen (Total time- 1 hour)

1. Demonstration of Polysomnography Setup (30 mins)

Teacher will provide a live demonstration of the polysomnography equipment setup, including electrodes placement for EEG, EOG, EMG, and respiratory monitoring.

Explain the importance of each component in the study.

Allow students to practice setting up the equipment under supervision.

or

2. Case-Based Learning with Sample Polysomnography Reports (30 mins)

Distribute sample polysomnography reports and highlight key components such as sleep architecture, respiratory events, and AHI.

In small groups, students will analyze the provided reports, calculate the AHI, and discuss the clinical implications of the findings.

Each group will present their interpretation and management recommendations

or

3. Hands-On Interpretation Workshop (30 mins)

Use **software t**hat simulates polysomnography data or provide anonymized real case studies for interpretation.

Students will work individually or in pairs to interpret the results, focusing on sleep stages, respiratory events, and calculating the AHI.

Follow up with a class discussion to review interpretations and clarify any misconceptions.

or

4. Role-Playing Patient Communication (30 mins)

Organize role-playing scenarios where students explain the results of a polysomnography study to a "parent" of a pediatric patient.

One student acts as the healthcare provider, while another plays the role of the concerned parent. They discuss the results, implications, and potential management strategies.

Peers provide feedback on clarity, empathy, and effectiveness in communication.

Experiential Learning Activity

Experiential-Learning Learning 19.1: Devices and techniques for bronchiectasis
One or more actvities can be chosen (Total time- 1 hour) 1. **Pulmonary Function Test (PFT) on Pediatric Mannequin (30 mins)** Set up the PFT equipment with the pediatric mannequin, ensuring the mannequin is connected correctly to simulate realistic testing conditions. Ensure students to perform multiple trials, simulating the correct breathing instructions, such as “take a deep breath and blow out as fast and hard as you can.” Allow students to practice reading and interpreting the results, discussing the significance of each value and what deviations from normal may indicate. or 2. **Positive Expiratory Pressure (PEP) Device Exercises (30 mins)** Set up the PEP device with the pediatric mannequin and demonstrate the correct positioning and angle for effective therapy. Instruct students to simulate using the PEP device on the mannequin, guiding them through the steps: inhale deeply, seal lips around the mouthpiece, and exhale with moderate force. Encourage students to observe the mannequin’s simulated breathing pattern and guide them to adjust the device settings to achieve optimal results based on therapy goals.
Experiential-Learning Learning 19.2: Diagnosis and management of Bronchiectasis
One or more activities can be chosen (Total time- 2 hours) **1. Case-Based Learning and Simulation (60 mins)** Present students with a simulated patient case reflecting typical bronchiectasis symptoms, including chronic productive cough, dyspnea, fatigue, and history of recurrent lung infections. Provide diagnostic tools and parameters, such as: Patient history, physical examination findings, and imaging results (simulated CT scan showing bronchial dilation). Pulmonary function test (PFT) results showing obstructive patterns. Allow students to independently analyze the data and determine the diagnosis of bronchiectasis or

2. Integrative Medicine Planning and Role Play (60 mins)

Discuss Unani principles of managing respiratory conditions, focusing on techniques like **Ilaj bil-Ghiza (dietotherapy)**, **Ilaj bil-Tadbir (regimenal therapy)**, and **Ilaj bil-Dawa (pharmacotherapy)**.

Guide students to create a Unani-based plan, incorporating:

Ilaj bil-Ghiza: Plan a diet that reduces phlegm and inflammation (e.g., avoiding cold, phlegm-producing foods).

Ilaj bil-Tadbir: Integrate practices like **Inkibab (steam inhalation)**, **Takmid (warm compress)**, and **Tila (herbal oil massage)** on the chest.

Ilaj bil-Dawa: Choose Unani herbs with bronchodilatory and anti-inflammatory effects, such as Adhatoda vasica (Vasaka) and Glycyrrhiza glabra (Licorice).

Students role-play patient counseling sessions, explaining how each regimen works and its importance for long-term care.

or

3.Clinical Practice and Protocol-Based Learning (60 mins)

Provide students with clinical guidelines on conventional bronchiectasis management, emphasizing therapies like:

Antibiotics: For bacterial infections, based on sputum culture.

Bronchodilators and Mucolytics: Demonstrate how to administer bronchodilators using inhalers or nebulizers and teach techniques for mucolytic therapy.

Airway Clearance Techniques: Simulate postural drainage and percussion, and instruct students to use Positive Expiratory Pressure (PEP) devices to enhance mucus clearance.

Allow students to simulate setting up and conducting these therapies on a pediatric mannequin or simulated environment.

Facilitate a discussion on potential side effects, contraindications, and indications for using each treatment.

or

4. Hands-On Skill Development and Reflective Learning (30 mins)

Set up practice stations with different airway clearance devices and techniques, such as:

PEP devices

Chest physiotherapy (manual chest percussion, vibration, and postural drainage)

Nebulization for mucolytic agents

Instruct students to practice each technique independently on a mannequin, simulating patient interaction and adjusting based on the patient's tolerance and needs.

Provide a self-assessment checklist for students to evaluate their technique, patient positioning, and the efficacy of mucus clearance.

or

5. Group Discussion and Critical Analysis (30 mins)

Have students reflect on the cases they managed, comparing and contrasting Unani and conventional management techniques.

Facilitate a discussion on when and why to prioritize one approach over the other, or when to use them in combination for best patient outcomes.

Encourage students to share insights on the benefits and challenges of integrative care in respiratory diseases and document reflections for future learning.

Experiential-Learning Learning 19.3: Evaluation of Dry pleurisy cases

One or more activities can be chosen (Total time- 1 hour)

1. Literature Review on Dry Pleurisy (60 mins)

Conduct a literature review of classical Unani texts and modern medical resources on dry pleurisy.

Summarize the traditional understanding, diagnosis, and treatment of dry pleurisy in Unani medicine and compare it to conventional approaches.

Note key signs, symptoms, and diagnostic approaches from both systems.

or

2. Case Analysis (30 mins per case)

Review a detailed case study of a patient presenting with symptoms of dry pleurisy.

Analyze the case using both classical and conventional diagnostic frameworks.

Prepare a differential diagnosis list, identifying key clinical signs for each system.

or

3. Chest Examination Simulation (20 mins)

Use a simulated mannequin or peer to practice percussion and auscultation, focusing on identifying friction rub and other pleural sounds.

Practice palpation and inspection techniques taught in both classical and conventional approaches.

Document and interpret physical findings.

or

4. Imaging and Diagnostic Tools Workshop (20 mins)

Study examples of chest X-rays and ultrasound images specific to pleurisy.

Note any features that differentiate dry pleurisy from other pleural conditions.

Discuss findings with peers or instructors to refine interpretation skills.

or

5. Hands-on Session with Diagnostic Techniques (20 mins)

Role-play a clinical scenario with a simulated patient presenting pleuritic symptoms.

Apply pulse assessment and classical diagnostic techniques to assess overall mizaj (temperament).

Document conventional signs such as friction rub and dyspnea.

or

6. Case Presentation (60 mins)

Prepare a detailed presentation including patient history, symptoms, examination findings, and imaging results.

Discuss treatment recommendations, incorporating both Unani interventions and modern pharmacological treatments.

Present findings to peers and instructors for feedback.

Experiential-Learning Learning 19.4: Management of Dry pleurisy

One or more activities can be chosen (Total time- 1 hour)

1. Comparative Literature Review (60 mins)

Conduct a thorough literature review on respiratory management in both Unani and conventional medical sources.

Compare and contrast the principles, methodologies, and therapeutic effects of classical and conventional treatments.

Summarize findings, noting any complementary aspects between the two systems.

or

2. Case Study Analysis (60 mins)

Review a provided case study, including patient history, symptoms, and diagnosis.

Outline a management plan using both Unani and conventional medicine approaches, detailing specific interventions from each system.

Present your integrated management plan to peers for feedback.

or

3. Diet and Lifestyle Counseling (Ilaj bil-Ghiza and Tadabir)

Role-play a counseling session where you advise a simulated patient on dietary and lifestyle modifications relevant to their respiratory condition.

Discuss recommended foods (Ilaj bil-Ghiza), lifestyle modifications (Tadabir), and their benefits.

Integrate and explain conventional medications or therapies that complement these lifestyle changes.

4. Workshop on Herbal and Pharmacological Therapy

Study the pharmacological profiles of specific Unani herbs and conventional drugs used for respiratory conditions.

Discuss potential drug-herb interactions, side effects, and contraindications.

Design a treatment plan that combines these therapies effectively and safely.

or

5. Treatment Algorithm Development (30 mins)

Use flowchart software to design a treatment algorithm incorporating classical and conventional methods for a specific respiratory condition.

Include stages for assessment, initial treatment, ongoing management, and referral criteria.

Present the algorithm to peers and instructors for feedback.or

6. Simulation of Clinical Application of Combined Treatments (30 mins)

Engage in a simulated clinical session with a mannequin or peer representing a patient with a respiratory condition.

Apply both Unani remedies (such as herbal compresses) and conventional treatments (such as bronchodilators) in real-time.

Record your observations on symptom improvement and patient comfort.
Experiential-Learning Learning 19.5: Normal and abnormal lung sounds in dry pleurisy
One or more activities can be chosen (Total time- 1 hour) **1. Auscultation of Clinical Cases (20 mins per case)** Observe an instructor's auscultation of patients presenting with and without pleuritic sounds. Take notes on the differences between normal and pleuritic sounds, such as the pleural friction rub heard in pleurisy. Review findings and discuss with the instructor. or **2. Simulated Lung Sound Comparison (30 mins)** Use a lung sound simulator programmed with various sound types (e.g., normal breath sounds, pleuritic sounds). Document the differences in pitch, duration, and characteristics between normal and pleuritic sounds. Present findings to peers or instructors, highlighting the identifying features. or **3. Case-Based Discussion on Respiratory Sounds (60 mins)** Review case scenarios where patients present with dry pleurisy and other respiratory conditions. Identify which cases likely involve abnormal lung sounds (e.g., pleural friction rub). Discuss findings with peers, focusing on the clinical significance of each sound. or **4. Lung Sound Assessment on Mannequins** Perform auscultation on mannequins, listening for normal versus pleuritic sounds. Document key sound characteristics (e.g., grating quality of pleural friction rub). Review with an instructor or peers to verify the findings.

or

5. Self-Directed Audio Practice (30 mins)

Use online resources or an auscultation app that includes normal and abnormal lung sounds.

Practice listening to and differentiating these sounds.

Take notes on unique features of pleuritic sounds and periodically test your recognition skills.

or

6. Peer Teaching on Lung Sound Differences (30 mins)

Conduct a teaching session with classmates, demonstrating both normal and pleuritic lung sounds.

Explain sound characteristics and clinical significance.

Answer questions and discuss how these sounds guide diagnosis.

Experiential-Learning Learning 19.6: Observation of Thoracentesis and chest tube insertion

One or more activities can be chosen (Total time- 1 hour)

1. Observation and Documentation of Thoracentesis Procedure (60 mins)

Instructions:

Watch a qualified healthcare provider perform thoracentesis.

Take detailed notes on the steps involved, from patient preparation to completion.

Document important safety and sterilization protocols, and how patient responses are monitored or

2. Simulation of Thoracentesis and Chest Tube Setup (60 mins)

Instructions:

Set up the simulation environment with equipment as it would be for a real procedure.

Follow sterilization and setup protocols precisely, preparing the mannequin as you would a patient.

Review and confirm setup with an instructor. or

3. Role-Play Patient Interaction and Preparation (60 mins)

Instructions:

Role-play explaining thoracentesis and chest tube insertion to a simulated caregiver or patient.

Practice addressing questions and explaining the importance of remaining still during the procedure.

Receive feedback from peers or instructors on communication skills.

Experiential-Learning Learning 19.7: Evaluation and management of Pleural effusion

One or more activities can be chosen (Total time- 2 hour)

1. Clinical Case Study Analysis (30 mins per case)

Review several case studies involving patients with pleural effusion.

Discuss the clinical features, diagnostic imaging, and management approaches used.

Present findings and propose alternative management plans incorporating classical methods.

or

2. Physical Examination Practice (20 mins)

Perform physical examinations on simulated patients or mannequins.

Focus on inspecting for dullness to percussion and decreased breath sounds.

Document findings and correlate with expected diagnostic outcomes.

or

3. Imaging Interpretation Workshop (20 mins)

Analyze various imaging results showing pleural effusion.

Identify the size, location, and characteristics of the effusion.

Discuss implications for management based on imaging findings.

or

4. Discussion of Diagnostic Criteria and Guidelines (40 mins)

Review current clinical guidelines regarding the assessment of pleural effusion.

Discuss indications for further investigation, such as thoracentesis.

Analyze how classical methods can complement conventional assessments.

or

5. Simulated Thoracentesis Procedure

Use a simulation model to perform thoracentesis.

Follow proper aseptic techniques and monitor simulated patient responses.

Discuss how classical treatments could be applied post-procedure.

Experiential-Learning Learning 19.8: Interpretation of investigations related with empyma

One or more activities can be chosen (Total time- 1 hour)

1. Case Review and Discussion (30 mins)

Review clinical cases of pediatric patients diagnosed with empyema thoracis.

Discuss the findings from imaging studies (X-rays, ultrasounds, CT scans) and laboratory results (e.g., pleural fluid analysis).

Formulate a diagnostic interpretation based on the data provided.

or

2. Imaging Interpretation Workshop (30 mins)

Analyze a series of chest X-rays and ultrasounds showing empyema thoracis.

Identify key features such as pleural fluid accumulation, loculations, and mediastinal shift.

Discuss the implications of these findings on management strategies.

Experiential-Learning Learning 19.9: Diagnosis and management of Empyma cases

One or more activities can be chosen (Total time- 2 hours)

1. Case Study Analysis (30 mins per case)

Review a detailed case study of a pediatric patient diagnosed with empyema.

Identify clinical signs, symptoms, and relevant investigation findings.

Discuss the differential diagnoses and select the most appropriate diagnosis.

or

2. Management Plan Development Workshop (60 mins)

Work in small groups to develop a management plan based on a given case scenario of empyema.

Include details on pharmacological treatment, classical remedies, dietary considerations (Ilaj bil-Ghaza), and non-invasive therapies.

Present your management plan to the class for feedback.

or

3. Classical and Conventional Medicine Comparison (30 mins)

Research management strategies for empyema in both classical and conventional medicine.

Present findings in a group discussion, focusing on differences and similarities in approaches.

Highlight the rationale behind each method and its applicability in different scenarios.

or

4. Simulation of Clinical Scenarios (60 mins)

Participate in simulation exercises that replicate clinical scenarios involving pediatric patients with empyema.

Practice diagnosing the condition and designing an immediate management plan in real-time.

Engage in debriefing sessions to discuss decision-making processes and outcomes.

or

5. Patient and Caregiver Education Sessions (20 mins)

Role-play educating a caregiver about empyema, including treatment options and management strategies.

Use visual aids and simple language to explain complex medical concepts.

Gather feedback from peers on communication effectiveness.
Experiential-Learning Learning 19.10: Drainage procedure in lung abscess
One or more activities can be chosen (Total time- 1 hour) **1. Observation of Drainage Procedures (30 mins)** Attend a clinical session where drainage procedures (e.g., thoracentesis, chest tube insertion) are performed. Take detailed notes on the indications for each procedure, contraindications, and post-procedure care steps. Participate in a debriefing session to discuss observations. or **2. Simulated Drainage Procedure Practice (30 mins)** Use a medical simulator to practice the steps of performing a drainage procedure (e.g., chest tube insertion). Focus on proper technique, aseptic measures, and identifying indications and contraindications. Receive feedback from supervisors and peers after the simulation. or **3. Case-Based Discussions (30 mins)** Review case studies where drainage procedures were necessary. Discuss the indications, contraindications, and outcomes of the procedures with a supervisor or in a small group. Analyze any complications that arose and how they were managed. or **4. Indications and Contraindications Workshop (60 mins)** Participate in a workshop focusing on the indications and contraindications for various drainage procedures. Engage in group discussions and role-playing scenarios to reinforce learning. Create a flowchart outlining indications and contraindications for easy reference.

or

5. Role-Playing Scenarios (60 mins)

In pairs, role-play scenarios where one student explains the procedure to a patient while the other acts as the patient or caregiver.

Focus on explaining the indications, contraindications, procedure steps, and post-procedure care.

Switch roles and repeat the exercise.

Experiential-Learning Learning 19.11: Evaluation and management of lung abcess

One or more activities can be chosen (Total time- 2 hours)

1. Case Review and Diagnosis Workshop (60 mins)

Review a series of clinical cases involving patients with lung abscesses.

Identify key clinical features, imaging results, and laboratory findings.

Discuss the differential diagnoses and determine the most likely diagnosis for each case.

2. Imaging Interpretation Session (10 reports in 60 mins)

Analyze various imaging studies, including X-rays and CT scans, of patients with suspected lung abscesses.

Identify characteristic features of lung abscesses and differentiate them from other lung pathologies.

Present findings to peers for discussion and feedback.

3. Pathophysiology Discussion Group (30 mins)

Participate in a group discussion focused on the pathophysiology of lung abscess formation.

Explore causes, risk factors, and mechanisms of infection leading to abscess development.

Discuss how this knowledge informs clinical management.

4. Management Plan Development (30 mins)

Based on a clinical case scenario, develop a detailed management plan including diagnostics, treatment options, and follow-up care.

Include pharmacological interventions, potential surgical options, and supportive care measures.

Present the plan to a supervisor for evaluation..
Experiential-Learning Learning 19.12: Diagnosis and management of asthma
One or more activities can be chosen (Total time- 2 hours) **1. Case Study Analysis (60 mins)** Review several clinical cases of asthma, including patient history and presenting symptoms. Identify key factors influencing the diagnosis, such as triggers and comorbidities. Discuss findings with peers and develop a consensus on the most appropriate diagnosis for each case. or **2. Literature Review on Asthma Management (60 mins)** Conduct a literature review focusing on classical texts and contemporary guidelines for asthma management. Summarize key findings regarding pharmacological treatments, lifestyle modifications, and non-pharmacological interventions. Present findings to peers for discussion and clarification of concepts. or **3. Personalized Management Plan Workshop (60 mins)** Create a template for an asthma management plan, including sections for diagnosis, triggers, medication, and action plans. Using case scenarios, develop personalized management plans that consider patient-specific factors such as age, comorbidities, and preferences. Share and critique each other's plans for feedback and improvement. or **4. Asthma Management Guidelines Presentation (60 mins)** Choose a set of asthma management guidelines (e.g., Global Initiative for Asthma [GINA], British Thoracic Society [BTS]). Prepare a presentation summarizing key components of the guidelines, including treatment algorithms and patient education. Engage peers in a discussion about the implications of the guidelines in clinical practice.

Experiential-Learning Learning 19.13: Management of acute asthmatic patient
One or more activities can be chosen (Total time- 2 hours) **1. Case-Based Learning (30 mins)** Review case study of pediatric patients presenting with acute asthma exacerbations. Discuss the symptoms, triggers, and prior management approaches. Develop a comprehensive management plan, including medications and interventions, and present it to the group. or **2. Simulation of Acute Asthma Management (30 mins)** Participate in simulation exercises with mannequins or actors portraying pediatric patients in acute respiratory distress. Administer appropriate treatments, including bronchodilators and corticosteroids. Debrief with instructors to discuss decision-making and management efficacy. or **3. Guided Clinical Rotations (30 mins)** Join clinical rounds in a pediatric unit or emergency department. Assist in assessing pediatric patients with asthma exacerbations, including vital signs and symptom evaluation. Discuss findings and management plans with supervising clinicians. or **4. Medication Administration Workshop (30 mins)** Set up a workshop focusing on different delivery methods for asthma medications. Use demonstration devices to practice administering medications to pediatric mannequins or peers. Discuss proper techniques and common errors in medication delivery.
Experiential-Learning Learning 19.14: Diagnosis and management of cystic fibrosis

One or more activities can be chosen (Total time- 2 hours)

1. Review of Cystic Fibrosis Guidelines (30 mins)

Review guidelines from reputable organizations, such as the Cystic Fibrosis Foundation or European Cystic Fibrosis Society.

Summarize key points regarding diagnostic criteria, management strategies, and follow-up recommendations.

Discuss findings with peers and identify differences between various guidelines.

or

2. Creating a Diagnostic Flowchart (30 mins)

Gather information on common signs and symptoms of CF (e.g., respiratory issues, gastrointestinal symptoms).

Identify key diagnostic tests (e.g., sweat test, genetic testing) and their interpretation.

Construct a flowchart that outlines the step-by-step diagnostic process for CF.

or

3. Case Study Analysis (60 mins)

Review several case studies of patients diagnosed with CF.

Identify their clinical presentation, diagnostic findings, and current management strategies.

Develop a management chart that includes treatment options, follow-up care, and multidisciplinary approaches.

or

4. Management Chart Construction (30 mins)

Use the information gathered from guidelines, case studies, and educational plans to design a management chart.

Include components such as routine assessments, medication regimens, pulmonary therapies, and nutritional recommendations.

Review the chart with supervisors and make necessary revisions based on feedback.

or

5. Role-Playing Scenarios (60 mins)

Set up role-playing exercises where participants act as either healthcare providers or patients with CF.

Simulate common clinical scenarios (e.g., acute exacerbation, routine check-up).

Debrief after each scenario to discuss management strategies and communication effectiveness.

Experiential-Learning Learning 19.15: Airway clearence technique in cystic fibrosis

One or more activities can be chosen (Total time- 1 hour)

1. Literature Review on Airway Clearance Techniques (ACTs) (30+ 30 mins)

Conduct a literature review of recent studies and guidelines on ACTs for Cystic fibrosis.

Summarize the efficacy, indications, and contraindications of different techniques (e.g., chest physiotherapy, PEP therapy, high-frequency chest wall oscillation).

Prepare a presentation to share findings with peers.

or

2. Demonstration of Airway Clearance Techniques (60 mins)

Participate in a workshop where experienced clinicians demonstrate various ACTs.

Practice techniques such as manual chest physiotherapy, PEP devices, and oscillatory devices on mannequins or peers.

Receive feedback from instructors on technique and patient positioning.

or

3. Simulation Training for Patient Education (30 mins)

Create a simulation scenario where students must educate a simulated CF patient and their caregiver on proper ACT techniques.

Role-play as both the clinician and the patient, emphasizing communication and understanding.

Debrief to discuss effective teaching strategies and address questions or concerns raised during the simulation.

or

4. Case Study Discussion on ACT Implementation (30+ 30 mins).

Review case studies of CF patients focusing on their respiratory status before and after implementing ACTs.

Discuss in small groups the effectiveness of the techniques used and alternative strategies that could have been employed.

Prepare a summary of group findings and present to the class.

or

5. Patient Assessment Skills Workshop (60 mins)

Conduct assessments on simulated patients or peers using respiratory assessment techniques.

Focus on evaluating lung sounds, oxygen saturation, and respiratory effort.

Based on assessments, determine appropriate ACTs to recommend.

Experiential-Learning Learning 19.16: Parent counselling for life style modification in cystic fibrosis.

One or more activities can be chosen (Total time- 1 hour)

1. Workshops on Nutrition and Dietary Adjustments (60 mins)

Organize a workshop where students present on nutrition basics, emphasizing age-appropriate dietary guidelines.

Include interactive components like meal planning and label reading.

Provide handouts with healthy recipes and tips for making nutritious choices.

or

2. Role-Playing Counseling Scenarios (60 mins)

In pairs, role-play counseling scenarios where one student acts as a parent and the other as the healthcare provider.

Focus on discussing lifestyle changes, addressing concerns, and providing motivation.

Switch roles and repeat to experience both perspectives.

or

3. Creating Educational Materials (60 mins)

Research and compile evidence-based information on dietary adjustments, exercise, and infection prevention.

Create brochures, posters, or digital content that can be shared with parents.

Ensure materials are visually appealing and easy to understand.

or

4. Group Discussions on Infection Prevention Strategies (60 mins)

Facilitate a group discussion where students lead conversations about common infections and prevention strategies (e.g., hand hygiene, vaccinations).

Encourage parents to share their experiences and concerns.

Summarize key points and distribute informational handouts.

Experiential-Learning Learning 19.17: Obstructive sleep apnea (OSA) diagnostic tools

One or more activities can be chosen (Total time- 1 hour)

1.Conducting a Sleep Questionnaire Review (30 mins)

Familiarize students with common questionnaires like the Epworth Sleepiness Scale and STOP-Bang.

Allow students to practice administering these questionnaires in pairs.

Analyze the results collectively and discuss their implications for OSA diagnosis.

or

2. Simulated Patient Interactions (30 mins)

Set up a role-play scenario where students act as healthcare providers assessing simulated patients with suspected OSA.

Encourage detailed questioning about sleep patterns, daytime sleepiness, and associated symptoms.

Provide feedback on their interviewing techniques and clinical reasoning.

or

3. Analyzing Imaging Studies (30 mins)

Present examples of imaging studies (CT scans, MRI) that illustrate anatomical features related to OSA.

Discuss how these images can impact the diagnosis and management of OSA.

Encourage students to analyze imaging results and hypothesize about their implications for OSA.

or

4. Workshop on Continuous Positive Airway Pressure (CPAP) Therapy (30 mins)

Conduct a workshop demonstrating CPAP equipment and its setup.

Allow students to practice adjusting settings based on various patient scenarios.

Discuss the indications for CPAP and how it can aid in diagnosing OSA during sleep studies.

or

5. Patient Education Role-Playing (30 mins)

Pair students to role-play scenarios where one acts as the healthcare provider and the other as the patient.

Focus on explaining OSA, the diagnostic process, and what to expect during sleep studies.

Provide constructive feedback on clarity, empathy, and effectiveness of communication.

Experiential-Learning Learning 19.18: Evaluation of Obstructive Sleep Apnea cases

One or more activities can be chosen (Total time- 1 hour)

1. Simulation of Pediatric Sleep Study (60 mins)

Divide students into small groups.

Provide a simulated PSG setup on a mannequin or a sleeping child simulator.

Each group will set up the PSG equipment, placing electrodes appropriately.

After the simulation, review the PSG data with the class.

or

2. Role-Playing Patient Scenarios (60 mins)

Pair students and assign roles (provider and patient).

Create scenarios based on common presentations of OSA in children (e.g., snoring, daytime sleepiness).

After the role-play, provide feedback on history-taking and communication skills.

or

3. Case-Based Learning (30 mins)

Provide students with anonymized case studies of children diagnosed with OSA.

Facilitate group discussions to identify key symptoms, diagnostic steps, and management options.

Encourage students to present their case analyses to the class.

or

4. Use of Sleep Questionnaires (30 mins)

Introduce common screening questionnaires (e.g., Epworth Sleepiness Scale, Pediatric Sleep Questionnaire).

Have students practice administering these questionnaires to peers or standardized patients.

Discuss the implications of the results in diagnosing OSA.

or

5. Hands-On Learning with Home Sleep Apnea Testing (HSAT) Devices (60 mins)

Provide HSAT devices for students to explore and set up.

Discuss the indications and limitations of HSAT compared to PSG.

Allow students to practice using the device on themselves or a mannequin.

Experiential-Learning Learning 19.19: Counselling of OSA patients

One or more activities can be chosen (Total time- 1 hour)

1. Interactive Workshop on Healthy Sleep Habits (60 mins)

Organize a workshop where students present on topics like sleep hygiene, bedtime routines, and sleep environment optimization.

Include interactive activities, such as group discussions and role-playing scenarios where participants identify poor sleep habits.

Provide handouts summarizing key points and tips.

or

2. Nutrition and Weight Management Seminar (60 mins)

Conduct a seminar on healthy eating habits, weight loss strategies, and their impact on OSA. Invite a nutritionist to co-facilitate the session and offer practical tips. Have students create sample meal plans or grocery lists to share with participants. or **3. Physical Activity Challenge (60 mins)** Organize a friendly competition or challenge encouraging patients and caregivers to engage in physical activities (e.g., walking, cycling). Create teams that can track their progress using a shared app or chart. Host weekly check-ins to celebrate achievements and discuss barriers. or **4. Motivational Interviewing Role-Play (60 mins)** Pair students and assign roles (provider and patient) for practicing motivational interviewing techniques. Provide scenarios related to OSA management, such as discussing weight loss or sleep hygiene. After role-playing, conduct a debrief to discuss challenges and effective techniques.	
Modular Assessment	
Assessment	**Hour**
Instructions: Conduct a structured modular assessment. Assessment will be for 50 marks. Keep a structured marking pattern. Use different assessment methods in each module for the semester. Keep a record of the structured pattern used for assessment. Calculate the modular grade point as per Table 6C. **1. Written Examination (Short Answer Questions)** **Description:** This section tests students' knowledge of the etiology, clinical presentation, diagnostic methods, and management of each disease. This allows students to demonstrate foundational understanding and theoretical application. **Topics Covered: (for example)** Pathophysiology, symptoms, complications, and treatment approaches for each condition.	4

Question Format: Students answer 4 questions out of a choice of 6, each carrying 5 marks. **Marks**: 20 and **Time:** 1 hour **Criteria and Marks distribution (5 marks per question)** Knowledge and Understanding: Accurate understanding of each condition's pathophysiology and etiology-2 marks Application and Explanation: Ability to apply knowledge to explain clinical presentations and management strategies-2 marks Conciseness and Clarity: Answers are clear, concise, and to the point-1 mark **2. Case-Based Assessment** **Description:** Students are provided with brief patient case scenarios, encouraging them to analyze clinical information, arrive at a diagnosis, and outline management strategies. Topics Covered: Diagnostic approach, differential diagnosis, and treatment plans for conditions like pleural effusion, bronchial asthma, and cystic fibrosis. Case Format: Two cases are presented, each worth 5 marks. **Marks:** 10 and **Time:** 1 hour **Criteria and Marks distribution (5 marks) per case** Clinical Reasoning: Demonstrates a logical diagnostic process based on case details-2 marks Diagnostic and Management Plan: Appropriate and feasible plan based on the diagnosis-2 marks Communication and Explanation: Clear articulation of the thought process behind the diagnosis and management-1 mark **3. Oral Viva** **Description**: The viva assesses students' ability to think on their feet, apply knowledge to clinical scenarios, and communicate their reasoning. This includes real-time problem-solving for acute and chronic conditions. Topics Covered: Discussion of pathophysiology, patient management, and preventive strategies for diseases like lung abscess and obstructive sleep apnea. Question Format: Students answer 5 oral questions, each worth 2 marks.	

Marks: 10 and **Time**: 30 minutes **Criteria and Marks distribution (2 marks) per question** Depth of Knowledge: Shows comprehensive understanding of each question topic-1 mark Clinical Application: Effectively applies knowledge to clinical reasoning or problem-solving-0.5 mark Clarity and Confidence: Communicates clearly and confidently, demonstrating clinical competence-0.5 mark **4. Literature Review Assignment** **Description:** Students will conduct a literature review on recent studies related to one of the respiratory diseases. Instructions: Choose one disease (e.g., bronchiectasis or pleural effusion or any other) and review recent articles or guidelines related to its management or treatment advancements. Write a summary (1,000 words) discussing key findings, implications for practice, and areas for further research. Submit the paper with appropriate citations. **Marks:** 10 and **Time:** 1 hour 30 min (for presentation, preparation and submission) **Criteria and Marks distribution (10 marks)** Relevance and Selection of Sources-2 marks Understanding and summary-3 marks Critical analysis-3 marks Organization and clarity-2 marks OR Any practical in converted form can be taken for assessment. (15 marks) and Any of the experiential as portfolios/ reflections/ presentations can be taken as an assessment (35 marks)	
Semester No : 4	
Module 20 : امراض نظام قلب۔اول Amrād-i- Nizām-i-Qalb -I (Cardiovascular Disorders- 1)	

Module Learning Objectives

(At the end of the module, the students should be able to)

1. Describe Tibbi Tashkhis (clinical evaluation) and Tashkhis-i-Tariqa-i-kar (Diagnostic Procedure) of cardiovascular system in pediatrics.
2. Demonstrate skills in obtaining a thorough history and performing a focused cardiovascular physical examination, and interpret key diagnostic tools, in the context of pediatric heart diseases.
3. Describe on Fetal circulation and recognize the differences in cardiovascular functions between neonates, infants, and older children
4. Identify common congenital heart defects, their initial management and timely referral to well established centers.
5. Illustrate pharmacological therapies in conventional medicine including Unani Advia-i-Qalbiya, as adjuvant therapy for cardiovascular diseases.
6. Discuss the long-term prognosis and potential complications of pediatric cardiovascular diseases, including post-surgical care
7. Discuss the role of preventive cardiology and lifestyle modifications in managing pediatric patients with cardiovascular risk factors.
8. Apply AI tools in cardiovascular disorders for examination and diagnosis.

Unit 1 نظام قلب کی طبی تشخیص وخصوصی تشخیصی طریقہ کار Nizām i-Qalb ki Tibbi Tashkhis wa Khususi Tashkhisi Tariqa-i-kar (Evaluation of cardiovascular system and Special diagnostic procedures)

20.1.1 Classical (Alamat-i-Amrad-i-Qalb, Tariqa-i-Tashkhis) and conventional parameters for the assessment of Cardiovascular diseases.

20.1.2 Diagnostic procedures to evaluate Cardiovascular diseases.

20.1.3 Recent guidelines, and approaches to Cardiovascular System.

20.1.4 Heart sounds and different types of murmurs.

References: 19,20,21,22,31,34,39,44

3A	3B	3C	3D	3E	3F	3G
CO1,CO2,CO4, CO5,CO6,CO7, CO8	Describe classical (Alamat-i-Amrad-i-Qalb, Tariqa-i-Tashkhis) and conventional parameters for the assessment of Cardiovascular diseases.	2	Lecture	CE	Knows-how	L&PPT ,L&GD

CO1,CO2,CO4, CO5,CO6,CO7, CO8	Describe the basic concepts, recent guidelines, and approaches to Cardio Vascular disease evaluation in children.	1	Lecture	CS	Knows-how	L&GD,FC,L& PPT
CO1,CO2,CO4, CO5,CO6,CO7	Demonstrate how to diagnose pediatric cardiac diseases.	1	Practical20.1	PSY-MEC	Shows-how	W,SIM,CBL,P BL
CO1,CO2,CO4, CO5,CO6,CO7	Analyze the heart sounds and different types of murmurs in children.	1	Practical20.2	CS	Shows-how	CBL,SIM,ML
CO1,CO2,CO4, CO5,CO6,CO7	Demonstrate procedure for obtaining a pediatric ECG and electrode placement.	1	Practical20.3	AFT-RES	Shows-how	PBL,D,PAL
CO1,CO2,CO4, CO5,CO6,CO7	Discuss indications, contraindication, procedure and interpret various investigations of pediatric cardiac disease.	2	Practical20.4	PSY-MEC	Shows-how	L&GD,SIM,W, PBL
CO1,CO2,CO4, CO5,CO6	Diagnose and document for the cases of cardiovascular disorders in hospital settings.	2	Experiential-Learning20.1	PSY-ORG	Does	CBL,LS,RLE, SIM
CO1,CO2,CO4, CO5,CO6,CO7, CO8	Analyze clinical manifestation of different cardiac problem in different age groups.	2	Experiential-Learning20.2	CAN	Does	CBL,FV,SIM, LS
CO1,CO2,CO4, CO5,CO6,CO7, CO8	Identify normal and abnormal heart sounds and murmurs.	1	Experiential-Learning20.3	CAN	Does	SIM,CBL,ML

CO1,CO2,CO4, CO5,CO6,CO7, CO8	Analyze diagrams and videos demonstrating ECG interpretation, echocardiograph, and cardiac catheterization techniques.	2	Experiential-Learning20.4	CAN	Does	CBL,ML,W,PL
CO1,CO2,CO4, CO5,CO6,CO7, CO8	Identify and interpret sample images from cardiac magnetic resonance imaging (MRI) and computed tomography (CT) angiography showing normal and abnormal findings.	1	Experiential-Learning20.5	CAN	Does	C_L,ML,W,SDL,CBL

Unit 2 دورانِ خونِ جنینی Dauran-i-Khun Janini (Fetal Circulation(

20.2.1 Features of fetal circulation,

20.2.2 Physiological changes or the transitions at birth,

20.2.3 Effect of neonatal transitions on circulation and cardiovascular functions of neonate and infant.

References: 34,44,63

3A	3B	3C	3D	3E	3F	3G
CO1,CO2,CO4, CO5,CO6,CO7, CO8	Describe the unique features of fetal circulation, the physiological changes or the transitions at birth, and how these transitions affect neonatal circulation and cardiovascular function of neonate and infant.	1	Lecture	CE	Knows-how	FC,L_VC,L&GD,L&PPT
CO1,CO2,CO4, CO5,CO6,CO7	Demonstrate the mechanism of blood flow through the fetal circulatory system and the physiological changes that occur during the transition from fetal to neonatal circulation using a flow model or simulation software.	1	Practical20.5	PSY-MEC	Shows-how	D-M,DIS,ML,SIM,CBL

CO1,CO2,CO4, CO5,CO6,CO7, CO8	Demonstrate the impact of clamping the umbilical cord and the associated changes in pressures in the heart and major vessels.	1	Practical20.6	PSY-SET	Shows-how	SIM,D,GBL,DIS,ML
CO1,CO2,CO4, CO5,CO6,CO7	Perfome activities to reinforce the concepts of fetal circulation and its transitions.	1	Experiential-Learning20.6	CAP	Does	D-M,CBL,PL,SIM,GBL
CO1,CO2,CO4, CO5,CO6,CO7, CO8	Discuss and demonstrate fetal circulation transitions.	1	Experiential-Learning20.7	CC	Does	CBL,DIS,SIM

Unit 3 خلقی امراض قلب Khalki Amrād i-Qalb (Congenital heart diseases)

20.3.1 Acyanotic and Cyanotic congenital heart diseases, thier epidemiology, genetic basis, etiology, pathophysiology, clinical manifestations, diagnosis, differential diagnosis, treatment, complications & prognosis

20.3.2 Obstructive Congenital Heart Diseases.

References: 34,44,63

3A	3B	3C	3D	3E	3F	3G
CO1,CO2,CO4, CO5,CO6,CO7, CO8	Describe Congenital heart diseases (CHD), its epidemiology, genetic basis of CHD, etiology, pathophysiology, clinical manifestation, diagnosis, treatment, complications, prognosis	1	Lecture	CC	Knows-how	BL,L&GD,L&PPT ,FC
CO1,CO2,CO4, CO5,CO6,CO7, CO8	Describe in detail, Acyanotic, Cyanotic & Obstructive congenital heart diseases.	3	Lecture	CE	Knows-how	L&PPT ,L&GD,L_VC

CO1,CO2,CO4, CO5,CO6,CO7	Demonstrate a systematic approach to perform a cardiovascular examination in a Congenital heart disease patient.	3	Practical20.7	PSY-MEC	Shows-how	SIM,D,TUT
CO1,CO2,CO4, CO5,CO6,CO7	Desmonstrate auscultation techniques for detecting heart murmurs.	1	Practical20.8	PSY-MEC	Shows-how	RLE,D-BED,DIS,CBL
CO1,CO2,CO4, CO5,CO6,CO7	Interpret findings in ECG and the significance of specific waveforms associated with CHDs.	1	Practical20.9	CAN	Shows-how	GBL,SIM,ML, CBL,DIS
CO1,CO2,CO4, CO5,CO6,CO7	interpret of echocardiography results.	1	Practical20.10	CAN	Shows-how	CBL,PER,DIS ,W
CO1,CO2,CO4, CO5,CO6,CO7, CO8	Demontrate how to diagnose Congenital heart diseases in children	2	Practical20.11	PSY-MEC	Shows-how	W,DIS,PL,CBL,C_L
CO1,CO2,CO4, CO5,CO6,CO7	Analyze types of congenital heart disease on the basis of history and examination.	5	Experiential-Learning20.8	CAN	Does	RLE,RP,CBL
CO1,CO2,CO4, CO5,CO6,CO7	Interpret Electrocardiograph (ECG) reports related with different types of Congenital heart diseases.	1	Experiential-Learning20.9	CE	Does	ML,CBL,PL,GBL
CO1,CO2,CO4, CO5,CO6,CO7	Diagnose and present cases of Congenital heart diseases (CHDs).	2	Experiential-Learning20.10	CE	Does	CBL,LS,CD,SIM

CO1,CO2,CO4, CO5,CO6,CO7	Formulate management plan for patients of congenital heart disease in children	2	Experiential-Learning20.11	PSY-ORG	Does	PBL,SIM,LS, RLE

Unit 4 Acquired heart diseases

20.4.1 حمی حداری Humma-i-Hadari (Rheumatic fever)- its epidemiology, etiopathogenesis, clinical features, diagnosis (John's criteria), differential diagnosis, complications, management, and Rheumatic prophylaxis

20.4.2 امراض قلب حداری Amrād-i-Qalb i-Hadari (Rheumatic heart diseases)- their clinical presentation, diagnosis, differential diagnosis, treatment, prevention

20.4.3 Different Patterns of valvular heart diseases- their clinical manifestations, diagnosis, differential diagnosis, treatment, and prevention.

20.4.4 Classical concept of Humma-i-Hadari and Amrād-i-Qalb i-Hadari

References: 34,44,63

3A	3B	3C	3D	3E	3F	3G
CO1,CO2,CO4, CO5,CO6	Describe Rheumatic fever, its epidemiology, etiopathogenesis, clinical features, diagnosis (John's criteria), differential diagnosis, complications, management, Rheumatic prophylaxis	1	Lecture	CC	Knows-how	L&PPT ,L&GD
CO1,CO2,CO4, CO5,CO6,CO7, CO8	Describe Rheumatic heart diseases and Patterns of valvular diseases, their clinical manifestation, diagnosis, differential diagnosis, treatment, prevention, complications.	1	Lecture	CC	Knows-how	L&PPT ,L&GD,L_VC
CO1,CO2,CO4, CO5,CO6,CO7	Demonstrate a systematic approach to execute a cardiovascular examination focusing on signs of carditis, specifically examination techniques for assessing joints for arthritis and others features in rheumatic fever patient.	1	Practical20.12	PSY-MEC	Shows-how	CBL,D-BED,ML,SIM

CO1,CO2,CO4, CO5,CO6,CO7, CO8	Demonstrate the identifying signs of carditis in ECG, interpretation of throat culture results and serological markers (ASO titres) and findings of inflammatory markers (CRP, ESR) in cases of rheumatic fever.	1	Practical20.13	CAP	Shows-how	CBL,CD,SIM, W,LRI
CO1,CO2,CO4, CO5,CO6,CO7	Demonstrate diagrams of pathophysiology concerned with Rheumatic heart disease (RHD) and its effects on heart valves.	1	Practical20.14	PSY-MEC	Shows-how	D,CBL,C_L,M L
CO1,CO2,CO4, CO5,CO6,CO7	Analyse echocardiographic images to differenciate valvular abnormalities.	1	Practical20.15	CAN	Shows-how	PL,CBL,D,PE R
CO1,CO2,CO4, CO5,CO6,CO7	Demonstrate the flowcharts for the diagnosis and management of rheumatic heart disease.	1	Practical20.16	PSY-MEC	Shows-how	CBL,SIM,C_L ,DIS
CO1,CO2,CO4, CO5,CO6,CO7, CO8	Identify patients of rheumatic fever by focusing on symptom recognition and manage promptly to prevent from complications.	2	Experiential-Learning20.12	CAN	Does	Mnt,LS,PBL, CD,SIM
CO1,CO2,CO4, CO5,CO6,CO7	Interpret cases of rheumatic heart diseases in paediatrics and formulate management protocol.	4	Experiential-Learning20.13	CAN	Does	SIM,PrBL,CD, DIS
Practical Training Activity						
Practical Training 20.1 Evaluation and assessment of pediatric cardiac diseases.						
One or more activities can be chosen (Total time: 1 hour) **1. Case-Based Learning (CBL) 20 mins**						

Activity: Teacher will introduce the method of evaluation and assessment to the students so they can work in groups to evaluate cases, discuss differential diagnoses, and outline clinical findings, like murmurs, cyanosis, or signs of heart failure. (20 mins) and/ or

2. Simulation-Based Training. (40 mins)

Approach: Use high-fidelity mannequins or virtual simulators to replicate pediatric patients with cardiac abnormalities.

Activity: Students practice auscultation (to detect heart murmurs, S1/S2 splits), palpation (for thrills, pulse characteristics), and evaluation of signs such as hepatomegaly and cyanosis. They can also interpret ECGs and chest X-rays. or

3. Clinical Skills Workshops (40 mins)

Approach: Organize workshops where students learn and practice step-by-step cardiovascular assessment techniques.

Activity: Include stations with tasks such as checking peripheral pulses (radial, brachial, femoral), measuring blood pressure in both upper and lower limbs, and assessing central cyanosis and clubbing.

4. Problem-Based Learning (PBL) (40 mins)

Approach: Present students with a clinical scenario (e.g., a cyanotic infant) and ask them to work through potential diagnoses, investigation strategies, and management plans.

Activity: Assign students roles (clinician, nurse, family member) in a simulated clinical discussion where they practice explaining the condition and treatment options to the family.

Practical Training 20.2 Auscultation in cardiovascular cases.

One or more activities can be chosen (Total time: 1 hour)

1. Auditory Training with Digital Tools

Approach: Utilize digital auscultation tools and apps that provide recordings of heart sounds, including normal S1 and S2, pathological murmurs (e.g., systolic, diastolic, continuous), and gallops (S3, S4).

Activity: Teacher will help the students to auscultate different heart sound on patients or digital auscultation tools than provide curated audio clips where students must identify and categorize the heart sounds (e.g., “Is this a systolic murmur or a diastolic murmur?”). Offer increasing difficulty by introducing conditions like mitral valve prolapse, aortic stenosis, and ventricular septal defects (VSD).

2. Simulated Auscultation Practice

Approach: Use auscultation mannequins or virtual reality simulators programmed with different heart sounds and murmurs.

wrap-up session (10 mins): Summarize the significance, the challenges and the limitations associated with these methodologies. Provide an opportunity for students to pose questions and share insights.

Practical Training 20.3 Pediatric electrocardiography

One or more activities can be chosen (Total time- 1 hour)

1. Video Demonstration of Electrode Placement (15 mins)

Approach: Teacher will Show a video or live demonstration of the correct electrode placement on a pediatric patient, emphasizing positioning for accuracy and patient comfort.

Activity: Pause the video to discuss key points like the differences in placement for smaller or active children and how to reduce movement artifacts. **or**

2. Hands-On Demonstration of Electrode Placement (15 mins)

Approach: Using mannequins or simulated pediatric patients, demonstrate step-by-step electrode placement.

Activity: Explain each step while demonstrating:

Clean the skin to ensure good contact.

Apply limb electrodes (RA, LA, RL, LL) to both arms and legs.

Place the chest electrodes in their positions:

Key Considerations: Highlight special cases like infants, where the precordial leads may need to be adjusted due to the smaller chest size.

3. Practice Sessions with Peers (30 mins)

Approach: Set up practice stations where students can practice electrode placement on each other or mannequins.

Activity: Provide feedback on electrode placement, ensuring electrodes are correctly positioned, secure, and ready to transmit clear signals. Encourage students to follow infection control practices, such as proper skin preparation.

4. Problem-Based Learning (PBL) for ECG Interpretation

Approach: Present clinical cases that require obtaining an ECG (e.g., a child with suspected arrhythmia or chest pain).

Activity: In small groups, learners work through the case, place electrodes, obtain the ECG, and interpret the results. Discuss the importance of proper electrode placement in ensuring accurate diagnosis.

wrap-up session (10 mins): Summarize the significance, the challenges and the limitations associated with these methodologies. Provide an opportunity for students to pose questions and share insights.

Practical Training 20.4 Investigations in cardiac diseases.

One or more activities can be chosen (Total time- 2 hours)

1. Simulation-Based Learning for Procedures

Approach: Teacher will use mannequins or simulators to demonstrate how to perform procedures such as obtaining an ECG or conducting echocardiography. (10 mins)

Activity: Assign students to stations where they perform simulated cardiovascular investigations (e.g., obtaining an ECG or guiding an ultrasound probe during echocardiography). Provide feedback on their technique and ensure they understand the steps involved in performing each investigation. (20 mins)

2. Interpretation Workshops for Investigation Results

Approach: Teacher provide real or simulated results from ECGs, echocardiograms, and chest X-rays for interpretation and teach basics for report interpretations (5- 10 mins)

Activity: Give students sample ECGs showing different arrhythmias (e.g., SVT, long QT syndrome), echocardiography findings (e.g., ASD, VSD), and chest X-rays (e.g., cardiomegaly, pulmonary edema). Have them work through the interpretation and discuss the clinical relevance of each finding. (20 mins)

3. Problem-Based Learning (PBL) for Comprehensive Investigation Approach (30 mins)

Approach: Present a pediatric cardiovascular case (e.g., a child with suspected heart failure or any other disease) and ask students to work through which investigations are appropriate and how to interpret their results.

Activity: Students should create a diagnostic plan, justify their choice of investigations, and interpret the findings. For example, coronary artery aneurysms can be detected via echocardiography, but normal ECG findings may still be present. or

4. Objective Structured Clinical Examination (OSCE) for Investigation Skills (30 mins)

Approach: Include OSCE stations where students must demonstrate skill in performing and interpreting various cardiovascular investigations.

Activity: Create stations for practical skills (e.g., performing an ECG) and result interpretation (e.g., interpreting an echocardiogram showing a congenital defect). Provide immediate feedback and highlight areas for improvement.

wrap-up session: Summarize the significance, the challenges and the limitations associated with these methodologies. Provide an opportunity for students to pose questions and share insights.

Practical Training 20.5 Fetal circulatory system and transitional changes

One or more activities can be chosen (Total time- 1 hour)

1.Flow Model or Simulation-Based Demonstration (30 mins)

Approach: Teacher will use a physical flow model or simulation software to represent the fetal circulatory system, allowing students to visualize the direction of blood flow, shunts, and the role of key vessels.

Activity: Engage students with a 3D simulation or model that displays:

Blood flow through the umbilical vein to the liver and ductus venosus.

Flow through the foramen ovale from the right atrium to the left atrium.

Flow through the ductus arteriosus from the pulmonary artery to the aorta. During the demonstration, ask students to predict how oxygenated and deoxygenated blood moves differently in fetal circulation. or

2. Simulation of the Transition from Fetal to Neonatal Circulation (30 mins)

Approach: Use the same model or software to demonstrate what happens when the baby takes the first breath, and how the circulatory shunts close (or should close).

Activity: Trigger the transition in the simulation to show how:

The foramen ovale functionally closes as left atrial pressure exceeds right atrial pressure.

The ductus arteriosus constricts due to increased oxygenation.

Pulmonary vascular resistance decreases, increasing blood flow to the lungs. Discuss what happens if these changes do not occur correctly, leading to conditions like patent ductus arteriosus (PDA). or

3. Case-Based Learning (CBL) on Neonatal Circulatory Disorders (30 mins)

Approach: Present clinical cases that involve issues in the transition from fetal to neonatal circulation (e.g., persistent pulmonary hypertension of the newborn or patent foramen ovale).

Activity: Have students discuss why the physiological changes didn't occur as expected and what interventions (e.g., prostaglandin inhibitors for PDA) could restore normal circulation. Use simulations to show how interventions affect blood flow. or

4. Interactive Group Discussions on Transitional Circulation (30 mins)

Approach: Engage students in discussing the mechanics of transitional circulation and potential complications (e.g., failure of the ductus arteriosus to close).

Activity: Present various scenarios like delayed lung expansion or insufficient oxygenation and ask students to predict the effects on blood flow through the fetal shunts. They should explain how this can lead to conditions such as cyanosis or heart failure.

Practical Training 20.6 Impact of umbilical cord clamping

One or more activities can be chosen (Total time 1 hour)

1. Simulation Software Demonstration (30 mins)

Approach: Teacher will discuss the impact of clamping the cord and associated changes by using **simulation software** to show the physiological changes, including:

The cessation of blood flow through the umbilical vein.

Increased systemic vascular resistance.

Rising left atrial pressure as pulmonary circulation increases.

Closure of the foramen ovale and ductus arteriosus due to pressure changes.

Activity: Run a simulation where the umbilical cord is clamped, and students observe the changes in pressures within the heart chambers and major vessels in real-time. or

2. Group Discussion on Pressure Dynamics (30 mins)

Approach: Divide students into small groups and ask them to predict what happens to:

The pulmonary and systemic pressures.

Left and right atrial pressures.

Changes in preload and afterload.

Activity: Each group presents their predictions, followed by a detailed discussion. Compare their predictions with actual physiological data from the flow model or simulation. or

3. Comparative Analysis of Pre- and Post-Clamping Circulation (30 mins)

Approach: Provide side-by-side charts showing pre- and post-clamping pressures in the pulmonary artery, systemic circulation, and heart chambers.

Activity: Ask students to annotate these charts to show where pressures increase or decrease after clamping. This reinforces the understanding of pressure dynamics across different systems. or

4. Visual Quiz on Pressure Changes

Approach: Create a visual quiz with images or diagrams of the fetal heart and vessels, asking students to identify how pressures shift after cord clamping.

Activity: Include multiple-choice or labeling questions where students predict pressure changes in different vessels or chambers after clamping.

Practical Training 20.7 Examination in a Congenital heart disease patient

One or more activities can be chosen (Total time- 3 hours)

1. Step-by-Step Demonstration of Cardiovascular Exam (1 hour for different types CHDs)

Approach: Teacher will use a patient model or a standardized patient to demonstrate the proper steps:

Inspection: Check for cyanosis, clubbing, precordial bulge, visible pulsations, and respiratory distress.

Palpation: Assess the apex beat, thrills, and peripheral pulses (e.g., radial, femoral) for discrepancies. Note any displaced or abnormal apex beats.

Percussion: Identify cardiac boundaries and the presence of an enlarged heart.

Auscultation: Identify heart sounds, murmurs, clicks, and pericardial friction rubs. Focus on the unique sounds found in CHD, such as wide fixed splitting in atrial septal defects (ASDs) or ejection murmurs in pulmonary stenosis.

Activity: After demonstrating each step, pause to explain the clinical significance of abnormal findings, like absent femoral pulses in coarctation of the aorta or a loud S2 in pulmonary hypertension.

2. Small Group Practice Sessions (20 mins for a single case of CHD)

Approach: Divide students and provide them with case scenarios involving CHD patients (e.g., a child with a ventricular septal defect or a newborn with cyanotic heart disease).

Activity: Have each student conduct the full examination while instructors provide guidance. Give immediate feedback on their technique, particularly focusing on identifying clinical signs like murmurs, cyanosis, or differences in pulse strength. or

3. Simulation of Common CHD Conditions

Approach: Set up a simulated environment where students can examine patients with various congenital heart defects.

Activity: Create simulated cases with different CHD conditions, such as an infant with a patent ductus arteriosus or an adolescent with a repaired tetralogy of Fallot. These scenarios can be interactive, with the simulation responding to student interventions, and instructors can debrief the findings and management implications.

4. Focused Tutorials on Specific CHD Examination Findings

Approach: Organize small-group tutorials focused on a particular congenital heart defect (e.g., transposition of the great arteries or aortic stenosis) and its impact on physical examination findings.

Activity: For each tutorial, cover the typical findings on inspection, palpation, and auscultation. For example, discuss the cyanosis and loud single S2 in transposition of the great arteries and have students practice detecting these findings in a simulation or on models.

Practical Training 20.8 Detection of heart murmurs
One or more activities can be chosen (Total time- 1 hour) **1. Demonstration of Auscultation Techniques (5 mins)** **Approach**: Teacher will demonstrate auscultation at various locations (aortic, pulmonic, tricuspid, and mitral areas) and positions (sitting, supine). **Activity**: Explain the importance of patient positioning and environmental factors. Show how to distinguish between different types of murmurs by their timing, quality, pitch, and location. For example: **Systolic murmurs**: Occur between S1 and S2. **Diastolic murmurs**: Occur between S2 and S1. **2. Assessing Quality of Peripheral Pulses (5 mins)** **Approach**: Discuss the anatomy of major peripheral pulses (radial, femoral, popliteal, dorsalis pedis, and posterior tibial) and their significance in assessing hemodynamics in CHD. **Activity**: Demonstrate proper techniques for palpating peripheral pulses, explaining factors such as: **Amplitude**: Strong, weak, or absent pulses. **Regularity**: Regular or irregular rhythm. **Symmetry**: Compare pulses on both sides of the body. **3. Case-Based Learning with Auscultation and Pulse Assessment (30 mins)** **Approach**: Present clinical scenarios or case studies of patients with different congenital heart defects. **Activity**: Have students listen to pre-recorded or live murmurs from standardized patients representing different conditions and assess peripheral pulses. They should use the findings to propose potential diagnoses and management plans based on their auscultation and pulse assessment. **4. Interactive Group Discussions on Clinical Implications (10 mins)**

Approach: After practice sessions, engage students in discussions about how certain murmurs or pulse characteristics relate to the underlying pathophysiology of CHD.

Activity: Encourage students to discuss scenarios where specific findings might prompt further investigation or intervention (e.g., referral for echocardiography).

Practical Training 20.9 Evaluation of ECG

One or more activities can be chosen (Total time- 1 hour)

1. Identification of Common ECG Findings (15 mins)

Approach: Teacher will present common ECG patterns and their clinical significance. Discuss abnormalities that may be present in patients with congenital heart disease.

Activity: Show examples of:

Right Axis Deviation: Associated with right ventricular hypertrophy (RVH) common in pulmonary stenosis or atrial septal defects (ASDs).

Left Axis Deviation: Often seen in left ventricular hypertrophy (LVH) due to conditions like aortic stenosis.

Prolonged QT interval: Can be seen in various arrhythmias or electrolyte imbalances.

Atrial enlargement: Indicated by changes in the P wave morphology (e.g., peaked P waves in right atrial enlargement). or

2. Case-Based Learning on CHD-Related ECG Findings

Approach: Present clinical cases of patients with different types of CHD, discussing their specific ECG findings.

Activity: For example:

Tetralogy of Fallot: Discuss right axis deviation, RVH, and characteristic ECG changes.

Transposition of the Great Arteries: Discuss signs of right ventricular overload.

Atrial Septal Defect: Focus on tall, broad P waves and right axis deviation.

3. Hands-On ECG Interpretation Sessions (45 mins)

Approach: Use a mix of normal and abnormal ECG strips, including those from patients with CHDs.

Activity: Divide students into small groups and provide each group with a series of ECG strips to analyze. Ask them to identify key features, classify the rhythms, and discuss potential implications.

Encourage them to document their findings and present their analyses to the class. or

4. Utilizing ECG Simulation Software

Approach: Use ECG simulation software that allows students to visualize and manipulate ECG readings.

Activity: Allow students to simulate various congenital heart disease scenarios and see how different factors (like heart rate and rhythm) affect the ECG output.

Encourage them to explore how certain pathologies manifest on the ECG.

Practical Training 20.10 Interpretation of echocardiography results in CHDs

One or more activities can be chosen (Total time- 1 hour)

1. Identifying Structural Abnormalities in CHDs (10 mins)

Approach: Teacher will present and discuss specific congenital heart defects, detailing their echocardiographic features.

Activity: Use case studies or clinical examples, focusing on defects such as:

Ventricular Septal Defect (VSD): Show images indicating the defect's location and size.

Atrial Septal Defect (ASD): Discuss the appearance of the defect and its hemodynamic consequences.

Tetralogy of Fallot: Present images highlighting right ventricular outflow tract obstruction, RVH, and associated defects.

Transposition of the Great Arteries: Emphasize the echocardiographic appearance of the aorta and pulmonary artery connections.

2. Hands-On Echocardiography Workshops (40- 50 mins)

Approach: Set up hands-on workshops where students can practice using echocardiography equipment or simulators.

Activity: Allow students to acquire basic views of the heart (e.g., apical four-chamber, parasternal long axis) and identify normal structures. Encourage them to recognize common anomalies using a structured checklist. or

3. Case-Based Learning on Echocardiography Interpretation

Approach: Present clinical cases of patients with specific CHDs and discuss the relevant echocardiographic findings.

Activity: Divide students and provide them with echocardiographic images or videos of patients. Ask them to interpret the images and discuss the implications of their findings for patient management. Include questions on: The structural abnormalities identified. Expected hemodynamic changes. Recommendations for further investigation or intervention. or **4. Group Presentations on Specific CHDs** **Approach**: Assign each group a specific congenital heart defect to research and present. **Activity**: Students should include echocardiographic findings, clinical presentation, management strategies, and long-term outcomes. Encourage use of multimedia (e.g., images, videos) in their presentations.
Practical Training 20.11 Diagnosis of congenital heart diseases in children
One or more activities can be chosen (Total time- 2 hours) **1. Case-Based Learning (30 mins)** **Approach**: Teacher will facilitate small group discussions to promote collaborative learning and critical thinking. **Activity**: Present a detailed case of a child with a suspected CHD. Ask learners to identify key signs and symptoms, discuss possible diagnoses, and review relevant investigations (e.g., echocardiogram, ECG). Each group presents their findings to the class for discussion. **2. Hands-On Workshops (60 mins)** **Approach**: Facilitate interactive workshops focusing on practical skills. **Activity**: Set up stations for learners to practice auscultation techniques using models or mannequins. Provide various heart sounds related to different CHDs for learners to identify and interpret. **3. Peer Teaching (30 mins)** **Approach**: Implement peer-led sessions to encourage active engagement.

Activity: Assign small groups topics on CHDs. Each group prepares a presentation and teaching session for their peers, covering clinical features, diagnosis, and management of a specific CHD.

4. Multimedia Resources

Approach: Integrate technology and multimedia into teaching.

Activity: Show videos or animations depicting normal and abnormal heart anatomy and function. Follow up with a discussion on how these changes relate to specific CHDs.Diagnosis

Practical Training 20.12 Examination in rheumatic fever patient

One or more activities can be chosen (Total time- 1 hour)

1. Demonstration of Systematic Cardiovascular Examination (10- 15 mins)

Approach: Utilize a demonstration led by an experienced clinician or teacher

Activity: Conduct a live demonstration of a cardiovascular examination on a mannequin or standardized patient. Highlight specific signs of carditis (e.g., heart murmur, rubs, heart sounds) during the exam. Allow learners to ask questions throughout the demonstration.

2. Case-Based Learning

Approach: Utilize small group discussions focused on clinical cases.

Activity: Present cases of patients with rheumatic fever. Have learners discuss the potential cardiovascular and joint findings, leading to differential diagnoses and management plans. Encourage groups to present their conclusions to the class. or

3. Simulation Training

Approach: Engage learners in high-fidelity simulations.

Activity: Create simulation scenarios where learners must assess a standardized patient presenting with rheumatic fever. They should perform a cardiovascular examination, identify signs of carditis, and assess joint involvement. Afterward, conduct a debrief to discuss observations and clinical decisions made during the simulation. or

4. Multimedia Learning Resources

Approach: Incorporate videos and animations into learning sessions.

Activity: Show videos demonstrating proper techniques for cardiovascular examinations and joint assessments. Follow the videos with discussions on the significance of findings related to carditis and arthritis.

Practical Training 20.13 Investigations in rheumatic fever

One or more activities can be chosen (Total time- 1 hour)

1. ECG, throat culture results, serological markers Interpretation Workshop

Approach: Teacher helps the students to interpret investigations in interactive workshops focused on ECG, throat culture results, serological markers interpretation.

Activity: Present learners with a variety of ECG strips, throat culture results, serological markers reports that demonstrate signs of carditis). Guide learners through the process of identifying these changes and discuss their clinical significance. Provide handouts summarizing key ECG, throat culture results, and serological markers report findings. or

2. Integrative Case Studies

Approach: Use integrative case studies that require comprehensive analysis.

Activity: Present a detailed case of a patient with suspected rheumatic fever, including ECG findings, throat culture results, ASO titres, CRP, and ESR values. Have learners work in groups to formulate a diagnosis and discuss the rationale behind their conclusions. or

3. Simulation of Clinical Scenarios

Approach: Engage learners in high-fidelity simulations.

Activity: Create simulation scenarios where learners must evaluate a patient with suspected rheumatic fever. They should analyze ECGs, interpret lab results, and determine appropriate management. Debrief to discuss clinical reasoning and decisions made. or

4. Peer Teaching and Assessment

Approach: Implement peer-led teaching sessions.

Activity: Assign topics related to ECG findings, throat cultures, ASO titres, and inflammatory markers to small groups. Each group prepares a presentation and teaching session for their peers. After presentations, encourage questions and discussions to clarify concepts.

Practical Training 20.14 Effects of Rheumatic heart disease on heart valves

One or more activities can be chosen (Total time- 1 hour)

1. Demonstrate Pathophysiology Algorithms (15 mins)

Approach: Teacher will introduce effects of rheumatic heart disease on valves and ask the students to create flowcharts that outline the steps involved in the development of RHD and its impact on the heart.

Activity:

Present algorithms that illustrate:

Pathway of streptococcal infection leading to rheumatic fever: Include steps like exposure, immune response, and clinical manifestations.

Progression from rheumatic fever to RHD: Highlight key points where inflammation affects the heart valves (e.g., mitral and aortic valves) and resulting complications (e.g., valvular stenosis or regurgitation).

Long-term sequelae of RHD: Show how chronic valve damage can lead to heart failure, atrial fibrillation, and other complications.

2. Interactive Diagram Activities (45 mins)

Approach: Use interactive whiteboards or digital platforms for collaborative learning.

Activity: Have learners work in small groups to create their own diagrams or algorithms based on provided information about RHD. Each group can present their diagrams, explaining the processes illustrated. This encourages active participation and peer teaching. or

3. Case-Based Learning with Diagrams

Approach: Facilitate case discussions that utilize diagrams and algorithms for clarity.

Activity: Present case studies of patients with RHD. Ask learners to use the diagrams and algorithms to trace the pathophysiological processes involved in each case. This reinforces the clinical relevance of the diagrams. or

4. Use of Multimedia Resources

Approach: Incorporate videos and animations that depict RHD pathophysiology.

Activity: Show short animations that illustrate the immune response to infection and the subsequent effects on heart valves. Follow up with discussions to reinforce concepts and clarify any misunderstandings.

Practical Training 20.15 Echocardiographic images analysis.

One or more activities can be chosen (1 hour)

1. Demonstration of echocardiographic images (15- 20 mins)

Approach: Teacher will give breif idea of ECG images by using visual aids and comparative imaging.

Activity:

Present echocardiographic images of normal mitral, aortic, tricuspid, and pulmonary valves. Compare these with images showing abnormalities such as:

Mitral Stenosis: Narrowing of the valve opening.

Mitral Regurgitation: Backward flow of blood into the left atrium.

Aortic Stenosis: Thickening and narrowing of the aortic valve.

Aortic Regurgitation: Backward flow into the left ventricle.

2. Interactive Image Review Sessions (40-45 mins)

Approach: Use a hands-on, interactive format.

Activity: Organize small group sessions where learners review a series of echocardiographic images on a projector or screen. Each group is given a set of images with different valvular abnormalities. They must identify the abnormality, discuss its clinical significance, and present their findings to the larger group. or

3. Case-Based Learning Using Echocardiographic Images

Approach: Use clinical case studies that integrate echocardiographic findings.

Activity: Present clinical cases that include patient history and echocardiographic images. Ask learners to review the images, make a diagnosis, and discuss the management plan based on the findings. Encourage groups to present their cases and reasoning. or

4. Peer Teaching Sessions

Approach: Implement peer-led teaching activities. **Activity**: Assign learners to groups and provide each group with a specific valvular abnormality to research. Each group prepares a presentation that includes echocardiographic images, pathophysiology, and clinical implications. Groups can then present their findings to the class, facilitating a collaborative learning environment.
Practical Training 20.16 Diagnosis and management of Rheumatic heart disease.
One or more activities can be chosen (Total time- 1 hour) **1. Interactive Flowchart Activities** **Approach**: Teacher will introduce diagnosis and management of rheumatic heart disease by using group discussions and collaborative learning. **Activity**: Divide learners into small groups and assign each group a specific aspect of the diagnosis or management flowchart. Have them create their own flowcharts based on the assigned topic and present them to the class. Encourage discussion on the different approaches and their clinical relevance. or **2. Case-Based Learning with Flowcharts** **Approach**: Use case studies that integrate flowchart decision-making. **Activity**: Present a clinical case of a patient with suspected RHD. Ask learners to use the diagnostic flowchart to determine the likely diagnosis and the management flowchart to propose an appropriate treatment plan. Discuss the rationale behind their decisions. or **3. Simulation and Practical Application** **Approach**: Use simulation labs or software for practice. **Activity**: Provide access to clinical scenario simulations where learners can use flowcharts to navigate through diagnostic and management decisions for patients with RHD. Facilitate discussions on their choices and the outcomes of those choices.
Experiential Learning Activity
Experiential-Learning Learning 20.1: Diagnosis of cardiovascular diseases.
One or more activities can be chosen (Total time 2 hours)

1. Case-Based Learning (1 hour)

Activity Description:

Students will participate in case-based learning sessions where they analyze pediatric cardiovascular cases.

Procedure:

Case Selection: Select cases from hospital records or recent admissions that involve cardiovascular disorders (e.g., congenital heart defects, myocarditis, or any other disease).

Independent Study: Students review patient history, clinical presentation, and relevant investigations (echocardiograms, ECGs, laboratory tests).

Diagnostic Formulation: Students formulate differential diagnoses based on their analysis.

Presentation: Prepare a presentation of their findings and diagnostic reasoning to peers and faculty for feedback.

2. Simulation-Based Learning (1 hour)

Activity Description:

Use high-fidelity simulations to practice diagnosing and managing pediatric cardiovascular emergencies.

Procedure:

Simulation Scenarios: Engage in simulations that depict common pediatric cardiovascular emergencies (e.g., acute heart failure, arrhythmias).

Role-Playing: Assume various roles (e.g., primary physician, nurse) to understand team dynamics during emergencies.

Debriefing: Participate in debriefing sessions after simulations to discuss decision-making processes, diagnoses, and management strategies.

Reflective Learning: Write a reflective summary of the experience, focusing on what was learned about diagnosis and management in pediatric cases. or

3. Research and Review of Literature

Activity Description:

Conduct a literature review on a specific pediatric cardiovascular disorder.

Procedure:

Topic Selection: Choose a specific disorder (e.g., coarctation of the aorta, rheumatic heart disease).

Literature Search: Conduct a thorough review of recent studies, guidelines, and reviews related to the selected disorder.

Data Compilation: Compile findings and summarize key points about diagnosis, management, and outcomes.

Presentation: Prepare a presentation or a report to share findings with peers and faculty, highlighting clinical implications.

By engaging in real-life clinical scenarios, research, and reflective practice, students will enhance their competency and confidence in managing these complex cases

Experiential-Learning Learning 20.2: Clinical manifestation of different cardiac problem in different age groups

One or more activities can be chosen (Total time 2 hours)

1. Case-Based Learning (1 hour)

Activity Description:

Analyze case studies that illustrate the clinical manifestations of cardiac problems in various age groups.

Procedure:

Case Selection: Choose cases from hospital records or clinical scenarios involving neonates, infants, and older children with cardiac conditions (e.g., patent ductus arteriosus in neonates, rheumatic heart disease in older children).

Independent Study: Review patient histories, clinical presentations, and relevant investigations.

Group Discussion: Present findings to peers, focusing on distinguishing features of cardiac manifestations in different age groups.

Diagnostic Formulation: Formulate differential diagnoses based on age-related presentations. or

2. Simulation-Based Learning

Activity Description:

Use high-fidelity simulations to practice recognizing and managing cardiac problems in pediatric patients of different age groups.

Procedure:

Simulation Scenarios: Engage in simulations that depict cardiac emergencies in neonates, infants, and older children (e.g., shock in a neonate due to congenital heart defect, arrhythmia in an older child).

Role-Playing: Assume roles in a simulated healthcare team to practice collaborative assessment and management.

Debriefing: Participate in debriefing sessions to discuss age-specific clinical manifestations and management strategies.

Reflective Learning: Write a reflective summary of the experience, focusing on age-related differences in presentation and management.

3. Literature Review and Presentation (1 hour)

Activity Description:

Conduct a literature review on age-specific presentations of cardiac disorders in pediatric patients.

Procedure:

Topic Selection: Choose a specific cardiac disorder (e.g., congenital heart defects, myocarditis) and its presentation in different age groups.

Literature Search: Conduct a thorough review of recent studies, guidelines, and clinical reviews related to the chosen disorder.

Data Compilation: Summarize findings, focusing on distinguishing clinical manifestations by age group.

Presentation: Prepare a presentation to share findings with peers, highlighting clinical implications and relevance to practice. or

4. Field Observations in Pediatric Units (1 hour)

Activity Description:

Conduct field observations in pediatric units to observe patients with various cardiac disorders.

Procedure:

Observation Schedule: Coordinate with pediatric units to schedule observation sessions.

Patient Rounds: Participate in patient rounds, observing the clinical presentations of cardiac patients across different age groups.

Documentation: Document findings, focusing on distinguishing features of cardiac conditions in neonates, infants, and older children.

Discussion: Share observations with faculty or mentors to discuss and analyze findings.

Experiential-Learning Learning 20.3: Normal and abnormal heart sounds

One or more activities can be chosen (1 hour)

1. Auditory Training Sessions (20 mins)

Activity Description:

Participate in dedicated auditory training sessions focused on heart sounds and murmurs..

Resource Utilization: Use audio resources, such as online databases or apps, that provide examples of normal heart sounds and common murmurs.

Listening Sessions: Organize group listening sessions where students can listen to various heart sounds and murmurs together.

Identification Practice: Identify and categorize the sounds as normal or abnormal, noting the characteristics of each sound (e.g., timing, duration, pitch).

Peer Feedback: Encourage peer discussions and feedback on the identification process to reinforce learning. or

2. Hands-On Workshops

Activity Description:

Participate in hands-on workshops focused on cardiovascular examination techniques.

Workshop Organization: Attend workshops that include simulations with high-fidelity mannequins or standardized patients where heart sounds are recorded.

Auscultation Practice: Practice using stethoscopes to auscultate heart sounds and murmurs.

Differentiation Exercises: Engage in exercises designed to help differentiate between normal heart sounds (S1, S2) and abnormal findings (S3, S4, murmurs).

Instructor Feedback: Receive feedback from instructors on technique and sound identification. or

3. E-Learning Modules and Quizzes

Activity Description:

Utilize online platforms offering e-learning modules and quizzes focused on heart sounds.

Module Selection: Choose e-learning modules that cover normal heart sounds, common heart murmurs, and the physiological basis of these sounds.

Interactive Quizzes: Complete quizzes following the modules to test knowledge and improve retention.

Progress Tracking: Track progress and revisit modules as necessary to strengthen understanding.

Peer Discussion: Discuss quiz questions and answers with peers to clarify concepts and correct misunderstandings.

4. Simulation-Based Learning

Activity Description:

Engage in simulation scenarios that require auscultation and differentiation of heart sounds.

Simulation Scenarios: Participate in simulated patient encounters where patients present with known heart conditions (e.g., congenital heart disease, valvular abnormalities).

Auscultation Task: Perform auscultation and document findings, differentiating between normal and abnormal sounds.

Diagnostic Formulation: Use findings to formulate a differential diagnosis and discuss management options.

Debriefing Session: Participate in debriefing sessions to reflect on the identification process and discuss any challenges faced. or

5. Case-Based Learning

Activity Description:

Analyze clinical cases that involve abnormal heart sounds and murmurs.

Case Selection: Choose case studies that highlight patients with distinct heart sounds or murmurs.

Independent Review: Review patient histories, examination findings, and any relevant diagnostic tests (e.g., echocardiograms).

Discussion Group: Discuss findings with peers and faculty, focusing on the significance of the heart sounds in relation to the clinical picture.

Diagnostic Reasoning: Formulate possible diagnoses based on auscultation findings and clinical context.

Experiential-Learning Learning 20.4: Electrocardiograph (ECG) interpretation, echocardiograph views and cardiac catheterization techniques

One or more activities can be chosen (Total time- 2 hours)

1. ECG Interpretation Workshops (60 mins)

Resource Collection: Gather a variety of ECG diagrams and recordings that include both normal and pathological findings.

Structured Learning: Attend workshops led by a cardiologist or electrophysiologist to learn about the different components of the ECG (P wave, QRS complex, T wave) and their significance.

Group Interpretation: Work in small groups to analyze ECG strips, discussing findings and making differential diagnoses based on observed patterns.

Presentation: Present interpretations to the larger group, justifying conclusions with evidence from the ECG. or

2. Echocardiography Video Analysis (30 mins)

Video Resources: Access a library of echocardiography videos covering standard views (apical, parasternal, subcostal) and specific pathologies.

View Identification: While watching, identify each view and discuss its importance in assessing cardiac structure and function.

Clinical Correlation: Relate findings in the videos to clinical scenarios, considering how the echocardiographic views help in diagnosing conditions (e.g., valvular heart disease, cardiomyopathies).

Discussion Group: Participate in discussions with peers to reinforce learning and clarify complex concepts. and/or

3. Cardiac Catheterization Technique Videos (30 mins)

Video Selection: Identify high-quality instructional videos that outline cardiac catheterization procedures, including right and left heart catheterization.

Step-by-Step Analysis: Watch videos and pause at critical steps to discuss the purpose and risks of each phase of the procedure.

Equipment Familiarization: Make note of the tools and equipment used during the procedure, including catheters, contrast media, and monitoring devices.

Case Discussion: After viewing, engage in case-based discussions to explore indications for cardiac catheterization and potential complications. and/or

4. Case-Based Analysis (30 mins)

Case Selection: Identify clinical cases with comprehensive data, including ECGs, echocardiograms, and catheterization findings.

Data Review: Review each component, correlating the findings and discussing their implications in the context of the patient's clinical presentation.

Differential Diagnosis: Formulate differential diagnoses based on the combined data and justify choices with evidence from the ECG and echocardiography.

Presentation: Present the case analysis to peers, focusing on the diagnostic process and conclusions drawn from the data.

Experiential-Learning Learning 20.5: Cardiac magnetic resonance imaging (MRI) and computed tomography (CT) angiography

One or more activity can be chosen (Total time- 1 hour)

1. Image Analysis Workshops (60 mins)

Resource Preparation: Gather a variety of cardiac MRI and CT angiography images, including annotated examples of both normal and abnormal findings.

Workshop Facilitation: Attend workshops led by radiologists or cardiologists specializing in cardiac imaging.

Guided Interpretation: Work through the images with guidance from the instructor, identifying key anatomical structures and abnormalities.

Group Discussion: Engage in group discussions to reinforce learning and clarify complex findings. or

2. Self-Directed Image Review (60 mins)

Image Collection: **Access online resources or institutional databases** to obtain cardiac MRI and CT angiography images.

Interpretation Guidelines: Familiarize yourself with standard interpretation guidelines for cardiac imaging (e.g., typical appearances of normal structures, common pathologies).

Independent Analysis: Review the images, documenting observations regarding anatomical structures and any abnormalities.

Self-Assessment: Use checklists or scoring systems to evaluate accuracy in identifying findings. or

3. Case-Based Learning Modules (60 mins)

Case Selection: Choose cases that include comprehensive imaging data, such as cardiac MRI and CT angiography findings, along with clinical histories.

Findings Correlation: Correlate imaging findings with the clinical presentation, making note of how the imaging helps inform diagnosis and management.

Differential Diagnosis: Formulate differential diagnoses based on the imaging findings and discuss with peers or mentors.

Presentation: Present case analyses to classmates, highlighting the significance of imaging findings in the overall clinical context. or

4. Interactive Learning Platforms (60 mins)

Activity Description:

Utilize interactive **online platforms or software** focused on cardiac MRI and CT angiography interpretation.

Platform Exploration: Identify and explore online platforms that offer interactive case studies and imaging analysis tools.

Engagement with Tools: Use the tools to manipulate images, compare normal and abnormal findings, and visualize different planes or views.

Quizzes and Assessments: Complete quizzes or assessments provided within the platform to test knowledge and understanding.

Feedback Mechanism: Use feedback from quizzes to identify areas for improvement and revisit challenging concepts.

Experiential-Learning Learning 20.6: Fetal circulation and its transition

One or more activities can be chosen (Total time- 1 hour)

1. Interactive Flowcharts and Diagrams (60 mins)

Activity Description:

Create and analyze flowcharts or diagrams that depict fetal circulation and the transitions that occur after birth.

Procedure:

Research: Study the anatomy and physiology of fetal circulation, including structures like the ductus arteriosus, foramen ovale, and ductus venosus.

Flowchart Creation: Design flowcharts that illustrate the path of blood flow through the fetal heart and how it changes at birth.

Group Discussion: Present flowcharts to peers for feedback and clarification of concepts.

Compare Diagrams: Analyze existing diagrams from textbooks or online resources, discussing similarities and differences in representation. or

2. Simulation Exercises (60 mins)

Activity Description:

Engage in simulation exercises that model fetal circulation and its transition to neonatal circulation.

Procedure:

Simulation Software: Utilize available simulation software or platforms that demonstrate fetal circulation and the physiological changes after birth.

Scenario Creation: Develop scenarios that involve fetal distress or congenital heart defects affecting circulation.

Interactive Learning: Use simulations to manipulate conditions (e.g., changes in blood pressure) and observe how fetal circulation adjusts.

Debriefing: After simulations, participate in a debriefing session to discuss observations and correlate them with the underlying physiology. or

3. Case-Based Learning (60 mins)

Activity Description:

Analyze clinical cases involving fetal circulation and its complications.

Procedure:

Case Selection: Identify cases that highlight issues related to fetal circulation (e.g., congenital heart defects, prenatal diagnosis of circulatory problems).

Analysis: Review the case, focusing on how fetal circulation is affected and what transitions occur at birth.

Discussion: Discuss findings with peers, linking the clinical aspects to the physiological changes of fetal circulation.

Present Findings: Present case analyses to classmates, focusing on clinical implications and management strategies. or

4. Peer Teaching Sessions

Activity Description:

Organize peer teaching sessions where students present on specific aspects of fetal circulation and transitions.

Procedure:

Topic Assignment: Assign each student or group a specific aspect of fetal circulation (e.g., pathways, transition mechanisms).

Research and Preparation: Prepare presentations or workshops based on the assigned topics, including diagrams and clinical relevance.

Peer Teaching: Deliver presentations to classmates, encouraging questions and discussions to clarify concepts.

Feedback Session: Conclude with a feedback session to reinforce learning and address any misunderstandings. or

5. Hands-On Activities

Activity Description:

Conduct hands-on activities that demonstrate fetal circulation concepts.

Procedure:

Model Creation: Create physical models of the fetal circulatory system using materials like balloons, tubing, and colored water to represent blood flow.

Demonstration: Use models to demonstrate how blood flows through the heart and major vessels in a fetus, highlighting shunts and bypasses.

Transition Simulation: Simulate the transition to neonatal circulation by adjusting the model to show how blood flow changes after birth (e.g., closure of the ductus arteriosus).

Reflection: Discuss insights gained from the hands-on activity and how it relates to clinical practice.

Through a combination of diagramming, simulations, case-based learning, and hands-on activities, students will enhance their knowledge of fetal hemodynamics and the physiological changes that occur at birth, preparing them for practical clinical application.

Experiential-Learning Learning 20.7: Changes in appearance of newborn due to fetal circulation transition

One or more activities can be chosen (Total time- 1 hour)

1. Simulated Clinical Scenarios (60 mins)

Simulation Setup: Collaborate with simulation centers to create scenarios involving newborns who have experienced challenges related to fetal circulation, such as persistent fetal shunting or congenital heart defects.

Role Assignment: Assign roles within the simulation team (e.g., lead clinician, nurse, respiratory therapist) to foster teamwork and communication.

Scenario Execution: Run the simulation, where students must monitor the newborn's vital signs and respond to changing conditions (e.g., cyanosis, respiratory distress).

Decision-Making: As the scenario progresses, students make clinical decisions based on their understanding of fetal circulation transitions (e.g., recognizing the need for supplemental oxygen, medications, or interventions). or

2. Case Study Discussions (60 mins)

Case Selection: Choose case studies that highlight newborns with issues stemming from fetal circulation, such as patent ductus arteriosus or transposition of the great vessels.

Group Analysis: In small groups, analyze each case, focusing on clinical presentations, relevant history, and necessary interventions.

Discussion of Responses: Discuss how knowledge of fetal circulation transitions influences management decisions, including monitoring strategies and treatment options.

Presentation of Findings: Present findings to the larger group, encouraging feedback and discussion of different approaches to the same clinical scenario. or

3. Decision-Making Simulations (60 mins)

Scenario Development: Create a series of scripted scenarios that involve sudden changes in a newborn's condition (e.g., changes in heart rate, oxygen saturation).

Role Play: Students role-play as healthcare providers responding to the simulated newborn's condition.

Immediate Assessment: Upon receiving information about the newborn's status, students must assess the situation and make decisions regarding interventions.

Feedback and Reflection: After each role-play scenario, receive feedback from peers and instructors on decision-making processes, rationale, and outcomes. or

4. Virtual Reality (VR) Simulations (60 mins)

Access VR Tools: Utilize available VR simulation tools that offer scenarios related to neonatal care and fetal circulation.

Scenario Engagement: Engage in VR scenarios where students assess and manage a newborn's condition based on fetal circulation knowledge.

Interactive Decision-Making: Respond to dynamic changes in the simulated environment, making clinical decisions based on evolving scenarios.

Debriefing: Participate in a debriefing session to discuss experiences, decisions made, and lessons learned.

Experiential-Learning Learning 20.8: Different Congenital heart diseases

One or more activities can be taken (Total time- 5 hours)

1. Case-Based Learning (30 mins per case)

Activity Description:

Analyze real or simulated clinical cases of congenital heart disease, focusing on patient history and physical examination findings.

Procedure:

Case Selection: Gather a series of clinical cases representing different types of congenital heart diseases (e.g., ventricular septal defect, atrial septal defect, tetralogy of Fallot).

History Review: For each case, review the patient history, emphasizing presenting symptoms, family history, and any relevant prenatal history.

Physical Examination: Conduct a focused physical examination to assess vital signs, auscultation findings (heart sounds, murmurs), and signs of heart failure.

Differential Diagnosis: In small groups, discuss findings and formulate a differential diagnosis for each case, justifying the reasoning behind the diagnosis based on history and examination.

Presentation: Present findings to the larger group, focusing on key differentiating features for each type of congenital heart disease. or

2. Role-Playing Scenarios (60 mins for a scenario)

Activity Description:

Engage in role-playing scenarios where students simulate patient encounters involving congenital heart disease.

Procedure:

Scenario Development: Create scripts for role-playing scenarios that include various congenital heart defects. Each script should detail the patient's history and potential examination findings.

Role Assignment: Assign roles (e.g., patient, clinician) to participants in the role-play exercise.

History Taking: The clinician role player will take a detailed history from the patient role player, focusing on symptoms, prenatal history, and family history of cardiac conditions.

Physical Examination: Conduct a focused physical examination, assessing vital signs, heart sounds, and other relevant clinical findings.

Debriefing: After each scenario, hold a debriefing session to discuss the history and examination findings, emphasizing how they inform the differential diagnosis.

or

3. Clinical Observations (60 mins)

Activity Description:

Observe and participate in clinical rounds in pediatric cardiology or general pediatrics.

Procedure:

Shadowing Opportunities: Arrange to shadow a pediatric cardiologist or a pediatrician with experience in managing congenital heart disease.

Patient Interactions: Observe patient history-taking and examination in real clinical scenarios.

Discussion with Clinicians: Engage in discussions with supervising clinicians about their diagnostic processes and considerations when evaluating congenital heart disease.

Reflective Journaling: Maintain a reflective journal to document observations, learning points, and clinical reasoning encountered during clinical rounds. or

4. Diagnostic Imaging Analysis (30 mins)

Activity Description:

Analyze diagnostic imaging studies related to congenital heart disease to enhance understanding of clinical findings.

Procedure:

Image Collection: Collect echocardiographic images, chest X-rays, and other relevant imaging studies of patients with congenital heart disease.

Analysis: Work individually or in groups to analyze the images, correlating them with clinical findings obtained from history and physical examination.

Present Findings: Present findings, focusing on how specific imaging findings support or contradict clinical assessments.

Discussion: Engage in discussions about the importance of imaging in the diagnosis of congenital heart disease and how it complements clinical evaluation.

Experiential-Learning Learning 20.9: Electrocardiograph interpretation in different types of Congenital heart diseases.

One or more activities can be chosen (Total time- 1 hour)

1. Case-Based Learning Sessions (60 mins)

Activity Description:

Analyze real or simulated cases that include ECG reports related to congenital heart disease.

Procedure:

Case Collection: Gather a series of clinical cases that include patient history, physical examination findings, and corresponding ECG reports. (min 4 report in 1 hour)

Group Discussion: In small groups, review each case, focusing on the patient's clinical presentation and ECG findings.

Interpretation Exercise: Encourage students to interpret the ECGs, identifying specific features such as axis deviation, hypertrophy patterns, and arrhythmias related to each type of CHD.

Presentation: Each group presents their findings, discussing the implications of the ECG findings in the context of the clinical scenario. or

2. Interactive ECG Interpretation Stations (60 mins)

Activity Description:

Set up interactive stations where students can practice interpreting ECGs associated with different types of CHD.

Procedure:

Station Setup: Create multiple stations, each focusing on a specific congenital heart defect with corresponding ECGs.

Self-Paced Learning: Students rotate through the stations, interpreting ECGs at their own pace, utilizing reference materials and guidelines for support.

Feedback Mechanism: Provide a system for students to self-check their interpretations with answer keys or peer review to enhance learning.

Summative Assessment: At the end of the stations, administer a brief quiz or assessment to evaluate students' ECG interpretation skills. or

3. Online ECG Interpretation Modules

Activity Description:

Utilize online learning platforms that offer modules specifically for ECG interpretation in congenital heart disease.

Procedure:

Module Selection: Identify reputable online resources that provide ECG interpretation modules focused on congenital heart diseases.

Self-Study: Students complete the modules at their own pace, engaging with interactive content and quizzes.

Discussion Forums: Encourage participation in online discussion forums to share insights and discuss challenging ECG interpretations with peers and instructors.

Practical Application: Students can later apply learned concepts by reviewing actual ECGs from clinical cases during their rotations. or

4. Peer Teaching Sessions

Activity Description:

Organize peer teaching sessions where students teach each other about specific ECG findings related to congenital heart diseases.

Procedure:

Topic Assignment: Assign each student or group a specific type of congenital heart disease and its associated ECG features.

Preparation: Each group prepares a presentation or teaching session focused on the ECG findings, including examples and clinical relevance.

Peer Teaching: Conduct teaching sessions where each group presents their findings to the rest of the cohort, allowing for questions and discussions.

Feedback and Reflection: Provide constructive feedback on presentations, and encourage students to reflect on their learning experiences.

Experiential-Learning Learning 20.10: Evaluation of Congenital heart diseases

One or more activities can be chosen (Total time- 2 hours)

1. Clinical Case Evaluations (60 mins per case)

Activity Description:

Participate in the evaluation of clinical cases involving congenital heart diseases during hospital rounds or specialty clinics.

Procedure:

Case Selection: Identify cases of congenital heart disease that are being managed in the pediatric cardiology department or general pediatrics.

Patient Interviews: Conduct interviews with patients and their families to gather comprehensive medical histories, including presenting symptoms and any relevant family history.

Physical Examination: Perform focused physical examinations to assess vital signs, heart sounds, and signs of heart failure or other complications.

Multidisciplinary Team Discussion: Participate in discussions with the healthcare team, including cardiologists, nurses, and other specialists, to develop a management plan based on the evaluation findings.

Documentation: Document the evaluation findings, management plans, and any follow-up recommendations in the patient's medical record. or

2. Simulated Patient Scenarios (60 min)

Activity Description:

Engage in simulated patient scenarios that replicate clinical cases of congenital heart disease.

Procedure:

Scenario Development: Create or use pre-designed simulated patient scenarios that include various types of congenital heart defects and associated clinical presentations.

Role Play: Participate in role-playing exercises where students take on the roles of clinicians evaluating the simulated patients.

History Taking: Practice obtaining detailed histories and performing physical examinations, focusing on identifying signs of congenital heart disease.

Management Planning: Develop and present management plans based on the evaluation findings, considering diagnostic tests, referrals, and follow-up care.

Feedback Session: After each simulation, engage in a feedback session to discuss strengths and areas for improvement in the evaluation process. or

3.Case-Based Learning Groups (60 min per case)

Activity Description:

Form small groups to analyze and present cases of congenital heart disease from the hospital setting.

Procedure:

Case Selection: Each group selects a unique case of congenital heart disease from the hospital, ensuring a variety of conditions are represented.

Information Gathering: Gather relevant clinical data, including patient history, examination findings, imaging studies, and laboratory results.

Analysis and Discussion: Analyze the case within the group, discussing differential diagnoses, potential complications, and management strategies.

Presentation: Present the case to peers or faculty, highlighting key evaluation findings, diagnostic challenges, and management recommendations.

Feedback and Reflection: Encourage peer feedback on presentations, fostering a collaborative learning environment and reflecting on the evaluation process. or

4.. Research and Literature Review (30 mins on continous basis)

Activity Description:

Conduct a literature review on congenital heart disease evaluation methods and best practices.

Procedure:

Literature Search: Identify relevant articles, guidelines, and case studies focusing on the evaluation of congenital heart diseases.

Critical Appraisal: Critically appraise the selected literature, assessing the quality and relevance of the information to clinical practice.

Synthesis of Findings: Summarize key findings and recommendations related to evaluation methods and management strategies for congenital heart disease.

Presentation: Present the literature review to peers or faculty, facilitating discussion on implications for clinical practice.

Application of Knowledge: Integrate findings from the literature into clinical practice during patient evaluations in the hospital setting.

Experiential-Learning Learning 20.11: Management of congenital heart diseases

One or more activities can be chosen (Total time- 2 hours)

1. Clinical Case Management Planning (30 min per case)

Activity Description:

Participate in the evaluation and management planning for real or simulated cases of congenital heart disease in a clinical setting.

Procedure:

Case Selection: Choose a specific patient with congenital heart disease from the clinical setting (or a simulated case).

Gather Clinical Information: Collect all relevant clinical information, including medical history, physical examination findings, imaging studies, and laboratory results.

Diagnosis and Prognosis: Determine the diagnosis and discuss the potential prognosis based on the type and severity of the congenital heart defect.

Develop Management Plan:

Medical Management: Outline pharmacologic interventions, including medications for heart failure, antiarrhythmics, or anticoagulants.

Surgical/Interventional Options: Discuss indications for surgical intervention or catheter-based therapies if applicable.

Follow-Up Care: Plan for regular follow-up visits, including monitoring for growth and development, potential complications, and psychosocial support.

Family Education: Develop strategies to educate the family about the child's condition, treatment options, and lifestyle modifications.

Presentation and Feedback: Present the management plan to faculty or peers for feedback and discussion. or

2. Simulation-Based Learning (60 mins)

Activity Description:

Participate in simulation exercises that replicate scenarios of managing patients with congenital heart disease

Procedure:

Scenario Development: Use pre-designed or develop new simulation scenarios that involve children with various types of congenital heart disease.

Role-Playing: Engage in role-playing exercises where students simulate the evaluation and management of a patient presenting with CHD.

Management Planning: Each group creates a management plan on the spot, considering both immediate and long-term management strategies.

Implementation Simulation: Simulate the execution of the management plan, including medication administration, monitoring, and coordination of care.

Debriefing: Participate in debriefing sessions to discuss the management plans created, including strengths and areas for improvement. or

3. Research and Evidence-Based Practice (30 mins on continous basis)

Activity Description:

Conduct a research project focused on the management of congenital heart disease in children, utilizing evidence-based guidelines.

Procedure:

Literature Review: Conduct a literature review on current guidelines and best practices for managing specific types of congenital heart disease.

Clinical Protocols: Develop a clinical protocol based on the literature review, outlining the management plan for a specific type of congenital heart disease.

Implementation Planning: Plan how to implement the protocol in a clinical setting, considering potential barriers and solutions.

Presentation of Findings: Present findings and the proposed protocol to peers or faculty, encouraging discussion and feedback.

Reflection on Practice: Reflect on how evidence-based practice can improve management plans for patients with congenital heart disease.

Experiential-Learning Learning 20.12: Diagnosis and management of Rheumatic fever patient.

One or more activities can be chosen (Total time- 2 hours)

1. Clinical Case Review (60 mins per case)

Activity Description:

Conduct a thorough review of clinical cases of suspected rheumatic fever in a hospital or clinic setting.

Procedure:

Case Selection: Identify patients diagnosed with or suspected of having rheumatic fever from the hospital's medical records.

History Taking: Conduct detailed interviews with patients or their guardians to gather history, focusing on recent streptococcal throat infections and presenting symptoms such as fever, joint pain, and skin manifestations.

Physical Examination: Perform physical exams to assess for these symptoms, documenting findings accurately.

Management Planning: Develop a management plan, including antibiotics (e.g., penicillin), anti-inflammatory medications (e.g., NSAIDs), and plans for follow-up.

or

2. Simulation of Patient Scenarios

Activity Description:

Engage in simulation exercises that replicate clinical scenarios involving patients with rheumatic fever.

Procedure:

Scenario Development: Create or use pre-designed simulation scenarios that include children presenting with symptoms of rheumatic fever.

Role Playing: Participate in role-playing exercises where students act as clinicians evaluating a simulated patient.

Symptom Recognition: Assess the simulated patient's symptoms and conduct a focused examination.

Management Implementation: Develop and implement an immediate management plan, including starting antibiotic therapy and supportive measures.

Debriefing Session: Participate in a debriefing to discuss the recognition of symptoms, management strategies, and areas for improvement. or

3. Research and Evidence-Based Learning

Activity Description:

Conduct a research project focused on the clinical presentation and management of rheumatic fever.

Procedure:

Literature Review: Perform a comprehensive review of the literature on rheumatic fever, including recent guidelines and treatment protocols.

Clinical Protocol Development: Develop a clinical protocol based on the literature, outlining the recognition and management of rheumatic fever.

Implementation Plan: Plan how to implement the protocol in a clinical setting, considering potential barriers and solutions.

Presentation of Findings: Present research findings and the developed protocol to faculty or peers, fostering discussion on clinical practice implications.

Reflection on Learning: Reflect on how evidence-based practice can enhance the management of rheumatic fever in children.

Experiential-Learning Learning 20.13: Diagnosis and management of Rheumatic heart diseases patients.

One or more activities can be chosen (Total time- 4 hours)

1. Clinical Assessment and Management in Pediatric Wards (one hour for single case of RHD)

Activity Description:

Conduct assessments of pediatric patients in the ward to recognize and manage rheumatic heart disease.

Procedure:

Patient Selection: Identify pediatric patients with a history suggestive of rheumatic fever or cardiac symptoms in the pediatric ward.

Clinical History: Take a detailed medical history, focusing on previous throat infections, joint pains, and current symptoms like shortness of breath, fatigue, or palpitations.

Physical Examination: Perform a thorough physical examination to assess for signs of RHD,

Initial Management:

Administer appropriate medications (e.g., antibiotics, diuretics).

Provide symptomatic treatment and monitoring.

Referral Process: Determine if the patient requires referral to a higher center based on the severity of the disease and prepare the referral documentation. or

2. Case Discussions

Activity Description:

Participate in case discussions focusing on the management of rheumatic heart disease.

Procedure:

Case Presentation: Present identified cases of rheumatic heart disease during ward rounds or departmental meetings.

Management Strategies: Discuss different management strategies, including medical management and indications for surgical intervention.

Referral Criteria: Understand and document the criteria for referral to specialized cardiac centers.

Feedback and Reflection: Seek feedback on case presentations and incorporate suggestions into future management plans. or

3. Simulation Exercises for RHD Management

Activity Description:

Engage in simulation exercises that replicate scenarios involving pediatric patients with rheumatic heart disease.

Procedure:

Scenario Development: Use pre-designed simulation scenarios involving children with varying degrees of rheumatic heart disease.

Role Playing: Act as a clinician evaluating a simulated patient with suspected RHD.

Symptom Recognition and Management:

Identify critical signs and symptoms in the simulation.

Implement an initial management plan based on the assessment.

Referral Simulation: Practice the referral process, including communication with the receiving center and family education.

Debriefing Session: Participate in a debriefing to discuss the recognition of symptoms, management strategies, and areas for improvement.

4. Research Project on RHD

Activity Description:

Conduct a research project focused on the epidemiology, clinical presentation, and management of rheumatic heart disease in children.

Procedure: **Literature Review**: Perform a literature review on current trends and management guidelines for rheumatic heart disease. **Data Collection**: Gather clinical data from pediatric patients diagnosed with RHD, focusing on demographics, clinical presentations, and treatment outcomes. **Analysis and Findings**: Analyze the data to identify patterns and outcomes related to timely management and referral. **Presentation of Findings**: Present findings at departmental meetings or conferences to discuss implications for clinical practice. **Integration into Practice**: Use research findings to enhance clinical practice regarding the identification and management of rheumatic heart disease.	
Modular Assessment	
Assessment	**Hour**
Instructions: Conduct a structured Modular assessment. The assessment will be for 50 marks. Keep a structured marking pattern. Use different assessment methods in each module for the semester. Keep a record of the structured pattern used for assessment. Calculate the modular grade points as per Table 6C. **1. Practical Role Play** **Description:** Role play involves clinical scenarios where students perform cardiovascular assessments, such as inspection, palpation, auscultation, and basic interaction with simulated pediatric patients or peers. This tests both clinical examination skills and communication. Scenarios Covered: Systematic CVS examination in pediatrics, Interaction with parents to explain findings and next steps. **Marks:** 15 and **Time:** 1 hour **Criteria and Marks distribution (15 marks)** Technical Skills: Accuracy in performing inspection, palpation, and auscultation-6 marks Clinical Reasoning: Correct identification of signs, such as murmurs or irregular heart rhythms-5 marks Communication Skills: Clear, empathetic interaction with the patient or parent-4 marks **2. Class Presentation**	4

Description: Each student presents on a diagnostic or therapeutic method for CHDs, covering the method's principles, indications, contraindications, and interpretation of results. Topics: Diagnostic techniques like echocardiography, ECG interpretation in CHDs, Therapeutic interventions for rheumatic heart disease. **Marks:** 10 and **Time:** 1 hour **Criteria and Marks distribution (10 marks)** Content Knowledge: Depth of understanding and accuracy of presented information-4 marks Clarity and Organization: Logical structure and clear delivery of content-3 marks Engagement and Response to Questions: Ability to engage with peers and respond accurately to questions-3 marks **3. Portfolio** **Description:** A portfolio compilation of case studies, clinical reflections, and diagnostic skills applied to pediatric CVS evaluation and CHD cases. Content: Case studies detailing diagnostic approaches in CHD and CVS disorders, Reflections on physiological changes from fetal to neonatal circulation, Summaries of diagnostic findings and interpretation. **Marks:** 15 and **Time:** 1 hour (submitted beforehand and reviewed during assessment time) **Criteria and Marks distribution (15 marks)** Case Analysis and Reflection: Detailed, insightful case analysis and reflections-6 marks Application of Diagnostic Skills: Demonstrates practical knowledge and application of skills in CVS diagnostics-6 marks Organization and Completeness: Portfolio is well-organized, complete, and demonstrates a clear understanding-3 marks **4. Viva** **Description:** The viva is an oral assessment focusing on the physiological transition from fetal to neonatal circulation, common congenital heart defects, and rheumatic heart disease (example) Topics: Explanation of transitional circulatory changes post-birth, Pathophysiology and management of specific CHDs, Key aspects of rheumatic heart disease management. **Marks:** 10 and **Time:** 1 hour	

Criteria and Marks distribution (10 marks) Conceptual Understanding: Demonstrates in-depth knowledge of physiological transition and pathophysiology-4 marks Clinical Application: Ability to apply knowledge to clinical scenarios or case questions-4 marks Communication and Confidence: Clear articulation of responses, confidence in answering questions-2 marks OR Any Practical in converted form can be taken for assessment (15 marks) and Any experiential, such as portfolios/ reflections/ presentations can be taken as assessment. (35 marks)	

Module 21 : امراض نظام قلب-دوم Amrād-i- Nizām-i-Qalb -II (Cardiovascular disorders- 2)

Module Learning Objectives

(At the end of the module, the students should be able to)

1. Categorize inflammatory conditions and lifestyle disorders related with heart, and their management with classical as well as conventional method
2. Differentiate between benign and pathological heart murmurs in pediatric patients.
3. Interpret diagnostic tools such as echocardiographs, electrocardiograms (ECG), chest X-rays, and blood tests specific to pediatric cardiovascular diseases.
4. Analyze the rational use of classical (Mubarrid, Mulattif, Mufarrih advia) as well as conventional treatment modalities.
5. Discuss the importance of long-term follow-up in children with cardiovascular disease, including growth and development monitoring, cardiac function assessment, and psychosocial support.
6. Identify strategies for the prevention of acquired heart diseases in children, including screening for hypertension, and promoting healthy lifestyle behaviours
7. Discuss to provide appropriate education, counselling, and support to the families of children with CVS diseases
8. Apply AI Tools in evaluating diseases of Cardiovascular system.

Unit 1 التہاب درون قلب Iltihab Darun-i-Qalb (Infective endocarditis)

21.1.1 Definition, etiology, epidemiology, pathogenesis, clinical features (Modified Duke Criteria), diagnosis, differential diagnosis, complications, treatment, prognosis, prevention

21.1.2 Concept of Iltihab Darun-i-Qalb and its Aqsam, Ala'mat, Usul-i-Ilaj, Ilaj in Classical literature.

References: 31,34,44,46,50,63

3A	3B	3C	3D	3E	3F	3G
CO1,CO2,CO4, CO5,CO6,CO7, CO8	Describe Infective Endocarditis, its etiology, epidemiology, pathogenesis, clinical features (Modified Duke Criteria), diagnosis, differential diagnosis with rheumatic carditis, complications, treatment, prognosis, prophylaxis.	1	Lecture	CE	Knows-how	L&PPT ,DIS,L
CO1,CO2,CO4, CO5,CO6,CO7, CO8	Demonstrate the evaluation and management of infective endocarditis cases in children	1	Practical21.1	CAP	Shows-how	RP,D-BED,CBL,SIM
CO1,CO2,CO4, CO5,CO6,CO7, CO8	Demonstrate flowcharts for the diagnosis and management of infective endocarditis.	1	Practical21.2	PSY-MEC	Shows-how	GBL,DIS,PBL ,ML
CO1,CO2,CO4, CO5,CO6,CO7	Identify cases of infective endocarditis in hospital settings	2	Experiential-Learning21.1	CAP	Does	Mnt,SIM,CBL, RLE,LS
CO1,CO2,CO4, CO5,CO6,CO7, CO8	Discuss and document diagnostic criteria, and treatment options and establish acute management strategies in infective endocarditis	1	Experiential-Learning21.2	PSY-MEC	Does	LS,CD,SIM,RLE,DIS

Unit 2 التہاب عضلات قلب Iltahab i- Adhalat-i-Qalb (Myocarditis)

21.2.1 Definition, etiology, epidemiology, clinical features, diagnosis, differential diagnosis, treatment, complications, of Myocarditis

21.2.2 Description of Iltahab i-Adhalat-i-Qalb with its Tarif, Ala'mat, Usul-i-Ilaj, and Ilaj.

References: 31,34,44,46,50,63

3A	3B	3C	3D	3E	3F	3G
CO1,CO2,CO4, CO5,CO6,CO7, CO8	Describe myocarditis, its etiology, epidemiology, clinical features, diagnosis, differential diagnosis, treatment, complications	1	Lecture	CE	Knows-how	L&GD,L&PPT ,FC
CO1,CO2,CO4, CO5,CO6,CO7, CO8	Demonstrate the evaluation and management of myocarditis cases in a hospital setting	1	Practical21.3	CAP	Shows-how	RP,SIM,DL,P BL,CBL
CO1,CO2,CO4, CO5,CO6,CO7, CO8	Interpret blood tests for Cardiac biomarkers, inflammatory markers, viral serologies, and ECG in cases of myocarditis.	1	Practical21.4	CE	Shows-how	RP,LRI,W,ML ,CBL
CO1,CO2,CO4, CO5,CO6,CO7, CO8	Apply knowledge in diagnosing and managing myocarditis in children	2	Experiential-Learning21.3	CAP	Shows-how	W,LS,RP,SIM ,PL

Unit 3 ورم غشاء القلب Waram Ghisha i-Qalb (Pericarditis)

21.3.1 Definition, etiology, clinical manifestations, diagnosis, differential diagnosis, treatment, complications of Pericarditis

21.3.2 Concept of Waram Ghisha i-Qalb in classical text, its Asbab, Ala'mat, Usul-i-Ilaj, and Ilaj.

References: 27,28,31,34,44,46,50,63

3A	3B	3C	3D	3E	3F	3G
CO1,CO2,CO4, CO5,CO6,CO7, CO8	Describe Warm-i-Ghisha-i-Qalb, its Asbab, Alamat, Ilaj and Pericarditis its etiology, clinical manifestation, diagnosis, differential diagnosis, treatment, complications	1	Lecture	CC	Knows-how	L&PPT ,L&GD,BL
CO1,CO2,CO4, CO5,CO6,CO7, CO8	Discuss Tariqa-i-tashkhis of Warm-i-Ghisha-i-Qalb, and focus on Usul-i-ilaj (Advia Qalbiya and Tadabir such as Zimad with mubarrid advia)	1	Practical21.5	CC	Shows-how	C_L,DIS,CBL, PBL,D
CO1,CO2,CO4, CO5,CO6,CO7, CO8	Demonstrate systematic approach to perform a cardiovascular evaluation with an emphasis on signs of pericarditis, ECG findings, diagnosis and management of pericarditis	1	Practical21.6	PSY-ADT	Shows-how	SIM,DL,PBL, W
CO1,CO2,CO4, CO5,CO6,CO7	Diagnose and manage cases of pericarditis.	1	Experiential-Learning21.4	PSY-ORG	Does	PL,SIM,CBL, W
CO1,CO2,CO4, CO5,CO6,CO7	Apply classical knowledge to diagnose and manage cases of pericarditis	1	Experiential-Learning21.5	CAP	Does	CBL,LRI,W,P L
Unit 4 فرط تدسم فی الدم Fart-i-Tadassum fid-Dam (Hyperlipidemia in children) 21.4.1 Definition, etiology, predisposing factors, clinical features, diagnosis, prevention and management of Hyperlipidemia in children. **References:** 43,44,50,63						
3A	**3B**	**3C**	**3D**	**3E**	**3F**	**3G**

CO1,CO2,CO4, CO5,CO6,CO7, CO8	Describe hyperlipidemia, its causes, clinical implications, diagnostic approaches, management strategies, and prevention in children.	1	Lecture	CE	Knows-how	L&GD,L&PPT
CO1,CO2,CO4, CO5,CO6,CO7	Demonstrate how to evaluat and early screening and interventions for hyperlipidemia.	1	Practical21.7	PSY-MEC	Shows-how	FC,W,JC,CBL
CO1,CO2,CO4, CO5,CO6,CO7	Demonstrate effective communication techniques for education on healthy lifestyle choices for families and children, providing brief idea of nutritional resources and meal planning guides	1	Practical21.8	CAP	Shows-how	DIS,SIM,D,R P
CO1,CO2,CO4, CO5,CO6,CO7, CO8	Perform activities to reinforce knowledge and skills related to hyperlipidemia	1	Experiential-Learning21.6	PSY-MEC	Does	SIM,LS,PER, CBL
CO1,CO2,CO4, CO5,CO6,CO7, CO8	Diagnose and document of hyperlipidemia cases and management with Ilaj bil-ghaza (dietotherapy) and Ilaj-bit-Tadbir (regimenal).	2	Experiential-Learning21.7	PSY-ORG	Does	PT,W,PER
Unit 5 ارتفاع ضغط الدم نظامی Irtifa-i-Zaght-ul-Dam Nizāmi (Systemic hypertension in children) 21.5.1 Definition, etiology, clinical features, diagnosis, management, course and prognosis of Systemic Hypertension in children. **References:** 44,50,63,70						
3A	**3B**	**3C**	**3D**	**3E**	**3F**	**3G**

CO1,CO2,CO4, CO5,CO6,CO7, CO8	Describe the systemic hypertension, its causes, clinical implications, diagnostic approaches, management strategies, and prevention in pediatric population.	1	Lecture	CC	Knows-how	L&GD,FC,L& PPT
CO1,CO2,CO4, CO5,CO6,CO7	Show evaluation, methods of screening, diagnosis and management of hypertension in children.	1	Practical21.9	CAP	Shows-how	D,SIM,FC,CB L,PBL
CO1,CO2,CO4, CO5,CO6,CO7	Identify the indications for initiating antihypertensive medications based on age and associated risk factors	1	Practical21.1 0	CAN	Knows-how	DIS,FC,RP,C BL,SIM
CO1,CO2,CO4, CO5,CO6,CO7	Analyze the signs and symptoms of hypertension to diagnose and manage.	1	Experiential-Learning21.8	CAN	Does	W,RLE,CBL
CO1,CO2,CO4, CO5,CO6,CO7	Identify and monitor patient's response to pharmacological management as well as complications of disease	1	Experiential-Learning21.9	AFT-RES	Does	CBL,SIM,JC, PrBL
CO1,CO2,CO4, CO5,CO6,CO7	Identify the best practices in promoting physical activity and nutrition management in children.	1	Experiential-Learning21.1 0	CAN	Does	FV,PL

Practical Training Activity

Practical Training 21.1 Infective Endocarditis evaluation and management

One or more activities can be chosen (Total time- 1 hour)

1. Case-Based Learning (CBL) (20+40 mins)

Teacher will demonstrate a clinical case comprising the evaluation and management of suspected pediatric patient having infective endocarditis.

Than divide the group into small teams and give them patient history, clinical signs (fever, new heart murmur, embolic phenomena), and laboratory results (blood cultures, echocardiography findings).

The teams will work together to identify risk factors, clinical signs, diagnostic criteria (Duke Criteria), initiate an investigation plan and plan the management.

Each group presents their diagnosis and management plan, followed by an interactive discussion where the facilitator clarifies the best approach.

or

2. Simulation-Based Learning (60 mins)

Use high-fidelity simulation mannequins or actors (standardized patients) to simulate a pediatric patient with suspected IE.

Simulate the key steps in diagnosing and evaluating IE:

Physical examination findings (e.g., new heart murmur, Janeway lesions, Osler nodes)

Ordering and interpreting key investigations (e.g., blood cultures, echocardiography)

Learners practice clinical decision-making in a controlled environment, including stabilizing the patient and initiating appropriate treatments (antibiotics, considering surgery in severe cases).

Provide feedback on their performance, highlighting strengths and areas for improvement.

or

3. Role Play (Patient-Doctor Interaction) (60 mins)

Set up a role-playing scenario where students act as healthcare providers and the instructor or another student acts as a parent of a child with suspected IE.

The students take the patient's history, perform a clinical exam, and explain the diagnosis and management plan to the "parent."

Provide feedback on their history-taking, examination techniques, and how well they explained the condition and plan to the "parent."

Practical Training 21.2 Infective Endocarditis managment

One or more activities can be chosen (Total time- 1 hour)

1. Interactive Flowchart Creation Session (20+40 mins)

Teacher will briefly discuss the case diagnosis and management of Infective endocarditis and divide learners into two groups (20 mins)

Ask each group to create their own flowchart for diagnosis and management based on the guidelines or information provided.

Encourage active learning and group discussions, helping learners organize their thoughts and understand the step-by-step process.

After the activity, display each group's flowchart and compare it to an expert-created one. Discuss any differences or gaps. or

2. Problem-Based Learning (PBL) with Flowchart Guidance (60 mins)

Present a case of a child with suspected infective endocarditis.

As students progress through the case, they can refer to or update a diagnosis and management flowchart. For example, starting with fever, cardiac risk factors, and progressing based on investigations.

Helps learners link clinical symptoms with appropriate investigations and interventions while reinforcing flowchart use as a diagnostic tool.

or

3. Using Pre-Made Flowcharts for Step-by-Step Teaching (60 mins)

Present pre-made flowcharts for both diagnosis and management during a lecture or tutorial session.

Display these flowcharts on a digital whiteboard or screen, and walk through each step:

Diagnosis Flowchart: Include pathways for high-risk features, blood cultures, echocardiography findings, and Duke Criteria.

Management Flowchart: Highlight initial antibiotic therapy, management of complications, surgical considerations, and follow-up.

Learners visually understand the complex process in a simplified manner. Each step can be broken down for further elaboration.

or

4. Digital Tools and Flowchart Platforms

Use online platforms (like Lucidchart, Canva, or MindMeister) to create interactive flowcharts.

Allow students to manipulate and build on existing templates or create their own flowcharts during a digital session.

Engages learners in digital literacy while helping them visualize clinical processes interactively.

Practical Training 21.3 Evaluation and management of myocarditis cases

One or more activities can be chosen (1 hour)

1. Simulation-Based Learning with High-Fidelity Mannequins (20+40 mins)

Teacher will demonstrate evaluation on high-fidelity simulation mannequins to mimic pediatric patients with myocarditis symptoms (e.g., fatigue, chest pain, difficulty breathing, arrhythmias).

Create a simulation scenario where students assess a child with suspected myocarditis.

Scenario includes: Initial assessment (vital signs, clinical presentation), ECG interpretation, lab results (troponin levels, inflammatory markers), and echocardiography findings.

Learners perform clinical tasks such as taking history, ordering investigations, and providing initial management.

Teach clinical evaluation (history, physical exam, and investigations), early recognition of myocarditis, and emergency management (stabilization, cardiac monitoring).

After the simulation, conduct a feedback session with a discussion on strengths, areas for improvement, and clinical decision-making.

or

2. Case-Based Learning (CBL) (60 mins)

Present a clinical case of a pediatric patient with myocarditis.

Divide the learners into two groups and provide them with case details progressively (history, physical findings, and results from diagnostic tests). The case should evolve, showing deterioration or improvement based on decisions made.

Each group discusses how they would evaluate the case at each step, focusing on critical elements such as differential diagnosis, use of diagnostic tools (ECG, echocardiography, cardiac MRI), and management decisions (medications, ICU admission, use of inotropes, or mechanical support).

After each group presentation, review the key points for evaluation and management, ensuring understanding of myocarditis complications like heart failure, arrhythmias, and the need for cardiopulmonary support.

or

3. Role-Playing Scenarios for Interdisciplinary Care (60 mins)

Organize role-playing scenarios where learners take on different roles (pediatrician, cardiologist, nurse, pharmacist, patient's family).

In this scenario, learners are tasked with communicating and collaborating with other healthcare team members to manage a child diagnosed with myocarditis.

This involves:

Explaining the diagnosis to the parents

Coordinating with cardiology for further evaluation (e.g., biopsy, MRI)

Working with the pharmacy to adjust medications

Emphasize the importance of teamwork in managing complex cases and improve communication skills in a multidisciplinary hospital setting.

Provide feedback on communication, decision-making, and care coordination.

or

4. Problem-Based Learning (PBL) with Emergency Management (60 min)

Use a problem-based approach to manage a child presenting with acute heart failure secondary to myocarditis.

The case starts with a critically ill child, and the students must quickly assess and manage using clinical reasoning. Key elements include:

Stabilizing the child (ABC approach, oxygen therapy, inotropes)

Cardiac monitoring and managing arrhythmias

Discussing when mechanical support (ECMO) is needed

Provide learners with experience in recognizing and managing critical illness in myocarditis, focusing on resuscitation and stabilization in an emergency setting.

Discuss key interventions, emphasizing the need for timely escalation to ICU or cardiac care units.

Practical Training 21.4 Investigations in Myocarditis

One or more activities can be chosen (1 hour)

1. Case-Based Learning (CBL) with Lab Results and ECG Interpretation (60 mins)

Teacher will interpret the different investigations of a case suspected of myocarditis, including a detailed history and physical exam, followed by lab results and ECG findings.

Provide students with blood test results (troponin, CK-MB, CRP, ESR, viral serologies) and an **ECG** from a myocarditis case.

Ask learners to interpret the results step-by-step.

They should discuss the significance of elevated cardiac biomarkers (e.g., troponin, CK-MB), inflammatory markers (e.g., CRP, ESR), and abnormal ECG findings (e.g., ST-segment changes, arrhythmias).

Help learners understand how to interpret specific laboratory values and ECG changes, linking them to the clinical presentation of myocarditis.

After interpretation, review each marker and ECG finding, emphasizing their role in diagnosing myocarditis and guiding management.

or

2. Interactive Diagnostic Workshop: Biomarkers and ECG Interpretation (60 min)

Organize a diagnostic workshop where learners rotate between different stations to practice interpreting blood tests and ECGs in myocarditis cases.

Station 1: Cardiac Biomarkers – Students receive different sets of cardiac biomarker results (troponin, CK-MB). They must assess which values suggest myocardial damage and how these levels correlate with disease severity.

Station 2: Inflammatory Markers – Present results of CRP, ESR, and other inflammatory markers, and ask learners to interpret how these support the diagnosis of myocarditis.

Station 3: Viral Serologies – Provide viral serology results (e.g., enterovirus, adenovirus), and learners discuss their relevance to viral myocarditis.

Station 4: ECG Interpretation – Provide ECGs with various abnormalities (ST-segment elevation, T-wave inversion, arrhythmias), and ask students to interpret these findings.

Allow students to independently interpret diagnostic tests, making the connection between lab results, ECG findings, and myocarditis.

After all stations, review key learning points for each type of test and explain how these results influence clinical decision-making.

or

3. ECG and Blood Test Interpretation Practice with Digital Tools (60 mins)

Instructions:

Use digital platforms (like **ECG simulators** or apps) where learners can interactively practice interpreting ECGs and blood test results related to myocarditis.

Assign students digital modules that include case-based ECGs with varying degrees of myocarditis-related changes (ST-segment elevation, T-wave inversion, arrhythmias).

Similarly, provide online quizzes or modules where students can interpret rising **troponin** or **CK-MB levels**, paired with **CRP** and **ESR** results.

Reinforce ECG and blood test interpretation through repetitive, self-paced practice with immediate feedback.

Review ECG and blood test results, and discuss key patterns learners should focus on in myocarditis.

Practical Training 21.5 Classical principles of treatment for pericarditis

One or more activities can be chosen (1 hour)

1.Case-Based Learning: (20 mins)

Teacher will present real or hypothetical cases of patients with Warm-i-Ghisha-i-Qalb and discuss the classical principles of treatment.

Discuss **Tariqa-i- Tashkhis (**diagnostic methods) employed in Unani practice, such as **Mizaj (temperament) assessment**, **Pulse diagnosis (Nabz)**, observation of clinical signs and symptoms, and identification of related humoral imbalances (phlegm, blood, bile, and black bile).

Pathophysiology of Warm-i-Ghisha-i-Qalb: Detailed explanation of the causes, symptoms, and Unani view on the inflammation of the pericardium. Symptoms like chest pain, fever, and irregular heartbeats are evaluated in light of Unani principles.

Usul-i-Ilaj: Introduce the therapeutic principles based on Unani pharmacology and regimental therapy, including **Advia Qalbiya** (cardiac medicines) and **Tadabir** (regimental therapies), emphasizing cooling remedies (mubarrid advia) for inflammation.

Encourage students to apply diagnostic principles and propose treatment plans using the Unani approach.

or

2. Problem-Based Learning (PBL): 30 mins

Assign groups to research different aspects of **Warm-i-Ghisha-i-Qalb** in Unani medicine. Each group could cover topics such as diagnostic techniques, the role of temperament in disease manifestation, pharmacological treatment options, and non-pharmacological regimens like **Tadabir**.

Encourage them to come back with case studies, share with the class, and propose therapeutic interventions based on their research.

3. Collaborative Learning and Discussion: 10 mins

Engage students in discussions on how **Usul-i-Ilaj** in Unani medicine compares with modern approaches to treating pericarditis (such as the use of anti-inflammatory drugs in allopathy) and the integration of traditional and modern techniques.

Peer Teaching: Assign students to teach certain sections to the class, reinforcing their understanding and allowing collaborative exchange of ideas.
Practical Training 21.6 Evaluation for pericarditis
One or more activities can be chosen (1 hour) **1. Simulation-Based Learning (30 mins)** Teacher will use high-fidelity simulation mannequins or standardized patients to mimic signs of pericarditis and demonstrate the cardiovascular exam in front of students. Emphasize the inspection, palpation, and auscultation of the heart, focusing on classical signs of pericarditis such as pericardial friction rub, distant heart sounds, and pleuritic chest pain. Teach learners to assess for pulsus paradoxus and signs of pericardial effusion or tamponade. After the examination, discuss the key findings, focusing on their significance in diagnosing pericarditis, and explain how to interpret them in context. and/or **2. Problem-Based Learning (PBL) (30 mins)** Present a case of a child with **pericarditis** (e.g., chest pain, fever, and shortness of breath), and guide learners through the diagnostic and management process. Divide the case into stages: initial clinical presentation, physical exam findings, lab and imaging results (e.g., ECG, echocardiogram). Ask learners to develop a diagnostic approach: including ruling out other causes of chest pain, assessing for pericardial rub, and analyzing ECG findings Learners should propose management steps, including anti-inflammatory therapy (NSAIDs, colchicine), and escalation for complications (e.g., pericardiocentesis in tamponade). After the activity, review the diagnosis and management plan, correcting any misconceptions and reinforcing correct management protocols. and/or **3. ECG Interpretation Workshop (60 min)** Organize a dedicated session to teach ECG interpretation, focusing specifically on the findings associated with pericarditis.

Provide learners with different ECGs, including ones with characteristic pericarditis patterns (e.g., widespread ST-segment elevation, PR-segment depression, and T-wave inversion in later stages).

Ask learners to interpret each ECG and identify signs that suggest pericarditis.

Discuss how ECG findings evolve over time in pericarditis and the importance of serial ECG monitoring.

Debrief: After reviewing the ECGs, discuss how these findings fit into the overall clinical picture and how they guide management decisions.

and/or

4. Clinical Skills Stations: Examination and Diagnostic Techniques (1 hour)

Set up stations where learners practice the **physical examination** and **diagnostic techniques** essential for pericarditis.

Station 1: **Cardiovascular Examination** – Learners practice auscultation to identify pericardial friction rub and assess for signs of pericardial effusion or tamponade (e.g., distant heart sounds, jugular venous distension).

Station 2: **ECG Interpretation** – Learners review ECGs and identify the **characteristic findings** of pericarditis.

Station 3: **Chest X-ray and Echocardiogram Interpretation** – Provide sample chest X-rays showing an enlarged cardiac silhouette (suggesting pericardial effusion) and echocardiograms demonstrating pericardial fluid.

Station 4: **Lab Tests** – Review the role of inflammatory markers (e.g., elevated **CRP** and **ESR**) and **cardiac enzymes** (which may be mildly elevated in pericarditis).

After rotating through the stations, review key findings and connect the physical exam, lab results, and imaging to the diagnosis and management of pericarditis.

Practical Training 21.7 Evaluation and intervention for hyperlipidemia

One or more activities can be chosen (Total time- 1 hour)

1. Case-Based Learning (CBL) on Pediatric Hyperlipidemia (30 mins)

Present real or hypothetical cases of children with risk factors for hyperlipidemia (e.g., obesity, family history of cardiovascular disease).

Provide students with the clinical history, family history, and lab results (e.g., lipid profile).

Ask learners to assess the child's risk for hyperlipidemia, interpret the lipid profile, and suggest next steps, including lifestyle interventions and possible medication.

Include discussions on when to start screening (e.g., **9-11 years** and again at **17-21 years** based on guidelines).

After each case, discuss the management and prognosis, emphasizing the significance of early detection and the risks of delayed intervention.

and/ or

2. Interactive Workshop: Lipid Profile Interpretation and Management (30 mins)

Organize an interactive workshop focused on interpreting **lipid profiles** in children.

Provide learners with several lipid panels, and ask them to differentiate between normal and abnormal levels of **total cholesterol, LDL, HDL, and triglycerides**.

Learners can then discuss the next steps, including lifestyle modifications (dietary changes, exercise) and possible pharmacologic interventions.

Discuss the role of genetic screening in children with **familial hypercholesterolemia (FH)**.

Review the importance of individualized care, focusing on when to initiate more aggressive therapies or genetic referrals.

and/ or

3. Flipped Classroom on Hyperlipidemia Screening Guidelines (30 mins)

Assign learners **guideline documents** (e.g., the **American Academy of Pediatrics** or **NHLBI guidelines**) on pediatric hyperlipidemia for pre-class reading.

In class, discuss screening recommendations for children with risk factors (e.g., obesity, diabetes, family history of early cardiovascular disease).

Use case scenarios to highlight when to start screening, how often to re-screen, and what steps to take when hyperlipidemia is detected.

Discuss the differences between **universal screening** and **targeted screening**.

Clarify the key takeaways from the guidelines, emphasizing the importance of early intervention to prevent long-term cardiovascular disease.

and/ or

4. Journal Club: Review of Pediatric Hyperlipidemia Research (60 mins)

Assign learners recent research articles or reviews on the **epidemiology, screening, and management of pediatric hyperlipidemia**.

Each learner presents a summary of the research, focusing on new developments in early screening, interventions, or genetic factors influencing hyperlipidemia in children.

The group discusses how this research could influence clinical practice and what gaps remain in pediatric hyperlipidemia management.

Summarize the key points of the research and discuss how these findings could translate into practice, especially in terms of screening and early intervention strategies.

Practical Training 21.8 Nutritional counseling in children

One or more activities can be chosen (Total time- 1 hour)

1. Role-Playing for Family Education and Lifestyle Counseling (20+40 mins)

Instructions:

- Teacher will give idea of counselling and ask to do role-playing to simulate conversations between healthcare providers and families. (20 mins)
- One learner plays the healthcare provider, while another plays a parent or child who needs education on making healthier lifestyle choices.
- The "provider" explains the importance of balanced nutrition, regular physical activity, and reducing sedentary behavior.
- Emphasize the need for **clear, simple language**, especially for families with limited health literacy.
- Provide specific examples (e.g., choosing fruits over sugary snacks, or ways to add more vegetables to meals).
- After the role-play, provide feedback on communication clarity, engagement, and how well the learner addressed any concerns or barriers. or

2. Simulation with Standardized Patients (SPs) (60 mins)

Instructions:

- Simulated or standardized patient encounters where learners practice discussing **nutritional changes** and **meal planning** with parents and children.
- Set up a scenario where a family comes to the clinic with concerns about a child's weight or eating habits.
- Learners guide the family through a conversation on making healthier food choices, emphasizing **portion control**, **food groups**, and **healthy snacks**.
- Include practical advice, such as how to read food labels, create balanced meals, and plan for family meals that everyone can enjoy.
- SPs provide real-time feedback on how comfortable and understood they felt during the conversation.
- After each session, discuss the strengths of the communication and areas for improvement, with input from the standardized patient. or

3. Interactive Workshop: Nutritional Resources and Meal Planning (60 mins)

Instructions:

- Conduct a hands-on workshop where learners create **meal plans** and explore **nutritional resources**.
- Learners work in pairs to develop **one-day meal plans** for a child and a family, taking into consideration nutrient needs, family preferences, and budget constraints.
- Provide access to online tools, such as **MyPlate** (from the USDA), to guide meal planning, and discuss government resources (e.g., **WIC**, **SNAP**).
- Instructors should provide feedback on how well the meal plans align with dietary recommendations and how feasible they are for families.
- After the workshop, discuss how these resources can be introduced to families in clinical settings and the importance of making meal planning a collaborative, family-friendly process. or

4. Video Demonstration and Discussion on Healthy Habits (60 mins)

Instructions:

- Show instructional videos demonstrating how to talk to children and families about **healthy habits** like regular exercise, balanced eating, and limiting screen time.
- Learners watch video examples of healthcare providers discussing healthy lifestyle choices in various scenarios (e.g., with a preteen struggling with weight gain or a family with unhealthy eating habits).
- After each video, learners identify the effective communication techniques used, such as motivational interviewing, empathy, and clear goal-setting.
- Discuss what worked well and how the provider could improve engagement with the family.

Practical Training 21.9 Decision making on Antihypertensive therapy

One or more activities can be chosen (Total time- 1 hour)

1. Case-Based Learning (CBL): Antihypertensive Therapy Decisions (30 mins)

Teacher will use case-based discussions to guide learners through real or hypothetical scenarios where antihypertensive therapy might be considered.

Present a case where a child or adolescent has sustained high blood pressure (e.g., elevated BP, Stage 1 or Stage 2 hypertension).

Learners must decide when to initiate antihypertensive therapy based on **blood pressure readings**, **age**, and **associated risk factors** (e.g., obesity, kidney disease, diabetes, or family history of early cardiovascular disease).

Discuss different management plans, including **lifestyle changes** and the **initiation of medications** based on specific clinical guidelines, such as those from the **American Academy of Pediatrics (AAP)**.

Discuss which cases would require immediate pharmacological intervention versus continued monitoring or lifestyle modifications, and review the rationale for those decisions.

and/or

2. Simulation-Based Learning: Initiating Antihypertensive Medications (30 mins)

Use clinical simulation to give learners hands-on experience managing pediatric patients with hypertension and initiating antihypertensive medications.

Create a simulation scenario where a child is admitted with Stage 2 hypertension and associated risk factors like obesity or chronic kidney disease.

Learners must evaluate the patient, decide on the urgency of treatment, and choose an appropriate antihypertensive medication (e.g., **ACE inhibitors**, **beta-blockers**, **calcium channel blockers**) based on the child's age and clinical presentation.

The simulation should include role-playing interactions with caregivers to explain the need for medication and manage concerns about side effects.

Discuss the treatment decisions made during the simulation, focusing on medication selection, patient education, and follow-up care.

Practical Training 21.10 Evaluation, diagnosis, and management of hypertension.

One or more activities can be chosen (Total time- 1 hour)

1. Case-Based Learning (CBL) for Pediatric Hypertension (20-40 mins)

Instructions:

- Teacher will use real-life or hypothetical patient cases to demonstrate the evaluation, diagnosis, and management of pediatric hypertension. (20 mins)
- Present a scenario where a child presents with high blood pressure readings.
- Learners interpret the child's blood pressure (BP) percentiles based on age, sex, and height (following the 2017 AAP Hypertension Guidelines).
- Ask learners to identify causes, such as primary hypertension (linked to obesity) or secondary causes (e.g., kidney disease, endocrine disorders).
- Discuss workup, including BP measurements in both arms and legs, laboratory tests (renal function, electrolytes), and imaging if necessary.

- After the case, review the correct steps in screening and diagnosis, emphasizing the role of appropriate blood pressure measurements and timely referrals for secondary causes. or

2. Flipped Classroom on Pediatric Hypertension Guidelines (20+40 mins)

Instructions:

- Assign learners to read the 2017 AAP Clinical Practice Guidelines on pediatric hypertension prior to class.
- In class, work through case studies where learners apply these guidelines to decide on screening, further evaluation, and management of children with elevated or hypertensive BP readings.
- Discuss the criteria for defining elevated BP and stage 1 and stage 2 hypertension in children, and when to start lifestyle interventions or medication.
- Clarify key concepts from the guidelines, such as when to initiate pharmacological treatment, follow-up intervals, and referral for secondary hypertension. or

3. Simulation-Based Learning: Management of Pediatric Hypertension (20+40 min)

Instructions:

- Use clinical simulation to allow learners to manage a child with confirmed hypertension.
- In a simulation scenario, learners assess a child with stage 2 hypertension, discuss diagnostic tests, and plan treatment.
- They review lifestyle interventions (diet, physical activity, weight reduction) and decide when to start medications such as ACE inhibitors, calcium channel blockers, or beta-blockers.
- Learners also manage the child's follow-up care, including regular BP checks, adjusting treatment, and evaluating for end-organ damage (e.g., ECG, echocardiography, urine tests).
- Review the management steps, focusing on the importance of lifestyle interventions first and how to choose the right medication if needed. or

4. Problem-Based Learning (PBL): Hypertension in Adolescents (20+40)

Instructions:

- Use problem-based learning to explore the unique challenges of diagnosing and managing hypertension in adolescents.

- Learners work through a case involving an adolescent with obesity, presenting with elevated BP. They consider factors such as growth spurts, hormonal changes, and the influence of screen time and sedentary behaviors.
- Discuss the role of weight loss, sports, and exercise in management, as well as the potential psychological impact of having hypertension at a young age.
- Learners create a management plan that includes both medical and behavioral interventions.
- Discuss how to balance medical treatment with encouraging healthy lifestyle habits in adolescents, and the role of follow-up visits in maintaining long-term adherence to therapy.

Experiential Learning Activity

Experiential-Learning Learning 21.1: Identification of cases of Infective Endocarditis

One or more activities can be chosen (2 hours)

1. Clinical Ward Rounds (30 mins)

Patient Selection: Identify patients on the ward with predisposing conditions (e.g., heart valve disease, recent dental work, history of IV drug use).

History Taking: Conduct detailed histories to assess:

Symptoms such as fever, chills, fatigue, and new heart murmurs.

Recent dental procedures, surgeries, or skin infections.

Physical Examination: Perform thorough physical exams, noting:

Signs of embolic phenomena (e.g., petechiae, Janeway lesions, Osler nodes).

Heart sounds (new murmurs).

Documentation: Record findings and discuss with supervising clinicians to develop differential diagnoses.

and/or

2. Case-Based Learning Sessions (30 mins)

Case Selection: Choose published or real clinical cases of infective endocarditis for discussion.

Group Discussion: Present the case to peers or mentors, focusing on:

Initial presentation and clinical findings.

Diagnostic tests (e.g., blood cultures, echocardiography).

Management options (e.g., antibiotics, surgical intervention).

Critical Thinking: Discuss possible complications and how to prevent them.

Feedback and Learning: Receive feedback on the discussion and apply it to future clinical encounters and/or

3. Simulation-Based Training (60 mins)

Scenario Development: Create or use pre-designed simulation scenarios involving patients with suspected infective endocarditis.

Role Playing: Act as a clinician managing a simulated patient with symptoms suggestive of infective endocarditis.

Diagnosis and Management:

Perform a simulated clinical assessment, including history and physical examination.

Order and interpret relevant diagnostic tests (e.g., echocardiogram, blood cultures).

Develop an initial management plan.

Debriefing Session: Discuss the simulation experience, focusing on areas for improvement in clinical practice.

and/or

4. Research and Literature Review (2 hours)

Literature Review: Review recent articles, guidelines, and case studies on infective endocarditis.

Data Collection: Collect data on local or hospital-specific cases of infective endocarditis, focusing on demographics, clinical presentations, and outcomes.

Analysis and Findings: Analyze the data to identify patterns and present findings in a structured format.

Presentation of Research: Share findings in departmental meetings or conferences to foster discussion on best practices and guidelines.

or

5. Mentorship and Supervised Practice

Shadowing: Shadow cardiologists or infectious disease specialists during patient evaluations.

Active Participation: Take an active role in patient evaluations, discussions, and management under supervision.

Case Discussions: Engage in discussions about complex cases of infective endocarditis, focusing on diagnostic challenges and management considerations.

Feedback and Improvement: Seek feedback on performance and incorporate it into future clinical practice.

Experiential-Learning Learning 21.2: Diagnosis, and management strategies in infective endocarditis

One or more activities can be chosen (Total time- 1 hour)

1. Case Studies Review and Discussion (60 mins)

Case Selection: Choose relevant case studies from **medical literature or clinical databases.**

Group Discussion: Present cases to peers, focusing on:

Initial presentation and symptoms.

Diagnostic criteria and necessary investigations.

Treatment options and management strategies.

Critical Analysis: Discuss the rationale behind chosen management strategies, including pharmacological and non-pharmacological interventions.

Feedback Session: Facilitate a feedback discussion to explore alternative management approaches or diagnostic considerations.

or

2. Simulation-Based Learning (60 mins)

Scenario Development: Use pre-designed or create simulation scenarios involving acute conditions (e.g., cardiac arrest, anaphylaxis).

Role Playing: Assume the role of a healthcare provider responding to the simulated medical emergency.

Assessment and Management:

Conduct rapid assessments, including vital signs and clinical evaluations.

Implement appropriate acute management strategies

Debriefing Session: Engage in a debriefing to review performance, discuss alternative approaches, and reinforce learning.

or

3. Clinical Rotations in Emergency Medicine (30 mins)

Patient Encounters: Engage in the assessment and management of patients presenting with acute conditions.

Diagnostic Workup: Learn to order and interpret necessary diagnostic tests (e.g., lab tests, imaging studies).

Management Planning: Collaborate with supervising clinicians to develop and implement management plans for patients.

Reflection: Maintain a log of experiences, including diagnostic criteria applied, treatment decisions made, and outcomes observed.

or

4. Research and Literature Review (60 mins)

Literature Search: Review recent clinical guidelines, research articles, and systematic reviews related to acute conditions

Data Analysis: Summarize key findings related to diagnostic criteria, treatment options, and management strategies.

Presentation of Findings: Present findings to peers or faculty to facilitate discussion and knowledge sharing.

Application of Knowledge: Integrate new knowledge into clinical practice and case discussions.

Experiential-Learning Learning 21.3: Myocarditis diagnosis and management

One or more activities can be chosen (2 hours)

1. Clinical Case Reviews (60 mins)

Case Selection: Gather case reports or select cases from clinical practice involving children diagnosed with myocarditis.

Discussion Group: Organize group discussions with peers or mentors to analyze selected cases.

Assessment Focus:

Discuss presenting symptoms, risk factors, and clinical findings.

Identify diagnostic tests (e.g., ECG, echocardiogram, cardiac MRI, and laboratory tests).

Review treatment plans, including medications and potential interventions.

Feedback and Insights: Discuss the outcomes and gather feedback on the decision-making process for diagnosis and management.

or

2. Simulation-Based Learning (60 mins)

Scenario Development: Create or use pre-designed scenarios that simulate a pediatric patient presenting with symptoms suggestive of myocarditis (e.g., chest pain, dyspnea, fatigue).

Role-Playing: Assume roles (e.g., clinician, nurse, family member) during the simulation.

Diagnostic Approach: Perform a clinical assessment, including history-taking, physical examination, and ordering relevant diagnostic tests.

Management Plan: Develop and implement a management plan based on the diagnosis, including discussions on the use of medications and monitoring.

Debriefing: Conduct a debriefing session to discuss the decisions made and areas for improvement.

or

3. Interdisciplinary Team Meetings

Case Presentation: Present a case of myocarditis during team meetings, highlighting the clinical findings, diagnostic process, and management plan.

Collaborative Discussion: Engage with team members (e.g., cardiologists, nurses, nutritionists) to discuss the case and treatment options.

Team Roles: Understand the roles of different healthcare providers in the management of myocarditis and how they contribute to patient care.

Feedback and Learning: Reflect on the discussion and gather feedback to improve collaborative skills.

or

4. Educational Workshops for Peers

Workshop Planning: Develop a workshop curriculum that includes:

Overview of myocarditis in children (epidemiology, causes, symptoms).

Diagnostic criteria and investigations.

Management options and follow-up care.

Interactive Learning: Incorporate interactive components, such as case discussions or quizzes, to engage participants.

Resource Distribution: Provide handouts or online resources for participants to refer to after the workshop.

Feedback Collection: Gather feedback from participants to assess the effectiveness of the workshop and improve future presentations. or

5. Research and Literature Review

Literature Search: Review recent studies, clinical guidelines, and review articles related to myocarditis.

Key Findings: Summarize the key findings regarding the pathophysiology, diagnosis, and management of myocarditis in children.

Presentation: Prepare a presentation to share findings with peers or at departmental meetings to promote discussion.

Integration of Knowledge: Apply new insights into clinical practice and case discussions.

Experiential-Learning Learning 21.4: Classical criteria to diagnose and manage pericarditis

One or more activities can be taken (Total time- 1 hour)

1: Case-Based Learning (30 mins)

Review patient cases presenting with symptoms of pericarditis, such as chest pain, dyspnea, and pericardial rub.

Discuss the clinical evaluation process, including history-taking and physical examination, to differentiate pericarditis from other cardiac conditions.

Formulate diagnosis and management plans based on both classical and contemporary approaches.

and/ or

2: Hands-On Clinical Skills Workshops (30 mins)

Practice auscultation techniques to identify characteristic heart sounds associated with pericarditis, such as pericardial friction rub.

Conduct simulated patient assessments to recognize signs and symptoms effectively.

Role-play scenarios to discuss differential diagnoses and management strategies based on classical knowledge.

and/or

3: Interpretation of Laboratory and Imaging Studies (15 mins)

Review common laboratory findings, such as elevated inflammatory markers (e.g., ESR, CRP) and their classical interpretations.

Analyze echocardiograms and chest X-rays to understand the structural changes associated with pericarditis.

Discuss how classical teachings inform the interpretation of these studies in diagnosing and managing pericarditis.

and/or

***4*. Reflective Practice and Peer Teaching (15 mins)**

Create platforms for peer teaching where students can share their findings from classical texts and their application in clinical cases.

Conduct debrief sessions to reflect on patient management experiences and integrate classical knowledge into clinical practice.

Encourage constructive feedback among peers to enhance understanding and application of classical concepts.

Experiential-Learning Learning 21.5: Diagnosis and management of pericarditis

One or more activities can be chosen (1 hour)

1. Clinical Case Studies Review (60 mins)

Case Selection: Gather diverse case studies involving patients diagnosed with acute or chronic pericarditis from clinical resources.

Discussion Group: Organize group discussions with peers or mentors to evaluate the selected cases.

Assessment Focus:

Discuss presenting symptoms, risk factors, and clinical findings.

Identify diagnostic tests (e.g., ECG, echocardiogram, chest X-ray) and lab results (e.g., inflammatory markers).

Review treatment plans, including pharmacological and non-pharmacological interventions.

Feedback and Insights: Discuss outcomes and gather feedback on the decision-making process for diagnosis and management.

or

2. Simulation-Based Learning (60 mins)

Scenario Development: Create or utilize pre-designed scenarios that simulate a patient presenting with symptoms of pericarditis (e.g., chest pain, dyspnea).

Role-Playing: Assume roles during the simulation, such as clinician or nurse.

Diagnostic Approach: Perform a clinical assessment, including history-taking, physical examination, and ordering relevant diagnostic tests.

Management Plan: Develop and implement a management plan based on the diagnosis, discussing potential medications (e.g., NSAIDs, colchicine) and monitoring.

Debriefing: Conduct a debriefing session to reflect on decisions made and areas for improvement.

or

3. Educational Workshops for Peers (60 mins)

Workshop Planning: Develop a curriculum that covers:

Overview of pericarditis (epidemiology, causes, symptoms).

Diagnostic criteria and investigations.

Management options and follow-up care.

Interactive Learning: Incorporate interactive components such as case discussions or quizzes to engage participants.

Resource Distribution: Provide educational materials (handouts, slides) for participants to refer to after the workshop.

Feedback Collection: Gather feedback from participants to assess the effectiveness of the workshop and improve future sessions.

or

4. Reflective Practice Journals (60 mins)

Daily Reflections: After each patient interaction or relevant activity, write reflections on learning outcomes, challenges faced, and successes achieved.

Learning Opportunities: Identify areas for improvement in understanding diagnostic criteria and management options.

Goal Setting: Set specific goals for further development based on reflections and feedback.

Peer Sharing: Share reflections with peers to foster collaborative learning and support.

or

5. Research and Literature Review (60 mins)

Literature Search: Review recent studies, clinical guidelines, and reviews related to pericarditis.

Key Findings: Summarize findings about pathophysiology, diagnosis, and management of pericarditis in children.

Presentation: Prepare a presentation to share findings with peers or at departmental meetings to encourage discussion.

Integration of Knowledge: Apply new insights into clinical practice and case discussions.

Experiential-Learning Learning 21.6: Ilaj bil-ghaza (dietotherapy) and Ilaj-bit-Tadbir (regimenal therapy) in hyperlipidemia cases management.

One or more activities can be chosen (Total time- 2 hours)

1: Clinical Case Studies (30 mins)

Review case studies of patients presenting with symptoms or risk factors for hyperlipidemia. Discuss the clinical history, physical examination findings, and laboratory results that indicate hyperlipidemia. Collaboratively create management plans that include dietary modifications and regimenal therapies based on Unani principles. Present findings to peers or faculty for feedback and discussion. and/ or **2: Workshops on Diagnostic Criteria and Assessment (40 mins)** Learn about the lipid profile and its components (total cholesterol, LDL, HDL, triglycerides) and their significance. Practice taking thorough patient histories, emphasizing dietary habits and lifestyle factors. Conduct hands-on training in interpreting laboratory results and identifying patients who may need dietary interventions. and/or **3: Practical Sessions on Ilaj bil-ghaza and Ilaj-bit-Tadbir (30 min)** Conduct interactive workshops on meal planning that emphasizes foods beneficial for managing hyperlipidemia, focusing on whole grains, fruits, vegetables, and healthy fats. Explore the principles of Ilaj-bit-Tadbir, including physical activities, stress management, and sleep hygiene. Use case scenarios to develop personalized management plans that integrate both dietary and regimenal approaches. and/or **4: Reflective Practice and Evaluation (20 mins)** After implementing management plans, reflect on patient outcomes and the challenges faced in adherence to Ilaj bil-ghaza and Ilaj-bit-Tadbir. Conduct group discussions or individual assessments to share experiences, successes, and areas for improvement. Use feedback to refine management strategies and enhance future practice.
Experiential-Learning Learning 21.7: Reinforcement activities on hyperlipidemia
One or more activities can be chosen (Total time- 1 hour)

1. Clinical Case Reviews (60 mins)

Instructions:

- **Case Selection**: Gather case studies from clinical practice or literature that illustrate different aspects of hyperlipidemia.
- **Discussion Group**: Organize discussions with peers or mentors to evaluate selected cases.
- **Assessment Focus**:
  - Discuss presenting symptoms, risk factors, and clinical findings.
  - Identify diagnostic tests (e.g., lipid panel, metabolic syndrome assessment) and their interpretation.
  - Review treatment plans, including lifestyle modifications and pharmacological interventions (e.g., statins, fibrates).
- **Feedback and Insights**: Discuss outcomes and gather feedback on the decision-making process for diagnosis and management. or

2. Simulation-Based Learning (60 mins)

Instructions:

- **Scenario Development**: Create or utilize scenarios that simulate patients with varying levels of hyperlipidemia and associated comorbidities (e.g., diabetes, hypertension).
- **Role-Playing**: Assume roles during the simulation (e.g., clinician, dietitian).
- **Clinical Assessment**: Conduct a clinical assessment, including history-taking, physical examination, and ordering relevant diagnostic tests.
- **Management Plan**: Develop and implement a management plan based on the diagnosis, discussing dietary changes, exercise recommendations, and medication options.
- **Debriefing**: Conduct a debriefing session to reflect on the decisions made and areas for improvement. or

3. Clinical Rotations in Endocrinology or Cardiology (60 mins)

Instructions:

- **Patient Interactions**: Assess patients presenting with hyperlipidemia and document findings.
- **Diagnostic Testing**: Learn to interpret lipid profiles and related metabolic tests.

- **Management Strategies**: Collaborate with attending physicians to develop and implement management strategies based on clinical presentations and diagnostic findings.
- **Documentation and Reflection**: Maintain a log of experiences, including patient assessments, diagnostic criteria applied, treatment plans, and outcomes. and/or

4. Research and Literature Review (60 mins)

Instructions:

- **Literature Search**: Review recent studies, clinical guidelines, and reviews related to hyperlipidemia management.
- **Key Findings**: Summarize findings about pathophysiology, diagnosis, and management of hyperlipidemia.
- **Presentation**: Prepare a presentation to share findings with peers or at departmental meetings to encourage discussion.
- **Integration of Knowledge**: Apply new insights into clinical practice and case discussions.

Experiential-Learning Learning 21.8: Diagnosis and management of hypertension

One or more activities can be chosen (Total time- 1 hour)

1. Interactive Lectures and Seminars (60 mins)

Engage with expert faculty members who can provide insights into recent guidelines and evidence-based practices.

Participate in discussions on the unique aspects of diagnosing hypertension in pediatric patients, including appropriate measurement techniques.

Use case examples to illustrate the clinical presentation and management of pediatric hypertension.

or

2. Case-Based Learning (CBL) (60 mins)

Work in small groups to evaluate detailed case studies, focusing on patient history, clinical examination, and lab results.

Identify key signs and symptoms that suggest hypertension and discuss differential diagnoses.

Develop management plans tailored to individual patient needs, incorporating lifestyle modifications, pharmacological treatments, and follow-up strategies.

or

3. Clinical Rotations and Observations (60 mins)

Shadow experienced pediatricians during ward rounds and outpatient clinics, focusing on the evaluation and management of hypertensive patients.

Take part in patient assessments, including physical exams and history-taking, to recognize signs and symptoms.

Document observations and discuss findings with supervising physicians to reinforce learning.

Experiential-Learning Learning 21.9: Pharmacological management of hypertension

One or more activities can be chosen (Total time- 1 hour)

1: Case-Based Learning (CBL) (60 mins)

Select diverse case studies that include patients with different diseases and pharmacological interventions.

In small groups, discuss patient histories, medications prescribed, expected responses, and possible complications.

Encourage students to propose monitoring plans, including laboratory tests, vital signs, and patient-reported outcomes.

Facilitate a debriefing session to reflect on learning points and the rationale behind management decisions.

or

2: Simulated Clinical Scenarios (60 mins)

Develop simulation scenarios based on common diseases treated with pharmacological management (e.g., diabetes, hypertension).

Assign roles (e.g., physician, nurse, patient) to students, emphasizing monitoring techniques such as checking blood glucose levels or blood pressure.

Have students assess patient responses, manage medication adjustments, and recognize complications.

Conduct post-simulation discussions to analyze actions taken, decision-making processes, and patient outcomes.

or

3: Clinical Rotations and Ward Rounds (60 mins)

During ward rounds, actively participate in discussions about patients' pharmacological management and clinical status.

Monitor patients' vital signs, lab results, and side effects of medications.

Engage with supervising physicians to discuss assessment strategies for evaluating drug efficacy and adverse reactions.

Document observations and reflect on learning experiences in a clinical logbook.

or

4: Evidence-Based Practice (EBP) Projects (60 mins)

Identify a clinical question regarding the effectiveness or safety of a medication in a specific patient population.

Conduct literature reviews to gather evidence on pharmacological management strategies and monitoring protocols.

Present findings to peers or faculty, discussing implications for practice, monitoring strategies, and potential complications.

Implement evidence-based guidelines in clinical practice and evaluate their impact on patient outcomes.

or

5: Group Discussions and Journal Clubs. (60 mins)

Select relevant articles from medical journals focusing on drug efficacy, safety, and monitoring strategies.

Facilitate discussions on study designs, results, and implications for clinical practice.

Encourage students to critique methodologies and discuss how findings can be applied to monitor patient responses in real-world settings.

Summarize key insights and develop guidelines for monitoring pharmacological management in various diseases.

Experiential-Learning Learning 21.10: Community programs in relation to hypertension.

One or more activities can be chosen (Total time- 1 hour)

1: Community Needs Assessment (60 mins)

Develop surveys or focus group questions targeting parents, teachers, and children to gather information on current habits and challenges.

Analyze data to identify gaps in physical activity opportunities and nutritional knowledge.

Use findings to tailor program content to meet the community's specific needs and interests.

or

2: Peer Teaching and Reflection (60 mins)

Organize presentations or workshops where PG students teach each other about best practices in promoting physical activity and nutrition. Reflect on personal experiences, challenges faced, and strategies used during program implementation. Encourage constructive feedback among peers to foster a collaborative learning environment.	
Modular Assessment	
Assessment	**Hour**
Instructions: Conduct a structured Modular assessment. The assessment will be for 50 marks. Keep a structured marking pattern. Use different assessment methods in each module for the semester. Keep a record of the structured pattern used for assessment. Calculate the modular grade points as per Table 6C. **1. Scenario-Based Assessment** **Description:** Students are presented with two clinical scenarios involving conditions such as infective endocarditis, myocarditis, pericarditis, hyperlipidemia, or systemic hypertension. Each scenario will include symptoms, basic lab findings, and diagnostic cues, requiring students to: Make a diagnosis, Explain their reasoning, Outline a management plan. **Format:** Two scenarios, each worth 5 marks. **Total Marks:** 10 and **Time:** 45 minutes **Criteria and Marks distribution (5 marks) per scenario** Diagnosis and Reasoning: Correct diagnosis and logical reasoning-2 marks Management Plan: Appropriate management steps, including pharmacological and non-pharmacological approaches-2 marks Communication and Clarity: Clear presentation and organized approach-1 marks **2. Theory Case Study** **Description:** A written case study presents a patient with either hyperlipidemia, systemic hypertension, or pericarditis, requiring analysis of the condition and formulation of a treatment plan. Topics Covered: Identification of primary and secondary risk factors, Suggested lifestyle interventions, pharmacological treatment, and long-term follow-up.	2

Marks: 10 and **Time:** 45 minutes **Criteria and Marks distribution (10 marks)** Understanding of Condition: Clear understanding of the pathophysiology and presentation-4 marks Risk Factor Identification and Intervention Plan: Appropriate identification and feasible intervention strategies-4 marks Clarity and Structure: Logical flow and clear explanation-2 marks **3. Critical Appraisal of a Research Article** **Description:** Students will be assigned a recent research article related to one of the cardiovascular disease conditions and will critically appraise the methodology, results, and implications for clinical practice. **Instructions:** Read the assigned article thoroughly, Prepare a written appraisal (approximately 500 words) covering the following: Study objectives -1 mark Methodology- 1 mark Key findings- 1 mark Implications for practice- 2 marks Submit the appraisal by the end of the assessment period. Marks: 5 marks and Time: 30 minutes (on continuous basis) OR Any Practical in converted form can be taken for assessment (10 marks) and Any experiential, such as portfolios/ reflections/ presentations can be taken as assessment. (15 marks)	
Module 22 : علم السرطان Ilm-ul-Sartan (Oncology)	
Module Learning Objectives (At the end of the module, the students should be able to)	

1. Describe Unani concept of Sartan i.e. (Asbab, Tashkhees,Usul-i-ilaj, Ilaj ,IBT regiment , Hifz-i-ma-taqaddum,etc.) and correlate it with advance technology for investigation & management.
2. Demonstrate a deep understanding of the types, etiology, epidemiology, and pathophysiology of common pediatric cancers, including leukemia, lymphomas, neuroblastoma, and brain tumors.
3. Conduct thorough evaluations, including history-taking, physical exams, and appropriate use of diagnostic tools, to accurately diagnose and stage pediatric cancers, while interpreting findings from imaging, pathology, and molecular tests.
4. Formulate and implement individualized treatment plans using a combination of surgery, chemotherapy, radiation therapy, immunotherapy, and stem cell transplantation, and explain the rationale behind each modality for specific cancer types.
5. Describe Palliative care to deliver holistic, patient-centered supportive care, addressing pain management, infection control, nutritional support, and psychological needs, while understanding the principles of pediatric palliative care for end-of-life cases.
6. Identify, manage, and provide counseling on the late effects of cancer treatment, and plan long-term follow-up care that includes surveillance for secondary malignancies and preventive health strategies for childhood cancer survivors.
7. Apply evidence-based Unani practices by critically evaluating current research and clinical guidelines, participate in discussions of emerging therapies, and demonstrate skills to engage in clinical trials or quality improvement initiatives in pediatric oncology.

Unit 1 Leukemia

22.1.1.Acute Lymphoblastic Leukemia

22.1.2.Acute Myelogenous Leukemia.

22.1.3.1.Chronic Myelogenous Leukemia.

22.1.3.2.Juvenile Myelomonocytic Leukemia.

22.1.3.3.Down Syndrome with Acute Leukemia.

22.1.3.4.Infant Leukemia.

References: 34,44,63

3A	3B	3C	3D	3E	3F	3G
CO1,CO2,CO4, CO5,CO6,CO7, CO8	Describe Acute Lymphoblastic Leukemia,Acute Myelogenous Leukaemia,Chronic Myelogenous Leukemia, Juvenile Myelomonocytic Leukemia, Down Syndrome with Acute Leukaemia, Infant Leukemia.	2	Lecture	CE	Knows-how	L&PPT ,PL,FC,L&GD
CO1,CO2,CO4, CO5,CO6,CO7, CO8	Demonstrate Peripheral Blood Smear Examination for Leukemia and Interpretation of Complete Blood Count (CBC) in Leukemia.	1	Practical22.1	PSY-MEC	Shows-how	PT,SIM,DL,L RI,D
CO1,CO2,CO4, CO5,CO6,CO7, CO8	Demonstrate Bone Marrow Aspiration technique and it's laboratory findings .	1	Practical22.2	PSY-MEC	Shows-how	GBL,FC,W,P BL,D
CO1,CO2,CO4, CO5,CO6,CO7, CO8	Interpret of X-ray, CT, MRI in case of Leukaemia.	1	Practical22.3	CE	Does	BL,PT,D,PSM ,DIS
CO1,CO2,CO4, CO5,CO6,CO7, CO8	Discuss recent advances in Leukaemia.	1	Practical22.4	CC	Shows-how	W,PL,DIS,CB L,X-Ray
CO1,CO2,CO4, CO5,CO6,CO7, CO8	Interpret and document case of leukemia along with treatment plan.	1	Experiential-Learning22.1	CE	Does	SIM,PBL,LRI, ML,TBL

CO1,CO2,CO4, CO5,CO6,CO7, CO8	Counsel the patients and families on Leukaemia Prognosis.	1	Experiential-Learning22.2	AFT-CHR	Does	DIS,W,SIM,RP,JC
CO1,CO2,CO4, CO5,CO6,CO7, CO8	Review and present the concept of Bone marrow transplant in leukemia.	1	Experiential-Learning22.3	PSY-ORG	Does	ML,CBL,DIS, BS,PAL
CO1,CO2,CO4, CO5,CO6,CO7, CO8	Formulate Chemotherapy Protocols in Leukemia.	1	Experiential-Learning22.4	CS	Does	SIM,BS,PBL, TBL,DIS
CO1,CO2,CO4, CO5,CO6,CO7, CO8	Discuss application of Cytogenetic and Molecular Techniques in Leukemia Diagnosis.	1	Experiential-Learning22.5	PSY-MEC	Does	LRI,PBL,BS,BL,DL
Unit 2 Lymphoma 22.2.1.Hodgkins Lymphoma 22.2.2.Non-Hodgkin Lymphoma **References:** 34,44,63						
3A	**3B**	**3C**	**3D**	**3E**	**3F**	**3G**
CO1,CO2,CO4, CO5,CO6,CO7, CO8	Describe Lymphoma (Hodgkin & Non-Hodgkin Lymphoma with it's epidemiology, pathogenesis ,clinical manifestation, diagnosis ,differential diagnosis, treatment, Relapse, Prognosis).	1	Lecture	CE	Knows-how	FC,L&PPT

CO1,CO2,CO4, CO5,CO6,CO7, CO8	Organize a session for Diagnostic technique to obtain histopathology slide review to Identify Reed-Sternberg Cells in Hodgkin Lymphoma.	1	Practical22.5	AFT-SET	Shows-how	DIS,CBL,W,BL,TBL
CO1,CO2,CO4, CO5,CO6,CO7, CO8	Anticipate the Interpretation of Imaging Studies (CT and PET Scans) for Lymphoma Staging.	1	Experiential-Learning22.6	AFT-SET	Does	TBL,DL,PT,GBL,DIS
CO1,CO2,CO4, CO5,CO6,CO7, CO8	Build up the skill for history taking and comprehensive clinical assessment in Lymphoma (Hodgkin & Non-Hodgkin Lymphoma) along with diagnosis and treatment options.	1	Experiential-Learning22.7	PSY-MEC	Does	LRI,BS,PBL, CD,PAL
CO1,CO2,CO4, CO5,CO6,CO7, CO8	Arrange Lymph Node palpation and clinical assessment session in a suspected case of Lymphoma.	1	Practical22.6	PSY-ORG	Shows-how	CBL,BL,D,RP ,PAL
CO1,CO2,CO4, CO5,CO6,CO7, CO8	Execute differential diagnosis and recommend treatment plan for Hodgkin v/s. Non-Hodgkin Lymphoma	1	Experiential-Learning22.8	PSY-MEC	Does	BS,BL,W,PBL ,D

Unit 3 Concept of Sartan and other pediatric tumour.

22.3.1.Unani concept of Sartaan (Asbab, Aqsam, Alamat, Tashkhis, Usul-i-ilaj, etc.).

22.3.2.Tumours of Neuron, retina, kidney, liver, bone and soft-tissue sarcoma,etc.

References: 34,39,44,51,63						
3A	**3B**	**3C**	**3D**	**3E**	**3F**	**3G**
CO1,CO2,CO4, CO5,CO6,CO7, CO8	Describe the unani concept of Sartaan. (Asbaab, Aqsam ,Alamaat, Tashkhis,Usool-e-ilaj,etc.).	1	Lecture	CE	Knows-how	L&PPT ,SY
CO1,CO2,CO4, CO5,CO6,CO7, CO8	Describe in brief about other pediatric tumours (Neuron, retina, kidney ,liver, bone, soft-tissue sarcoma, etc.)	1	Lecture	CE	Knows-how	SY,L_VC,L&PPT
CO1,CO2,CO4, CO5,CO6,CO7, CO8	Demonstrate histopathological slides of various pediatric tumors, such as neuroblastoma, retinoblastoma, Wilms tumor (kidney), hepatoblastoma (liver), osteosarcoma (bone), and soft-tissue sarcomas, to understand cellular characteristics and tumor differentiation.	2	Practical22.7	PSY-MEC	Shows-how	TBL,BS,DL,GBL,W
CO1,CO2,CO4, CO5,CO6,CO7, CO8	Interpret imaging studies (X-ray, MRI, CT) for identification and staging tumors commonly found in pediatric.	2	Experiential-Learning22.9	CE	Does	SIM,JC,GBL, DL,PBL
CO1,CO2,CO4, CO5,CO6,CO7, CO8	Demonstrate how to diagnose pediatric tumours.	2	Practical22.8	PSY-MEC	Shows-how	CD,D-BED,TBL,ML, PBL

CO1,CO2,CO4, CO5,CO6,CO7, CO8	Analyze a series of pediatric case studies involving various tumors, working through diagnosis, differential diagnosis, and appropriate diagnostic tests.	1	Experiential-Learning22.10	CAN	Does	BS,D,PAL,LRI,BL
CO1,CO2,CO4, CO5,CO6,CO7, CO8	Interpret tumor markers to diagnose pediatric tumor cases.	1	Experiential-Learning22.11	CE	Does	SIM,LRI,BL,PAL,CD
CO1,CO2,CO4, CO5,CO6,CO7, CO8	Review and present unani literature for Sartaan along with emphasis on recently published original research papers on Sartaan.	1	Experiential-Learning22.12	CE	Does	DL,LRI

Practical Training Activity

Practical Training 22.1 Peripheral Blood Smear examination in leukemia.

Total practical time :1 hour.

Teacher can conduct any one activity from the following:

1.Peripheral Blood Smear Preparation and Examination for Leukemia (1 hour)

Students will be guided by teacher on how to prepare and examine a peripheral blood smear, focusing on proper slide preparation, staining, and identifying characteristic features of leukemia under the microscope, such as blasts, Auer rods (in AML), and abnormal cell morphology.

2. Guided Analysis and Interpretation of Complete Blood Count (CBC) in Leukemia Cases (1 hour)

Teacher will provide the students to review CBC reports showing leukemic patterns (e.g., leukocytosis, anemia, thrombocytopenia).

They'll be taught how to analyze CBC parameters like white blood cell count, hemoglobin levels, and platelet counts, and correlate findings with different leukemia subtypes.

3. Microscopy Skills Session with Peer Review on Leukemia Blood Smears (1 hour)

Teacher will divide the students In pairs or small groups, students examine prepared blood smear slides and then discuss findings, noting any unusual or characteristic cells (e.g., blasts in acute leukemias, lymphocytes in CLL).

Peer review and feedback are incorporated to enhance observational accuracy.

4. Simulated Case Study and Presentation on Leukemia Diagnosis Using CBC and Peripheral Smear Findings (1 hour)

Teacher will assign students with simulated patient cases with CBC and blood smear data. They must analyze the findings, make a preliminary diagnosis, and present their interpretation and reasoning to the class

Peer review and feedback are incorporated to enhance observational accuracy.

Evaluation: At the end of these activities, conduct a feedback session to assess student learning and areas for improvement. Encourage self-reflection and group discussions to enhance the learning experience further.

Practical Training 22.2 Bone Marrow Aspiration with interpretation .

Total practical time : 1 hour

Teacher can conduct this practical in two steps as follows :

Step 1: Hands-on Workshop -COMPULSORY ACTIVITY (30 minutes)

Teacher will demonstrate the procedure using a **manikin or bone marrow aspiration simulator**.

Allow students to practice **needle insertion, aspiration technique, and specimen collection**.

Provide feedback on **sterile technique, patient positioning, and safety precautions**.

Step 2: Teacher can conduct any one activity from the following for next 30 minutes:

1. Case-Based Learning (CBL) (30 minutes)

Teacher will present a case (e.g., **pancytopenia, leukemia, multiple myeloma**) and ask students to justify the need for **bone marrow aspiration**.

After discussing the case, show real **bone marrow biopsy slides** and ask students to **interpret** the findings.

2. Simulation-Based Training (VR & AR Models) (30 minutes)

Teacher will provide students with **VR headsets or AR apps** that simulate **bone marrow aspiration**.

Allow them to **practice virtually** before performing on a mannequin or real patient.

Conduct a **debriefing session** on **common errors and challenges**.

3. Flipped Classroom Approach (30 minutes)

Teacher will assign **pre-recorded video lectures, articles, and guidelines** for students to study before class.

During the session, focus on **interactive discussions, Q&A, and problem-solving**.

4. Gamification (Quiz & Competitive Learning) (30 minutes)

Teacher will use **Kahoot, Quizizz, or case-based MCQs** on topics such as:

Indications & contraindications

Complications of the procedure

Microscopic findings in different diseases

Divide students into teams for a **competitive quiz session**.

5. Microscopic Slide Review (Pathology-Based Learning) (30 minutes)

Teacher will provide **real bone marrow slides** showing cases of **leukemia, myelodysplastic syndrome, and aplastic anemia**.

Use **multimedia projection** to compare **normal vs. abnormal findings**

Evaluation: At the end of these activities, conduct a feedback session to assess student learning and areas for improvement. Encourage self-reflection and group discussions to enhance the learning experience further.

Practical Training 22.3 Imaging studies in Leukaemia.

Total practical time : 1 hour.

Teacher can conduct any one activity from the following:

1. Case-Based Workshop on Imaging of Leukemia Complications (1 hour)

Teacher will conduct a hands-on case-based workshop where teacher will guide students to analyze a range of imaging studies, including CT, MRI, and PET scans that illustrate common leukemia complications such as mediastinal masses, bone lesions, organomegaly, and CNS involvement.

Each case includes relevant patient history and clinical data to help students make connections.

2.Imaging Simulation Lab: Interactive 3D Imaging Analysis (1 hour)

Teacher will Set up a simulation lab where students can interact with 3D imaging models to visualize and explore complex anatomical changes in leukemia, such as bone marrow involvement and lymph node enlargement.

Instructors/ teacher guide students through specific tasks, such as measuring lesion sizes and identifying key areas of pathology.

3. Differential Diagnosis Practice: Comparing Imaging in Leukemia vs. Similar Conditions (1 hour)

Teacher will provide students with imaging cases that include leukemia complications alongside similar-appearing conditions (e.g., lymphoma, metastatic cancer)

.

Teacher/Instructor should guide and have them differentiate based on subtle imaging features. Each student or group presents their differential diagnosis and rationale.

4. Interactive Imaging Interpretation Workshop with Gamified Case Challenges (1 hour)

An teacher /instructor-led session introduces the common complications of leukemia seen in imaging, such as mediastinal mass, bone lesions, and splenomegaly.

Students are then divided into small teams, each team given a series of imaging cases (X-rays, CT, and MRI scans) to interpret.

Each team earns points for correct identification of findings and associated complications.

5.Differential Diagnosis Drill Using Imaging in Leukemia Complications(1 hour)

Teacher will provide a set of imaging reports.

Students analyze a set of imaging findings that include both leukemia-related complications and similar-looking conditions (e.g., distinguishing infection-induced lung infiltrates from leukemic lung involvement).Instructor should guide and have them differentiate based on subtle imaging features.

Students discuss and eliminate differential diagnoses to arrive at the most plausible explanation, scoring points for correct differentials and reasoning.

Evaluation: At the end of these activities, conduct a feedback session to assess student learning and areas for improvement. Encourage self-reflection and group discussions to enhance the learning experience further.

Practical Training 22.4 Recent Advances in Leukaemia.

Total practical time :1 hour.

Following are the Practical activities for the topic,"Discuss recent advances in Leukaemia",with different teaching learning method.Teacher can conduct any one activity from the following:

1. Interactive Lecture on Recent Advances in Leukemia Treatment (1 hour) Instruction:

Begin with an instructor-led lecture highlighting recent advances in leukemia treatment, including targeted therapies (like tyrosine kinase inhibitors), immunotherapies (such as CAR T-cell therapy), and advancements in bone marrow transplant techniques.

Use multimedia (slides, videos) to enhance understanding.

Feedback are incorporated to enhance observational accuracy of

2. Case-Based Learning: Analyzing Recent Clinical Trials in Leukemia (1 hour) Instruction:

Teacher will divide students into small groups and assign each group a recent clinical trial related to leukemia treatments.

Each group reviews the trial design, results, and implications for clinical practice. Groups then present their findings, emphasizing how these advances can impact patient management.

Peer review and feedback are incorporated to enhance observational accuracy of each group.

3. Journal Club: Discussion of Recent Publications on Leukemia Advances (1 hour) Instruction:

Teacher will organize a journal club session where students select and present a recent publication on advances in leukemia treatment or research.

Each student provides a summary, discusses the study's methodology, results, and clinical implications, and leads a group discussion.

The group discussion encourages diverse perspectives and deeper understanding.

4.Workshop: Translating Research Advances into Clinical Practice (1 hour) Instruction:

Conduct an instructor guided workshop where students are presented with various recent research findings on leukemia.

In groups, they will discuss how these findings could be implemented into clinical practice, considering patient populations, clinical guidelines, and resource availability.

Peer review and feedback are incorporated for accuracy.

5. Debate: Ethical Considerations in Advanced Leukemia Therapies (1 hour) Instruction:

Organize a structured instructor/ teacher guided debate on the ethical implications of emerging treatments for leukemia, such as CAR T-cell therapy and their accessibility, cost-effectiveness, and impact on quality of life.

Divide students into teams representing different viewpoints.

Peer review and feedback are incorporated for accuracy.

Evaluation: At the end of these activities, conduct a feedback session to assess student learning and areas for improvement. Encourage self-reflection and group discussions to enhance the learning experience further.

Practical Training 22.5 Histopathology slide to identify Reed-Sternberg Cells in Hodgkin Lymphoma.

Total practical time:1 hour.

This Practical Activity Plan contain basic 3 steps as follows:

Step 1. Introduction to Diagnostic Techniques (10 minutes) :

- Teacher will begin with a brief lecture introducing the diagnostic techniques used to obtain histopathology slides in Hodgkin lymphoma, including fine-needle aspiration (FNA) and excisional biopsy.
- Discuss the significance of identifying Reed-Sternberg cells in the diagnosis and staging of Hodgkin lymphoma.

Step 2. Slide Preparation Workshop (35 minutes) :

- Teacher will organize a hands-on workshop where students learn how to prepare histopathology slides from lymph node biopsy specimens.
- Teacher /instructor will demonstrate the steps involved in tissue processing, sectioning, and staining (e.g., Hematoxylin and Eosin staining).

Step3. Histopathology Slide Review Session (15 minutes)

- Teacher will provide students with pre-prepared histopathology slides of lymph node biopsies. Instruct them to identify Reed-Sternberg cells and other relevant histological features associated with Hodgkin lymphoma.
- A pathologist or instructor should guide the students during the session

After completing above steps following are the accessory teaching learning session for better understanding of students. Teacher can conduct any activity from the following for better understanding of students if time permits:

1. Case-Based Learning: Clinical Correlation

- Present clinical cases of patients diagnosed with Hodgkin lymphoma. Each case should include histopathology findings, clinical history, and imaging results.
- Students will discuss how the identification of Reed-Sternberg cells contributes to the diagnosis and management of the disease.

2. Assessment Quiz on Reed-Sternberg Cells Identification

- Administer a quiz that includes images of histopathology slides, asking students to identify the presence of Reed-Sternberg cells and explain the significance of their findings.
- The quiz could also include questions about the diagnostic techniques discussed.

Practical Training 22.6 Lymph Node Palpation and Clinical Assessment in Lymphoma.

Total practical time:1 hour

Teacher can conduct any one activity from the following:

1. Workshop on Lymphoma Basics (1 hour)

Activity: Begin with a workshop that covers the basics of lymphoma, focusing on the pathophysiology, clinical presentation, and management of Hodgkin and Non-Hodgkin lymphoma.

- Teacher will use a mix of multimedia presentations, including slides and videos, to explain the differences between the two types of lymphoma.
- Facilitate small group discussions on the implications of clinical findings in lymphoma.
- Incorporate case studies to allow students to apply their knowledge to real-life scenarios.

2. Demonstration of Lymph Node Palpation Techniques (1 hour)

Activity: Conduct a live demonstration of lymph node palpation techniques by an experienced clinician.

- Teacher will demonstrate proper hand positioning, technique, and areas to palpate (cervical, axillary, inguinal, etc.).

- Teacher will highlight specific characteristics of lymph nodes that indicate Hodgkin vs. Non-Hodgkin lymphoma (e.g., size, consistency, tenderness).
- Provide students with tips on patient positioning and comfort during examination.

3. Hands-On Practice in Small Groups (1 hour)

Activity: Organize small group sessions where students practice lymph node palpation on each other or standardized patients.

- Teacher will divide students into groups and assign them to different stations, each focusing on specific lymph node regions.
- Provide peer feedback as students practice palpating lymph nodes and assessing for abnormalities.
- Instructors circulate to provide guidance, answer questions, and assess students' techniques.

4. Clinical Assessment Simulation (1 hour)

Activity: Conduct a simulation session where students perform a comprehensive clinical assessment of a patient presenting with lymphadenopathy.

- Set up clinical scenarios for students to work through, including history taking, physical examination, and differential diagnosis formulation.
- Use standardized patients or actors to portray symptoms and responses accurately.
- Encourage students to document their findings and present their assessments to the group.

5. Interactive Skill Stations (1 hour)

Activity: Set up interactive skill stations where students practice lymph node palpation and clinical assessment.

- Organize multiple stations focusing on different regions (cervical, axillary, inguinal) and include both palpation and assessment of lymph node characteristics.
- Use standardized patients or anatomical models for practice, allowing students to experience different clinical scenarios.
- Instructors and peers provide feedback on techniques and findings at each station.

Reflective Debrief and Feedback Session

- Facilitate a group discussion on what students learned, challenges faced, and insights gained during the activities.
- Encourage sharing of experiences and strategies for improvement.
- Provide constructive feedback on techniques, clinical assessments, and communication skills observed during the practical sessions.

Practical Training 22.7 Histopathological slides of various pediatric tumour.

Total practical time: 2 hour.

Step-1: Overview of Pediatric Tumors.(Compulsory session in brief) (30 minutes)

- Teacher will begin the session with a short lecture covering pediatric tumors, their incidence, risk factors, and clinical presentations.
- Discuss histological features unique to each tumor type.
- Use slides or digital presentations to show clinical images and histopathological slides.
- Highlight key cellular characteristics of each tumor type.

Step-2 :Histopathological Slide Review Work shop.(Compulsory session) (1 hour):

- Teacher will provide students with histopathological slides of neuroblastoma, retinoblastoma, Wilms tumor, hepatoblastoma, osteosarcoma, and soft-tissue sarcomas.
- Allow students to examine the slides under a microscope, identifying key cellular characteristics and making notes on each tumor's differentiation.
- Pair students for peer learning, encouraging them to discuss their observations and findings.
- Instructors circulate to provide guidance and answer questions

Step-3 : Teacher can conduct any one activity from the following : (30 minutes)

1. Case-Based Learning **(30 minutes)**

- Present clinical cases of pediatric patients diagnosed with specific tumors, alongside corresponding histopathological slides.
- Students will work in groups to analyze the cases, interpret the histological slides, and propose a diagnosis based on their findings.
- Facilitate discussion within groups, encouraging collaboration and critical thinking.
- Each group presents their case analysis to the class, highlighting key findings and reasoning.

2. Interactive Slide Annotation: **(30 minutes)**

- Use digital platforms or software that allows students to annotate slides interactively.
- Students will label key features on the slides and provide brief explanations of their significance.
- Conduct this activity in a computer lab or using tablets in the classroom.
- Encourage students to share their annotations with the class, fostering discussion

3. Brainstorming Session **(30 minutes)**

- Organize students into small groups and assign each group a specific tumor type.
- Each group will brainstorm potential histological features, differential diagnoses, and clinical implications associated with their assigned tumor.
- Use a whiteboard or flip chart to visualize their ideas and encourage creativity.
- Groups present their findings to the class, and peers can ask questions or provide feedback.

4. Interactive Quiz Competition **(30 minutes)**

- After the slide review workshop teacher will conduct a quiz competition using a quiz platform (e.g., Kahoot! or Quizizz).
- Questions will focus on histopathological features, clinical presentations, and differences between tumor types.
- Create engaging questions that encourage participation and friendly competition among students.
- Award prizes or recognition for top performers to enhance motivation.

Practical Training 22.8 **Steps for history taking & assessing symptoms in pediatric tumour.**

Total practical time :2 hour.

Teacher can conduct any one activity from the following:

1. *Bedside Demonstration (2 hour)*

***A*ctivity**: Conduct bedside demonstrations to assess real pediatric patients with suspected tumors.

Preparation: Schedule a session in a pediatric ward with a clinician experienced in pediatric oncology.

Demonstration: The clinician demonstrates history taking and physical assessment techniques for each tumor type.

For **Wilms tumor**: Demonstrate how to assess abdominal swelling and palpate the abdomen.

For **retinoblastoma**: Demonstrate how to assess eye abnormalities, including looking for leukocoria (white pupil) and strabismus (crossed eyes).

For **osteosarcoma**: Demonstrate how to assess bone pain and conduct a physical examination of the affected limb.

Student Participation: Allow students to practice under supervision after the demonstration.

2. Workshops on History Taking (2 hour)

Activity: Organize interactive workshops focused on history-taking skills tailored to pediatric patients.

Introduction: Start with a brief lecture on the importance of a thorough history in pediatric oncology, focusing on specific symptoms and questions relevant to each tumor type.

Role-Playing: Students engage in role-playing scenarios where one acts as the clinician and the other as the parent of a child exhibiting relevant symptoms. Use standardized patient scenarios that mimic real clinical presentations.

Feedback Session: After each role-play, conduct a feedback session where peers and instructors provide constructive criticism and suggestions for improvement.

3. AI-Assisted Virtual Patient Simulations ***(2 hour)***

Activity: Use AI-driven virtual patient simulation software.

Students interact with virtual patients presenting symptoms of pediatric tumors.

They must ask relevant history questions based on symptoms such as abdominal swelling, eye abnormalities, and bone pain.

The AI provides feedback on the appropriateness of questions, clinical reasoning, and potential diagnoses.

4. Problem-Based Learning (PBL) Cases ***(2 hour)***

Activity: Implement problem-based learning sessions focusing on real clinical cases.

Present students with detailed clinical cases for Wilms tumor, retinoblastoma, and osteosarcoma.

In small groups, students analyze the cases, formulate differential diagnoses, and outline the necessary history-taking steps and symptom assessments.

Groups present their findings to the class, facilitating peer learning.

5. Interactive Workshops on Symptom Assessment ***(2 hour)***

Activity: Organize workshops focused on physical examination techniques related to pediatric tumors.

Demonstrate techniques for assessing abdominal swelling (Wilms tumor), examining the eyes (retinoblastoma), and assessing bone tenderness (osteosarcoma).

Students practice these techniques on mannequins or standardized patients, guided by instructors.

Incorporate discussions on clinical findings and how they correlate with patient history.

Experiential Learning Activity

Experiential-Learning Learning 22.1: Evaluation of a case of leukemia along with Treatment Plan for Acute and Chronic Leukemia.
Total experential time :1 hour. **Teacher can conduct any one activity from the following :** **1. Case-Based Learning (CBL) (1 hour)** Present a realistic case scenario involving a patient with suspected leukemia, including symptoms (e.g., fatigue, fever, bruising), basic lab findings, and patient history. Break students into small groups and distribute the case scenario. students will evaluate the symptoms, interpreting lab values, and suggesting a diagnosis (acute vs. chronic leukemia). Each group presents its findings, followed by feedback. **2. Journal Club for Recent Advances (1 hour)** Organize a journal club session to review recent research on leukemia treatments, such as tyrosine kinase inhibitors for CML or immunotherapy for ALL Assign students articles on new treatments, discuss methodologies, outcomes, and clinical significance. Students present findings, leading to a group discussion on the evolving treatment landscape. **3. Gamified Case Diagnosis Challenge (Virtual or In-Class) (1 hour)** Create a competitive diagnosis game, where students are presented with anonymized patient cases of leukemia, and points are awarded for accurate and quick diagnoses. Present initial symptoms for each "patient" and allow students to "unlock" additional information like lab reports, bone marrow biopsy findings, and imaging, using points or tokens. Assign points based on the correct identification of leukemia type (e.g., AML, ALL, CML, or CLL) and accuracy in selecting diagnostic tests. Introduce bonus rounds with rare or atypical presentations, requiring critical thinking. **4.Leukemia “Escape Room” Challenge (Physical or Virtual) (1 hour)** An escape room-style game where students solve leukemia-related puzzles to "escape" or progress through treatment challenges.

Set up several rooms or stages, each with a different leukemia-related challenge. Examples include diagnosing based on lab findings, understanding the correct treatment protocol, or solving a patient case with multiple symptoms.

Each "room" can have clues tied to leukemia diagnostics (e.g., blood smear images, patient histories, cytogenetic results) and treatment protocols.

Students must solve puzzles within a set time to move forward, fostering excitement and collaboration.

5.Virtual Reality (VR) or Augmented Reality (AR) Pathology Lab Experience (1 hour):

A VR/AR simulation where students examine leukemia slides, diagnose based on lab findings, and plan treatment within a virtual pathology lab.

Provide VR headsets or tablets with AR overlays to allow students to explore leukemia cell morphology (blasts in acute leukemia, mature cells in chronic leukemia).

Include interactive quizzes or flashcards within the VR environment for self-assessment.

Set up scenarios where students can practice diagnostic and staging skills in leukemia, interpreting labs and planning management steps.

Evaluation: At the end of these activities, conduct a feedback session to assess student learning and areas for improvement. Encourage self-reflection and group discussions to enhance the learning experience further.

Experiential-Learning Learning 22.2: Counselling for Lukaemia Prognosis.

Total experential time: 1 hour.

Teacher can conduct any one activity from the following:

1. Role-Play Counseling Sessions (1 hour)

- Provide students with a leukemia case profile (acute or chronic, adult or pediatric) including relevant medical history, current status, and treatment response.
- Assign students to role-play as healthcare providers, patients, and family members.
- Guide students to discuss prognosis, address common questions (survival rates, treatment success, side effects), and provide empathetic responses to emotions like fear, anger, or denial.
- Rotate roles, giving each student a chance to practice counseling from multiple perspectives.

2. Case-Based Discussion and Reflective Practice (1 hour)

- Present real-world cases of leukemia with varied prognoses and host a discussion focused on how to communicate different outcomes to patients and families.
- Provide case studies with distinct leukemia types (e.g., ALL with a high survival rate in children vs. chronic leukemia in adults).
- Engage students in discussing how they would approach prognosis counseling, considering age, treatment response, and individual family dynamics.
- Conclude with reflective practice where students write about their feelings or challenges in discussing difficult prognoses.

3. Gamified "Counseling Challenge" with Real-Time Feedback (1 hour)

- Create a quiz or challenge game where students encounter simulated counseling scenarios (with different patient emotions or family concerns) and must choose the best response.
- Present students with counseling challenges, where they select responses to questions or emotional reactions from virtual "patients" or "family members."
- Offer real-time feedback on each choice, explaining the reasoning behind preferred responses.
- Use scoring to encourage students to prioritize empathy, accuracy, and clear communication.

4. Journal Club on Patient-Family Communication in Oncology (1 hour)

- Organize a journal club focused on studies related to communication practices in oncology, specifically around delivering prognosis.
- Select articles on effective communication strategies for delivering cancer prognosis, focusing on both adult and pediatric oncology.
- Have students present summaries of each article, emphasizing key findings and practical applications.
- Discuss how to integrate these research-backed strategies into real counseling sessions.

5. Interactive Lecture with Scenario-Based Questions (1 hour)

- Host an interactive lecture on prognosis communication techniques, interspersed with scenario-based questions that encourage students to apply knowledge.
- Present techniques for conveying complex information simply, understanding emotional reactions, and fostering hope while remaining realistic.
- Throughout the lecture, pose scenarios (e.g., a pediatric patient with parents or a young adult with newly diagnosed CML) and have students suggest responses.

- Discuss and analyze student suggestions, highlighting areas for improvement.

Evaluation: At the end of these activities, conduct a feedback session to assess student learning and areas for improvement. Encourage self-reflection and group discussions to enhance the learning experience further.

Experiential-Learning Learning 22.3: Bone Marrow Transplant.

Total experential time :1 hour.

Teacher can conduct any one activity from the following:

1. Hands-on Workshop – "Transplant Pathway" Simulation (1 hour)

A guided hands-on simulation of BMT stages using flowcharts, mock lab reports, and patient monitoring data.

Students are assigned roles (oncologist, transplant nurse, lab technician, patient coordinator).

Use mock data (HLA typing results, blood counts, complications) to navigate the transplant process.

Conclude with a reflective discussion on clinical challenges, patient management, and post-transplant complications.

2. AI-Assisted Virtual BMT Scenarios (1 hour)

Engage with AI-based simulations where students interactively manage leukemia cases requiring BMT.

Students select a virtual case (e.g., acute leukemia in a child, chronic leukemia in an adult).

They make step-by-step decisions regarding donor selection, conditioning regimens, and monitoring complications.

AI provides feedback on their choices, highlighting best practices.

3. Gamified BMT Decision-Making Challenge (1 hour)

Interactive decision-making game where students navigate BMT-related clinical challenges.

Present patient cases with critical decision points (e.g., choosing between autologous vs. allogeneic BMT, selecting a donor, managing GVHD).

Students earn points for correct choices, encouraging engagement and knowledge retention.

Include a leaderboard to promote collaborative learning.

4. Bone Marrow Histology & Microscopy Workshop (1 hour)

Examination of bone marrow slides under a microscope to understand BMT's role in hematopoiesis restoration.

Provide normal and leukemic bone marrow slides for microscopic examination.

Discuss cellular differences pre- and post-transplant.: Analyze key hematological markers of transplant success and failure.

5. **Simulation Lab – "Stem Cell Harvesting and Infusion"(1 hour)**

Using a simulated environment, students observe or participate in a mock stem cell harvest and infusion procedure.

Set up a simulation with models or mannequins where students learn about the harvesting process (bone marrow aspiration or peripheral blood stem cell collection).

Demonstrate the infusion process, discussing how the stem cells are prepared and delivered to the patient.

Conclude with a Q&A session, where students can ask about the technical and clinical aspects of the procedure.

6.Edutainment with Interactive 3D Learning Module (1 hour)

Use a 3D educational module to explore the bone marrow's structure, functions, and role in leukemia and post-transplant recovery.

Students engage with a 3D, interactive model of the bone marrow, exploring its components (stem cells, hematopoietic niches) and seeing changes in leukemic vs. healthy marrow.

The module includes clickable sections to learn about transplant effects on each component, post-transplant immune system reconstitution, and potential complications.

Use quizzes embedded in the module for real-time assessment of understanding.

Evaluation: At the end of these activities, conduct a feedback session to assess student learning and areas for improvement. Encourage self-reflection and group discussions to enhance the learning experience further.

Experiential-Learning Learning 22.4: Chemotherapy Protocols in Leukemia.

Total experential time :1 hour.

Teacher can conduct any one activity from the following:

1. AI-Powered Chemotherapy Protocol Simulation (1 hour)

Students use an AI-driven platform that simulates various leukemia cases, where they choose chemotherapy regimens, adjust dosing, and monitor outcomes.

Students engage in a simulated treatment environment, selecting regimens (e.g., hyper-CVAD, FLAG-IDA, or TKI for CML) based on patient data.

The AI offers feedback on regimen appropriateness and tracks virtual patient outcomes based on treatment efficacy and side effect profiles.

Students can adjust doses or switch protocols based on AI-simulated feedback, learning to adapt treatment in response to complications.

2. Gamified Quiz: "Protocol Precision" (1 hour)

An interactive quiz game challenges students to match chemotherapy protocols to specific leukemia subtypes, age groups, and comorbidities.

Students compete individually or in teams, answering questions about choosing protocols, understanding drug mechanisms, and recognizing dose-limiting toxicities.

Each question has a timer to encourage quick, evidence-based decision-making, with points for accuracy and speed.

Feedback includes explanations, helping students learn from mistakes and reinforcing key information.

3. Small-Group Problem-Based Learning (PBL) (1 hour)

In small groups, students tackle real-world problems related to chemotherapy dosing, side effect management, and protocol modifications in leukemia.

Each group is given a clinical problem (e.g., chemotherapy toxicity, refractory leukemia, or infection management).

Students research and develop evidence-based solutions, such as dose adjustments or supportive care.

Groups present solutions to the class, encouraging collaborative learning and diverse approaches.

4. Case-Based Competition: "Leukemia Treatment Championship" (1 hour)

Students participate in a team-based game where they apply chemotherapy protocols to diverse leukemia cases. Each team is presented with cases that require selecting and justifying a chemotherapy plan.

Divide students into small teams, each assigned a case (e.g., adult ALL, pediatric AML, chronic phase CML).

Teams analyze each case, choose a chemotherapy protocol, and list reasons behind their choice.

Scenarios involve complexities like co-morbidities, prior treatment failure, or age-specific factors, requiring students to think critically.

Teams earn points based on the accuracy and rationale of their selections, with bonus points for handling side effects effectively.

5.Escape Room Challenge: "Protocol Mastery Mission" (1 hour)

Students work in teams to solve leukemia treatment-based challenges to "escape" from a virtual room, using clues linked to chemotherapy protocols.

Set up an escape room with multiple challenges, such as choosing the right induction therapy, calculating dosages, or managing adverse effects.

Each challenge unlocks a "clue" leading to the next stage of treatment, from initial diagnosis to maintenance.

Teams must solve each protocol-related puzzle within a set time limit to progress and ultimately "escape" the room.

Evaluation: At the end of these activities, conduct a feedback session to assess student learning and areas for improvement. Encourage self-reflection and group discussions to enhance the learning experience further.

Experiential-Learning Learning 22.5: Cytogenetic and Molecular Techniques in leukaemia diagnosis.

Total experential time: 1 hour.

Teacher can conduct any one activity from the following;

1. Laboratory Simulation Workshop(1 hour)

- Students participate in a laboratory-based workshop where they observe and conduct simulations of cytogenetic techniques such as karyotyping, FISH (Fluorescence In Situ Hybridization), and PCR (Polymerase Chain Reaction).
- Start with a demonstration of each technique, explaining its purpose in leukemia diagnosis, e.g., identifying chromosomal translocations in ALL or CML.
- Students work in pairs or small groups to simulate a cytogenetic analysis on sample data or images provided.
- Analyze mock sample results, identifying abnormal genetic markers, and linking them to leukemia subtypes.

2. Case-Based Learning: "Genetic Profiling and Diagnosis" (1 hour)

- Students are presented with leukemia cases that include genetic information derived from cytogenetic and molecular tests.
- Each case includes clinical history, presenting symptoms, and results from karyotyping, FISH, or PCR.
- Students analyze the genetic data to classify leukemia type (e.g., Philadelphia chromosome in CML), and discuss its impact on diagnosis and treatment planning.
- Cases can progress, introducing new genetic findings that affect prognosis and treatment adjustments, prompting students to adapt their approach.

3. Interactive Gamification: "Leukemia Genetics Quest" (1 hour)

- An interactive quiz game with scenarios focused on genetic findings in leukemia, where students progress through questions about techniques like PCR, FISH, and next-generation sequencing.
- Questions are framed as "quests," where each correct answer unlocks the next genetic clue.
- Each question or scenario involves identifying genetic markers associated with specific leukemia types, requiring students to choose the appropriate diagnostic method (e.g., FISH for Philadelphia chromosome).
- Feedback is given with each answer, explaining why specific markers and methods are relevant, adding depth to the learning process.

4. Virtual Microscopy Session (1 hour)

- Using virtual slides, students view and analyze cytogenetic and molecular diagnostic results for various leukemia cases.
- Provide access to digital slides showing cytogenetic features like chromosomal translocations, numerical abnormalities, or PCR gel electrophoresis results.
- Students examine each slide to identify genetic abnormalities and link them to corresponding leukemia subtypes, such as BCR-ABL fusion in CML.
- After analyzing, they discuss findings in small groups, considering how results influence prognosis and treatment.

5. AI-Assisted Molecular Diagnostic Tool (1 hour)

- Students use an AI-powered platform that provides mock leukemia cases and assists in interpreting cytogenetic data to confirm diagnoses.
- Each case includes detailed genetic profiles; students enter data into the AI tool, which provides diagnostic probabilities and information about associated markers.
- Students can adjust variables (e.g., changing genes to simulate mutation) to see how AI interpretations shift, giving insight into complex diagnostic processes.
- Students discuss AI-driven insights, comparing them with clinical guidelines for genetic interpretation in leukemia.

Evaluation: At the end of these activities, conduct a feedback session to assess student learning and areas for improvement. Encourage self-reflection and group discussions to enhance the learning experience further.

Experiential-Learning Learning 22.6: Interpretation of Imaging Studies for Lymphoma Staging.

Total experential time :1 hour.

Teacher can conduct any one activity from the following:

1. Group Activity: Image Interpretation Stations **(1 hour)**

- Set up multiple stations with different cases, each featuring CT and PET scan images along with clinical histories.
- Divide students into small groups and assign them to rotate through the stations.
- At each station, groups will analyze the images, identify relevant findings, and discuss the likely stage of lymphoma based on the provided information.

2. Case-Based Discussion and Analysis **(1 hour)**

- Provide a selection of clinical cases with accompanying CT and PET scans for in-depth discussion.
- Facilitate group discussions where students present their interpretations, justify their staging decisions, and consider differential diagnoses.
- Encourage critical questioning from peers to stimulate deeper analysis.

3. Image Interpretation Exercise **(1 hour)**

- Provide students with a set of anonymized CT and PET scan images of patients diagnosed with lymphoma.
- Instruct them to analyze the images, identify relevant findings, and categorize the stages of lymphoma based on established criteria (e.g., Ann Arbor staging system).

4. Interactive Quiz on Imaging Studies **(1 hour)**

- Create an interactive quiz focused on the interpretation of CT and PET scans in lymphoma.
- Include questions about identifying lymph nodes, lesions, and patterns suggestive of lymphoma staging.
- Use images from the previous exercise for real-time assessment

5. Peer Teaching: Presenting Imaging Findings **(1 hour)**

- Assign small groups to research and present specific aspects of lymphoma imaging, such as the advantages of PET scans in detecting metabolic activity versus anatomical changes visible in CT scans.
- Encourage them to include imaging examples in their presentations.

Reflection and Feedback Session: Conclude the practical activities with a reflection session where students discuss what they learned about imaging studies and their role in lymphoma staging. Encourage students to share their thoughts on the strengths and areas for improvement in their understanding of the material.

Experiential-Learning Learning 22.7: History taking and comprehensive clinical assessment in Lymphoma.

Total experential time: 1 hour.

Teacher can conduct any one activity from the following:

1. Interactive Role-Playing Sessions (1 hour)

- Students engage in role-playing exercises where they simulate patient interactions and history-taking scenarios.
- Pair students and assign one as the clinician and the other as the parent of a child suspected to have lymphoma(simulation for both the case Hodgkin & non-Hodgkin)
- Provide a checklist of relevant questions for history taking (e.g., presenting symptoms, family history, previous medical history).
- After the role-play, students switch roles and reflect on their experiences, discussing challenges and effective communication strategies.

2. Case-Based Learning (1 hour)

- Students are presented with detailed case studies of lymphoma patients(Hodgkin & non-Hodgkin) to analyze.
- Distribute written case scenarios that include symptoms, lab results, and family backgrounds.
- Students work in small groups to develop a comprehensive clinical assessment, identifying key issues and necessary investigations.
- Each group presents their findings and recommendations for further management, including diagnostic procedures and treatment options.

3. Peer Teaching Sessions (1 hour)

- Students research specific aspects of lymphoma (Hodgkin & non Hodgkin), including diagnosis and treatment options, then teach their peers.
- Teacher will assign topics related to lymphoma i.e. Hodgkin & non Hodgkin (e.g., staging, imaging techniques, treatment protocols) to small groups.
- Each group prepares a brief presentation or interactive session on their topic, incorporating discussion and Q&A.
- Facilitate feedback after each session to encourage critical thinking and deeper understanding among peers.

4.Objective Structured Clinical Examination (OSCE) (1 hour)

- Implement an OSCE focused on lymphoma (Hodgkin & non Hodgkin) assessment and counseling.
- Design stations that require students to perform specific tasks: taking a history, performing a physical examination, and counseling a parent.
- Each station is timed, and students are assessed based on their performance and communication skills.
- Provide immediate feedback after each station to reinforce learning and identify areas for improvement.

Evaluation: At the end of these activities, conduct a feedback session to assess student learning and areas for improvement. Encourage self-reflection and group discussions to enhance the learning experience further.

Experiential-Learning Learning 22.8: Differential Diagnosis and treatment plan for Hodgkin v/s. Non-Hodgkin Lymphoma.

Total experential time :1 hour.

Teacher can conduct any one activity from the following:

1. Case-Based Collaborative Learning (1 hour)

Activity: Utilize case-based collaborative learning (CBCL) to explore various clinical scenarios involving lymphomas.

- Present students with diverse patient cases that include differential diagnoses and require them to work in small groups to identify possible conditions (e.g., infectious lymphadenopathy, reactive lymphadenopathy, etc.).
- Encourage each group to prepare a differential diagnosis list and justify their reasoning based on the clinical data provided.
- Facilitate a class discussion where groups present their cases and reasoning, promoting peer learning and critical thinking.

2. Simulation of Clinical Scenarios (1 hour)

Activity: Implement simulation sessions where students interact with standardized patients portraying symptoms of lymphoma.

- Set up scenarios that require students to perform history taking, physical examination, and communicate their differential diagnosis and treatment recommendations to the patient.
- Debrief with the entire group, discussing challenges faced during the simulation and reinforcing key learning points.

3. AI-Assisted Learning Modules (1 hour)

Activity: Create interactive AI-driven learning modules that simulate real-world clinical scenarios.

- Utilize AI software that presents virtual patient cases with varying presentations of Hodgkin and Non-Hodgkin lymphoma.
- As students interact with the cases, they can input their differential diagnoses . Feedback from the AI regarding the accuracy and rationale of their choices at the feedback session.
- Integrate quizzes at the end of each module to reinforce learning and assess understanding.

4. Gamification through Simulation Games (1 hour)

Activity: Design a simulation game where students compete to diagnose and treat virtual patients with lymphoma.

- Divide students into small teams and provide each team with a set of clinical cases that require differential diagnosis.
- Use a point system where teams earn points for correctly diagnosing patients, recommending appropriate treatment plans, and justifying their choices based on clinical guidelines.
- Incorporate timed challenges and scenarios that simulate unexpected complications, requiring teams to adapt their treatment plans in real time.

5.Multimedia Presentations and Workshops (1 hour)

Activity: Organize workshops that focus on the latest treatment protocols and emerging therapies for Hodgkin and Non-Hodgkin lymphoma.

- Assign students to research different aspects of lymphoma treatment, including chemotherapy regimens, targeted therapies, and immunotherapies.
- Encourage them to create multimedia presentations (videos, infographics) that they can share with their peers during a workshop.
- Facilitate discussions on the implications of their findings for clinical practice and patient care.

Reflective Learning and Feedback Session

- Facilitate a group discussion where students share their reflections on what they learned about differential diagnoses and treatment planning.
- Encourage students to discuss the importance of patient-centered care and interdisciplinary approaches in managing lymphomas.
- Provide constructive feedback and highlight areas for further study or improvement.

Experiential-Learning Learning 22.9: Tumor Marker Analysis.

Total experential time: 1 hour.

The experiential activity will be conducted in 3 step as follows;

Step-1: Introductory Lecture on Tumor Markers in Pediatric Cancers (15 minutes):

Activity: Begin with a lecture covering the role and significance of tumor markers in diagnosing pediatric cancers, specifically beta-hCG for germ cell tumors and AFP for hepatoblastoma.

- Provide an overview of common pediatric tumor markers and explain the biochemical principles behind each.
- Discuss clinical presentations and specific tumor markers associated with different cancers, emphasizing the role of each marker in diagnosis and prognosis.

Step-2 : Demonstration of Sample Collection Techniques for Tumor Markers (20 minutes)

Activity: Conduct a demonstration where instructors show proper sample collection techniques for tumor markers, focusing on sterile technique, labeling, and proper handling.

- The instructor demonstrates blood sample collection on a mannequin or simulated arm, focusing on sterile techniques, sample handling, and correct labeling for markers like AFP and beta-hCG.
- Students observe the process, ask questions, and take notes to ensure a clear understanding of each step.

Step-3. Hands-On Lab Practice: Sample Collection and Preparation (25 minutes)

Activity: Students practice sample collection and preparation techniques using mannequin arms and simulated blood samples, working in small groups under supervision.

- Students rotate through workstations, each equipped for sample collection and preparation.
- They work in pairs, alternating roles of collecting and assisting, while lab instructors observe and provide feedback on technique, labeling, and handling.

Experiential-Learning Learning 22.10: Review of unani literature.

Total experential time:1 hour.

Teacher can conduct any one activity from the following:

1. Literature Review Workshop **(1 hour)**

Activity: Conduct a hands-on workshop where students collaboratively analyze Unani texts related to Sartaan, focusing on historical perspectives, treatment protocols, and medicinal formulations.

- Divide students into small groups and assign them specific texts or topics within Unani literature on Sartaan.
- Each group will present key findings, historical significance, and treatment methods detailed in their assigned literature.
- Facilitate discussions after each presentation to encourage questions and critical thinking.

2. ***Research Article Review Session*** **(1 hour)**

Activity: Organize a session where students review and discuss recently published original research papers from UGC-approved journals on Sartaan.

- Assign each student or group a specific research paper to read and summarize, focusing on methodologies, results, and implications for Unani treatment of Sartaan.
- Students will present their findings to the class, highlighting how modern research aligns with or contrasts traditional Unani perspectives.
- Encourage critical discussion on the strengths and limitations of the research, promoting analytical thinking.

3. ***Case Study Analysis*** **(1 hour)**

Activity: Present students with case studies of patients diagnosed with Sartaan and explore their treatment pathways using Unani methods alongside modern medical treatment.

- Divide students into groups and provide them with case studies that detail patient histories, treatment regimens, and outcomes.
- Each group will analyze their assigned case, considering the integration of Unani literature and modern research findings.
- Groups will present their analysis, discussing the effectiveness of different treatment modalities and potential recommendations.

4. ***Interactive Panel Discussion*** **(1 hour)**

Activity: Host a panel discussion with experts in Unani medicine and oncology, allowing students to ask questions and engage in dialogue about the future of Sartaan treatment.

- Invite practitioners, researchers, and educators in Unani medicine and oncology to participate in a panel.
- Prepare students with guiding questions beforehand to facilitate a meaningful discussion.
- Encourage students to share insights from their literature reviews and research findings during the discussion.

Experiential-Learning Learning 22.11: Imaging studies in Pediatric tumour.

Total experential time: 2 hours.

Step-1: Introductory Lecture on Tumor Staging and Imaging Modalities (Compulsory activity) (20 minutes):

- Begin the session with a 15-20 minute overview lecture on tumor staging, covering TNM (Tumor, Node, Metastasis) criteria and its application in pediatric cancers.
- Explain the role of different imaging modalities (X-ray, MRI, CT) in visualizing tumor characteristics and staging, using case examples from neuroblastoma, retinoblastoma, and soft-tissue sarcoma.
- Use annotated slides to show imaging examples and typical tumor features.
- Incorporate Q&A to engage students and address queries.

Step-2: Small Group Hands-On Image Analysis(Compulsory Activity) (1 hour):

- Divide students into small groups, and provide each group with anonymized X-ray, MRI, and CT images representing cases of neuroblastoma, retinoblastoma, and soft-tissue sarcoma at different stages.
- Guide each group to identify and measure tumor characteristics (location, size, spread) using provided staging worksheets.
- Each group collaborates to fill out staging worksheets and present their findings on tumor location, size, and spread.
- A facilitator circulates between groups to provide support and answer questions

Step-3:Teacher can conduct any one activity from the following: (40 minutes)

1. Case-Based Presentations and Peer Feedback (40 minutes)

- Each group will present one of their analyzed cases to the class, including the imaging interpretation, identified tumor stage, and rationale.
- Following each presentation, peers and facilitators provide constructive feedback and discuss possible alternative interpretations.
- Use a structured rubric for presentations to ensure each group covers key aspects like tumor size, lymph node involvement, and spread.
- Foster discussion by prompting students to think about different aspects of tumor spread and metastasis.

2. Gamified Staging Quiz for Reinforcement (40 minutes)

- After the presentations, conduct a gamified quiz (e.g., Kahoot! or Quizizz) to reinforce learning and test knowledge on tumor identification and staging.

- Include questions based on images, such as rapid recognition of tumor spread, location, or approximate stage.
- Design a set of multiple-choice and true/false questions based on images and clinical scenarios related to tumor staging.
- Reward points for both accuracy and speed to increase engagement and competitive spirit.

3. Interactive Group Activity with AI Assistance (40 minutes)

- Divide students into small groups and provide each with anonymized imaging samples (X-ray, MRI, CT) of neuroblastoma, retinoblastoma, and soft-tissue sarcoma.
- Each group uses AI-based imaging tools (or simulation platforms if available) to assist in identifying and analyzing tumor characteristics, including size and potential spread. Students can input dimensions and potential findings, receiving AI-aided interpretations or similar images for comparison.
- Encourage students to discuss their findings within the group and refer to AI suggestions as secondary reference points for validation.
- Facilitators guide students on how to use AI assistance effectively and verify results against manual observations.

4. Lab Demonstration of Imaging Techniques (40 minutes)

- Arrange a demonstration session in the imaging lab, where students are shown X-ray, MRI, and CT imaging procedures. A radiologist can explain the imaging process and highlight key differences among these imaging modalities.
- Provide annotated examples of typical pediatric tumor images to help students identify tumor features and assess how each imaging type contributes to understanding tumor stage and spread.

5.Journal Club Review on Pediatric Tumor Imaging Studies (40 minutes)

- Conduct a journal club session where students review selected articles on imaging practices, advancements in tumor detection, and recent studies on pediatric tumor staging.
- Encourage students to discuss the strengths and limitations of various imaging techniques and explore recent innovations in imaging technology for tumor diagnosis and staging.
- Facilitate discussion on research outcomes and clinical implications, fostering critical thinking about how new advancements can impact diagnostic accuracy and treatment decisions.

Reflection and Group Discussion: Wrap up with a brief reflection where students discuss what they learned, challenges they faced, and potential applications of these skills in clinical practice.Prompt students to share insights and ask remaining questions.

Experiential-Learning Learning 22.12: Comprehensive examination and diagnostic work-up in case of Pediatric tumour.

Total Experential time:1 hour.

Teacher can conduct any one activity from the following:

1. **Case Study Group Analysis: (1 hour)**

Activity: Organize students into small groups to analyze assigned pediatric tumor case studies.

- **Case Distribution**: Provide a series of detailed case studies representing various pediatric tumors, including clinical history, symptoms, and preliminary test results.
- **Group Analysis**: Groups work collaboratively to identify key clinical features, formulate initial diagnoses, and list differential diagnoses based on presented symptoms.
- **Diagnostic Testing Recommendations**: Each group discusses and selects appropriate diagnostic tests (e.g., imaging, laboratory tests) to confirm their diagnoses.

2.Simulation of Clinical Scenarios **(1 hour)**

Activity: Conduct simulated clinical scenarios where students practice their diagnostic skills.

- **Scenario Creation**: Develop realistic patient scenarios based on the case studies, including simulated patient presentations and histories.
- **Role-Playing**: Students take turns playing roles of healthcare providers and patients, practicing history taking, clinical assessment, and discussing differential diagnoses.
- **Debriefing Session**: After each simulation, hold a debrief to discuss experiences, challenges, and insights.

3. Expert Panel Discussion **(1 hour)**

Activity: Arrange for a panel of pediatric oncologists and diagnostic experts to engage with students.

- **Panel Setup**: Invite professionals to discuss real cases, diagnostic challenges, and treatment strategies in pediatric oncology.

- **Q&A Session**: Students can pose questions about their cases, diagnostic reasoning, and current best practices in pediatric tumor management.

4. Gamified Case Study Analysis **(1 hour)**

Activity: Use a gamification approach to make learning engaging and enhance retention.

- **Case Cards**: Distribute case "cards" detailing various pediatric tumor presentations, symptoms, and initial tests, designed to resemble clinical scenarios.
- **Diagnostic Pathway Points**: Students earn points for accurately identifying symptoms, selecting appropriate tests, and making initial diagnoses.
- **Leaderboard**: A live leaderboard tracks group progress, creating a competitive yet collaborative environment.

5. Peer-Led Differential Diagnosis and Testing Session **(1 hour)**

Activity: Conduct a structured session where students present their diagnostic approach, differential diagnosis, and test recommendations to peers.

- **Group Presentation**: Students, working in small groups, analyze their cases and prepare a differential diagnosis and testing plan.
- **Feedback Round**: After each presentation, peers provide feedback, prompting discussions on alternative diagnostic approaches and strategies.
- **Case Conclusion**: Groups revise their findings and diagnoses based on peer input.

Modular Assessment

Assessment	**Hour**
Instructions: Conduct a structured Modular assessment. The assessment will be for 25 marks. Keep a structured marking pattern. Use different assessment methods in each module for the semester. Keep a record of the structured pattern used for assessment. Calculate the modular grade points as per Table 6C. 1. Case-Based Assessment (CBA) Students will analyze a clinical vignette involving a pediatric patient with a malignancy.5 marks and 30 minutes 2. Practical Performance Assessment Assessment of identification of Histopathology slide related to pediatric tumors. 10 marks and 40 minutes 3. Mini-Clinical Evaluation Exercise (Mini-CEX) Direct observation of clinical interactions with a focus on assessing a child with suspected cancer and discussing management options. 5 marks	2

and 30 minutes 4. Simulated Patient Interaction Students will interact with a simulated patient presenting with symptoms of a pediatric tumor, conducting history-taking and counseling. 5 marks and 20 minutes Marks Breakdown 1. Case-Based Assessment (CBA) Components: Analyze a vignette of a child diagnosed with a specific tumor (e.g., Wilms tumor). Address questions regarding symptoms, differential diagnosis, and treatment options. Marks Breakdown: Identification of key features in the case (2 marks) Differential diagnosis (1 mark) Suggested management plan including Unani approaches (2 marks) 2. Practical Performance Assessment Marks Breakdown: Explanation of proper Technique of making Histopath slide (5 marks) Identification of key signs (5 marks) 3. Mini-Clinical Evaluation Exercise (Mini-CEX) Components: Observe a student interacting with a simulated patient, assessing history taking and clinical reasoning. Discuss management options, integrating both conventional and Unani treatments. Marks Breakdown: Communication skills (2 marks) Clinical reasoning (2 marks) Treatment options discussed (1 mark)	

4. Simulated Patient Interaction Components: Engage with a simulated patient presenting symptoms of a pediatric tumor (e.g., neuroblastoma). Conduct thorough history-taking and provide counseling. Marks Breakdown: Completeness of history taken (2 marks) Clarity and relevance of counseling provided (3 marks) Or Any Practical in converted form can be taken for assessment (25 marks). OR Any experiential, such as portfolios/ reflections/ presentations can be taken as assessment (25 marks)	

Semester No : 5

Module 23 : امراض نظام اعصاب ودماغ ـــ اول Amrād i-Nizām-i--Asaab-wa-Dimaagh –I (NEUROLOGICAL DISORDER –I)

Module Learning Objectives

(At the end of the module, the students should be able to)

1. Describe the development of the central and peripheral nervous systems in children .
2. Diagnose neurological disorders in pediatric cases.
3. Describe the pathophysiology and clinical features of diseases like acute flaccid paralysis,Epilepsy,Acute febrile seizure and Guillain-Barré syndrome,etc.
4. Interpret findings from diagnostic tools such as EEG, MRI, and CT scans ect,
5. Apply Unani medical concepts (such as Mizaj) to understanding and managing pediatric neurological disorders.
6. Formulate treatment plans incorporating Unani regimens like Ilaj bit Tadbeer (regimenal therapy) for epilepsy and other conditions.
7. Apply Unani pharmacological (Ilaj bil Dawa) approaches alongside modern treatment strategies.
8. Formulate management plans for pediatric patients using both Unani and contemporary medical approaches.

9. Counsel and educate parents and caregivers on management strategies, treatment adherence, and follow-up care.
10. Analyze current literature and research on pediatric neurology with a focus on integrating findings into practice.
11. Discuss a holistic approach that considers the physical, emotional, and psychological needs of the child.

Unit 1 Nizam- i-Asaab-wa-Dimāgh ki Tibbi Ta نظام اعصاب ودماغ کی طبی تشخیص وخصوصی تشخیصی طریقہ کارTibbi Tashkhis of Nizam- i-Asaab-wa-Dimāgh and KhususiTashkhisi Tariqa-i-kar(Evaluation of Central Nervous System and Special diagnostic procedures)

23.1.1.Clinical parameters for the assessment of Neurological disorders.

23.1.2.Special diagnostic procedures for the evaluation of Neurological Disorders.

References: 44,46,63

3A	3B	3C	3D	3E	3F	3G
CO1,CO2,CO4, CO5,CO6,CO7, CO8	Describe history taking, developmental examination, sensory & motor examination, autonomous nervous system, higher centres, cranial nerve examination,in patient with neurological disorders .	1	Lecture	CE	Knows-how	L&PPT
CO1,CO2,CO4, CO5,CO6,CO7, CO8	Describe special investigation in suspecting case of neurological disorder.	1	Lecture	CC	Knows-how	BL,L&GD

CO1,CO2,CO4, CO5,CO6,CO7, CO8	Demonstrate how to diagnose neurological disorder.	2	Practical23.1	PSY-GUD	Shows-how	D,JC,W,DIS, SDL
CO1,CO2,CO4, CO5,CO6,CO7, CO8	Demonstrate diagnostic tests & special investigation in neurological disorder cases.	2	Practical23.2	PSY-MEC	Shows-how	LRI,JC,W,CB L,DIS
CO1,CO2,CO4, CO5,CO6,CO7, CO8	Identify and assess neurological disorder patient.	2	Experiential-Learning23.1	CAN	Does	FV,SIM,PBL, LRI,TBL
CO1,CO2,CO4, CO5,CO6,CO7, CO8	Interpret and demonstrate the special investigation procedures in neurological disorder.	3	Experiential-Learning23.2	CE	Does	D-M,PL,D,SIM,J C
CO1,CO2,CO4, CO5,CO6,CO7, CO8	Discuss and present about the Recent Advances in Neurology such as N1 Implant, skin medicated patches, etc. (pros & Cons).	1	Experiential-Learning23.3	CC	Does	CBL,DIS,JC, BS,GBL

Unit 2 Seizure Disorders Part- A

23.2.1. *Sar´* (Epilepsy)

23.2.2. *Sar´a-i-radi* (Status Epilepticus).

References: 28,31,34,39,42,43,44,51,63

3A	3B	3C	3D	3E	3F	3G
CO1,CO2,CO4, CO5,CO6,CO7, CO8	Describe Unani Concept of *Ummul subyan* (Asbab, Musharkat e Aaza, Tashkhees, Alamaat, Usool-e-Ilaj,Ilaj), Epilepsy and Status epilepticus/ *Sar-e-Radi.*	2	Lecture	CE	Knows-how	L_VC,L&GD
CO1,CO2,CO4, CO5,CO6,CO7, CO8	Demonstrate a case of epilepsy .	2	Practical23.3	PSY-MEC	Shows-how	SIM,DIS,PBL, CBL,PSM
CO1,CO2,CO4, CO5,CO6,CO7, CO8	Demonstrate how to diagnose a case of Epilepsy.	2	Practical23.4	CE	Shows-how	CBL,PT,D,GB L,LRI
CO1,CO2,CO4, CO5,CO6,CO7, CO8	Assess and manage case of Status epilepticus in children.	1	Experiential-Learning23.4	CE	Does	IBL,W,BS,LRI ,TBL
CO1,CO2,CO4, CO5,CO6,CO7, CO8	Formulate a Unani Treatment plan for *Sara or Ummus sibyan.*	2	Experiential-Learning23.5	CS	Does	FV,CBL,PL,W ,BL
CO1,CO2,CO4, CO5,CO6,CO7, CO8	Perform Ilaj Bit Tadbeer regiments on Sara / *Ummus sibyan(* Epilepsy patient).	2	Experiential-Learning23.6	PSY-GUD	Does	PL,RP,D,BS, D-BED
Unit 3 Seizure Disorders Part-B						

23.3.1.Generalized Tonic Clonic Seizure.

23.3.2.Febrile Convulsion.

23.3.3.Management of Acute seizure.

References: 34,44,63

3A	3B	3C	3D	3E	3F	3G
CO1,CO2,CO4, CO5,CO6,CO7, CO8	Describe Generalized tonic clonic seizure and febrile seizure.	2	Lecture	CE	Knows-how	L&PPT
CO1,CO2,CO4, CO5,CO6,CO7, CO8	Describe the management of Acute febrile seizure (AFI).	1	Lecture	CC	Knows-how	PL,BS,FC
CO1,CO2,CO4, CO5,CO6,CO7, CO8	Demonstrate how to diagnose cases of generalized Tonic Clonic Seizure and febrile seizure.	3	Practical23.5	PSY-MEC	Shows-how	W,CBL,PBL,BS,BL
CO1,CO2,CO4, CO5,CO6,CO7, CO8	Demonstarte the protocols for managing Acute febrile seizure in emergency room.	3	Practical23.6	PSY-GUD	Does	D-BED,SIM,GBL,PT,W

CO1,CO2,CO4, CO5,CO6,CO7, CO8	Apply skill to assess & manage Generalized Tonic - Clonic Seizure(GTCS) patient.	3	Experiential-Learning23.7	PSY-MEC	Does	FC,BL,GBL,SIM,JC
CO1,CO2,CO4, CO5,CO6,CO7, CO8	Diagnose and discuss of Febrile seizures.	2	Experiential-Learning23.8	CE	Does	CBL,SIM,RP, GBL,BS
CO1,CO2,CO4, CO6,CO7,CO8	Formulate Unani Ilaj for Seizure disorder.	2	Experiential-Learning23.9	CS	Does	SIM,C_L,DA, GBL,DIS

Unit 4 لقوہ Laqwa (Bell's Palsy)

23.4.1.Unani concept of Laqwa .

23.4.2.Bell's Palsy (Introduction, aetiology, pathophysiology, clinical manifestation, diagnosis, management and prognosis).

References: 28,31,34,39,42,43,44,63

3A	3B	3C	3D	3E	3F	3G
CO1,CO2,CO4, CO5,CO6,CO7, CO8	Describe Unani concept of Laqwah (Asbab, alaamat, usool-e-ilaj,etc.) and Bell's Palsy.	2	Lecture	CE	Knows-how	L&PPT

CO1,CO2,CO4, CO5,CO6,CO7, CO8	Demonstrate the session for *Ilaj-Bit-Tadbeer* in LAQWA (dalak, Riyazat,ec).	2	Practical23.7	PSY-MEC	Shows-how	CBL,RP,DIS
CO1,CO2,CO4, CO5,CO6,CO7, CO8	Demonstrate how to Rhabilitate a case of Bell's palsy.	2	Practical23.8	PSY-ORG	Shows-how	FV
CO1,CO2,CO4, CO5,CO6,CO7, CO8	Formulate Unani treatment plan for Laqwa patient.	3	Experiential-Learning23.10	PSY-ORG	Does	RP,DIS,CBL, W
CO1,CO2,CO4, CO5,CO6,CO7, CO8	Disuss and present case of Bell's palsy with management.	2	Experiential-Learning23.11	PSY-ADT	Does	JC,RP,CBL,W

Unit 5 Acute Flaccid Paralysis (AFP)

23.5.1.Acute Flaccid Paralysis (AFP) Surveillance.

23.5.2.Guillain Barre syndrome.

References: 34,44,63

3A	3B	3C	3D	3E	3F	3G

CO1,CO2,CO4, CO5,CO6,CO7, CO8	Describe AFP Surveillance and causes of AFP along with breif discription of Guillain barre syndrome.	1	Lecture	CE	Knows-how	FC
CO1,CO2,CO4, CO5,CO6,CO7, CO8	Demonstrate how to diagnose Acute Flassid paralysis according to WHO Guidelines.	1	Practical23.9	PSY-MEC	Knows-how	GBL,SIM,L_VC,FV
CO1,CO2,CO4, CO5,CO6,CO7, CO8	Demosntrate a Unani treatment plan for the Case of Acute Flaccid Paralysis as an adjuvent therapy.	1	Practical23.10	PSY-GUD	Shows-how	PER,CBL,BS, DIS,TBL
CO1,CO2,CO4, CO5,CO6,CO7, CO8	Discuss and present guidelines to evaluate and assess AFP cases.	2	Experiential-Learning23.12	CC	Does	SIM,CBL,TBL,RP,W
CO1,CO2,CO4, CO5,CO6,CO7, CO8	Counsel parents for occupational therapy in case of Acute flaccid paralysis (AFP).	1	Experiential-Learning23.13	AFT-CHR	Does	CBL,PER,DIS,W,FV
Practical Training Activity						
Practical Training 23.1 History taking and comprehensive examination (physical and motor examination) of Neurological disorder.						
Total practical time: 2 hours. **Teacher can conduct any one activity from the following :** **1.Hands-On Workshop: Pediatric Neurological Examination (2 hours)**						

- Teacher will organize a hands-on workshop where an experienced clinician demonstrates the neurological examination techniques on pediatric patients (or using mannequins/standardized patients).
- Include assessment of:
    - **Cranial nerves**: Check for abnormalities in facial movements, eye tracking, and pupil reflexes.
    - **Motor function**: Evaluate muscle tone, strength, and involuntary movements.
    - **Reflexes**: Test deep tendon reflexes, Babinski response, and primitive reflexes.
    - **Sensory examination**: Assess pain, temperature, and vibration sensation.
    - **Coordination and gait**: Test for cerebellar function, balance, and coordination.
- After the demonstration, allow students to practice the examination on each other or mannequins under supervision.

2. Clinical Simulation: Motor and Physical Examination in Pediatric Patients (2 hours)

- Teacher will create a simulated scenario in which a child presents with a neurological complaint (e.g., weakness, developmental delay, or abnormal gait).
- Students must take a brief history, perform a motor examination, and assess muscle tone, coordination, and reflexes.
- Encourage students to assess for signs of neurological diseases such as cerebral palsy, muscular dystrophy, or hypotonia.
- After the simulation, have a debriefing session where the student's examination skills are reviewed, with feedback from both peers and instructors.

3. Structured Case Presentation with Focus on Motor and Physical Examination (2 hours)

- Teacher will divide students into small groups and assign them different pediatric neurological cases (e.g., Pediatric stroke,cerebral palsy,hydrocephalus,etc).
- Instruct each group to evaluate the case and conduct a simulated examination focusing on motor function (e.g., muscle strength, tone, reflexes, coordination).
- Students then present their findings to the class, detailing their diagnostic process, examination techniques, and potential management plans.
- Emphasize the importance of accurate physical and motor examination in reaching the diagnosis.

4. Motor Skill Assessment Practice: Pediatric Developmental Milestones along with Communicating Diagnosis and Management Plans to Parents.(2 hours)

a)Motor Skill Assessment Practice: Pediatric Developmental Milestones (1hr):

- Teacher will organize a session where students review key pediatric developmental milestones (e.g., sitting, crawling, walking) and their neurological significance.
- Teacher will provide simulated cases of children at various stages of development (infants, toddlers, older children) showing motor delay or dysfunction.
- Students should assess the motor skills of the simulated patients and correlate any abnormalities with potential neurological disorders (e.g., hypotonia in infants could suggest Down syndrome).
- Each student writes a report detailing the motor assessment findings and the suspected diagnosis based on developmental delays.

b)Role-Playing: Communicating Diagnosis and Management Plans to Parents(1hr):

- Teacher will set up a role-playing scenario where students must explain the diagnosis of a neurological disorder (e.g., cerebral palsy or epilepsy) to the child's parents.
- Focus on discussing the diagnosis in a compassionate and clear manner, explaining the next steps, including further evaluations (MRI, EMG), and treatment plans (physical therapy, medication, etc.).
- Instruct students to also discuss long-term expectations, prognosis, and how parents can support their child's therapy.
- Rotate roles, with some students acting as physicians and others as parents.

5. Group Discussion and Peer Feedback: Differential Diagnosis of Pediatric Neurological Disorders (2 hours)

- Teacher will present a variety of cases involving neurological issues (e.g., seizures, abnormal reflexes, spasticity, developmental delay).
- Students must work together to create a differential diagnosis for each case based on the physical and motor examination findings.
- Facilitate a class discussion where groups present their differentials and justify their reasoning.
- Teacher will provide feedback on the accuracy and depth of their differential diagnoses, as well as the consideration of rare conditions.

6. Journal Club: Review of Pediatric Neurological Examination Guidelines (2 hours)

- Teacher wil assign students recent research articles, reviews, or guidelines on pediatric neurological examination techniques and diagnostic criteria for various conditions.
- During the journal club, students present key findings from their assigned articles, discussing updates or new techniques in motor and neurological evaluations.

- Facilitate a discussion on how these guidelines can be integrated into daily clinical practice and how they can enhance diagnostic accuracy.

EVALUATION: At the end of these practical activities, conduct a feedback session to assess how students have improved their physical and motor examination skills, diagnostic reasoning, and communication with parents. Self-reflection and peer feedback should be encouraged to further reinforce learning.

Practical Training 23.2 Special investigation for neurological disorders.

Total practical time : 2 hours

Teacher can conduct this practical in any of the following two options :

A.]FIRST OPTION : In this, session can be done in four compulsory activities as following:

1. Observational Learning: Diagnostic Imaging in Neurological Disorders(30 minutes):

- Teacher will organize a session where students observe the process of ordering, conducting, and interpreting MRI or CT scans in neurological cases (e.g., brain tumors, stroke, or multiple sclerosis).
- A teacher/radiologist/ neurologist should guide the students through how these scans reveal structural abnormalities in the brain or spine, with a focus on lesion identification, cerebral atrophy, or hemorrhages.
- After observing the scans, students discuss the findings in relation to the patient's neurological symptoms and diagnosis.

2. Hands-On Lab: Assisting in Electromyography (EMG) and Nerve Conduction Studies (NCS) (30 minutes):

- In a clinical setting or lab , allow students to assist in performing EMG and NCS tests on patients suspected of having neuromuscular disorders (e.g., peripheral neuropathy, myasthenia gravis, ALS).
- Students should observe how electrodes are placed on muscles to measure electrical activity during contraction (EMG) and how NCS assesses the speed of nerve signals.
- Under supervision, students can assist in operating the equipment, preparing patients, and interpreting the results.

3.Case-Based Learning: Interpreting EEG in Neurological Disorders (30 minutes):

- Present students with EEG recordings from different neurological cases, such as epilepsy, encephalopathy, or sleep disorders.

- Teach students how to interpret various EEG waveforms and patterns, such as spikes, sharp waves, and background rhythms, to diagnose conditions like generalized or focal seizures.
- Allow students to practice reading sample EEGs and correlate the findings with the patient's symptoms.

4. **Simulation: Performing a Lumbar Puncture for Cerebrospinal Fluid (CSF) Analysis (30 minutes):**

- Use mannequins or simulation tools to demonstrate how to perform a lumbar puncture, with emphasis on safety and precision.
- Explain the indications for a lumbar puncture, such as diagnosing infections (e.g., meningitis), multiple sclerosis, or subarachnoid hemorrhage.
- After the procedure, students assist in collecting and analyzing the CSF sample for glucose, protein, cell count, and possible pathogens, learning how the results inform diagnosis.

B.] SECOND OPTION : Field Trip - Observing Diagnostic Tests in a Specialized Neurology Department (2 hours)

- Organize a field trip to a hospital's neurology department where students can observe specialized diagnostic tests being performed, such asMRI, CT, EEG, EMG, lumbar puncture, PET scans for brain function.and other diagnostic tests performed in neurological cases.
- Encourage students to ask questions to neurologists or radiologists about how these advanced imaging techniques contribute to diagnosing complex neurological conditions (e.g., brain tumors, degenerative diseases).
- After the field trip, students should write a reflection on what they observed and how these diagnostic tests can be integrated into clinical practice.
- Guide the discussion on how the combination of physical exam findings and diagnostic results leads to accurate diagnosis.

Evaluation : After completing these activities, conduct an assessment to evaluate students' skills in observing, assisting, and interpreting diagnostic tests in neurological cases. This could include practical exams, peer review, and reflective writing on their learning experiences.

Practical Training 23.3 Approach to a case of epilepsy.

Total practical time :2 hour.

Teacher can conduct practical Session in 6 steps as follows:

Step-1. ***Introduction to Pediatric Epilepsy and Diagnostic Overview*** **Duration**: **15 minutes**

Instructor Role: Brief introduction to epilepsy in children, types of seizures, and common symptoms.

Material needed: Presentation slides or handouts summarizing epilepsy types, key diagnostic criteria, and differential diagnoses.

Step-2. Demonstration and Practice: History-Taking and Physical Examination **Duration**: **30 minutes**

- **Demonstration**: Instructor demonstrates a comprehensive history-taking approach, covering perinatal history, developmental milestones, family history, and seizure-related questions.
- **Practice**: Students pair up to practice taking histories, focusing on identifying key epilepsy symptoms and seizure patterns.
- **Physical Exam**: Emphasize the neurological examination, with particular attention to cranial nerves, reflexes, motor skills, and sensory testing.

Step-3 . ***Case-Based Problem Solving and Investigation Planning*** **Duration**: **30 minutes**

- **Case Scenarios**: Instructor presents several case scenarios with varied symptoms and suspected seizure types.
- **Investigation Planning**: Each student group decides which investigations to order (e.g., EEG, MRI, genetic testing) and justifies their choices based on clinical information.
- **Discussion**: Groups discuss their investigation plans, and the instructor provides feedback.

Step-4. ***Hands-On EEG and MRI Interpretation*** **Duration**: **20 minutes**

- **Demonstration**: Instructor provides an overview of EEG and MRI, covering key signs indicative of epilepsy.
- **Practice**: Students review sample EEG and MRI images, identifying abnormal findings such as spikes or sharp waves.
- **Materials Needed**: Sample EEG recordings, MRI brain scans with annotations.

Step-5. ***Group Presentation and Peer Review of Diagnostic Approaches*** **Duration**: **20 minutes**

- Each group presents their approach to diagnosing a specific case, including history, examination, and recommended investigations.
- Peer Review: Groups give feedback on each other's presentations, discussing alternative approaches and additional considerations.

Step-6. ***Reflective Activity and Q&A Session (5-10 minutes)***

- **Activity**: Students write a brief reflection on what they learned from the practical exercises, focusing on diagnostic challenges and key takeaways.
- **Q&A Session**: An open Q&A for students to clarify doubts .

Practical Training 23.4 Epilepsy diagnostic work-up.

Total practical time :2 hour.

Teacher can conduct Practical Session Plan which is covered in 7 steps as follows :

1.Introduction to Diagnostic Pathway for Epilepsy Duration: 10 minutes

Instructor Role: Brief overview of the diagnostic pathway in epilepsy, including clinical evaluation, EEG, MRI, and genetic/metabolic tests. **Materials Needed**: Summary slides of diagnostic pathways, common diagnostic tools, and criteria for epilepsy diagnosis.

2.Case Presentation and Group-Based Analysis Duration: 20 minutes

Teacher will present a case scenario of a patient with suspected epilepsy.

Include a brief medical history and symptoms that align with seizure activity.

Teacher will divide students into small groups to discuss initial thoughts and which investigations would help confirm epilepsy.

3. Hands-On EEG Interpretation Workshop Duration: 30 minutes

Demonstration: Instructor demonstrates reading and interpreting an EEG, highlighting normal vs. abnormal findings like interictal spikes, generalized or focal discharges.

Practice: Students are given EEG reports (real or simulated) to analyze. They note key features that indicate epilepsy, distinguishing between different seizure types based on EEG patterns.

Materials Needed: EEG samples with annotations, including normal and epileptic findings.

4. MRI and Imaging Analysis Session Duration: 20 minutes

Demonstration: Instructor shows MRI brain scans, explaining what to look for in epilepsy cases (e.g., structural abnormalities, hippocampal sclerosis, cortical malformations).

Practice: Students analyze MRI images and record observations. They are guided to identify any abnormalities that could correlate with epileptic foci.

Materials Needed: Annotated MRI images, including examples of both normal and abnormal findings.

5. Laboratory and Genetic Testing Discussion Duration: 15 minutes

Teacher will provide sample lab and genetic test results (e.g., metabolic panel, genetic markers) relevant to epilepsy on which students review will be taken.

Discussion on when to use these tests, such as in cases of refractory epilepsy or suspected genetic syndromes.

6. Integrating Findings for Differential Diagnosis Duration: 20 minutes

Each group consolidates findings from EEG, MRI, and lab tests to make a diagnosis, ruling out other potential causes (e.g., syncope, psychogenic seizures).

Groups present their diagnostic conclusion and rationale for the chosen investigations.

Encourage each students to present their findings and rationale to the class.

Peer review and feedback are incorporated

7. Reflective Activity and Q&A Duration: 5 minutes

Students complete a short reflection, focusing on their diagnostic approach, new insights, and challenges faced.

Open Q&A session to address any uncertainties or complex aspects of diagnosis.

Teacher will lead the debriefing session, helping students critically evaluate their experiences and offering guidance for future improvement.

Practical Training 23.5 Diagnostic criteria of GTCS & febrile seizure.

Total practical time: 3 hours.

Teacher can conduct any two activities from below, each for 90 minutes:

1.Clinical Case Comparison (90 minutes)

- Teacher will present students with two detailed cases—one involving a child with a febrile seizure and another with GTCS.
- Include key features like age, seizure duration, postictal symptoms, family history, and the presence of fever or infection.
- Students will learn to identify distinguishing features between febrile seizures (age under 5 years, fever-associated, no prior neurological history) and GTCS (recurrent, generalized without fever, postictal state).
- Peer review and feedback are incorporated to enhance observational accuracy.

2.Seizure Video Analysis (90 minutes)

- Teacher will show recorded videos of children experiencing febrile seizures and adults or children with GTCS.
- Teacher will ask students to observe and note the clinical differences, including motor activity, duration, postictal confusion, and triggers.

- Teach students to visually recognize the differences in seizure semiology between GTCS (generalized motor involvement, postictal confusion) and febrile seizures (short, no lasting neurological deficit).

3.Diagnostic Criteria Workshop (90 minutes)

- Teacher will divide the students into small groups and give them diagnostic guidelines for febrile seizures and GTCS from various sources (e.g., WHO, ILAE).
- Ask each group to discuss and present the key diagnostic differences between the two conditions.
- Allow students to become familiar with diagnostic criteria and apply them to theoretical cases.
- Encourage each students to present their findings and rationale to the class.

4. Problem-Based Learning (PBL) Case Study (90 minutes)

- Teacher will present a case where the diagnosis is unclear: a young child presents with a generalized seizure.
- Students must work together to gather additional history, consider investigations, and arrive at a diagnosis.
- Encourage students to think critically about what features make the seizure more likely to be febrile or GTCS. Ask them to suggest further investigations (e.g., lumbar puncture, EEG) and treatment.

5.Electroencephalogram (EEG) Interpretation Workshop (90 minutes)

- Teacher will present EEG results from a patient with febrile seizures and one with GTCS. Have students interpret the findings, looking for signs of epilepsy or normal brain activity post-seizure.
- Teach students how to use EEG findings in the diagnostic process, noting that febrile seizures typically don't have persistent EEG abnormalities, while GTCS may.

6. Flowchart Creation Exercise (90 minutes)

- Teacher will have students create a flowchart or decision tree that outlines the step-by-step approach to diagnosing a child with a seizure, highlighting the points that differentiate febrile seizures from GTCS (e.g., age, fever, EEG findings, family history).
- Encourage students to visually map out the diagnostic pathway.

These diverse activities incorporate visual learning, role-playing, problem-solving, and critical thinking, addressing different learning styles while reinforcing the essential clinical and diagnostic skills necessary for distinguishing between GTCS and febrile seizures.

Practical Training 23.6 Management Protocols for Acute Febrile Seizure.

Total practical time: 3 hours

Teacher can conduct any 3 activity from the following each for 1 hour :

1. Activity: Case-Based Discussion on Febrile Seizures (1 hour)

- Teacher will present a **real-life clinical case** of a child (e.g., a 2-year-old with fever and seizure).
- Guide students to:
  - Differentiate between **simple and complex febrile seizures**.
  - Identify **red flag signs** requiring further investigations.
  - Outline initial **stabilization and management** in the ER.
- Conduct a **debriefing session** to summarize key learning points.

2. Activity: Emergency Response Simulation for Febrile Seizures (1 hour)

- Teacher will set up a **high-fidelity simulation** with a manikin or pediatric patient model.
- Assign students to:
  - **Assess ABCs (Airway, Breathing, Circulation)**.
  - Place the child in a **safe position** to prevent injury.
  - **Monitor vital signs (temperature, heart rate, oxygen saturation).**
  - **Administer antipyretics** (e.g., paracetamol).
  - Consider **IV/rectal benzodiazepines** (if seizure >5 minutes).
- Provide **immediate feedback** on technique and decision-making.

3. Activity: OSCE (Objective Structured Clinical Examination) on Febrile Seizure Management (1 hour)

- Set up **OSCE stations** for different aspects:
    - **Station 1:** History-taking from a parent of a child with seizures.
    - **Station 2:** Performing **a neurological examination** post-seizure.
    - **Station 3:** Interpretation of **lab tests & imaging** (e.g., CBC, serum electrolytes, lumbar puncture, CT scan).
    - **Station 4:** Emergency seizure management (handling **prolonged febrile seizures**).
- Assess performance and provide **structured feedback**.

4. Activity: Role-Playing Exercise for Parental Counseling on Febrile Seizures (1 hour)

- Use **standardized patients (actors) or peers** playing distressed parents.
- Have students explain:
    - What febrile seizures are and their **benign nature**.
    - **Seizure precautions** at home.
    - When to **seek emergency care**.
    - The need for **follow-up and further investigations** (if needed).
- Provide structured feedback on **clarity, empathy, and communication style**.

5. Activity: Gamification-Based Quiz on Febrile Seizure Protocols (1 hour)

- Conduct a **Kahoot! or Jeopardy-style quiz** covering:
    - Classification: **Simple vs. Complex Febrile Seizures**.
    - First-line vs. second-line treatments.
    - Seizure safety measures.
    - **When to admit or discharge a patient**.
- Encourage team-based learning and discussion after each question

6. Activity: Interpretation of Investigations in a Febrile Seizure Case (1 hour)

- Provide **lab and imaging results** from real or simulated cases.

- Ask students to analyze:
    - **Blood tests** (CBC, serum glucose, electrolytes, calcium, infections).
    - **Lumbar puncture findings** (in suspected meningitis/encephalitis).
    - **Neuroimaging (CT/MRI)** indications (when required).
- Discuss case **scenarios where advanced investigations are necessary**.

7. Activity: Demonstration of Antipyretic and Seizure Medication Administration (1 hour)

- Demonstrate how to administer:
    - **Rectal Diazepam** and **Buccal Midazolam**.
    - **IV Lorazepam** in prolonged seizures.
    - **Oral/rectal antipyretics (Paracetamol/Ibuprofen)** for fever control.
- Allow students to **practice on manikins**.
- Discuss **dosing, indications, contraindications, and side effects**.

8. Activity: Team-Based Approach to Managing Status Epilepticus in Febrile Seizures (1 hour)

- Create a **mock ER scenario** where students work in teams to:
    - Stabilize the patient.
    - Escalate **treatment to second-line and third-line drugs**.
    - Decide when to **intubate and transfer to ICU**.
- Conduct a **team debriefing** to discuss the **decision-making process**.

9.Algorithm Walkthrough and Protocol Mapping (1 hour)

- Teacher will provide cases of acute febrile seizure to students.
- Teacher will guide students through the step-by-step protocols and algorithms for managing acute febrile seizures.
- This activity improves understanding of the structured approach to febrile seizure management.

10. Flipped Classroom (1 hour)

- Pre-session preparation with online learning, followed by in-class application.
- Assign students to watch videos or read material about febrile seizures before the class.
- In the classroom, focus on applying that knowledge to cases or simulation exercises.
- Facilitate group work to assess how students can apply learned protocols in a practical context.

11. Guided Reflection (1 hour)

- challenges they faced, and what they would do differently in future cases.
- Student will do journaling or group reflection on experiences after simulation or clinical practice.
- Teacher will do debreifing and feedback.

Practical Training 23.7 *Ilaj-Bit-Tadbeer in Laqwa.*

Total practical time: 2 hours.

Following is the Practical Session Outline:

1. Introduction to Ilaj Bit Tadbeer in the Context of Epilepsy (20 minutes)

- Teacher will give introduction about understanding the principles of **Ilaj Bit Tadbeer** and its relevance in treating **Laqwa .**
- **Teacher will explain key Concept : a)Basic Principles of Unani Medicine** i.e.Concept of humors (Akhlat), temperament (Mizaj), and the need for balance in bodyfunctions. **b) Role of Regimenal Therapy**: Restoring balance through physical, dietary, and lifestyle regimens.

2. Hands-On Practice: Performing IBT regiments(Dalak, riyazat ,etc.) on patient or Manikin. (60 min)

- **Nutool (Irrigation)**: Instructor demonstrates medicated head irrigation, using unani herbs, believed to soothe the brain and rejuvenate the affected area.
- Students practice preparing the irrigation liquid and performing Nutool on a simulated model or peer.
- **Dalk (Massage Therapy)**: Demonstrate Dalk techniques focusing on calming nervous tension,nerve stimulant and relaxing muscles. Students practice applying these techniques on peers or simulated patients.
- **Riyazat (Physical Exercise)**: Instructor guides students in gentle exercises to relax the body and improve circulation.
- ***Zimad :*** Instructor demonstrate the application of zimad etc.

3. Case-Based Discussion and Group Activity (30 minutes)

- Divide the students into groups and present a case of a patient with **Laqwa** .
- **Case Scenarios**: For e.g. A 12-year-old female with a history of Laqwa 1mnth back.
- Each group will discuss and present:
- Diagnosis based on Unani principles.
- The regimenal therapy they would choose (Dalak, Riyazat, Dietotherapy,etc).
- Unani preparations they would recommend.
- How they would combine Unani therapies with conventional medications.

4. Wrap-Up and Key Takeaways (10 minutes)

- **Review**: Summarize the regimenal therapies and their application in epilepsy management.
- Discuss the **importance of Unani practices** , emphasizing holistic care.
- Encourage students to ask questions or share reflections.

Assessment/Feedback:

- Case-based questions to assess the students' understanding of Unani Laqwa management.
- Practical skill demonstration: Students are evaluated on their technique in performing massage therapy.

Practical Training 23.8 Feild visit to rehabilitation centre for Bell's palsy.

Total practical time : 2 hour.

Teacher can conduct this practical as follows:

Step-1. **Introduction and Orientation (15 minutes)**

- Briefing by clinic staff or physical therapist on Bell's palsy, its causes, symptoms, and prognosis.
- Discussion of how rehabilitation helps in regaining muscle function and preventing long-term complications like synkinesis (involuntary muscle movements).

Step-2. Observation of Rehabilitation Sessions (30 minutes)

- Observe rehabilitation exercises focusing on facial muscle strengthening, coordination, and relaxation.
- Students should note the sequence of exercises, patient engagement, and therapist guidance.
- Focus on specific techniques like facial massage, neuromuscular re-education, and functional training.

Step-3. Demonstration of Exercises (30 minutes)

- A therapist demonstrates specific exercises for Bell's palsy rehabilitation (e.g., eye exercises, lip exercises, and facial muscle stretching).
- Students can perform these exercises on themselves or with a partner to understand the movement patterns and muscle engagement.

Step-4. Interactive Q&A with Therapist (15 minutes)

- Conduct an interactive Q&A session with the rehabilitation staff, where students can ask about various treatment approaches, timelines for recovery, and the role of different healthcare professionals in rehabilitation.
- Discuss patient cases and how treatment is tailored based on the severity of Bell's palsy.

Step-5. Patient Interaction (if feasible and consented) (15 minute)

- Allow students to have supervised discussions with patients (if ethically permitted) to gain insight into the emotional and physical challenges faced during recovery.
- Learn how patient motivation and consistency affect rehabilitation outcomes.

Step-6. Documentation and Case Study Presentation (15 minutes)

- After the visit, students should document their observations and reflections, including the types of exercises, patient progress, and the role of rehabilitation in recovery.
- Assign a case study where students research a Bell's palsy case, assess rehabilitation progress, and suggest modifications to the exercise regime based on the patient's response.

Feedback: Post-visit reflection or debriefing session to discuss key takeaways and assess student understanding through group discussions or quizzes on Bell's palsy management, focusing on the exercises they observed or performed.

Practical Training 23.9 Unani treatment for Acute Flaccid Paralysis..

Total practical time : 1 hour.

Teacher can conduct any 1 activity from the following:

1. **Interactive Lecture with Visual Aids (1 hour)**
    - Conduct a lecture on the Unani approach to AFP, using diagrams, flowcharts, and videos to illustrate concepts like Akhlat (humors) and Mizaj (temperament).
    - Include case studies that highlight successful Unani treatment outcomes.
    - Encourage questions throughout the session to foster a discussion-based learning environment.
2. **Group Case Study Analysis (1 hour)**
    - Divide students into small groups and assign each group a different patient case with AFP.
    - Each group analyzes their case and develops a comprehensive Unani treatment plan, including:
        - Ilaj-bit-tadbeer (Regimenal therapy)
        - Ilaj –bil-Dawa .
        - Ilaj-bil-ghiza.
    - Groups present their plans to the class, allowing for feedback and discussion.
3. **Podcast Creation(1 hour)**
    - Assign students to create a short podcast episode discussing the Unani treatment plan for AFP.
    - They can include interviews with peers, discussions on treatment methods, and patient testimonials (real or fictional).
    - Share the podcasts with the class to enhance auditory learning and peer-to-peer knowledge sharing.
4. **Online Research Presentation(1 hour)**
    - Have students research current literature on Unani treatments for neurological disorders, particularly AFP.
    - Each student or group presents their findings in a PowerPoint presentation, including evidence supporting their treatment recommendations.
    - Discuss how traditional methods can align with modern evidence-based practices.

Practical Training 23.10 Guidelines for AFP surveillance.

Total practical time :1 hour.

Teacher can conduct any one activity from the following:

1. **Lecture with Visual Aids (1 hour)**
    - Conduct a **lecture** focusing on the epidemiology of AFP, its clinical relevance (especially in polio eradication), and the key WHO surveillance guidelines.
    - Use **visual aids** such as flowcharts, tables, and infographics to explain:
        - Case definitions for AFP.
        - Surveillance targets (such as non-polio AFP rate >1/100,000 children under 15 years).
        - Timelines for stool collection and transportation.
    - Discuss global progress in polio eradication and surveillance in different countries.
2. **Case-Based Group Discussion with Simulation Role-Play : (1 hour)**
    - Create a **simulation** where students role-play healthcare providers, public health officers, and laboratory staff.
    - Set up a scenario and present a suspected AFP case which is reported in a community. Students must:
        - Investigate the case (clinical examination and history).
        - Report it according to WHO guidelines.
        - Collect and handle stool samples for laboratory analysis.
        - Follow up with public health authorities for surveillance.
    - Incorporate realistic challenges such as delayed reporting or difficulty in sample collection.
    - After the simulation, hold a debriefing session to reflect on the experience.
3. **Field Visit to Public Health Laboratory (1 hour)**
    - Organize a **field visit** to a local or regional public health laboratory where AFP stool samples are analyzed.
    - Students observe the process of sample reception, viral isolation, and reporting of results.
    - The laboratory staff explains the importance of proper sample handling, timely transportation, and cold chain maintenance.
    - After the visit, students discuss how the laboratory component integrates with overall AFP surveillance and polio eradication efforts.

4. **Quiz-Based Learning (Gamification) (1 hour)**

- Teacher will Reinforce key concepts of AFP surveillance through an interactive quiz.
- Through **Gamification** with a quiz or competitive team-based activity student will have access in understanding the guidelines for AFP.
- After the activity, teacher will hold a debriefing session to reflect on the experience.

5. **Problem-Based Learning (PBL) with Global Polio Surveillance (1 hour)**

- Assign students a research project where they explore AFP surveillance in various countries or regions, particularly those with ongoing polio transmission or recent outbreaks.
- Each student (or group) prepares a **brief presentation** on the challenges and successes of AFP surveillance in their assigned region, including:
  - Non-polio AFP rates.
  - Geographic or socio-political barriers to surveillance.
  - The role of supplemental immunization activities (SIAs).
- Following the presentations, hold a class discussion on how global efforts are coordinated and how gaps in surveillance can be addressed.

Experiential Learning Activity

Experiential-Learning Learning 23.1: Approach to neurological diagnosis.

Total experential time:2 hours.

Teacher can conduct any two activities, each for 1 hour:

1. Clinical Simulation Lab: (1 hour)

- Set up a simulation with a patient (actor or mannequin) showing neurological symptoms (e.g., muscle weakness, abnormal reflexes, or sensory deficits).
- Guide students through a step-by-step neurological exam:
  1. Cranial nerve assessment.
  2. Motor and sensory system evaluation.
  3. Reflex testing.

4. Coordination and gait examination.

- Students must record their findings and provisional diagnosis based on the results.

2. Case Study Discussions and Differential Diagnosis (1 hour)

- Present students with a case study describing a patient's neurological symptoms (e.g., sudden onset of numbness, difficulty walking, or memory loss).
- In small groups, students must work through the case, discussing potential diagnoses and suggesting relevant diagnostic tests.
- After the group discussion, students present their findings to the class.

3. OSCE Station (1 hour)

-
- Set up multiple stations where students rotate through different components of the neurological examination:
  - Station 1: Test cranial nerve function (e.g., pupil reactions, facial movements).
  - Station 2: Assess motor strength and coordination (e.g., muscle tone, finger-to-nose test).
  - Station 3: Check sensory function (e.g., pain, temperature, vibration).
  - Station 4: Assess reflexes (e.g., biceps, patellar).
- Provide an assessment sheet where students record their findings at each station.

4. Video Case Review and Group Analysis (1 hour)

- Show a video of a real or simulated patient with a neurological disorder undergoing an exam.
- Pause the video at key points and ask students to observe specific findings (e.g., abnormal gait, tremor, slurred speech).
- After the video, students discuss the case in groups, identifying the signs and linking them to potential neurological diagnoses.

5. Real Patient Interaction in Neurology Clinic (1 hour)

- Organize a visit to a neurology clinic or hospital where students can observe real patients with neurological conditions (e.g., stroke, epilepsy, multiple sclerosis).
- Under supervision, students may perform basic assessments or assist with patient examinations.
- After each patient interaction, students write a reflective journal entry on their observations and the diagnostic process.

6. Neurological Disorder Diagnosis Game (1 hour)

- Create a game where students are presented with a series of symptoms (e.g., numbness, tremors, or difficulty speaking).
- In groups, students ask yes/no questions to "the patient" (a facilitator) to narrow down the differential diagnosis.
- After reaching a diagnosis, the group explains their reasoning and suggests the next steps in diagnosis or treatment.

7. Flowchart Creation for Neurological Disorders (1 hour)

- Assign students the task of creating diagnostic flowcharts for specific neurological disorders (e.g., differentiating between types of stroke or diagnosing peripheral vs. central nerve damage).
- Flowcharts should include symptoms, examination steps, and diagnostic tests.
- Students present their flowcharts to the class, explaining how to approach a patient with those symptoms.

8.Problem-Solving with Diagnostic Tools (Tech-Enhanced Learning) (1 hour)

Activity: Using a virtual platform or diagnostic software, students are given patient cases where they must choose and interpret diagnostic tests (e.g., MRI, CT, EEG, lumbar puncture) to confirm a diagnosis.

- Teach students the indications and contraindications for various neurological tests.
- Present them with real-life diagnostic data (e.g., MRI images, CSF results) to interpret.

Experiential-Learning Learning 23.2: Interpretation of special investigation procedure.

Total experential time; 3 hours

Teacher will conduct first four activities each in 30 minutes followed by any one optional activities for next one hour :

1. **Neurological Imaging Interpretation (Flipped Classroom with Interactive Learning) (30 minutes)**

Activity: Provide students with video tutorials on interpreting neurological imaging (CT, MRI, PET scans) before class. In class, they work on cases with real neurological images, identifying lesions, hemorrhages, tumors, or strokes.

- Divide students into small groups and give each group different sets of neuroimaging results (MRI for demyelinating disease, CT for stroke, etc.).
- Guide them to identify key findings and correlate the images with patient symptoms and history.

2. **Hands-On Lumbar Puncture Simulation (Simulation-Based Learning) (30 minutes) :**

Activity: Conduct a simulation using mannequins or lumbar puncture kits where students perform the procedure. They practice patient positioning, identifying anatomical landmarks, needle insertion, and cerebrospinal fluid (CSF) collection.

- Begin with a brief review of lumbar puncture indications (e.g., meningitis, multiple sclerosis), contraindications, and complications.
- Walk through the step-by-step process while explaining best practices (e.g., sterile technique, patient comfort).

3. **Electroencephalography (EEG) Interpretation Workshop (Hands-On and Visual Learning) (30 minutes) :**

Activity: Organize a workshop where students practice interpreting EEG results from patients with epilepsy, encephalopathy, or sleep disorders. Use actual EEG waveforms and guide them through the process of identifying abnormalities (e.g., spikes, waveforms, seizure patterns).

- Review the basic principles of EEG, including the types of waves (alpha, beta, delta, theta) and what constitutes normal vs. abnormal findings.
- Students analyze EEG tracings from different cases and attempt to diagnose based on the patterns observed.

4. **Nerve Conduction Studies (NCS) and Electromyography (EMG) Simulation (Hands-On Learning) (30 minutes) :**

Activity: Students work with nerve conduction and EMG simulation devices to perform and interpret these procedures. They simulate testing muscle and nerve function, identifying abnormalities such as neuropathy, myopathy, or motor neuron disease.

Instruction:

- Provide a brief lecture on the indications for NCS and EMG (e.g., carpal tunnel syndrome, Guillain-Barré syndrome, ALS).
- Guide students through the process of setting up the equipment, placing electrodes, stimulating nerves, and interpreting the results.

OPTIONAL ACTIVITIES : Any one .

1.Multimedia Learning: Video-Based Tutorials on Advanced Neuroimaging Techniques (PET, MRI) (1 hour)

- **Instruction:**
  - Discuss how advanced imaging techniques are used to assess brain function (fMRI) or metabolic activity (PET scans) in conditions like Alzheimer's disease, brain tumors, or epilepsy.
  - Have students interpret sample PET and fMRI scans, identifying key findings (e.g., hypometabolism in dementia, hyperactivity in seizure foci).

2. **OSCE on Special Investigation Techniques (1 hour)**

- **Instruction:**
    - At each station, provide a clinical case with corresponding investigation results, and ask students to interpret the findings.
    - They must explain why the test was indicated, what the results mean, and how they would manage the patient based on those results.

3. **Peer Learning: Case Presentations on Special Investigations (1 hour)**

- **Instruction:**
    - After each group presents, allow peers to ask questions and challenge the reasoning behind the choice of investigation.
    - Instructors provide feedback on both the choice of diagnostic tools and the accuracy of result interpretation.

Experiential-Learning Learning 23.3: Recent advances in Neurology.

Total experential time; 1 hour.

Teacher can conduct any one activity for one hour:

1. Expert-Led Seminar & Panel Discussion (1 hour)

- Invite a **neurologist or neuroscientist** with expertise in advanced neurological treatments.
- **Instructions:**
    1. **Pre-session Preparation** – Assign students **pre-readings** on N1 Implant, skin patches, neuroprosthetics, and AI applications.
    2. **Expert Lecture** – The invited expert presents the **latest breakthroughs, mechanisms, applications, and limitations**.
    3. **Panel Discussion** – Faculty and students discuss the **ethical concerns, feasibility, and patient perspectives** on these innovations.

2. Journal Club – Research Paper Review (1 hour)

- **Instructions:**
    1. Assign each group **one research article** to analyze.
    2. Groups **present findings** on methodology, clinical efficacy, pros & cons, and future scope.
    3. Faculty **moderates a discussion** on how these advancements may change patient management.

3. Gamification – Debate on "Futuristic Neurology: Boon or Bane?" (1 hour)

Organize a **structured debate** where students argue for and against **emerging neurological interventions**.

- **Instructions:**
    1. Divide students into **"For" and "Against" teams**.
    2. Teams **research their stance**, including regulatory issues, patient accessibility, and ethical concerns.
    3. Conduct a **structured debate** where each side presents their argument with scientific backing.

4. Case-Based Learning – Applying Innovations to Clinical Scenarios (1 hour)

- **Instruction:** Provide patient cases that **could benefit from recent advancements** (e.g., a quadriplegic patient for N1 Implant, a Parkinson's patient for transdermal patches).
    1. Students **evaluate the patient case** and discuss if a new technology could improve patient outcomes.
    2. Groups present their **rationale for using/not using the innovation** based on **evidence**.
    3. Faculty facilitates discussion on **real-world applications and limitations**.

5. Interactive Quiz – "Tech in Neurology" (1 hour)

- **Instructions:**
    1. Questions cover **mechanisms, benefits, risks, and regulatory approvals** of new technologies.
    2. Students compete in teams to **answer correctly within time limits**.
    3. Faculty explains answers and discusses **controversies and future trends**.

This session encourages a holistic understanding of new technologies in neurology and fosters analytical, empathetic, and communication skills among medical students.

Experiential-Learning Learning 23.4: Assessment & management of Status Epilepticus.

Total experential time: 1 hour.

Teacher can perform any 1 activity from the following :

1. **Simulation-Based Learning (1 hour)**

Activity: High-Fidelity Simulation

- Set up a high-fidelity simulation lab with a mannequin programmed to exhibit signs of status epilepticus.
- Provide students with a brief patient history (e.g., a 5-year-old male with a history of epilepsy presenting with prolonged seizure activity).
- Students will work in teams to assess the patient, establish a diagnosis, and initiate management protocols.

2. **Case-Based Learning (1 hour)**

Activity: Small Group Discussion and Case Presentation

- Divide students into small groups and provide them with a detailed case study of a patient with status epilepticus, including vital signs, lab results, and a brief medical history.
- Each group should discuss the case, develop a differential diagnosis, outline management steps, and prepare a brief presentation for the class.

3. **Role-Playing (1 hour)**

Activity: Interprofessional Role-Playing Exercise

- Assign students different roles (e.g., medical student, nurse, pharmacist, attending physician) in a scenario involving a patient with status epilepticus.
- Simulate a clinical environment where they must interact to assess and manage the patient, focusing on communication and collaboration.

4. **Problem-Based Learning (PBL) (1 hour)**

Activity: PBL Case Scenario

- Present a case scenario involving status epilepticus with minimal background information.
- Students will work in groups to identify learning objectives, research relevant topics (e.g., etiology, pathophysiology, treatment), and come back to present their findings.

5. **Interactive Workshops (1 hour)**

Activity: Hands-On Skills Workshop

- Conduct a workshop focusing on skills related to the management of status epilepticus (e.g., IV medication administration, airway management).
- Use mannequins or simulation equipment to allow students to practice these skills in a controlled environment.

Reflective Learning

- After completing the experiential activities, ask students to write reflective entries about their learning experiences related to managing status epilepticus.
- Encourage them to explore what they learned, challenges they faced, and how they plan to improve.

Experiential-Learning Learning 23.5: Ilaj Bit Tadbeer in Epilepsy

Total experential time: 2 hours.

Teacher can conduct this experiential activities step-wise as follows:

Step-1. **Introduction to Ilaj Bit Tadbeer in Epilepsy**

Duration: 10 minutes

Instructor Role: Briefly introduce Ilaj Bit Tadbeer, focusing on how it supports epilepsy treatment by rebalancing humors,improving nerve conduction,etc.

Overview of Regimens: Describe each Tadbeer technique, its physiological effects, and why it's used for epilepsy.

Materials Needed: Presentation slides on each regimen'ns purpose and benefits.

Step-2 . ***Demonstration and Hands-On Practice of Key Ilaj Bit Tadbeer Techniques (6***0 minutes)

- **Nutool (Medicated Head Irrigation)**: Instructor demonstrates medicated head irrigation, using unani herbs, believed to soothe the brain and reduce seizure susceptibility.
- Students practice preparing the irrigation liquid and performing Nutool on a simulated model or peer.
- **Dalk (Massage Therapy)**: Demonstrate Dalk techniques focusing on calming nervous tension and relaxing muscles. Students practice applying these techniques on peers or simulated patients.
- **Riyazat (Physical Exercise)**: Instructor guides students in gentle exercises to relax the body and improve circulation.
- **Materials Needed**: Decoction solutions for Nutool, massage oils, and exercise mats.

Step-3 . ***Case-Based Application and Group Role-Play (4***0 minutes)

- **Case Presentation**: Students are presented with a case of a patient with epilepsy, including details on symptoms, temperament, and health history.

- **Small Group Role-Play**: Each group acts out the application of Tadbeer regimens on a simulated patient, discussing which regimen(s) they prioritize based on the patient's condition.
- **Group Reflection**: After role-play, groups discuss the patient's response to Tadbeer and the rationale behind choosing certain regimens.

Step-4 . ***Observation and Faculty Feedback*** (10 minutes)

- Each group demonstrates a selected Tadbeer technique to the class.
- Faculty observes and provides constructive feedback on technique, safety, and patient interaction.

Assessment :

- **Practical Skills Checklist**: Evaluate students on their ability to perform each Tadbeer technique accurately and safely.
- **Patient Case Report**: Each student or group submits a report detailing their chosen Tadbeer regimens, rationale, and reflections on patient outcomes.

Experiential-Learning Learning 23.6: Unani Management for *Sara or Ummus sibyan.*

Total experential time; 2 hour.

Teacher can do any one activity given below :

ACTIVITY 1: This session consist of 5 steps: (2 hours)

Step-1. **Introduction to Epilepsy (Sara) in Unani Medicine Duration**: 10 minutes

Instructor Role: Provide a brief overview of epilepsy according to Unani principles, discussing ikhlat imbalances, brain function, and the role of temperament (Mizaj).

Materials Needed: Presentation slides with Unani concepts related to Sara,etc.

Step-2. **Unani Herbal Formulations and Treatment Options Duration**: 60 minutes

- **Unani drugs Workshop**: The instructor demonstrates key drugs i.e Mufrudat and Murakkabat commonly used in Unani treatment for epilepsy for e.g. Jadwaar, etc.
- **Practical Exercise**: Students examine these unani drugs, learn about their effects, and discuss dosage forms (e.g.decoctions,etc.)

Step-3. Case-Based Problem Solving: Designing a Treatment Plan Duration: 30 minutes

- **Case Scenario**: The instructor presents a case of a patient with epilepsy symptoms, including frequency and type of seizures, temperament, and other health details.
- **Small Group Activity**: Each group designs a treatment plan, selecting Unani herbs and Ilaj-bit-Tadbeer procedures (e.g., Nutool, Dalak etc).
- **Treatment Design Elements**:
    - **Diet (Ghiza)**: Based on Mizaj (temperament) and dietary recommendations for epilepsy in Unani.
    - **Medicines (Murakkabat / Mufridat)**: Appropriate Unani drugs combinations and formulations for epilepsy.
    - **Regimens (Ilaj-bit-Tadbeer)**: Include regimens like Nutool ,Zimad,Dalak etc.

Step-4. Case-Based Analysis of Unani Treatment Efficacy and Safety Duration: 15 minutes

- **Instructor Presentation**: Present brief cases or research findings on the effectiveness and limitations of Unani treatments in epilepsy.
- Discussion on safety considerations, possible drug-herb interactions, and long-term management.

Step-5. Reflection and Q&A Session Duration: 5 minutes

- Students individually reflect on what they have learned, noting strengths and limitations of Unani treatments for epilepsy and areas for further research.
- Q&A session where students can clarify doubts and discuss the Unani approach to epilepsy management.
- **Outcome**: Reflection encourages deeper understanding, and the Q&A session consolidates key concepts and addresses uncertainties.

OR

ACTIVITY 2 : Field Visits to Unani SET-ups or Clinics: (2 hours)

Activity: Observational Visits to Unani Healthcare Settings

- Organize field visits to local Unani clinics or hospitals where students can observe the practice of Unani medicine, focusing on the management of epilepsy.
- Students will:
    - Observe patient assessments and treatment recommendations.
    - Engage with Unani practitioners to understand their approaches and philosophies.
    - Discuss with patients about their experiences with Unani treatment plans.

Feedback:

- After the visits, hold a debriefing session where students can share their observations and insights.
- Provide feedback on the depth of their observations and understanding of the Unani approach to patient care.

Experiential-Learning Learning 23.7: Assessment and management of Generalized Tonic - Clonic Seizure(GTCS).

Total experential time: 3 hours.

Teacher can conduct any two activities, each for 90 minutes :

1. **Simulation-Based Learning (90 minutes)**
    - Use a high-fidelity mannequin to simulate a patient experiencing a GTCS episode in an emergency department.
    - Students must quickly assess the situation, ensure airway safety, administer anticonvulsants (e.g., IV lorazepam), and manage the postictal phase.
    - Include monitoring tools like pulse oximetry and ECG to simulate real-time vital signs.
    - After the simulation, conduct a debriefing session to discuss decision-making and actions taken.
    - Provide individual feedback on their clinical skills and their ability to respond under pressure.
2. **Case-Based Learning (90 minutes)**
    - Present students with a detailed case involving a patient who has suffered multiple GTCS episodes. Provide a history (e.g., 13-year-old male, epilepsy, non-compliance with medication).
    - Students will discuss the patient's diagnostic workup, including EEG, MRI, and blood tests.
    - Have them develop a treatment plan focusing on seizure control, lifestyle modifications, and patient education about medication adherence.
    - Facilitate a group discussion to review the management plan and its rationale.
    - Provide feedback on the appropriateness of the proposed treatment strategies and diagnostics.
3. **Role-Playing (90 minutes)**
    - Organize a role-playing scenario where students take on different roles in a clinical team (e.g., physician, nurse, neurologist, family member, pharmacist) managing a GTCS patient.

- The scenario involves a GTCS episode during a hospital stay. The team must work together to stabilize the patient, communicate with the family, and discuss treatment planning.
- After the role-play, discuss how the team worked together and identify areas for improvement.
- Provide feedback on communication, teamwork, and clinical decision-making.

4. **Problem-Based Learning (PBL) (90 minutes)**
   - Present students with a case of a 40-year-old patient who presents with GTCS and no prior history of seizures. The etiology is unknown.
   - The students must identify possible causes (e.g., metabolic, structural, toxicological) and discuss diagnostic steps, including laboratory tests, imaging, and EEG.
   - After diagnosis, they must develop an acute management plan and discuss options for long-term follow-up.
   - Provide feedback on the thoroughness of the differential diagnosis, appropriateness of diagnostic steps, and the management plan.
5. **Flipped Classroom (90 minutes)**
   - Before class, assign students to read about the pathophysiology, diagnosis, and treatment of GTCS, including current guidelines.
   - In class, present a case study of a patient with GTCS, and have students discuss the case in small groups, integrating their pre-class readings into the management of the case.
   - Encourage students to focus on treatment challenges, such as medication compliance or managing comorbidities like depression or anxiety.
   - Instructors guide the discussion, correcting misconceptions and providing additional insights.
   - Encourage peer-to-peer feedback on the depth of understanding and clinical reasoning.
6. **Reflective Journaling (90 minutes)**
   - After participating in a simulation or role-play activity, ask students to write a reflective journal entry about their experience managing a GTCS patient.
   - Encourage them to reflect on:
     - What they learned about the diagnosis and management of GTCS.
     - Challenges they faced in the activity (e.g., decision-making under pressure).
     - How they will apply the skills and knowledge gained in future clinical settings.

- Provide individualized feedback on their reflections, encouraging deeper analysis of their experiences.
- Use reflections to guide future learning experiences and clinical practice.

7. **Gamification: GTCS Management Game (90 minutes)**

Activity: "Seizure Savior" – A GTCS Management Simulation Game

- Create an interactive game where students play as healthcare providers managing a virtual patient experiencing a GTCS. The game can be designed digitally or through a live, classroom-based activity using cards and scenarios.

Game Components:

- **Patient Profile Cards:** Different patients with GTCS (e.g., pediatric, adult, elderly) with varying seizure histories, comorbidities, and medication lists.
- **Action Cards:** Students draw cards representing actions (e.g., administer lorazepam, check airway, request blood tests) to manage the seizure. Some actions lead to positive outcomes, while others may worsen the patient's condition or delay treatment.
- **Challenge Levels:** Increase complexity as the game progresses, such as managing prolonged seizures (status epilepticus) or dealing with medication side effects.

Game Flow: Students work in teams, drawing and playing action cards in response to different phases of the seizure (ictal, postictal). Points are awarded based on the appropriateness and timeliness of the actions.

Feedback:

- Provide real-time feedback during the game, explaining the rationale for each correct or incorrect action.
- After the game, debrief the students to review key learning points, highlight areas for improvement, and discuss alternative strategies.

8. **Journal Club: Evidence-Based Discussion on GTCS Management:** Organize a journal club where students review and discuss recent research articles related to the diagnosis and management of GTCS.**(90 minutes)**

1. **Article Selection:** Provide students with a few landmark studies or recent review articles on GTCS, focusing on topics like pharmacological advancements, seizure triggers, or long-term outcomes.
2. **Critical Appraisal:** Assign each student or group to critically appraise a specific article, focusing on the study's objectives, methodology, results, and clinical relevance.

3. **Presentation:** Each group presents a summary of their article, discussing how the findings might influence GTCS management in real-world clinical practice.
4. **Discussion:** Facilitate a discussion on how the research impacts current guidelines, best practices, and patient care strategies for GTCS.

Feedback:

- Provide feedback on the students' ability to interpret research findings and connect them to practical clinical scenarios.
- Engage the group in discussions to highlight the relevance of evidence-based practice in managing GTCS.

9. **Gamification: GTCS Diagnostic Escape Room (90 minutes)**

- Set up an escape room where students must solve GTCS-related puzzles to "diagnose and treat" a virtual patient and "escape" the room within a time limit.

Puzzles and Clues:

1. **Medical History Puzzle:** Students piece together a patient's history (family history, medications, seizure triggers) using clues hidden in the room. Correctly interpreting the history unlocks the next stage.
2. **Diagnostic Clue Search:** Students find hidden diagnostic test results (EEG, CT scan, blood tests) around the room. Analyzing these clues correctly leads them to the next phase of treatment.
3. **Pharmacology Puzzle:** Students must determine the correct medications and dosages for the patient's GTCS based on the clues provided, such as the patient's weight and comorbidities.

Game Flow:

- Teams of students work together to solve each puzzle, with time penalties for incorrect answers or missed steps in the diagnosis and management process.
- The final puzzle involves creating a treatment plan for the patient, which unlocks the "exit" from the room.

Feedback:

- At the end of the escape room, provide feedback on the students' clinical reasoning, teamwork, and ability to apply knowledge to solve problems.
- Discuss the key steps they missed or struggled with and how to improve in future scenarios.

10. **Journal Club + Case Discussion Hybrid (90 minutes)**

- Combine a journal club and a case discussion by selecting a recent research paper that reports on a case of GTCS.

1. **Pre-Session Reading:** Students read the paper before class and prepare to discuss both the case and the study's broader implications for GTCS management.
2. **Case Breakdown:** Begin the session by discussing the clinical case in detail, focusing on history, diagnostic steps, and management decisions.
3. **Research Discussion:** Transition to a discussion of the research findings, comparing how the case management aligns with or differs from standard protocols based on the latest evidence.
4. **Practice Reflection:** Students reflect on how they would apply the research findings to similar cases in their own practice.

- Encourage discussion on the practical challenges of implementing research findings in clinical practice

11. **Gamification: GTCS Treatment Algorithm Quiz (90 minutes)**

- Design an interactive quiz game where students answer questions related to GTCS diagnosis, treatment, and follow-up. The game can be digital (using tools like Kahoot! or Quizizz) or a live classroom quiz.
- **Multiple-Choice Questions:** Students answer questions on topics like seizure triggers, first-line treatment, and diagnostic tests.
- **Scenario-Based Questions:** Present clinical scenarios where students must choose the correct next step (e.g., what to do if a seizure lasts more than 5 minutes).
- **Bonus Rounds:** Include more advanced questions about complex GTCS cases, such as managing status epilepticus or seizures in patients with comorbid conditions.

Feedback:

- After each quiz round, provide explanations for correct and incorrect answers to enhance learning.
- Review challenging questions and discuss the reasoning behind the best clinical decisions.

Experiential-Learning Learning 23.8: Comprehensive examination and investigation for febrile seizure.

Total experential time: 2 hours.

Teacher can perform any two activities each for one hour:

1. Case-Based Learning (CBL) - Stepwise Approach to Diagnosis (1 hour)

- Present a **case scenario** (e.g., a 2-year-old child with fever and a brief, generalized seizure).
- Guide students to:
    - **Take a detailed history** (fever onset, duration, seizure characteristics, prior illnesses).
    - Perform **a physical and neurological examination**.
    - Identify **red flag signs** that may indicate other causes (e.g., CNS infection, metabolic disorder).
    - Discuss appropriate **laboratory and imaging investigations**.
- Encourage students to **present their diagnostic approach** and discuss their reasoning.

2. Hands-on Skill Lab – Performing & Interpreting Key Investigations (1 hour)

- Set up **hands-on stations** for:
    - **Lumbar puncture (LP) on a manikin** – Indications and contraindications.
    - **Blood investigations:** Interpreting CBC, serum electrolytes, calcium, and blood glucose.
    - **CSF analysis interpretation** – Differentiate between normal, bacterial, and viral findings.
    - **Neuroimaging (CT/MRI)** – Identifying when and how to use imaging.
- Allow students to **practice sample collection techniques** under supervision.
- Discuss **real patient investigation reports** to strengthen interpretation skills.

3. OSCE (Objective Structured Clinical Examination) on Febrile Seizure Diagnosis (1 hour)

- Set up **OSCE stations** with standardized cases and test the following:
    - **Station 1:** Take a **focused history** from a parent (peer/simulated patient).
    - **Station 2:** Perform **a neurological examination** after a seizure episode.
    - **Station 3: Order and interpret investigations** (blood work, CSF analysis, imaging).
    - **Station 4:** Differentiate between **febrile seizures and other seizure types**.

- Provide **individual feedback** to students on their performance.

4. Problem-Based Learning (PBL) – Differentiating Febrile Seizures from Other Seizures (1 hour)

- Divide students into **small groups**.
- Provide them with **3-4 different cases**:
    - **Case 1:** Simple febrile seizure.
    - **Case 2:** Complex febrile seizure.
    - **Case 3:** Seizure due to meningitis.
    - **Case 4:** Afebrile seizure (e.g., epilepsy).
- Have them **discuss key differentiating features** and choose appropriate investigations for each case.
- Conduct **a facilitator-led debriefing** to clarify concepts

5. Gamification-Based Interactive Quiz – Investigation & Diagnosis (1 hour)

- Organize a **Kahoot! or Jeopardy-style quiz** covering:
    - **Indications for lumbar puncture**.
    - **When to perform neuroimaging**.
    - **Interpreting lab results** (e.g., CSF findings in bacterial vs. viral meningitis).
    - **Criteria for diagnosing febrile seizures**.
- Allow team-based discussion to justify answers.

6. Role-Playing Exercise – Communicating Diagnostic Findings to Parents (1 hour)

- Assign students to play the roles of:
    - **Doctor** explaining the diagnosis to a worried parent.
    - **Parent** asking questions about prognosis, treatment, and further investigations.
- Provide structured feedback on:
    - **Clarity in explaining febrile seizures**.

- **Empathy and reassurance skills**.
- **Handling difficult questions about epilepsy risk**.

7. Interpretation of Real-World Investigation Reports (1 hour

- Provide students with **anonymized patient reports**, including:
  - **Complete blood count (CBC)**.
  - **Serum electrolytes and glucose**.
  - **CSF analysis** (normal vs. abnormal findings).
  - **Neuroimaging scans (CT/MRI cases of febrile seizures vs. CNS infections)**.
- Ask them to:
  - Identify **normal vs. abnormal findings**.
  - Justify **whether further testing is required**.
  - Establish a **final diagnosis** based on reports.

8. Virtual Reality (VR) Simulation – Diagnosing Febrile Seizures in an Emergency Setting (1 hour)

- Use VR headsets to simulate a **pediatric emergency room** scenario.
- The student will interact with a **virtual child presenting with a febrile seizure**.
- They must:
  - Take a **focused history from a virtual parent**.
  - Perform a **neurological exam**.
  - Decide on **appropriate investigations** (CBC, serum electrolytes, CSF analysis, neuroimaging).
  - Make a **diagnostic decision** based on findings.
- At the end, they receive **real-time AI-driven feedback** on their performance

9. AI-Driven Chatbot for Diagnostic Reasoning (1 hour)

- The chatbot will act as a **virtual patient**, providing case details progressively.

- Students will engage in a **stepwise diagnostic conversation**, asking:
    - Fever onset and duration
    - Type and duration of seizure
    - Associated symptoms (e.g., stiff neck, irritability)
    - Family history of seizures
- AI will guide them through **ordering and interpreting investigations**, providing feedback.

10. Augmented Reality (AR) Interactive Case Discussion (1 hour)

- Use **AR apps** on tablets/smartphones to view:
    - **3D brain models** showing different causes of seizures.
    - **CT/MRI scans of febrile seizures vs. meningitis vs. structural lesions**.
- Students interact with these **holographic images** and analyze real patient cases.
- A facilitator guides them through **case-based discussion and differential diagnosis**.

11. Gamification-Based Clinical Decision-Making Challenge (1 hour)

- Organize a **team-based quiz game (e.g., Kahoot, Jeopardy, or Escape Room format)**.
- Create **progressive diagnostic challenges** where students must:
    - **Identify red flag symptoms**.
    - **Order appropriate investigations**.
    - **Interpret lab results and imaging**.
    - Differentiate **simple febrile seizures from complex febrile seizures and other conditions**.
- Teams earn points for correct answers and explanations.

12. AI-Based Case Scenario with Decision Tree Analysis (1 hour)

- Students interact with **adaptive AI-based case scenarios** on a medical education platform.
- The AI **adapts to their responses**, presenting different case progressions.

- They make real-time decisions on:
    - Ordering **blood tests, CSF analysis, neuroimaging**.
    - Choosing **appropriate management steps**.
    - Recognizing **when a lumbar puncture is needed**.
- AI provides **instant feedback and explanations** based on international guidelines.

13. Digital Portfolio-Based Reflective Learning (1 hour)

- Students maintain a **digital portfolio** where they:
    - Document **real-life patient cases** they encounter.
    - Reflect on **diagnostic challenges and learning points**.
    - Compare their case approach with **international guidelines**.
- Faculty members review and provide **personalized feedback**.

Experiential-Learning Learning 23.9: Unani treatment for Seizure disorders.

Total experential time :2 hours

Teacher can do any two activities from the following :

1. Case-Based Learning (CBL) – Unani Approach to Seizure Disorders (1 hour)

- Present **real-life seizure disorder cases** to students.
- Students will:
    - Take **detailed case history** based on Unani concepts.
    - Correlate symptoms with **Asbab (causes) and Akhlat (humors)**.
    - Propose **Unani interventions** including **Ilaj bit Tadbeer (regimen therapy), Ilaj bil Ghiza (dietary therapy), and Ilaj bil Dawa (unani medicines)**.
    - Compare Unani management with **modern anti-epileptic treatments**.
- Faculty will **moderate discussions** and provide **feedback**.

2. Gamified Role-Play – Counseling Patients on Unani Ilaj for Seizures.(1 hour)

- Divide students into **doctors, patients, and caregivers**.
- The "doctor" must:
    - Explain **Unani causes of seizures** in simple terms.
    - Describe unani**, dietary, and regimen therapies**.
    - Address **common concerns and misconceptions**.
- Faculty will observe and provide **constructive feedback**.

3. Unani Medicine Formulation – Prepare and Prescribe Unani Drugs (1 hour)

- Conduct a **practical lab session** where students:
    - **Identify Unani herbs** used for seizure disorders .
    - Prepare formulations such as: – Brain tonic and anti-epileptic,e.g.**Habb-e-jadwar** ,etc.
    - Discuss dosage, indications, contraindications, and safety profiles.

4. Neurophysiology Lab – Understanding the Effect of Unani Drugs on Seizure Activity (1 hour)

- Demonstrate EEG readings **before and after** Unani interventions.
- Perform a **comparative study** between Unani drugs and **conventional anti-epileptic drugs (AEDs)**.
- Discuss how **Unani drugs work as neuroprotectors and antispasmodics**.

5. Flipped Classroom – Compare Unani and Modern Management of Seizures (1 hour)

- Assign students **pre-session learning material** (articles, videos, research papers).
- In class, students **debate** on:
    - **When to use Unani treatments alone vs. integrated with modern medicine**.
    - The **safety profile** of Unani drugs vs. allopathic AEDs.
    - Case studies where **Unani medicine successfully treated seizures**.
- Faculty **moderates and provides expert insights**.

6. Community Outreach – Educating the Public on Unani Ilaj for Seizures (1 hour)

- Organize **a health camp or awareness session** in a local community.
- Students will:
  - Explain seizure types and their **Unani treatment options**.
  - Demonstrate **home-based Unani interventions** (e.g., stress-reducing foods, Unani herbal teas).
  - Address **cultural and social myths** about seizures.
- Conduct **pre- and post-session surveys** to measure impact.

7. OSCE (Objective Structured Clinical Examination) – Assess Unani Seizure Treatment Skills (1 hour)

- Set up **OSCE stations** where students must:
  - Take a **focused history** from a standardized patient.
  - Perform **neurological assessment** in Unani terms.
  - Choose **appropriate Unani therapies**.
  - Write a **complete Unani prescription**.
  - Justify their approach in an **oral viva**.

8. Workshop on Unani Remedies (1 hour)

- Organize a workshop led by a qualified Unani practitioner.
- Provide students with various Mufridat and Murakkabat commonly used in treating seizures.
- Include practical demonstrations on preparing Unani formulations (e.g., decoctions, infusions).
- Discuss the pharmacological properties and evidence supporting their use.

9. Journal Club (1 hour)

- Assign students to read selected articles on Unani treatments for Generalized Tonic-Clonic Seizures and Febrile Seizures.
- Facilitate a discussion where students present the article findings, methodologies, and relevance to clinical practice.
- Encourage students to critique the research and discuss its implications for using Unani approaches.

10.Gamification: Quiz and Case Challenges (1 hour)

- Develop a quiz and case challenges related to Unani treatments for seizures.
- Use platforms like Kahoot or Quizizz to create interactive quizzes.
- Include questions on Unani treatments, Ilaj-bil-ghiza (dietary recommendations), and emergency management of seizures.
- Offer prizes for top performers to encourage participation.

Experiential-Learning Learning 23.10: Unani treatment of Laqwa.

Total experential time : 3 hours.

Teacher can conduct this experential, stepwise as follows:

Step-1. Patient Case Presentation: (60 minutes)

- Divide students into small groups.
- Each group is assigned a different patient case with varying presentations of Laqwa (e.g., post-stroke, Bell's palsy).
- Groups should prepare a presentation detailing the patient's history, clinical findings, and appropriate Unani treatment strategies, including **Ilaj Bit Tadbeer** regimens.
- Include rationale for chosen treatments, such as unani remedies, Ilaj-bil-ghiza(dietary recommendations), and Rectification in asbab e sitta zarooriya(lifestyle modifications).

Step-2. Educational Seminar on Unani Treatments for Laqwa (60 minutes)

- Invite an expert in Unani medicine to conduct a seminar.
- The seminar should cover the theoretical framework of Unani treatments for Laqwa, focusing on the role of **Ilaj Bit Tadbeer** and lifestyle modifications i.e. rectification of Asbab-e-sitta zarooriya.
- Include case studies and evidence supporting the effectiveness of these treatments.
- Allow time for questions and discussions to deepen understanding.

Step-3. Community Health Outreach Program (60 minutes)

- Organize a community health camp focusing on Laqwa and its management through Unani treatments.
- Students can prepare educational materials (brochures, pamphlets) outlining the causes, symptoms, and Unani treatment options for Laqwa.
- Include demonstrations of **Ilaj Bit Tadbeer** techniques (e.g., self-massage, dietary recommendations) for community members.
- Encourage students to engage with the community, answer questions, and provide guidance on seeking treatment.

Evaluation: At the end of the activities, conduct a feedback session to assess the learning experiences and the effectiveness of different teaching methods.

Encourage self-reflection and peer feedback to further enhance the educational experience.

Experiential-Learning Learning 23.11: Evaluation and management of Bell's Palsy.

Total experential time : 2 hour.

Teacher can conduct any 2 activities from the following each for one hour:

1. Case Study Analysis (1 hour)

- Divide students into small groups and provide each group with a detailed case study of a patient with suspected Bell's Palsy, including history, physical examination findings, and initial diagnostic tests.
- Instruct groups to analyze the case, identify key symptoms (e.g., facial droop, inability to close one eye), and discuss differential diagnoses.
- Each group should present their diagnostic reasoning and proposed management plan, including pharmacological and non-pharmacological interventions.

2. Role-Playing Clinical Scenarios (1 hour)

- In pairs, assign roles of a clinician and a patient with Bell's Palsy. Provide scripted scenarios for the clinician to follow.
- The clinician should take the patient’s history, perform a focused physical examination, and formulate a management plan, considering the psychosocial impact of the condition.
- After the role-play, have students switch roles and repeat the exercise.

3. Workshop on Facial Assessment Techniques (1 hour)

- Organize a workshop led by an experienced clinician focusing on the assessment of facial nerve function.
- Teach students how to perform various tests (e.g., smile, frown, close eyes tightly) to evaluate the degree of weakness and the impact on daily activities.
- Allow students to practice these assessments on each other under supervision, providing constructive feedback.

4. Journal Club Discussion (1 hour)

- Assign students to read selected articles or guidelines on the diagnosis and management of Bell's Palsy.
- Facilitate a journal club discussion where students present key findings, discuss the evidence supporting treatment options (e.g., corticosteroids, antiviral therapy), and evaluate different management strategies.
- Encourage students to critique the articles and discuss implications for clinical practice.

5. Group Case Presentations (1 hour)

- Each group is tasked with constructing a fictional case of a Bell's Palsy patient, including detailed history, physical examination findings, diagnostic tests, and management plan.
- Groups should prepare a presentation that covers all aspects of their case, emphasizing clinical reasoning, differential diagnosis, and patient-centered care.
- After presentations, facilitate a class discussion to compare different cases and management approaches.

6. Simulation Training (1 hour)

- Set up a simulation scenario where students must respond to a patient presenting with acute onset of facial weakness consistent with Bell's Palsy.
- Include confounding factors such as recent viral illness or other neurological symptoms to test students' diagnostic reasoning and management.
- After the simulation, conduct a debriefing session to discuss what went well, areas for improvement, and clinical decision-making processes.

Evaluation: At the end of these activities, conduct a feedback session to assess the learning experiences and the effectiveness of various teaching methods. Encourage self-reflection and peer feedback to further enhance the educational experience.

Experiential-Learning Learning 23.12: Assessment of Acute Flaccid Paralysis and Promt Referal if needed .

Total experential time:2 hours

Teacher can conduct any 2 activities from the following each for 1 hour:

1. Case Study Analysis and Construction (1 hour)

- Divide students into small groups and provide them with a real or hypothetical case of a child or adult presenting with acute onset flaccid paralysis.
- Include important details in the case history such as recent viral illness, vaccination status, and travel history.
- Instruct the students to perform a differential diagnosis, considering conditions like Guillain-Barré syndrome, poliomyelitis, and transverse myelitis.
- Each group will construct a detailed evaluation, including physical exam findings, diagnostic tests (such as lumbar puncture, MRI, and nerve conduction studies), and a management plan with a focus on advocating timely referrals

2. Hands-On Workshop on Neurological Assessment (1 hour)

- Organize a workshop where students learn to perform a focused neurological exam on a simulated patient with acute flaccid paralysis.
- Key exam components include muscle strength testing, reflexes, sensation, and cranial nerve evaluation.
- Instructors guide students through common findings in AFP cases, such as decreased or absent deep tendon reflexes, and hypotonia.
- Students practice on each other or mannequins to hone their skills under supervision.

3. Simulation-Based Learning: Emergency Room Scenario (1 hour)

- Set up a simulation lab where students respond to a child presenting with rapid onset flaccid paralysis.
- The scenario involves obtaining a thorough history, performing a physical exam, ordering appropriate diagnostic tests (e.g., CSF analysis, MRI), and determining the need for immediate referral to a specialist (e.g., neurologist, infectious disease).
- After the simulation, conduct a debriefing session to discuss key aspects of their performance, focusing on timely diagnosis and referral according to AFP guidelines.

4. Journal Club Discussion on AFP Guidelines (1 hour)

- Assign students to review the latest guidelines on AFP surveillance and referral from global health authorities (e.g., WHO, CDC).
- In a journal club setting, have students present the key points from the guidelines, focusing on the diagnostic criteria for AFP, the role of stool sample collection (for poliovirus detection), and the referral process.
- Facilitate a discussion on how these guidelines can be applied in both resource-rich and resource-limited settings.

5. Role-Playing Scenarios: Patient Advocacy and Communication (1 hour)

- Students participate in role-playing exercises where one acts as the physician and the other as the caregiver of an AFP patient.
- The physician must explain the diagnosis, discuss the importance of timely referrals to specialists, and educate the caregiver about the potential causes (e.g., viral, immune-mediated) and prognosis.
- Students rotate roles and reflect on how to effectively communicate and advocate for the best care of the patient.

6. Case Presentation and Class Discussion (1 hour)

- Each group constructs a detailed case presentation on a hypothetical patient with Acute Flaccid Paralysis, covering history, examination findings, diagnostics, and a management plan.
- The presentation should include referral decisions, the rationale for their chosen approach, and a reflection on how they would communicate with patients and their families.
- After presentations, facilitate a class discussion to compare different management approaches and the importance of early detection and referral.

7. Field Trip or Guest Lecture on Public Health Surveillance (1 hour)

- Organize a field trip to a public health unit or invite a guest lecturer from a disease surveillance program.
- The session should cover how AFP cases are reported, the role of national surveillance programs in polio eradication efforts, and the process of case investigation.
- Students learn about the importance of accurate reporting and follow-up in preventing outbreaks and ensuring proper patient care.
- Guidelines for referral of case.

Evaluation: At the end of the activities, conduct a feedback session where students reflect on what they have learned about AFP diagnosis, assessment, and referral. Encourage self-reflection and group discussion on the effectiveness of the teaching methods used and how they can apply these skills in future clinical practice.

Experiential-Learning Learning 23.13: Parent counselling in AFP

Total experential hour: 1 hour

Teacher can conduct any one activity from the following:

1. Role-Playing: Parent-Clinician Counselling Simulation (1 hour)

- Divide students into pairs or small groups. One student takes the role of the clinician, while another plays the parent of a child requiring occupational therapy (OT) for a developmental or physical disability.
- The clinician is responsible for explaining the role of occupational therapy, its benefits, and how it will support the child's development or recovery.
- Focus on using clear, empathetic language to address parents' concerns and provide practical advice on how to integrate therapy into daily life.
- Rotate roles so each student has a chance to be both the clinician and the parent.

2. Workshop: Techniques in Occupational Therapy (1 hour)

- Organize a hands-on workshop led by an occupational therapist.
- Students will be introduced to various techniques used in OT, such as motor skill training, sensory integration, and adaptive techniques for daily activities (e.g., dressing, feeding).
- After learning the techniques, students must explain them to simulated parents (fellow students), highlighting their purpose, benefits, and how parents can support their child's therapy at home.

3. Case Study Analysis: Child Requiring Occupational Therapy (1 hour)

- Provide students with a detailed case study of a child with developmental delays or physical impairments who requires OT.
- Ask students to construct a management plan outlining how OT will benefit the child, the types of therapy required, and the potential long-term outcomes.
- As part of the assignment, students must include how they would explain the plan to the child's parents and provide guidance on what parents can do at home to support the therapy.

4. Journal Club on Pediatric Occupational Therapy (1 hour)

- Assign students to read research articles or reviews on occupational therapy outcomes in pediatric populations.
- During the journal club session, students will present key findings from the articles and discuss how the evidence supports OT's role in specific conditions (e.g., autism, developmental delay, neurological conditions).
- Facilitate a discussion on how students can incorporate evidence-based information into their counseling sessions with parents.

5. Community-Based Learning: Observing an OT Session (1 hour)

- Organize an observational field trip to an occupational therapy clinic where students can observe therapy sessions involving children with disabilities.
- After the session, students debrief with the occupational therapist to understand the goals of the session, the progress made, and how parents are educated to support therapy at home.
- Have students write a reflection on how they would communicate the therapy's benefits to parents and address any challenges observed during the session.

Feedback: At the end of these activities, conduct a feedback session to assess student learning and the effectiveness of different teaching methods. Encourage self-reflection on how they felt counseling parents and managing expectations, and provide opportunities for peer review and group discussion.

Modular Assessment

Assessment	Hour
Instructions: Conduct a structured Modular assessment. The assessment will be for 50 marks. Keep a structured marking pattern. Use different assessment methods in each module for the semester. Keep a record of the structured pattern used for assessment. Calculate the modular grade points as per Table 6C. 1. Case-Based Assessment (CBA) Students analyze clinical cases involving seizure disorders, AFP, and Bell's Palsy to demonstrate understanding of diagnosis, management, and Unani integration. 15 marks and 1 hour - Review each case provided. - Answer structured questions on diagnosis, treatment, and Unani perspectives. 2. Log Book Review Evaluation of students' logbooks documenting patient cases, clinical skills, and Unani treatment plans for conditions in the module. 10 marks and 30 minutes - Submit logbooks detailing patient encounters and self-reflections.	4

- Highlight cases related to seizures, AFP, and Bell's Palsy. 3. Viva Examination Oral examination on theoretical knowledge, clinical reasoning, and Unani literature on neurological disorders covered in the module. 15 marks and 1 hour - Prepare to answer questions from examiners. - Demonstrate an understanding of conventional and Unani treatment approaches. 4. Peer Assessment Students assess each other's performance on simulated cases of seizure disorders ,Bell's palsy etc providing constructive feedback. 5 marks and 30 minutes - Evaluate a peer on aspects like history-taking, clinical reasoning, and Unani integration. - Provide written feedback. 5. Practical Skill Demonstration Hands-on assessment on performing clinical examinations and diagnostic techniques for conditions such as Bell's Palsy, AFP,GBS and seizures, etc. 5 marks and 1 hour - Perform a neurological exam on a simulated patient or model. - Demonstrate knowledge of relevant diagnostic techniques. Detailed Assessment Breakdown 1. Case-Based Assessment (CBA) Components: Present cases involving conditions like febrile seizures, AFP, or Laqwa. Ask structured questions on diagnosis, management, and potential complications. Marks Breakdown: Case analysis and differential diagnosis (5 marks) Management plan, including treatment options (5 marks)	

Integration of Unani perspectives (5 marks) 2. Log Book Review Components: Review student entries related to patient cases and self-reflections. Emphasis on documenting clinical encounters and personal learning experiences for conditions in the module. Marks Breakdown: Completeness and relevance of case entries (4 marks) Depth of self-reflection and learning points (3 marks) Integration of Unani perspectives in patient care (3 marks) 3. Viva Examination Components: Oral questioning on topics like seizure disorder classifications, Saraa, treatment approaches for AFP, and Laqwa in Unani medicine. Examiners evaluate understanding of theoretical concepts and practical applications. Marks Breakdown: Depth of theoretical knowledge (5 marks) Clinical reasoning and application (5 marks) Knowledge of Unani treatment approaches (5 marks) 4. Peer Assessment Components: Students observe peers handling a simulated case of neurological disorder, focusing on clinical skills and approach. Written feedback provided to peers on strengths and areas for improvement. Marks Breakdown: Clarity and relevance of feedback provided (2 marks) Evaluation of clinical approach (2 marks) Constructiveness of feedback (1 mark) 5. Practical Skill Demonstration	

Components: Perform a focused clinical examination on simulated cases related to Bell's Palsy or seizure disorders. Demonstrate Unani diagnostic techniques where applicable. Marks Breakdown: Completeness of the examination (2 marks) Identification of key clinical signs (2 marks) Integration of Unani diagnostics (1 mark) Or Any Practical in converted form can be taken for assessment (20 marks). and Any experiential, such as portfolios/ reflections/ presentations can be taken as assessment (30 marks).	

Module 24 : امراض نظام اعصاب ودماغ۔دوم I Amrad-i-Nizām-i-Asaab-wa-Dimaagh –II(Neurological Disorders-2)

Module Learning Objectives

(At the end of the module, the students should be able to)

1. Formulate a D/D and propose initial evaluation and mgmt. independently for patients with common neurological disorders and will be able to determine the state of prompt refferrals if necessary
2. Demonstrate a lesion in the nervous system based on history and examination.
3. Describe concept of neurological disease i.e. (Asbab, tashkhees,Usool e ilaj, Ilaj ,IBT regiment , Hifz-e-ma-taqaddum,etc.) and correlate it with advance technology for investigation & management.
4. Demonstrate how to diagnose and manage Acute Neurological Emergencies for e.g. cases of Increased ICT and Meningitis in emergency room.
5. Counsel parents and aware about Mental Retardation, Cerebral Palsy, etc in childerns.

Unit 1 a) حمق Humq (Intellectual Disability) b) فالج دماغی Fālij-i-Dimāghī (Cerebral Palsy)

24.1.1. Unani concept of Humq (Tareef, asbab, alamaat, tashkhees, usul-i-ilaj, ilaj, etc.)

24.1.2.Intellectual Disability (Definition,Grades of mental handicap, prevalence, etiology, pre-disposing factors, Clinical manifestations, Investigations,Differential diagnosis, prevention and Management).

24.1.3.Unani concept of Falij-i-Dimaghi (Tareef, asbab, alamat, tashkhis, usul-i-ilaj, ilaj, etc

24.1.4.Cerebral Palsy (Definition, Etiopathogenesis, Classification, Evaluation, Diagnosis,D/D, Prevention and management)

References: 28,31,34,39,43,44,63

3A	3B	3C	3D	3E	3F	3G
CO1,CO2,CO4, CO5,CO6,CO7, CO8	Describe the Unani concept of Humq and Falij-e-Dimaghi (Tareef, asbab, alamaat,tashkhees, usool-e-ilaj, ilaj,etc).	1	Lecture	CE	Knows-how	BL,L&GD,FC
CO1,CO2,CO4, CO5,CO6,CO7, CO8	Describe and differentiate between Intellectual Disability and Cerebral Palsy with reference to their definitions, etiopathogenesis, classification (or grades), prevalence, risk and predisposing factors, clinical features, evaluation and investigations, differential diagnoses, prevention, and management.	2	Lecture	CE	Knows-how	L&GD,L_VC
CO1,CO2,CO4, CO5,CO6,CO7, CO8	Discuss ‘Grading of mental handicap’.	2	Practical24.1	AFT-RES	Shows-how	W,PAL,BS,PL ,DIS

CO1,CO2,CO4, CO5,CO6,CO7, CO8	Discuss the counselling sessions for speech therapy, occupational therapies, etc for Intellectual disability & Cerebral palsy.	2	Practical24.2	PSY-MEC	Shows-how	CBL,FV,W,RP ,TBL
CO1,CO2,CO4, CO5,CO6,CO7, CO8	Demonstrate Ilaj-bit-tadbeer session in case of Humuq and Falij-E-Dimagh.	2	Practical24.3	PSY-MEC	Shows-how	D-BED,DIS,PAL ,PER
CO1,CO2,CO4, CO5,CO6,CO7, CO8	Discuss the rehabilitation and Vocational Guidance for Intellectual disability & cerebral Palsy cases.	4	Experiential-Learning24.1	CC	Does	FV,IBL,D,PAL ,CBL
CO1,CO2,CO4, CO5,CO6,CO7, CO8	Review and present detail history and comprehensive examination in case of Cerebral palsy & Intellectual disability.	2	Experiential-Learning24.2	PSY-MEC	Does	D,PAL,JC,D-BED,SY
CO1,CO2,CO6, CO7,CO8	Integrate the concept of Recent Advances in case of Intellectual disability & Cerebral palsy (Rhizotomy, Tenotomy,etc.) .	2	Experiential-Learning24.3	CS	Does	PER,LS,RP,I BL,SIM

Unit 2 ماءالراس Mā' al-Ra's (Hydrocephalus)

24.2.1.Unani cocept of Mā' al-Ra's (Asbab, Alamat, Usul-i-ilaj, Ilaj.)

24.2.2.Hydrocephalus (CSF circulation,Definition,Etiology and Classification,Pathophysiology,Clinical feature ,Diagnosis, Differential diagnosis and Management.).

References: 31,34,39,44,63

3A	3B	3C	3D	3E	3F	3G
CO1,CO2,CO4, CO5,CO6,CO7, CO8	Describe the Unani concept of Maul-Rās and correlate it with modern aspects of Hydrocephalus, including its causes, clinical features, diagnosis, and management.	1	Lecture	CE	Knows-how	L&PPT ,FC
CO1,CO2,CO4, CO5,CO6,CO7, CO8	Demonstrate and how to evaluate the case of Hydrocephalus.	1	Practical24.4	PSY-MEC	Shows-how	D-M,PAL,X-Ray,DIS,D
CO1,CO2,CO4, CO5,CO6,CO7, CO8	Demonstrate the surgical management of Hydrocephalus.	1	Practical24.5	PSY-MEC	Shows-how	PAL,DIS,D,BL,L_VC
CO1,CO2,CO4, CO5,CO6,CO7, CO8	Counsel the parents for case of Hydrocephalus along with prognosis.	1	Experiential-Learning24.4	AFT-CHR	Does	PL,RP,D,W,DIS
CO1,CO2,CO4, CO5,CO6,CO7, CO8	Demonstrate and discuss Ilaj Bit Tadbeer sessions in case of Hydrocephalus. .	2	Experiential-Learning24.5	PSY-MEC	Does	CD,D-M,RP,D,W

Unit 3 زوایدسلعاتدماغیہ Zawaid-i-sulaat Dimaghiya (Intracranial Space Occupying Lesions)

24.3.1.Concept of increased Intracranial Tension.

24.3.2.Brain tumours

24.3.3.Inflammatory granulomas.

24.3.4.Brain abscess

24.3.5.Subdural hematoma.

References: 34,43,44,63

3A	3B	3C	3D	3E	3F	3G
CO1,CO2,CO4, CO5,CO6,CO7, CO8	Describe the Unani concept of Zawāʾid-e-Sūlat-e-Dimāghiyah and correlate it with the modern understanding of Increased Intracranial Tension, including definition, causes, types, clinical features, and principles of management.	1	Lecture	CE	Knows-how	L_VC,L&PPT
CO1,CO2,CO4, CO5,CO6,CO7, CO8	Describe common intracranial space-occupying lesions, including types of brain tumors (cerebellar, brainstem, supratentorial), inflammatory granulomas (tuberculoma, neurocysticercosis), brain abscess, and subdural hematoma, with emphasis on their definitions, causes, clinical features, diagnostic approach, and management	2	Lecture	CE	Knows-how	FC,L&PPT ,L&GD

CO1,CO2,CO4, CO5,CO6,CO7, CO8	Demonstrate history taking & comprehensive clinical examination in a case of Intracranial space occupying lesion (ISOL)	2	Practical24.6	PSY-MEC	Shows-how	PAL,BL,PBL, DIS,RP
CO1,CO2,CO4, CO5,CO6,CO7, CO8	Interpret the Investigations and diagnose a case of Intra Space Occupying Lesion	4	Practical24.7	CE	Does	PBL,DIS,BS, DL,PAL
CO1,CO2,CO4, CO5,CO6,CO7, CO8	Discuss and document the Signs of Increased Intracranial Tension(ICT) in patient.	3	Experiential-Learning24.6	CC	Does	PL,BS,CD,RP ,PSM
CO1,CO2,CO4, CO5,CO6,CO7, CO8	Discuss and present clinical examination with management in case of intracranial space occupying lesion along with timely referrals to higher centre.	4	Experiential-Learning24.7	PSY-MEC	Does	LRI,SIM,PBL, DIS,DL

Unit 4 سرسام Sarsām (Meningitis)

24.4.1.Unani concept of Sarsam (Tareef, asbab, alamat, usul-i-ilaj, ilaj).

24.4.2.Meningitis (Definition, Classification, Epidemiology, Pathogenesis, Pathology, Clinical Features, Complication, Diagnosis, Differential diagnosis, Management)

References: 28,31,34,39,42,43,44,51,63

3A	3B	3C	3D	3E	3F	3G

CO1,CO2,CO4, CO5,CO6,CO7, CO8	Describe the Unani concept of Sarsam and correlate it with the modern understanding of Meningitis, including its definition, classification, causes, clinical features, complications, differential diagnosis, and principles of management.	2	Lecture	CE	Knows-how	FC,L_VC,PL, L&PPT
CO1,CO2,CO4, CO5,CO6,CO7, CO8	Demonstrate Ilaj Bit Tadbeer for sarsam.	3	Practical24.8	PSY-MEC	Shows-how	RP,D,DIS
CO1,CO2,CO4, CO5,CO6,CO7, CO8	Interpret the Laboratory diagnosis in case of Meningitis.	1	Practical24.9	CE	Shows-how	DIS,DL,LRI,D ,PAL
CO1,CO2,CO4, CO5,CO6,CO7, CO8	Identify the Case of Meningitis and management of Acute meningitis in Emergency Room and prompt referral if needed	3	Experiential-Learning24.8	CAN	Does	PAL,EDU,BL, PBL,CBL
CO1,CO2,CO4, CO5,CO6,CO7, CO8	Demonstrate lumbarpuncture on manikin.	3	Experiential-Learning24.9	PSY-GUD	Does	LRI,D,FC,CB L,ML

Unit 5 Encephalitis / Encephalopathy

24.5.1.Encephalitis and Encephalopathies (Definition, Epidemiology, Etiopathology, Clinical features, Prognosis, Diagnosis, Management)

References: 34,44,63

3A	3B	3C	3D	3E	3F	3G
CO1,CO2,CO4, CO5,CO6,CO7, CO8	Describe Encephalitis and Encephalopathies.(Definition.,Epidemiology,Etiopathology,Clinical features,Prognosis, Diagnosis, Management etc..)	1	Lecture	CE	Knows-how	FC,DIS,L&PPT
CO1,CO2,CO4, CO5,CO6,CO7, CO8	Demonstrate the list of etiology to diagnose Encephalitis & Encephalopathy.	2	Practical24.10	PSY-ADT	Shows-how	CBL,PL,BS,DIS
CO1,CO2,CO4, CO5,CO6,CO7, CO8	Interpret of the investigation of encephalitis and encephalopathy.	2	Experiential-Learning24.10	CE	Does	CBL,CD,PAL, LRI,W

Practical Training Activity

Practical Training 24.1 Mental Handicap Grading.

Total practical time :2 hour.

Teacher can conduct any 2 activity from the following, each for one hour:

Activity 1. Case-Based Classification of Intellectual Disability (1 hour)

- Teacher will present students with case scenarios of patients with varying degrees of intellectual disability. These should include clinical details such as IQ scores, functional abilities, and adaptive behavior. Instructor will explain and summarize the mental handicap grading for each case.
- Provide students with more case scenarios.Ask students to assign each case to the appropriate category of intellectual disability (mild, moderate, severe, or profound) based on the available information.

- Students will explain their reasoning, referencing the standard criteria (e.g., DSM-5, WHO classification) and considering factors like cognitive abilities, social skills, and self-care independence.

Activity 2. Grading Mental Handicap: Practical Assessment Workshop (1 hour)

- Teacher will divide students into small groups and provide them with mock assessments, including psychological testing results (e.g., IQ tests, adaptive behavior scales such as the Vineland Adaptive Behavior Scales).
- Each group will interpret the results and categorize the patient's level of intellectual disability.
- Instructors should facilitate discussion on the **limitations of IQ testing**, the role of adaptive functioning in diagnosis, and how other comorbid conditions (e.g., autism, epilepsy) may influence the assessment.

Activity 3: Simulation Role Play (1 hour)

- The teacher would use role-play scenarios where students act as doctors and patients (or family members of patients with intellectual disabilities).
- Simulate different levels of mental handicap, and students should determine the grade based on patient interactions and cognitive assessments.
- Guide students throughout,evaluating the case and suggesting a diagnosis and grading.

Activity 4: Group Discussion with Visual Aids (1 hour)

Instruction:

- Show video clips or pictures of individuals with varying levels of mental handicap.
- In small groups, have students discuss and determine the grade of mental handicap for each individual.
- Guide students to focus on intellectual functioning, communication, self-care, and social adaptability.

Activity 5. Simulated IEP (Individualized Education Program) Development (1 hour)

Instruction:

- Assign students to create an **Individualized Education Program (IEP)** or a similar care plan for a patient with a specific grade of intellectual disability.
- Students will outline the patient’s strengths and weaknesses, set educational or developmental goals, and propose interventions such as speech therapy, occupational therapy, or special education

Practical Training 24.2 Counselling of Parents in Intellectual disability & Cerebral palsy.

Total practical time :2 hour.

Teacher can conduct any two activity from the following each for 1 hour:

1. Role-Playing Counseling Sessions(1 Hour)

- Instructor should split students into pairs or groups, with one acting as the counselor (medical professional) and the other as the parent of a child with Intellectual disability or CP.
- The "parent" expresses concerns about the child's future, therapies, education, and overall care.
- The "counselor" provides empathetic support, explains the diagnosis, offers guidance on treatment, therapy options, and encourages positive coping strategies.

Debriefing: Guide students through and discuss the importance of empathy, clear communication, and emotional support in counseling parents.

2. Case-Based Discussions(1 Hour)

- Instructor present a case study of a child with Intellectual disability or CP to the students.
- Have students discuss the medical, social, and emotional needs of the family.
- Instructor should include discussions on genetic counseling, prognosis, and early intervention strategies.
- Focus and encourage the students how to tailor counseling for different family dynamics, cultural backgrounds, and socioeconomic

3. Planning and Presenting a Therapy Session (1 Hour)

- Provide a students with recorded case. Students can observe a real or recorded **speech therapy** or **occupational therapy** session.
- Students should then design a session plan for either therapy, considering the child's individual needs (speech difficulties, motor skills, etc.).
- Present and explain the importance of each element (e.g., exercises, play, or communication techniques) to help improve quality of life.Peer review and feedback are incorporated to enhance observational accuracy.

Practical Training 24.3 Ilaj Bit Tadbeer in Mental Reatardation & Cerebral palsy.

Total practical time: 2 hours.

Teacher should conduct this practical step-wise as follows:

1. Demonstration of Dalk (Massage Therapy) (20 minutes)

- A session on **Dalk (massage therapy)**, where students learn how to perform massage using oils that are commonly used in Unani medicine,etc.
- Emphasis should be placed on techniques for patients with hemiplegia to improve circulation, muscle tone, and relaxation of stiff muscles.

2. Demonstration of Riyazat (Therapeutic Exercise) (20 minutes)

- Students participate in a session demonstrating **Riyazat (therapeutic exercise)** tailored for patients with CP, hemiplegia or other motor impairments.
- The exercise regimen should include **passive and active movements** to improve limb function, increase strength, and prevent muscle atrophy.

3. Demonstration of Ghusl (Therapeutic Bathing) (20 minutes)

- Students observe the application of **Ghusl (therapeutic bath)** for edema patients, which includes the use of warm water infused with unani advia that promote detoxification and circulation.
- The session includes preparation, patient positioning, and understanding the therapeutic effects of various drugs.

4. Demonstration of Nutool (Irrigation Therapy) (20minutes):

Demonstrate **Nutool (irrigation therapy)**, where unani drugs decoctions are poured over the affected part of the body (usually for Falij patients). The goal is to relax the muscles and improve neurological function.

5**. Case Presentation and Counseling Sessions (20minutes)**

- Have students present cases involving Humuq and Falij-E-Dimagh, including the patient's history, symptoms, and the IBT regimens chosen for treatment.
- Students should practice counseling patients and caregivers on the treatment plan, its goals, and expected outcomes.

6. Hands-On Application of Diet Therapy (Ilaj bil Ghiza) (20minutes)

- Students participate in preparing a diet plan for patients with Humuq and Falij-E-Dimagh based on Unani principles, focusing on **nutrient-rich, nerve-strengthening foods** for paralysis.
- Demonstrate how dietary changes, such as including **Maul-shaeer(barley broth)**, **muqawwiyat**, and **Unani teas**, can support recovery.

Practical Training 24.4 Evaluation of Hydrocephalus .

Total practical time :1 hour.

The teacher can conduct the activity step-wise as follows:

Step-1. Clinical Signs Demonstration and Hands-On Practice

Duration: 20 minutes

Instructions:

- Teacher demonstrates key physical examination techniques on a model, including head circumference measurement, fontanelle palpation, and observing eye movement (e.g., “sunsetting” sign).
- Students then practice these techniques on models or peers under supervision.

Step-2. Case-Based Learning (CBL)

Duration: 15 minutes

Instructions:

- teacher will present a brief case scenario of a child with suspected hydrocephalus (e.g., a 6-month-old with rapidly increasing head size and bulging fontanelle).
- Students discuss the clinical findings and propose initial investigations, such as neuroimaging and ophthalmologic exams.
- Peer review and feedback are incorporated to enhance observational accuracy.

Step-3. Imaging Analysis Workshop

Duration: 15 minutes

Instructions:

- Teacher will provide sample CT or MRI scans with varying hydrocephalus presentations.
- Students work in pairs to identify enlarged ventricles and other typical signs of hydrocephalus.
- Teacher facilitates a quick review of key features in the images.

Step- 4. **Small Group Discussions: Differential Diagnosis and Management**

Duration: 10 minutes

Instructions:

- In small groups, students discuss differential diagnoses, considering possible causes (e.g., congenital, acquired).
- Groups briefly outline a management plan for hydrocephalus (e.g., referral for surgical options like shunt placement).

Practical Training 24.5 Surgical Management of Hydrocephalus.

Total practical time: 1 hour.

Teacher can conduct any one activity from the following:

Activity 1. Video-Based Surgical procedure Review (1 hour)

- Teacher will show a high-quality video of surgical procedures commonly used in hydrocephalus management, such as **ventriculoperitoneal (VP) shunt placement** or **endoscopic third ventriculostomy (ETV)**.
- Follow the video with a guided discussion focusing on key steps of the procedure, indications, contraindications, and possible complications.

Activity 2.Video-Based Surgical procedure with Postoperative Management Video Analysis (1 hour)

- Teacher will provide a video overview of the video of surgical procedure with postoperative management of patients who have undergone surgery for hydrocephalus, including monitoring for complications, rehabilitation, and follow-up care.
- Teacher will facilitate a discussion on the significance of each aspect of postoperative care.

Activity 3. Interactive VR Surgical Simulation (1 hour)

Activity:

- Use VR technology to provide an immersive experience of surgical procedures for hydrocephalus.

Practical Training 24.6 Intra Cranial Space Occupying Lesion case evaluation.

Total practical time :2 hour.

Activity:**1. Neurological Examination Workshop (1 hour)**

- Teacher will conduct a workshop where students practice the complete **neurological examination** on standardized patients or peers. This includes assessing cranial nerves, motor and sensory function, coordination, gait, and reflexes.

- Focus on signs that might suggest an intracranial space-occupying lesion, such as **papilledema**, **focal neurological deficits**, or **signs of raised intracranial pressure (ICP)**.

Activity:2**. Case-Based Discussion (CBD) (1 hour)**

- Present clinical cases of patients with ICSOLs, such as brain tumors, abscesses, or hemorrhages, with a focus on clinical examination findings.
- Students discuss the **presenting symptoms**, including headaches, seizures, focal deficits (e.g., hemiparesis, aphasia), and changes in consciousness or behavior.
- Encourage students to correlate the **clinical findings** with possible locations of lesions (frontal lobe, parietal lobe, cerebellum, etc.)

Practical Training 24.7 Investigation & interpretation in Intra Cranial Space Occupying Lesion.

Total practical time :4 hour.

Teacher can conduct any 4 activites from the followingeach for 1hour :.

1. Neuroimaging Overview and Interpretation Session (2 hour)

- The teacher will conduct a session that introduces various **neuroimaging modalities** used to diagnose ICSOLs: **X-rays, CT scans, MRIs, PET scans, and angiography**.Provide students with **actual radiological reports** for patients with intracranial space-occupying lesions (ICSOLs). The reports should include findings from CT, MRI, or PET scans.
- The teacher will show example images of each modality with common findings associated with ICSOLs, such as tumors, abscesses, and hematomas.
- Teacher will discuss the clinical indications for choosing each modality.

2. Case-Based Imaging Review (2 hours)

- The teacher will present clinical cases of patients with **intracranial space-occupying lesions** along with their **imaging studies** (CT, MRI, or PET).
- Students are tasked with **reviewing the clinical history, performing imaging analysis**, and suggesting possible diagnoses. They will also discuss the **differential diagnosis** based on the imaging findings and clinical presentation.
- Teachers should guide and have them differentiate based on imaging features.

Practical Training 24.8 ILAJ BIT TADBEER in case of Sarsam.

Total practical time :3 hours

Teacher will conduct the practical step-wise as follows:

Step-1: This step had two compulsory activity as follows:

1.Unani Formulation Workshop (compulsory activity for 1 hour)

- **Preparation of Unani Remedies**: Teacher will organize a hands-on workshop where students learn to prepare unani formulations commonly used in IBT. Examples include Nutool (a decoction) and Zimaad (pastes or ointments).
- **Guided Demonstration**: A qualified practitioner demonstrates the preparation methods, explaining the properties of each ingredient and its relevance to treating Sarsam /Meningitis.

2. Therapeutic Techniques Demonstration (compulsory activity for 1 hour)

- **Practical Demonstration of Techniques**: The teacher will conduct demonstrations of therapeutic techniques used in IBT, such as **Nutool** , **Zimad, Ghusl** (bathing techniques), and **Saoot**,etc.
- **Hands-On Practice**: Students take turns practicing these techniques on each other under supervision, focusing on their application and techniques.

Step 2: The teacher can conduct any one activity from the following (1 hour):

1. Clinical Case Studies and Group Discussions (1 hour)

- The teacher will present case studies of patients diagnosed with Sarsam / Meningitis who have undergone IBT treatments.
- The teacher will divide students into small groups to analyze the cases, discussing treatment options, expected outcomes, and the rationale behind choosing specific regimens like Nutool and Zimaad, Saoot ,etc.
- Teacher will lead the debriefing session, helping students critically evaluate their experiences and offering guidance for future improvement.

2. Integrative Medicine Discussion Panel (1 hour)

- **Panel Discussion**: The teacher will organize a discussion panel featuring experts in both Unani medicine and conventional medical practice. Topics can include the effectiveness of IBT for Sarsam (Meningitis) and the scientific evidence supporting its use.
- **Q&A Session**: Allow students to engage with the panel, asking questions about the integration of traditional and modern practices.

3. Research Project on Efficacy of IBT (1 hour)

- **Conducting Literature Reviews**: Teacher will assign students to conduct literature reviews on the efficacy and safety of IBT regimens, including Nutool and Zimaad, in treating Sarsam.
- **Presentation of Findings**: Each student presents their findings, highlighting gaps in research, patient outcomes, and recommendations for future studies.
- Peer review and feedback are incorporated to enhance observational accuracy.

Practical Training 24.9 laboratory Diagnosis in Meningitis.

Total practical time :1 hour.

Teacher can conduct the practical step-wise as follows:

Step-1. Introduction & Case Scenario (5 min)

- The facilitator presents a clinical case of a suspected meningitis patient (e.g., fever, neck stiffness, altered sensorium).
- Discussion on the importance of laboratory investigations in meningitis diagnosis.

Step-2. Hands-on Demonstration (45 min)

a) CSF Analysis & Interpretation:

- Demonstration of normal vs abnormal CSF findings (via prepared slides or simulated images).
- Key parameters to be assessed:
    - Appearance (Clear/Turbid)
    - Cell Count & Type (WBCs, Neutrophils, Lymphocytes)
    - Glucose & Protein Levels
    - CSF/Serum Glucose Ratio

b) Special Stains & Microbial Identification:

- **Gram Stain:** Identifying bacterial meningitis (e.g., Gram-positive diplococci in pneumococcal meningitis).
- **India Ink Preparation:** Demonstrating Cryptococcus neoformans in fungal meningitis.

- **Ziehl-Neelsen Stain:** Detecting Acid-Fast Bacilli in tubercular meningitis.

C. Other Laboratory Tests:

- **PCR for Viral Meningitis:** Role of HSV, Enterovirus PCR.
- **Antigen Detection Tests:** Latex agglutination for bacterial meningitis.
- **Blood Cultures & Peripheral Blood Findings:** Correlation with systemic infection.

Step-3. Small Group Discussion & Interpretation with debriefing (10 min)

- Students are divided into small groups and given different CSF sample reports.
- Each group interprets findings and presents their diagnosis.
- Facilitator corrects misconceptions and emphasizes key diagnostic points.

Practical Training 24.10 Etiology of Encephalitis & Encephalopathy.

Total practical time :2 hour.

Teacher can conduct any 2 activities from the following:

1. **Case-Based Learning (CBL) (60 Minutes)**

- Teacher will present cases covering different causes of encephalitis (e.g., viral, bacterial, autoimmune) and encephalopathy (e.g., hepatic, uremic, hypoxic). Each case includes patient symptoms, history, lab results, and imaging.
- **Teacher** will divide students into small groups, assigning each group a case. They discuss the case, identify the likely etiology, and outline the rationale for their diagnosis. The groups then share findings with the class.
- Teacher will lead the debriefing session, helping students critically evaluate their experiences and offering guidance for future improvement.

2. Concept Mapping and Brainstorming (60 Minutes)

- Teacher will assign each group to creates a concept map that categorizes causes of encephalitis and encephalopathy (e.g., infectious, metabolic, toxic, autoimmune).

- **Group Presentation and Discussion**: Groups present their maps, Teacher will discuss the interconnectedness of etiologies and their differential diagnoses. This can help students visualize the broad spectrum of causes.

3. Peer Teaching with Flashcards (60 Minutes)

- **Etiology Flashcards**: Students create flashcards with different etiologies on one side and related mechanisms, symptoms, or risk factors on the other.
- **Paired Peer Teaching**: Students use flashcards to quiz each other on etiologies, promoting active recall and reinforcing learning through peer instruction.

4. Interactive Lecture with Multimedia (60 Minutes)

- **Video Explanations**: Short videos or podcast segments on challenging etiologies, like autoimmune encephalitis or metabolic encephalopathy, provide foundational knowledge.
- **Interactive Q&A**: After viewing, an instructor-led Q&A session addresses questions and deepens understanding through real-world clinical examples.

Experiential Learning Activity

Experiential-Learning Learning 24.1: Feild visit to Rehabilitation centre Intellectual disability & cerebral Palsy.

Total experential time: 4 hours.

Field visit to Rehabilitation Centre and Vocational Guidance Centre for Intellectual disabity & cerebral Palsy cases.

1. Introduction to Intellectual disabity ,cerebral Palsy and rehabilitation.

2. Review of ICD-10/DSM-5 criteria for Intellectual disabity.

3. Discussion of rehabilitation goals and strategies.

Field Visit Activities

Station 1: Observation of Rehabilitation Sessions(1 Hour)

1. Observe occupational therapy, physical therapy, and speech therapy sessions.

2. Note the techniques used and patient responses.

Station 2: Interaction with Patients(1 Hour)

1. Interact with patients and engage in activities (e.g., games, arts).

2. Assess communication skills and adaptive behavior.

Station 3: Clinical Assessment(1 Hour)

1. Conduct clinical assessments (e.g., cognitive functioning, adaptive behavior).

2. Use standardized assessment tools (e.g., IQ tests, ABAS).

Station 4: Multidisciplinary Team Meeting(1 Hour)

1. Attend a multidisciplinary team meeting.

2. Observe discussion of patient care plans and rehabilitation strategies.

Post-Visit Debriefing

1. Discussion of observations and experiences.

2. Reflection on rehabilitation goals and strategies.

3. Case presentations and group discussion.

Experiential-Learning Learning 24.2: Assessment in case of Cerebral palsy & Intellectual disability.

Total experential time: 2 hours.

Teacher can conduct any two activity from the following:

Activity 1: Case-Based Learning with Standardized Patient Interaction (1 hour)

- Teacher will divide students into small groups and assign each group a case of a child or adult with Intellectual disability and/or cerebral palsy.
- Instructor will provide detailed case histories, including birth history, developmental milestones, family history, and social background.
- Students will:
    - Conduct a simulated patient interview with a standardized patient (actor) or classmate role-playing as a caregiver.
    - Elicit information on developmental milestones, motor and cognitive functions, social behavior, and any concerns from caregivers.
- Focus on the following components during the history-taking:
    - Prenatal, perinatal, and postnatal history.

- Developmental history: milestones in motor, cognitive, social, and language development.
- Medical history: including previous therapies, medications, and surgeries (if any).
- Family and genetic history.
- Social and environmental factors.

Activity 2: Physical and Neurological Examination Workshop (1 hour)

- Teacher will conduct a workshop where students will practice a structured physical and neurological examination of a simulated or real patient with Intellectual disability and CP.
- Demonstrate the specific examination techniques used in assessing motor function, muscle tone, deep tendon reflexes, gait, and coordination.
- Students will perform the following:
  - General physical examination (growth parameters, head circumference, dysmorphic features).
  - Neurological examination (muscle tone, spasticity, involuntary movements, reflexes).
  - Gross motor and fine motor skills evaluation.
  - Cognitive function assessment (as appropriate).
  - Speech and language skills.

Activity 3: Problem-Based Learning (PBL) Session (1 hour)

- Present students with a complex case scenario where the patient has both Intellectual disability and cerebral palsy, along with co-morbidities such as epilepsy or orthopedic issues.
- In groups, students will:
  - Identify the critical points in the history and examination that would aid in diagnosing the condition.
  - Develop a comprehensive approach for further investigation, management, and referral.
  - Discuss therapeutic interventions (e.g., physical therapy, occupational therapy, speech therapy) based on examination findings.
- Each group will present their approach and discuss their diagnostic reasoning.

Experiential-Learning Learning 24.3: Recent Advances in C/ O Intellectual disability & Cerebral palsy (Rhizotomy, Tenotomy,etc.) .

Total experential time: 2 hours.

Teacher can conduct any 2 activities from the following:

Activity 1: Case Study Analysis of Surgical Interventions (1 Hour)

- Present students with detailed case studies of children with cerebral palsy who underwent rhizotomy or tenotomy.
- In small groups, students will:
    - Analyze the case to identify indications for surgery, expected outcomes, and postoperative care.
    - Discuss the role of these surgical procedures in improving function and quality of life.
    - Prepare a brief presentation on their findings, highlighting recent advances in these surgical techniques.

Activity 2: Journal Club.(1 hour)

Article Selection and Assignment

- Pre-assign students recent journal articles (published in the last 3-5 years) on the surgical management of CP and associated intellectual disabilities, focusing on procedures like SDR, Tenotomy, and alternative treatment modalities (e.g., stem cell therapy, botulinum toxin injections, robotic rehabilitation).
- Ensure a mix of research types: randomized controlled trials, meta-analyses, cohort studies, and case series.

Activity 3: Research and Presentation on Advances(1 hour)

- Assign groups of students to research recent studies and advancements in the management of Intellectual disability and cerebral palsy, focusing on rhizotomy, tenotomy, and other interventions.
- Each group will:
    - Summarize their findings in a presentation that covers:
        - New surgical techniques
        - Advances in rehabilitation therapies
        - Long-term outcomes and quality of life improvements
- Presentations should include visual aids and be interactive.

Experiential-Learning Learning 24.4: Counselling of parents in case of Hydrocephalus.

Total practical time :1 hour.

Teacher can conduct any one activity from the following:

Activity 1. Role-Play Simulations(1 Hour)

- Teacher led the students to engage in a role-play where one student acts as the physician, another as a parent, and a third as an observer. The physician-student must explain the diagnosis of hydrocephalus, discuss treatment options (shunt surgery, follow-up care, etc.), and the prognosis of the condition.
- Teacher will provide detailed patient scenarios beforehand. Observe interactions, and give constructive feedback on communication, empathy, and medical accuracy.

OR

Activity 2. Standardized Patient Encounters(1 Hour)

- Teacher will led the students interact with trained actors playing the role of parents who have just learned that their child has hydrocephalus.
- The student is expected to discuss diagnosis, surgical options, the prognosis for development and potential complications, and long-term care.
- Teacher will do the debriefing session. Evaluate students' performance based on pre-set criteria (empathy, clarity, thoroughness).

Experiential-Learning Learning 24.5: Ilaj Bit Tadbeer sessions in case of Hydrocephalus.

Total experential time :2 hour.

Teacher can conduct any 1 activity from the following:

Activity 1*. Demonstration of Core Procedures: Nutool ,Zimad, Dalak,etc.(1 Hour)*

- The instructor demonstrates Nutool (medicated liquid poured on the scalp,etc) and Zimad (medicated paste application) ,Dalak ,Dietotherapy ,etc. as part of the IBT regimen for hydrocephalus. Students observe the preparation of unani drugs, application techniques, and the expected therapeutic outcomes.
- Explain the selection of unani medicines, preparation methods, safety protocols, and therapeutic goals specific to hydrocephalus.

Activity 2. Guided Practice Sessions(1 Hour)

- Teacher will led the students to practice performing Nutool, Zimad, Dalak ,Dietotherapy ,etc. on simulated patients under instructor supervision. They are guided through each step, from the preparation of unani decoctions to the precise technique of pouring (Nutool) and application of pastes (Zimad) , Dalak ,Dietotherapy ,etc. on patients with hydrocephalus.
- Teacher will supervise students, ensuring proper technique and addressing individual queries. Provide feedback on accuracy, patient interaction, and handling of tools/materials.

Activity 3*. Case-Based Learning (CBL) with Hydrocephalus Patients (1 Hour)*

- Teacher will provide students a case of a pediatric patient with hydrocephalus. They are required to develop a detailed treatment plan that includes IBT regimens (Nutool, Zimad, Dalak ,Dietotherapy ,etc. etc.) along with conventional care. The focus is on integrating Unani practices to manage symptoms like headache, intracranial pressure, and cognitive issues.
- Teacher will provide case scenarios and guide students through creating a comprehensive management plan. Discuss the role of IBT in symptomatic relief and overall care.

Experiential-Learning Learning 24.6: Signs of Increased Intracranial Tension(ICT).

Total practical time :3 hour.

Teacher should conduct activities as follows:

1. Clinical Observation of Increased Intracranial Tension (ICT) Signs (1 hour)

- Teacher will provide students to observe clinical cases or simulated patients showing signs of ICT.
- Students will notify the key signs include headache, vomiting, papilledema, altered consciousness, and bradycardia,etc.
- They also learn how to perform a focused neurological examination to elicit signs like Cushing's triad and cranial nerve palsies.
- At the end of session teacher explain the pathophysiology behind the clinical signs of ICT.

2.Simulation-Based Learning for Emergency Assessment of ICT (1 hour)

- **Activity**: A simulated emergency scenario where a patient with increased intracranial tension (due to trauma, hydrocephalus, or stroke) is presented to students. The students must identify the signs of ICT and initiate appropriate diagnostic and treatment protocols.

3. Radiology and Diagnostic Review Session (1 hour)

- **Activity**: A session where students review diagnostic imaging (CT scans, MRIs) of patients with increased ICT. They identify key radiological signs such as midline shift, cerebral edema, or herniation. They also learn how to correlate these findings with clinical signs.

Experiential-Learning Learning 24.7: Assessment & management in case of intracranial space occupying lesion with timely referrals to higher centre..

Total practical time :4 hour.

Teacher can conduct this activity in 7 steps as follows :

Step 1. Bedside Clinical Examination of Neurological Symptoms (40 minutes)

- Students are tasked with performing a comprehensive neurological examination, including cranial nerve testing, motor function assessment, sensory evaluation, reflex testing, and cerebellar function tests on real or simulated patients suspected of having an ICSOL.
- Demonstrate a systematic approach to neurological examination. Supervise students and provide immediate feedback on the assessment of specific neurological signs, such as papilledema, altered mental status, motor deficits, and cranial nerve abnormalities.

Step 2*. Interpretation of Diagnostic Imaging (30 minutes)*

- Students are provided with various imaging reports, such as CT scans, MRI, and PET scans, of patients with suspected ICSOL. They must interpret the images, identifying the location and type of lesion (e.g., tumor, abscess, hematoma) and correlating this with clinical findings.
- Guide students in identifying the signs of ICSOL on imaging, such as mass effect, midline shift, edema, and compression of adjacent structures. Provide feedback on their diagnostic accuracy and reasoning.

Step 3*. Differential Diagnosis and Management Planning (20 minutes)*

- After conducting the examination and interpreting imaging, students must generate a differential diagnosis, considering various causes of ICSOL, such as tumors, abscesses, and vascular lesions.
- They then develop a management plan, including medical stabilization, preparation for surgery or biopsy, and initiation of treatment based on the nature of the lesion.

- Guide students through formulating differential diagnoses, using clinical and imaging clues. Discuss the appropriate medical and surgical interventions, and help them develop logical management plans.

Step 4. *Referral Decision-Making and Communication (20 minutes)*

- Students must assess whether the patient's condition warrants referral to a higher center for specialized neurosurgical intervention. They practice preparing referral documentation, including the clinical findings, diagnostic results, and justifications for referral. Students also simulate verbal handovers to specialists.
- Teacher act as a receiving neurosurgeon or specialist at a higher center. Evaluate the students' clarity and accuracy in referral documentation and verbal communication. Provide feedback on their handoff skills and the appropriateness of the referral.

Step 5. *Emergency Management and Stabilization Simulation (30 minutes)*

- In an acute scenario where the patient with ICSOL deteriorates (e.g., sudden increase in intracranial pressure, herniation signs), students must practice emergency stabilization techniques, such as administering mannitol, hyperventilation, and other interventions before referral.
- Teacher will set up the simulation, supervise students in real-time decision-making and interventions, and provide feedback on their actions.

Step 6. *Journal Club: Review of Recent Advances in ICSOL Management (60 minutes)*

- Students review the latest literature on the management of ICSOL, discussing advancements in treatment such as novel surgical techniques, radiotherapy, chemotherapy for tumors, and evolving diagnostic tools.
- **Instructor's Role**: Facilitate discussions on the latest guidelines and innovations in the treatment of ICSOL, helping students connect theory to clinical practice.

Step 7. *Interprofessional Team Collaboration Workshop (40 minutes)*

- Students participate in interdisciplinary case discussions with neurosurgeons, radiologists, and intensivists, focusing on ICSOL cases. The team works together to create comprehensive care plans, including pre-operative, intra-operative, and post-operative management.
- **Instructor's Role**: Guide the discussion on the role of each healthcare professional in managing ICSOL cases and highlight the importance of teamwork.

Experiential-Learning Learning 24.8: Assessment & management of Meningitis .

Total experiential time :3 hour.

Teacher should perform activities as follows:

*1. **Case-Based Learning (CBL): Identifying Meningitis (90 minutes)***

Instruction:

- Present students with various case scenarios involving patients with symptoms suggestive of meningitis (fever, headache, neck stiffness, altered consciousness, etc.). They will work through the differential diagnosis, focusing on distinguishing meningitis from other conditions like encephalitis, brain abscess, and systemic infections.
- Provide clinical vignettes, guide students through decision-making, and encourage critical thinking about different presentations of meningitis (bacterial, viral, fungal, and tubercular).

*2. **Simulation: Emergency Room Management of Acute Meningitis (90 minutes)***

Instruction:

- Using a high-fidelity simulation, students are placed in an emergency room setting where they encounter a patient presenting with suspected acute bacterial meningitis.
- They must perform an initial assessment, including history-taking and physical examination, stabilize the patient, and initiate appropriate treatment (e.g., antibiotics, corticosteroids).
- Monitor students as they perform under pressure, and provide real-time feedback on their clinical decision-making and management.

Experiential-Learning Learning 24.9: Demonstration of Lumbar puncture.

Total experential time :3 hour.

Teacher can conduct this experential in step-wise as follows :

Step-1: ***Demonstration and Hands-On Practice (1 hour)***

- **Activity**: Faculty performs a step-by-step demonstration of a lumbar puncture on a manikin, followed by students practicing the procedure under supervision.

- **Instructions**:
    - Begin with a brief lecture on indications, contraindications, and complications of lumbar puncture.
    - Demonstrate the proper positioning of the patient, identification of landmarks (L3-L4 or L4-L5 intervertebral spaces), needle insertion, and CSF collection.
    - Have students practice on manikins in small groups, with direct supervision from faculty to provide real-time feedback.

Step-2 : ***Objective Structured Clinical Examination (OSCE) Simulation (1 hour)***

- **Activity**: Create an OSCE station where students are evaluated on their ability to perform lumbar puncture on a manikin under exam conditions.
- **Instructions**:
    - Set up a timed station where students must perform a lumbar puncture on a manikin as part of a clinical scenario (e.g., a patient with suspected bacterial meningitis).
    - Examiners assess students based on their technique, sterile precautions, patient communication, and proper handling of the CSF sample.

Step-3: Teacher can conduct any one activity from the following for 1 hour:

1. ***Virtual Reality (VR) Simulation (1 hour)***

- **Activity**: Students use VR technology to perform a lumbar puncture in a simulated 3D environment, where they can practice the procedure repeatedly without risk to real patients.
- **Instructions**:
    - Provide VR headsets that simulate a clinical scenario where the student must prepare the equipment, position the patient, and perform the lumbar puncture.
    - The simulation provides feedback on hand movements, needle angle, and depth, allowing students to refine their technique.

2. ***Problem-Based Learning (PBL) with Clinical Case Scenarios (1 hour)***

- **Activity**: Use a problem-based learning approach where students are given clinical case scenarios requiring a lumbar puncture (e.g., suspected meningitis, subarachnoid hemorrhage).
- **Instructions**:

- Present a case where lumbar puncture is indicated.
- Students work in groups to discuss the case, including when and why lumbar puncture is needed, potential risks, and how to mitigate complications.
- After the discussion, students perform the procedure on manikins, applying their theoretical knowledge to practical skills.

*3. **Peer-Assisted Learning (PAL) (1 hour)***

- **Activity**: Senior students or peers who have mastered lumbar puncture demonstrate the procedure to junior students, guiding them through the process and offering tips from their experience.
- **Instructions**:
  - Pair up students, where one acts as the instructor and the other as the learner.
  - The “instructor” student performs a lumbar puncture on the manikin and explains each step, then guides the learner through the process.
  - Rotate roles to ensure everyone gets a chance to perform the procedure.

*4. **Flipped Classroom Approach with Pre-Procedure Video (1 hour)***

- **Activity**: Before coming to the lab, students watch a video on lumbar puncture, covering its indications, contraindications, and steps. In the lab, they practice the procedure on manikins.
- **Instructions**:
  - Provide students with pre-recorded educational videos that explain the lumbar puncture procedure in detail.
  - During the practical session, students can directly apply what they’ve learned by practicing on the manikins.
  - Faculty can assess and assist as needed during the hands-on practice.

Experiential-Learning Learning 24.10: Laboratory Diagnosis in Encephalitis and Encephalopathy.

Total experential time :2 hour.

Teacher can conduct the experential as follows :

Activity Flow:

1. Case-Based Introduction (30 min)

- Facilitator presents two different case scenarios:
  - **Case 1:** A patient with fever, altered mental status, seizures, and focal neurological deficits (suggesting encephalitis).
  - **Case 2:** A patient with altered sensorium, confusion, and metabolic derangements without fever (suggesting encephalopathy).
- Students discuss key clinical differences and hypothesize the required investigations.

2. Hands-on Interpretation of Investigations (60 min)

A. CSF Analysis Interpretation (15 min)

- **CSF parameters:** WBC count, protein, glucose, CSF/serum glucose ratio.
- **Findings:**
  - **Viral Encephalitis:** Lymphocytic pleocytosis, normal/mildly elevated protein, normal glucose.
  - **Bacterial Meningoencephalitis:** High neutrophils, high protein, low glucose.
  - **Autoimmune Encephalitis:** Lymphocytic dominance, oligoclonal bands.

B. Neuroimaging (CT/MRI) Interpretation (15 min)

- **MRI Findings:**
  - Temporal lobe hyperintensity → **Herpes Simplex Encephalitis (HSE)**.
  - Diffuse cortical edema → **Hypoxic Encephalopathy**.
  - White matter changes → **Autoimmune or Paraneoplastic Encephalitis**.

C. EEG Interpretation (15 min)

- **Findings in Encephalitis:** Focal or diffuse slowing, epileptiform discharges.
- **Findings in Hepatic Encephalopathy:** Triphasic waves.
- **Autoimmune Encephalitis:** Extreme delta brush pattern.

D. Metabolic and Serologic Markers (15 min)

- **Ammonia, Liver Function Tests:** Hepatic Encephalopathy.

- **Serum Autoantibodies (Anti-NMDA, Anti-VGKC):** Autoimmune Encephalitis.
- **PCR for HSV, CMV, EBV:** Viral Encephalitis.

3. Group Discussion & Diagnosis Formulation (30 min)

- Students are divided into groups, each receiving a case with a set of investigation results.
- Each group analyzes the data and presents their diagnosis, supporting it with investigation findings.
- The facilitator provides feedback and corrects misconceptions.

Modular Assessment

Assessment	Hour
Instructions: Conduct a structured Modular assessment. The assessment will be for 50 marks. Keep a structured marking pattern. Use different assessment methods in each module for the semester. Keep a record of the structured pattern used for assessment. Calculate the modular grade points as per Table 6C. 1. DOPS (Directly Observed Procedural Skills) Practical assessment of clinical skills in examining patients with neurological conditions, focusing on neurological exam techniques and Unani assessments. 15 marks and 1 hour - Perform an examination of a simulated patient. - Focus on recognizing signs and symptoms related to seizures, cerebral palsy, hydrocephalus, etc. 2. Chart-Stimulated Recall (CWS) Evaluation based on a simulated patient's medical chart for conditions like MR and hydrocephalus, testing interpretative skills and reasoning. 10 marks and 45 minutes - Review provided patient charts with case details. - Answer interpretative questions based on case data in the charts. 3. Case-Based Assessment(CBA)	4

Discuss clinical cases covering topics like encephalitis, ICSOL, Falij-e-Dimaghi, Maulraas, emphasizing differential diagnosis and Unani concepts. 15 marks and 1.25 hours - Analyze the provided case scenario and answer questions on diagnosis, management, and Unani treatment applications. - Include differential diagnosis. 4. Debate on Management Approaches Debate on conventional vs. Unani approaches for managing neurological disorders, focusing on safety, efficacy, and integration. 10 marks and 50 minutes - Participate in a structured debate. - Present and defend views on managing conditions like seizures, MR, cerebral palsy, etc., from both perspectives. Detailed Assessment Breakdown 1. Directly Observed Procedural Skills (DOPS) Components: Students perform a focused neurological examination on a simulated patient, demonstrating understanding of signs, motor skills, reflexes, and cranial nerve function. Emphasis on relevant skills for diagnosing cerebral palsy, encephalitis, and hydrocephalus. Marks Breakdown: Technique and thoroughness (5 marks) Identification of clinical signs (5 marks) Integration of Unani assessment skills (5 marks) 2. Chart-Stimulated Recall (CWS) Components: Students analyze patient charts to answer questions on management and progression of conditions such as MR and hydrocephalus. Charts include medical history, clinical notes, and treatment plans. Marks Breakdown: Identification of key information and trends in the chart (4 marks)	

Clinical interpretation of data (4 marks) Recommendations for further management or investigations (2 marks) 3. Case-Based Assessment(CBA): Components: A structured discussion around a case study focusing on differential diagnosis, therapeutic approaches, and patient-centered care. Unani treatment recommendations should be included where relevant for conditions like Maulraas, Falij-e-Dimaghi, etc Marks Breakdown: Differential diagnosis and reasoning (5 marks) Management plan (5 marks) Unani treatment integration and patient considerations (5 marks) 4. Debate on Management Approaches Components: Students debate various approaches, comparing conventional methods with Unani treatments for neurological disorders. Topics include the merits, limitations, and potential integration of both systems. Marks Breakdown: Clarity and coherence of arguments (4 marks) Evidence-based points and supporting arguments (4 marks) Teamwork and collaboration in debate (2 marks) Or Any Practical in converted form can be taken for assessment (20 marks). and Any experiential, such as portfolios/ reflections/ presentations can be taken as assessment (30 marks).	
Semester No : 6	
Module 25 : HEMATOLOGICAL DISORDERS.	

Module Learning Objectives

(At the end of the module, the students should be able to)

1. Identify the various types of anemia, including their etiologies, clinical features, and laboratory findings, to facilitate accurate diagnosis and management.The module also incorporate the Unani aspect of disease i.e faqr-ul-dum.
2. Describe the pathophysiology, clinical presentation, and management strategies for common hemoglobinopathies, including sickle cell disease and thalassemia. Evaluate the mechanisms and clinical implications of disorders such as hemophilia, immune thrombocytopenic purpura (ITP), and disseminated intravascular coagulation (DIC).
3. Describe various laboratory tests and procedures used in hematology, including complete blood counts (CBC), blood smears, and bone marrow biopsies.
4. Apply knowledge of hematology to real-life clinical scenarios, recognizing signs and symptoms associated with hematologic disorders.
5. Discuss the role of hematologists and other healthcare professionals in managing hematologic conditions, emphasizing teamwork in patient care.
6. Discuss the ethical issues and challenges related to hematologic treatments and patient management.
7. Discuss the latest advancements in hematology, including emerging therapies and diagnostic techniques
8. Describe the different components of blood and their indications for use in transfusion therapy, along with guidelines for safe blood transfusion practices.

Unit 1 فقرالدم Faqr-ul- dam (Anemia)

25.1.1.Iron Deficiency Anemia

25.1.2.Hemolytic Anemia

25.1.3.Megaloblastic Anemia

25.1.4.Aplastic Anemia

References: 34,44,63						
3A	**3B**	**3C**	**3D**	**3E**	**3F**	**3G**
CO1,CO2,CO4, CO5,CO6,CO7, CO8	Describe Unani concept of *Faqru-ul-dum.* (Asbaab, Alamaat, Usool-e-ilaj, Ilaj,etc,.] and Iron deficiency Anemia, Hemolytic Anemia.	2	Lecture	CC	Knows-how	L&PPT ,FC,PL
CO1,CO2,CO4, CO5,CO6,CO7, CO8	Describe Megaloblastic Anemia and Aplastic Anemia.	2	Lecture	CC	Knows-how	L&PPT ,L_VC,BL
CO1,CO2,CO4, CO5,CO6,CO7, CO8	Demonstrate General Physical Findings in case of Anemia.	2	Practical25.1	PSY-MEC	Shows-how	GBL,RP,SIM, D,BS
CO1,CO2,CO4, CO5,CO6,CO7, CO8	Demonstrate correlation of MCV(Mean corpuscular volume) & Reticulocyte count in diagnosis of Anemia.	2	Practical25.2	PSY-GUD	Shows-how	DL,BS,LRI,C BL,GBL
CO1,CO2,CO4, CO5,CO6,CO7, CO8	Interpret Peripheral Blood Morphologic findings in various Anemia. (Through microscopic slides).	2	Practical25.3	CAP	Shows-how	CD,BS,D,JC, FC
CO1,CO2,CO4, CO5,CO6,CO7, CO8	Demonstrate how to diagnose erythrocyte destruction in haemolytic Anemia.	1	Practical25.4	CC	Shows-how	BS,D,JC,GBL ,CD

CO1,CO2,CO4, CO5,CO6,CO7, CO8	Analyze accelerated erythropoiesis in Haemolytic Anemia.	1	Practical25.5	CC	Shows-how	GBL,JC,BL,PBL,CD
CO1,CO2,CO4, CO5,CO6,CO7, CO8	Adapt the steps for history taking and comprehensive clinical examination in suspected case of anemia and advice the patient for appropriate investigation.	2	Experiential-Learning25.1	PSY-ADT	Does	BL,CBL,W,FC,DIS
CO1,CO2,CO4, CO5,CO6,CO7, CO8	Discuss and document the drugs that causes Megaloblastic Anemia.	1	Experiential-Learning25.2	PSY-ADT	Does	DIS,W,GBL,TPW,CBL
CO1,CO2,CO4, CO5,CO6,CO7, CO8	Describe and discuss the metabolic causes of Megaloblastic Anemia.	1	Experiential-Learning25.3	PSY-GUD	Does	BL,CD,TBL,RP,CBL
CO1,CO2,CO4, CO5,CO6,CO7, CO8	Identify the reasons for non response to hematinic therapy in Iron Deficiency Anemia.	1	Experiential-Learning25.4	PSY-GUD	Does	RP,FC,W,SIM,PSM
CO1,CO2,CO4, CO5,CO6,CO7, CO8	Review and present unani literature for *Faqru-ul-dum* & recent advance in case of Anemia.	3	Experiential-Learning25.5	PSY-ORG	Does	JC,RP,BS,PAL,W
CO1,CO2,CO4, CO5,CO6,CO7, CO8	Discuss and document the list of Drugs Contraindicated in G6PD deficiency.	1	Experiential-Learning25.6	PSY-MEC	Does	DIS,LS,DA,CBL,BL

CO1,CO2,CO4, CO5,CO6,CO7, CO8	Formulate Unani treatment plan & unani dietary therapy i.e Ilaj bil ghiza in Iron deficiency Anemia.	1	Experiential-Learning25.7	PSY-ORG	Does	DIS,RP,CBL, SIM,W
Unit 2 Hemoglobinopathies 25.2.1.Sickle Cell disease. 25.2.2.Thalassemia. **References:** 34,44,63						
3A	**3B**	**3C**	**3D**	**3E**	**3F**	**3G**
CO1,CO2,CO4, CO5,CO6,CO7, CO8	Describe Sickle cell disease and Thallessemia (Definition, Epidemiology, Pathophysiology, Clinical Manifestation, Types of crisis and complications, Laboratory studies,Assessment during Acute illness,Inpatient management,preventive care,etc.)	2	Lecture	CC	Knows-how	FC,L&PPT ,L_VC
CO1,CO2,CO4, CO5,CO6,CO7, CO8	Demonstrate how to manage sickle cell crisis and complications.	1	Practical25.6	CAN	Shows-how	PSM,SIM,RP, BS,D
CO1,CO2,CO4, CO5,CO6,CO7, CO8	Demonstrate peripheral blood smear to identify Sickled RBC, Howell-Jolly bodies, Microcytosis, Hypochromia, nucleated	1	Practical25.7	AFT-RES	Shows-how	CD,BS,JC,CB L,GBL

	RBC,etc.for the case of Sickle cell anemia and Thallessemia and discuss about Hemoglobin Electrophoresis.					
CO1,CO2,CO4, CO5,CO6,CO7, CO8	Demonstrate the therapeutic management Algorithm for thalassemia.	1	Practical25.8	CC	Shows-how	IBL,PSM,CBL ,BS,RP
CO1,CO2,CO4, CO5,CO6,CO7, CO8	Discuss the concept of Hematopoietic stem cell transplant (HSCT), Gene therapy, Bone marrow transplant as a recent advance techniques in hematology.	1	Practical25.9	CC	Shows-how	BS,GBL,CBL, JC,L&GD
CO1,CO2,CO4, CO5,CO6,CO7, CO8	Analyze Sickle Cell and Normal Blood cells.	1	Experiential-Learning25.8	CAN	Does	DIS,ML,JC,W ,SIM
CO1,CO2,CO4, CO5,CO6,CO7, CO8	Discuss and present diagnosis and treatment strategies in case of Thallessemia and sickle cell disease cases.	2	Experiential-Learning25.9	PSY-MEC	Does	W,CBL,X-Ray,SIM,LRI
CO1,CO2,CO4, CO5,CO6,CO7, CO8	Review and discuss Thallessemia comorbidities.	1	Experiential-Learning25.10	PSY-ADT	Does	CBL,W,TBL,BS,DIS
CO1,CO2,CO4, CO5,CO6,CO7, CO8	Council and aware the families about Thallessemia & sickle cell disease.	2	Experiential-Learning25.11	PSY-ORG	Does	W,TBL,DIS,FV

Unit 3 Hemorrhagic and Thrombotic Diseases:

25.3.1.Immune Thrombocytopenic Purpura.

25.3.2.Hemophilia.

25.3.3.Disseminated Intravascular Coagulopathy.

References: 3,34,44,63

3A	3B	3C	3D	3E	3F	3G
CO1,CO2,CO4, CO5,CO6,CO7, CO8	Describe Immune Thrombocytopenic Purpura, Hemophilia, and Disseminated Intravascular Coagulopathy i.e DIC (Definition, epidemiology, pathogenesis, clinical evaluation, laboratory evaluation, differential diagnosis, management, etc.)	3	Lecture	CE	Knows-how	FC,L&PPT
CO1,CO2,CO4, CO5,CO6,CO7, CO8	Document the treatment options for Immune Thrombocytopenic purpura (Pros,Cons and cost).	1	Practical25.10	PSY-MEC	Shows-how	PBL,RP,SIM, TBL,CBL
CO1,CO2,CO4, CO5,CO6,CO7, CO8	Diagnose and manage common type of Haemorrhage in patient with Hemophilia.	1	Practical25.11	PSY-GUD	Shows-how	ML,BS,TBL,CBL,SIM

CO1,CO2,CO4, CO5,CO6,CO7, CO8	Demonstrate how to diagnose Disseminated Intravascular Coagulopathy(DIC) using DIC score.	1	Practical25.12	PSY-GUD	Shows-how	RP,CBL,JC,PBL,TBL
CO1,CO2,CO4, CO5,CO6,CO7, CO8	Discuss Types of blood component therapy,their constituents and guidelines for use.	1	Practical25.13	AFT-RES	Shows-how	JC,LRI,W,D,TBL
CO1,CO2,CO4, CO5,CO6,CO7, CO8	Demonstration and interpret basic investigation such as Prothrombin time(PT) ,partial thromboplastin time (aPTT), Thrombin time,Bleeding time,fibrinogen	2	Practical25.14	PSY-GUD	Shows-how	CD,DIS,ML,BS,L&PPT
CO1,CO2,CO4, CO5,CO6,CO7, CO8	Demonstrate and present differential diagnosis of Thrombocytopenia in children and Adolescents.	1	Experiential-Learning25.12	PSY-GUD	Does	CD,BS,RP,PBL,TBL
CO1,CO2,CO4, CO5,CO6,CO7, CO8	Document and present a list of disorders which cause Disseminated Intravascular Coagulopathy.	1	Experiential-Learning25.13	PSY-MEC	Does	CBL,GBL,BS, TBL,PAL
CO1,CO2,CO4, CO5,CO6,CO7, CO8	Demonstrate and present case of Immune thrombocytopenic purpura, Hemophilia , Disseminated vascular coagulopathy.	3	Experiential-Learning25.14	PSY-MEC	Does	JC,D-BED,W,LRI,PER
CO1,CO2,CO4, CO5,CO6,CO7, CO8	Discuss the step for management of acute bleeding .	2	Experiential-Learning25.15	PSY-ORG	Does	D,BS,SIM,DIS,CD

Unit 4 Blood component & Blood Transfusion

25.4.1.Blood component & blood Transfusion

25.4.2.Risk of blood Transfusion.

25.4.3.Guideline for pediatric Platelet & RBC transfusion.

References: 34,44,63

3A	3B	3C	3D	3E	3F	3G
CO1,CO2,CO4, CO5,CO6,CO7, CO8	Describe in brief about blood component & blood transfusion.	1	Lecture	CE	Knows-how	BL,FC
CO1,CO2,CO4, CO5,CO6,CO7, CO8	Discuss Guideline for pediatric red blood cell transfusion.	1	Practical25.15	CC	Shows-how	D,CBL,DIS,BS,PAL
CO1,CO2,CO4, CO5,CO6,CO7, CO8	Discuss Guideline for pediatric Platelet transfusion.	1	Practical25.16	CC	Shows-how	LRI,TBL,PSM,ML,PBL

CO1,CO2,CO4, CO5,CO6,CO7, CO8	Review and present guidelines for Pediatric Granulocyte Transfusions.	1	Experiential-Learning25.16	PSY-MEC	Does	D-BED,JC,RP, ML,CD
CO1,CO2,CO4, CO5,CO6,CO7, CO8	Review and prfesent guidelines for Pediatric Fresh Frozen Plasma transfusion.	1	Experiential-Learning25.17	PSY-ADT	Does	ML,JC,BL,GBL,CBL
CO1,CO2,CO4, CO5,CO6,CO7, CO8	Discuss and present the Risk of blood Transfusion.	1	Experiential-Learning25.18	CE	Does	D,SIM,CBL,DIS,RP

Practical Training Activity

Practical Training 25.1 Clinical Findings in Anemia

Total Practical hour : 2 hours.

Teacher can conduct any two activities each for 1 hour :

1. **Role-Playing Simulation (1 hour):**

Activity: Tacher will assign the roles to the students.Students play roles as doctors and patients. One student presents as an anemic patient with generalized symptoms such as pallor, fatigue, dizziness, and shortness of breath.

- Students perform a physical exam, looking for specific signs like pallor (in conjunctiva, nails), jaundice (if hemolytic anemia), glossitis, and nail changes (koilonychia).Guide students through evaluating the symptoms while suggesting a diagnosis.
- Instruct the student playing the doctor to verbally summarize their findings, then justify a differential diagnosis for anemia.

2. Case-Based Learning (CBL) (1 hour):

Activity: Teacher would present a real-life or virtual patient case where the patient has classic anemia symptoms and physical findings.

- Have students work in groups to summarize physical findings of anemia (e.g., pale conjunctiva, splenomegaly in hemolytic anemia).Teacher should guide and have them differentiate based on sign and symptoms.
- After discussion, they will present their findings and propose an action plan, which includes lab tests and potential treatment.

3. Flipped Classroom with Video Review (1 hour):

Activity:Teacher will provide students to watch a pre-recorded physical exam focusing on anemia prior to class.

- In class, students summarize the key physical signs of anemia.
- They then practice examining each other under supervision, identifying signs like pallor, tachycardia, and angular cheilitis.
- The instructor will guide students in reflecting on their findings.

4. Gamification - Quiz Competition (1 hour):

Activity: Teacher will divide the class into teams and create an interactive quiz based on physical findings in anemia (e.g., pallor, tachycardia, glossitis).

- Teams answer questions related to identifying these signs in clinical scenarios or images of patients.
- Include a section where students must quickly identify the relevant physical signs of anemia based on images or descriptions.
- Instructor should guide and have them differentiate based on image features.

5.Journal Club on Physical Signs of Anemia (1 hour):

Activity: Teacher will instruct the students to read a research article that reviews physical findings in anemia and discuss it during a session.

- Ask students to summarize the common physical findings of different types of anemia (e.g., iron deficiency vs. megaloblastic).
- Discussion should include how these findings correlate with underlying pathophysiology.

6. Interactive Simulation Using Augmented Reality (AR) and Digital Models (1hour):

- **Teacher will instruct the students to use AR applications** (e.g., "Human Anatomy Atlas," "Complete Blood Count AR") to visualize:
- **Changes in RBC morpholo**
- **Systemic effects of anemia on the heart, lungs, and brain**.
- **Digital patients (AI-based or simulation software)** provide real-time feedback on findings.
- Faculty guides students to **correlate digital findings with real-world cases**.

7. Role-Playing with Standardized Patients (SPs) (1 hour):

- Train **standardized patients (SPs)** to mimic symptoms of anemia.
- Students perform:
  - **History-taking (dietary habits, blood loss, chronic illness history)**.
  - **Physical examination** as per a structured checklist.
  - **Communicate findings effectively** and discuss management options.
- Faculty **assesses communication and clinical reasoning**.

8. Gamification: Anemia Diagnosis Challenge (Quiz & Escape Room Activity) (1hour):

a)Quiz Challenge:

- **Teacher will provide Interactive digital quiz** on anemia symptoms, signs, and investigations.
- Immediate feedback and explanations provided.

b)Escape Room Challenge:

- **Teacher will allow the students to work in teams** to "escape" by solving anemia-related clinical puzzles.
- Each puzzle requires **identifying signs, choosing lab tests, and diagnosing anemia types**.

Evaluation : At the end of these practical activities, conduct a feedback session to assess how students have improved their physical examination skills, diagnostic reasoning, and communication . Self-reflection and peer feedback should be encouraged to further reinforce learning.

Practical Training 25.2 Correlation of MCV(Mean corpuscular volume) & Reticulocyte count in Anemia.

Total Practical hours: 2 hours.

Teacher can conduct any two activities each for one hour.

1. Laboratory Analysis of Blood Samples (1 hour):

Activity: Students will measure MCV and Reticulocyte counts from blood samples.

Materials: Blood samples, hemocytometer, automated blood cell analyzer, slides, staining kits.

- Teacher / Instructor-led session which introduces the students, the technique of preparing and staining blood smears.
- Use the automated analyzer to obtain MCV and Reticulocyte counts.
- Calculate MCV manually using hematocrit and RBC count.
- Students will accurately perform laboratory techniques for analyzing MCV and Reticulocyte count.
- Students will interpret results in the context of diagnosing different types of anemia.
- Faculty feedback to refine the findings.

2. Case Study Analysis (1 hour):

Activity: Analyze different case studies of anemia with varying MCV and Reticulocyte count values.

Materials: Case study handouts, reference lab values.

- Teacher will instruct the students to work in groups to review case studies provided by teacher.
- They calculate MCV and Reticulocyte count based on provided data.
- Groups present their findings, discussing the type of anemia and management.
- Teacher review and feedback are incorporated to enhance observational accuracy.

3. Simulated Patient Interviews.(1 hour):

Activity: Conduct simulated interviews with standardized patients presenting anemia symptoms.

Materials: Standardized patient actors or simulation software.

- Teacher will instruct the students to conduct patient interviews to gather clinical history and symptoms.
- They discuss lab results (MCV and Reticulocyte counts) with the patient.
- Students will explain the significance of MCV and Reticulocyte counts to patients effectively.
- They present their interpretation and diagnosis to a teacher , receiving feedback on their findings and diagnostic reasoning.

4. Statistical Analysis Workshop (1 hour) :

Activity: Analyze a dataset of patient lab results.

Materials: Access to anonymized data, statistical software (e.g., SPSS, Excel).

- Students perform correlation analyses between MCV and Reticulocyte counts under teacher's guidance.
- They interpret the statistical findings and relate them to clinical significance.
- Students will understand the implications of statistical relationships in clinical practice.

5. Interactive Learning Quiz (1 hour) :

Activity: Use quizzes to reinforce knowledge of MCV and Reticulocyte counts.

Materials: Quiz platforms (Kahoot, Quizlet).

- Teacher will create and conduct a quiz focusing on MCV, Reticulocyte count, and anemia.
- Teacher will review answers and explanations as a group.

6. Integration with Clinical Skills Training (1 hour)

Activity: Combine lab findings with physical examination skills.

Materials: Physical examination tools, patient scenarios.

- Students practice history taking and physical examinations.
- Discuss lab findings and their relevance during examination.
- Students will learn to integrate laboratory results with clinical findings.
- Teacher will facilitate a group discussion comparing approaches.

7.Flipped Classroom Approach (1 hour)

- Teacher will assign a video or reading material on MCV and reticulocyte count correlation with anemia diagnosis prior to class.
- During the class, students will apply this knowledge by analyzing several patient cases with varying MCV and reticulocyte counts.
- Have them summarize which type of anemia each patient likely has and why, correlating it with the pathophysiology of the conditions.

8. Gamification - Diagnostic Challenge (1 hour):

- Teacher will create a game where students are presented with clinical cases and corresponding lab results (MCV and reticulocyte counts) in a quiz or puzzle format

- Students are given different sets of lab results (e.g., low MCV and low reticulocytes, high MCV with normal reticulocytes) and must identify the type of anemia, explaining the pathophysiology behind the findings.
- Teams earn points for correct diagnoses and explanations.

9. Concept Mapping Exercise (1 hour):

- Have students create a concept map that links different types of anemia with their corresponding MCV and reticulocyte count patterns.
- Teacher should guide and have them differentiate based on subtle imaging features
- Students map out the relationships between low, normal, and high MCV values, correlating them with reticulocyte count and specific types of anemia (e.g., microcytic anemia with iron deficiency, normocytic anemia with acute blood loss, macrocytic anemia with vitamin B12 deficiency).

Evaluation: At the end of these practical activities, conduct a feedback session to assess how students have improved their physical examination skills, diagnostic reasoning, and communication . Self-reflection and peer feedback should be encouraged to further reinforce learning

Practical Training 25.3 Peripheral Blood Morphology in anemia.

Total practical time: 2 hours

Teacher can conduct any two activities from the following each for one hour :

1. **Microscopic Slide Observation in the Lab (1 hour):**

Activity: Teacher will provide students with stained peripheral blood smears for direct observation under a microscope.

- Students will examine slides of patients with different types of anemia (e.g., iron deficiency anemia, megaloblastic anemia, sickle cell anemia) and identify morphologic features like microcytosis, macrocytosis, target cells, spherocytes, or schistocytes.
- Students document their observations, compare with reference images, and correlate with the type of anemia.

2. Case-Based Learning (CBL) with Morphological Interpretation (1 hour):

Activity:Teacher will present a case study of a patient with anemia and include peripheral blood smear images as part of the diagnostic work-up.

- After reviewing the clinical scenario and blood smear findings, students will interpret the morphologic changes (e.g., anisocytosis, poikilocytosis) and correlate them with possible types of anemia.

- Students will discuss how these findings align with other laboratory values like MCV, reticulocyte count, and iron studies.

3.Flipped Classroom with Pre-Lab Video Review (1 hour):

Activity: Teacher will assign videos or readings on the morphological findings in various anemias for students to review before class.

- In the lab session, students will use this pre-class knowledge to identify the different cell morphologies on prepared slides (e.g., hypersegmented neutrophils in megaloblastic anemia, sickle cells in sickle cell anemia).
- They will then summarize their findings and match each morphology to the correct type of anemia.

4.Gamification: Morphology Challenge (1 hour):

Activity: Teacher will create a competitive game where students are shown microscopic images of blood smears and must quickly identify the anemia type based on the morphologic findings

- Teams will earn points for correctly identifying cell types and correlating them with specific anemia diagnoses (e.g., basophilic stippling for lead poisoning, teardrop cells for myelofibrosis).
- The team with the most correct identifications and correlations wins.

5.Virtual Microscopy Session (1 hour):

Activity: Use virtual microscopy software that allows students to view high-resolution images of peripheral blood smears online.

- In groups, students will explore different digital slides, zooming in on areas of interest and identifying key morphologic findings such as elliptocytes, schistocytes, and macro-ovalocytes.
- They will record their findings and discuss how these abnormalities are related to the underlying pathology of the anemia type.

6. Problem-Based Learning (PBL) (1 hour):

Activity: Teacher will present a patient scenario where the peripheral blood smear findings are key to the diagnosis, such as a patient with hemolytic anemia showing fragmented red blood cells (schistocytes).

- Students will be tasked with diagnosing the type of anemia based on the peripheral smear and correlating it with the patient's symptoms, history, and other lab findings.
- They will present their diagnosis and rationale for the morphologic findings.

7. Morphology Journal Club (1 hour):

Activity: Organize a journal club where students review and present research articles or reviews that describe the morphologic features seen in specific anemias.

- Students will summarize the key findings of the research article, particularly focusing on how certain blood cell abnormalities (e.g., pencil cells in iron deficiency anemia) are diagnostic of specific anemias.
- The session will conclude with a group discussion on how to recognize these features in peripheral blood smears.

Evaluation & Feedback: At the end of these practical activities, conduct a feedback session to assess how students have improved their physical and motor examination skills, diagnostic reasoning, and communication with parents. Self-reflection and peer feedback should be encouraged to further reinforce learning.

Practical Training 25.4 Signs of accelerated Erythrocyte Destruction in haemolytic Anemia.

Total Practical Time: 1 Hour .

Teacher can conduct any one activitiy :

1. Laboratory Analysis Session (1 hour)

Activity: In a laboratory setting, students review real or simulated lab results from patients with hemolytic anemia.

- Teacher will provide students with lab reports showing elevated bilirubin levels, increased lactate dehydrogenase (LDH), decreased haptoglobin, and peripheral blood smears showing spherocytes or schistocytes.
- Students will identify and summarize these signs as evidence of accelerated erythrocyte destruction.
- Guide students in interpreting these results and discussing how they correlate with hemolysis.

2. Gamification: Lab Findings Challenge (1 hour)

Activity: Teacher will organize a competitive quiz game where students are given different sets of lab results of cases and must identify the specific signs of hemolytic anemia.

- Include questions on elevated indirect bilirubin, increased LDH, decreased haptoglobin, reticulocytosis, and positive direct Coombs test.
- Students compete to answer correctly and explain the clinical significance of each lab finding.
- Conduct a debrief to reflect on the interaction.

3. Problem-Based Learning (PBL) (1 hour)

Activity: Teacher will present a patient with jaundice and anemia. Ask students to investigate the cause using provided lab results.

- Students will interpret elevated indirect bilirubin, reticulocyte count, and peripheral blood smear findings such as spherocytes.
- They will then correlate these findings with the pathophysiology of hemolytic anemia.
- Guide students through evaluating the symptoms, interpreting lab values, and suggesting a cause.

4.Journal Club: Review on Hemolytic Anemia (1 hour)

Activity: Teacher will assign students a recent journal article that discusses laboratory findings in hemolytic anemia.

- Each student or group will present the laboratory signs of accelerated erythrocyte destruction highlighted in the article.
- The group will discuss how these findings are used in clinical practice for diagnosing hemolytic anemia.
- Peer review and faculty feedback to refine the outcome.

5. Concept Mapping (1 hour)

Activity: Have students create a concept map that links the pathophysiology of hemolytic anemia with its lab signs.

- Students will map out the relationships between hemolysis, increased bilirubin, LDH, low haptoglobin, and elevated reticulocyte count.
- They will present how each of these findings supports the diagnosis of accelerated erythrocyte destruction.
- Faculty review and feedback are incorporated to enhance observational accuracy.

Evaluation & Feedback: At the end of these practical activities, conduct a feedback session to assess how students have improved their physical and motor examination skills, diagnostic reasoning, and communication with parents. Self-reflection and peer feedback should be encouraged to further reinforce learning.

Practical Training 25.5 **Signs of accelerated erythropoiesis in Haemolytic Anemia.**

Total practical time:1 hour.

Teacher can conduct any one activity from the following :

1. Laboratory Data Interpretation (1 hour)

Activity: Teacher will provide students with lab results from patients with hemolytic anemia that indicate accelerated erythropoiesis.

- Students review key findings such as increased reticulocyte count, elevated erythropoietin levels, and signs of bone marrow hyperplasia (e.g., increased nucleated red blood cells in peripheral blood).
- Instruct students to summarize how each of these lab findings indicates increased erythropoiesis.
- Conduct a debrief to reflect on the interaction.

2. Case-Based Learning (CBL) (1 hour)

Activity: Teacher will present a clinical case of a patient with hemolytic anemia and include lab results showing signs of accelerated erythropoiesis.

- Students analyze the case and laboratory findings such as reticulocytosis, elevated mean corpuscular volume (MCV) (due to increased reticulocyte size), and increased serum erythropoietin.
- They will discuss how these signs correlate with the body's response to red blood cell destruction.
- Teacher will lead the debriefing session, helping students critically evaluate their experiences.

3. Problem-Based Learning (PBL) (1 hour)

Activity: Teacher will present a patient scenario where hemolytic anemia leads to increased erythropoiesis, and students must investigate the laboratory findings.

- Teacher will provide lab results with elevated reticulocytes, low hemoglobin, and bone marrow findings.
- Students work in small groups to determine the cause of anemia and explain how the lab data reflects the body's compensatory efforts to increase red blood cell production.
- Faculty review and feedback are incorporated to enhance observational accuracy.

4. Journal Club: Accelerated Erythropoiesis in Hemolytic Anemia (1 hour)

Activity: Teacher will assign students to review and present an article discussing the signs of accelerated erythropoiesis in hemolytic anemia.

- Students summarize the lab markers discussed in the article, such as high reticulocyte count and erythroid hyperplasia.
- The group discusses how these markers are used to monitor and diagnose hemolytic anemia.
- Student deepen their understanding of the pathophysiology of erythropoiesis in hemolytic anemia by reviewing current research.
- Faculty review and feedback are incorporated to enhance observational accuracy.

5. Concept Mapping Exercise (1 hour)

Activity: Have students create a concept map that visually links the process of hemolysis with the laboratory signs of accelerated erythropoiesis.

- Students map out the relationships between hemolysis, increased reticulocytes, elevated erythropoietin, and bone marrow response.
- Present their maps to the class for peer review and discussion.
- Conduct a debrief to reflect on the interaction.

6. Statistical Analysis of Erythropoiesis Indicators (1 hour)

Activity: Analyze data sets of hemolytic anemia cases to observe patterns in erythropoiesis.

Materials: Access to anonymized patient data sets (reticulocyte counts, CBC results), statistical software (e.g., Excel, SPSS).

1. Have students analyze a dataset to identify trends in reticulocyte counts and other laboratory findings in patients with hemolytic anemia.
2. Guide students in performing basic statistical analysis (mean, standard deviation) and interpreting the results.

Evaluation & Feedback: At the end of these practical activities, conduct a feedback session to assess how students have improved their physical and motor examination skills, diagnostic reasoning, and communication with parents. Self-reflection and peer feedback should be encouraged to further reinforce learning.

Practical Training 25.6 **Algorithm for Therapeutic management of Thallessemia.**

Total practical time: 1 hour.

Teacher can conduct any one avtivity from the following :

1. Interactive Case-Based Learning (1 hour)

- Teacher will present a detailed clinical case of a thalassemia patient requiring treatment. Ask students to apply an algorithm for therapeutic management, highlighting the use of standard treatments (e.g., blood transfusions, iron chelation therapy) and newer drugs like Luspatercept and Hydroxyurea.
- Divide students into small groups and provide them with patient details (age, history, lab values).
- Ask each group to develop a management plan using the algorithm.
- Facilitate a class discussion comparing approaches and rationales for choosing specific treatments.

2. Flowchart Creation (Algorithm Development) (1 hour)

- Have students collaboratively create a flowchart of the treatment algorithm for thalassemia, integrating various treatment options, including newer drugs like Luspatercept and Hydroxyurea.
- Provide them with key resources (guidelines, clinical data).
- Assign small groups to focus on specific stages (e.g., initial diagnosis, transfusion therapy, chelation, drug therapy).
- Compile their results and discuss the stepwise therapeutic approaches

3. Guided Literature Review and Presentation (1 hour)

- Teacher will assign students to review recent articles or clinical trials on Luspatercept and Hydroxyurea in thalassemia treatment.
- They should focus on the efficacy, safety profile, and real-world application of these drugs.
- Students present their findings in a class discussion, comparing new treatments with traditional management practices.
- Faculty will provide feedback.

4.Gamification (Quiz-Based Learning) (1 hour)

Activity: Use a quiz-based platform to engage students in reviewing the therapeutic options for thalassemia. Questions can include when to use standard treatment and the role of newer drugs.

- Teacher will divide the quiz into different categories: diagnosis, treatment algorithm, iron chelation therapy, and newer drugs like Luspatercept and Hydroxyurea.
- Include real-life cases where students must choose the right treatment strategy based on the patient's clinical status.
- Teacher will facilitate a class discussion and feedback

Evaluation & Feedback: At the end of these practical activities, conduct a feedback session to assess how students have improved their physical and motor examination skills, diagnostic reasoning, and communication with parents. Self-reflection and peer feedback should be encouraged to further reinforce learning.

Practical Training 25.7 Sickle cell crisis and complications.

Total practical time:1 hour

Teacher can conduct any one activity from the following :

1.Simulation-Based Learning for Acute Crisis Management (1 hour) :

Instructions:

- Teacher will set up a simulation scenarios of cases where students manage a patient presenting with a vaso-occlusive crisis. Include details like vital signs, patient history, and initial assessment findings.
- Students work in teams to practice triaging, administering IV fluids, managing pain (using non-opioid and opioid options), and initiating oxygen therapy as needed under guidance of teacher.
- Teacher will Guide students through evaluating the symptoms, and suggesting a diagnosis.

2.Interactive Case Discussions on Sickle Cell Complications (1 hour)

Instructions:

- Teacher will present detailed case studies of common complications such as acute chest syndrome, stroke, or splenic sequestration. Teacher will encourage students to identify clinical features, diagnostic criteria, and treatment options.
- Facilitate small group discussions where students assess the cases, propose management plans, and discuss prevention strategies.

3.Practical Workshop on Pain Management Protocols (1 hour)

Instructions:

- Teacher will provide students with protocols and scenarios for managing pain in SCD. Include tasks like calculating pain medication dosages and planning multimodal pain management.
- Students practice creating and adjusting pain management plans based on patient responses during mock clinical situations.
- Faculty review and feedback are incorporated to enhance observational accuracy.

4. Lab Interpretation and Diagnostic Skills Session (1 hour)

Instructions:

- Teacher will present students with a set of lab results and imaging findings typical of sickle cell complications (e.g., CBC showing anemia, chest X-rays indicating acute chest syndrome).
- Students analyze the results to diagnose the patient's condition and suggest appropriate next steps, such as blood transfusions or further imaging.

- Faculty review and feedback are incorporated to enhance observational accuracy.

5. Problem-Based Learning (PBL) on Long-Term Management Strategies (1 hour)

Instructions:

- Teacher will assign students to investigate and present on long-term management plans, including the use of hydroxyurea, chronic transfusion programs, and lifestyle modifications.
- Students work in groups to prepare presentations on evidence-based approaches for preventing recurrent crises and managing chronic complications.
- Facilitate a group discussion comparing approaches.
- Conduct a debrief to reflect on the interaction.

Evaluation & Feedback: At the end of these practical activities, conduct a feedback session to assess how students have improved their physical and motor examination skills, diagnostic reasoning, and communication with parents. Self-reflection and peer feedback should be encouraged to further reinforce learning.

Practical Training 25.8 Peripheral blood smear identification in Sickle cell anemia and Thallessemia.

Total practical time : 1 hour.

Teacher can conduct any one activity:

1.Microscopy Lab: Blood Smear Examination (1 hour) **Instructions**

- Teacher will conduct a microscopy session where students observe prepared blood smears of patients with sickle cell anemia and thalassemia.
- Teacher will provide students with stained blood smears showing sickled RBCs, Howell-Jolly bodies, microcytosis, hypochromia, and nucleated RBCs.
- Instruct them to identify these features under the microscope, document their findings, and correlate them with the pathophysiology of the diseases.
- Guide them to differentiate between sickle cell anemia and thalassemia based on the observed morphology.

2.Case-Based Learning (CBL) with Peripheral Blood Smears (1 hour)

- Teacher will present a clinical case of a patient with anemia, where students analyze peripheral blood smear.
- Students review the clinical presentation along with the blood smear, which may show sickled RBCs or other abnormalities like Howell-Jolly bodies, nucleated RBCs (suggesting ineffective erythropoiesis), microcytosis, and hypochromia.

- They will discuss the case in small groups, interpreting how these findings help in diagnosing sickle cell anemia versus thalassemia.

3. Gamification: Blood Smear Identification Challenge (1 hour)

- Teacher will organize a game where students are shown images of peripheral blood smears, and they must quickly identify specific abnormalities such as sickled RBCs, Howell-Jolly bodies, or hypochromia
- Set up a quiz or game where teams of students compete to identify the correct blood smear features and correlate them with either sickle cell anemia or thalassemia.
- Bonus points can be awarded for correctly interpreting hemoglobin electrophoresis results.
- Debriefing of session by teacher.

4.Journal Club: Latest Advances in Hemoglobin Electrophoresis (1 hour)

- Teacher will instruct students to read recent journal articles about new advances in hemoglobin electrophoresis or other molecular diagnostics for hemoglobinopathies
- Each student or group will present their article, summarizing the significance of electrophoresis in diagnosing sickle cell anemia and thalassemia.
- After the presentations, the group discusses the role of electrophoresis in modern diagnostic approaches, including its limitations and alternatives such as genetic testing.

5. Concept Mapping: Peripheral Blood Smear and Electrophoresis in Hemoglobinopathies (1 hour)

- Have students create a concept map that visually links the findings on peripheral blood smear with the results of hemoglobin electrophoresis in sickle cell anemia and thalassemia.
- Students map out how different peripheral blood features (e.g., sickled RBCs, Howell-Jolly bodies, nucleated RBCs) are associated with the underlying pathophysiology and how these findings correlate with electrophoresis results.
- They will present their maps to the class for feedback and discussion.

Evaluation & Feedback: At the end of these practical activities, conduct a feedback session to assess how students have improved their physical examination skills, diagnostic reasoning, and communication with parents. Self-reflection and peer feedback should be encouraged to further reinforce learning.

Practical Training 25.9 Recent advance techniques in hematology.

Total practical time: 1 hour.

Teacher can conduct any one activity:

1. Case-Based Discussion: (1 hour)

- Teacher will present a case of a patient with a hematologic disorder (e.g., leukemia, thalassemia, or sickle cell disease) that requires advanced treatment options like HSCT, gene therapy, or bone marrow transplant.
- Divide students into small groups and provide a clinical case with lab results and diagnosis.
- Each group develops a treatment plan using advanced techniques and discusses the indications, risks, and benefits.
- Conduct a class-wide discussion comparing their approaches to treatment and the role of HSCT, gene therapy, and bone marrow transplant in the case.

2. Flowchart and Algorithm Development (1 hour)

Activity:

- Students collaboratively create a step-by-step algorithm for the indications, patient eligibility, and procedures involved in HSCT, gene therapy, and bone marrow transplant.
- Teacher will divide the students into groups, assigning each a specific focus: HSCT, gene therapy, or bone marrow transplant.
- Ask each group to outline the process, from patient selection and conditioning regimens to transplantation and post-transplant care.
- Present and discuss each group's algorithm and how they apply to different hematological conditions.

3. Journal Club (1 hour)

Activity: Organize a journal club session on recent advances in HSCT, gene therapy, and bone marrow transplants.

- Teacher will assign groups to research and present different recent trials or studies that focus on outcomes of these advanced techniques.
- Guide them to critically evaluate the studies' methodologies, success rates, and challenges in clinical application.
- Discuss as a class how these advances change the landscape of hematology treatment.

4. Quiz and Gamification (1 hour)

- Teacher will create a quiz or gamified learning session where students answer questions about the procedures, risks, and success rates of HSCT, gene therapy, and bone marrow transplants.

- Include multiple-choice questions, case-based scenarios, and clinical decision-making challenges.
- Use quiz platforms like Kahoot or Quizizz to foster competition and engagement among students.
- Provide instant feedback on correct and incorrect answers to reinforce learning.

5. **Interactive Lecture with Concept Mapping (1 hour)**

Activity: Conduct an interactive lecture on the basics of HSCT, gene therapy, and bone marrow transplants while having students create concept maps in real-time.

- Present a short lecture covering the scientific principles and clinical application of each technique.
- Ask students to build a concept map that connects these advanced therapies to specific conditions, procedures, outcomes, and limitations.
- Review and discuss student-generated maps to ensure understanding.

Evaluation & Feedback: At the end of these practical activities, conduct a feedback session to assess how students have improved their physical and motor examination skills, diagnostic reasoning, and communication with parents. Self-reflection and peer feedback should be encouraged to further reinforce learning.

Practical Training 25.10 **Treatment options for Immune Thrombocytopenic purpura.**

Total practical time : 1 hour.

Teacher can conduct any one activity:

1. Case-Based Learning (1hour)

Activity: Present a clinical case of a patient diagnosed with ITP, including platelet counts, symptoms, and treatment history. Ask students to discuss the treatment options available.

- Teacher will divide students into small groups and provide each with different cases (e.g., acute ITP, chronic ITP, ITP in pregnancy).
- Ask students to propose treatment options, weighing the pros, cons, and costs of corticosteroids, IVIG, Rituximab, splenectomy, and newer agents like thrombopoietin receptor agonists.
- Facilitate a class discussion where each group presents its treatment strategy, comparing different options and discussing the decision-making process.

2.Pros and Cons Table (Group Activity) (1hour)

Activity: Have students create a comparative table of treatment options for ITP, highlighting the pros, cons, and cost for each option.

- Teacher will assign different treatment options (e.g., corticosteroids, IVIG, rituximab, splenectomy, TPO receptor agonists) to each group.
- Ask students to research and present their findings in a table format, comparing efficacy, side effects, long-term outcomes, and cost-effectiveness.
- Students will create a structured comparative table summarizing treatment options.
- Conduct a class-wide discussion to consolidate the tables into a comprehensive overview of ITP treatment options.

3.Debate (Treatment Decision) (1hour)

Activity: Organize a debate where students defend or critique specific treatment options for ITP based on a hypothetical patient case.

- Teacher will assign one treatment (e.g., corticosteroids vs. thrombopoietin receptor agonists) to each side of the debate.
- Students must research the efficacy, pros and cons, side effects, and costs of their assigned treatment.
- After the debate, facilitate a reflection on the challenges and decision-making in choosing treatments for ITP.

4.Problem-Based Learning (PBL) (1hour)

Activity: Present a problem scenario where a patient with ITP has not responded to first-line treatment. Ask students to explore second-line therapies and justify their choice based on pros, cons, and costs.

- Teacher will provide the clinical background, patient history, and treatment failure with corticosteroids or IVIG.
- Students should propose second-line options such as rituximab, splenectomy, or thrombopoietin receptor agonists and explain their choices.
- Encourage in-depth discussion on the rationale for selecting one treatment over another.

5. Gamification (Quiz-Based Learning) (1hour)

Activity: Use quiz-based platforms like Quizizz or Kahoot to create an interactive quiz on the treatment options for ITP. Questions can focus on the pros, cons, and costs of various therapies.

- Create questions based on different treatment approaches, including corticosteroids, IVIG, splenectomy, and thrombopoietin receptor agonists.
- Make some questions case-based, asking students to decide which treatment is best for a hypothetical patient based on factors like platelet count, response to treatment, and cost.
- Provide immediate feedback after each question to reinforce key learning points.

6. **Simulation Exercise (1hour)**

Activity: Use a clinical simulation program where students manage a virtual patient with ITP, choosing appropriate treatments and adjusting based on patient response.

Instructions:

- The simulation can present various stages of ITP, requiring students to select and modify treatment based on the patient's clinical status.
- Include cost considerations as part of the simulation, challenging students to choose affordable yet effective treatments.
- After completing the simulation, debrief with students to discuss the rationale behind their treatment choices and evaluate outcomes.

Evaluation & Feedback: At the end of these practical activities, conduct a feedback session to assess how students have improved their physical examination skills, diagnostic reasoning, and communication with parents. Self-reflection and peer feedback should be encouraged to further reinforce learning.

Practical Training 25.11 Treatment plan and factor replacement dose in Hemophilia.

Total practical time : 1hour

Teacher can conduct any one activity:

1. **Case-Based Learning**

Activity: Present clinical cases of patients with hemophilia experiencing different types of hemorrhages, such as joint (hemarthrosis), muscle bleeds, gastrointestinal bleeds, and intracranial hemorrhage.

- Teacher will provide each group of students with a specific type of hemorrhage in hemophilia.
- Ask students to develop treatment plans, including the calculation of the appropriate dose of clotting factor replacement based on the severity of the bleed and the patient's weight.
- Facilitate a discussion where each group presents their case and treatment plan, comparing the approach for each type of hemorrhage.

2. **Hands-On Workshop on Factor Calculation**

Activity: Organize a workshop where students practice calculating factor replacement doses for various clinical scenarios.

- Provide sample scenarios (e.g., a 30 kg patient with a moderate joint bleed who needs a 30% rise in Factor VIII levels).

- Each student calculates the dose needed and discusses the rationale for their calculations.
- Include a comparison of dosing for Factor VIII and Factor IX patients, emphasizing the differences in the calculation methods.
- At the end of the workshop, discuss any challenges students faced and correct common errors.

3. **Flowchart Creation for Treatment Recommendations**

Activity: Ask students to create a flowchart that outlines the treatment recommendations for different types of hemorrhages in hemophilia (mild, moderate, and severe) along with factor replacement dosing.

- Assign different types of hemorrhages (e.g., joint bleeds, soft tissue bleeds, CNS bleeds) to small groups.
- Each group researches the treatment guidelines, including the type and amount of factor replacement therapy required, adjunct therapies (like antifibrinolytics), and monitoring.
- Have the students present their flowcharts and combine them into one comprehensive guide for managing hemorrhages in hemophilia patients.

4. **Problem-Based Learning (PBL)**

Activity: Present a problem where a hemophilia patient has a complex bleeding issue, and students must figure out the best treatment strategy, including factor replacement.

- Provide clinical details about the patient's bleed, including lab results and imaging.
- Ask students to calculate the necessary factor replacement dose and decide if additional treatments (e.g., antifibrinolytic agents or surgery) are required.
- Facilitate a group discussion where students justify their treatment recommendations, focusing on safety, efficacy, and cost-effectiveness.

5. **Role Play (Simulated Emergency Drills)**

Activity: Conduct a role-playing exercise where students simulate managing a hemophilia patient with acute bleeding in an emergency setting.

- Assign one student the role of the patient and another as the healthcare provider.
- The healthcare provider must assess the patient's condition, calculate the appropriate factor replacement dose, and explain the treatment plan to the patient.
- Students take turns leading the response, performing rapid assessment, calculating factor replacement, and initiating treatment under a time constraint.
- After the role play, provide feedback on the accuracy of the treatment and factor dose calculation.

6. Interactive Digital Modules:

- Develop or use existing e-learning modules with interactive quizzes and scenarios where students must calculate doses and choose treatments.
- Students complete the modules, receiving instant feedback and explanations for their choices

Evaluation & Feedback: At the end of these practical activities, conduct a feedback session to assess how students have improved their physical and motor examination skills, diagnostic reasoning, and communication with parents. Self-reflection and peer feedback should be encouraged to further reinforce learning.

Practical Training 25.12 Algorithm for diagnosis of Disseminated Intravascular Coagulopathy(DIC).

Total practical time : 1 hour

Teacher can conduct any one activity :

1.Case-Based Learning (1 hour)

Activity: Provide a set of clinical cases where students must use patient symptoms and lab values (e.g., platelet count, PT, aPTT, fibrinogen, and D-dimer levels) to diagnose DIC.

- Teacher will present students with a variety of cases (e.g., a sepsis patient, a trauma case, or obstetric complications).
- Ask them to calculate the DIC score using ISTH criteria.
- Encourage a group discussion on how the diagnosis impacts the clinical management of the patient.

2. Flowchart Creation and Group Presentation (1 hour)

Activity: Have students work in small groups to create flowcharts that outline the step-by-step process for diagnosing DIC using the DIC score.

- Each group should focus on a specific aspect of DIC diagnosis, such as evaluating lab values, clinical signs, or applying the DIC score.
- Students present their flowcharts to the class and explain how they apply to different patient presentations (e.g., trauma, sepsis).
- Consolidate all group contributions into one comprehensive algorithm for DIC diagnosis.

3. Problem-Based Learning (PBL) (1 hour)

- **Activity**: Present a challenging clinical scenario where a patient might have DIC but has confounding factors (e.g., liver disease or ongoing bleeding).
  - Provide lab results and clinical symptoms to students.

- Ask them to calculate the DIC score and determine if the patient meets the diagnostic criteria.
- Discuss how this impacts immediate treatment decisions and how scoring informs the severity of DIC.

4. Simulation-Based Learning Objective: (1 hour)

Activity: Use a patient simulation tool (or virtual patient software) where students can interact with evolving clinical data, including lab values and symptoms, to diagnose DIC.

- Set up a simulation where the patient's condition worsens, and lab data show progressive changes.
- Students must calculate the DIC score based on real-time data, diagnose the condition, and decide on appropriate management.
- After the simulation, debrief with the students, reviewing their decisions and discussing optimal diagnostic steps.

5. Hands-On Lab Data Interpretation Workshop (1 hour)

Activity: Provide students with a variety of real or simulated laboratory results that correspond to different stages of DIC.

- Distribute lab results showing varying levels of platelets, fibrinogen, D-dimer, PT, and aPTT from different patient cases.
- Ask students to calculate the DIC score for each case and interpret the results to determine if DIC is present or likely.
- Facilitate a discussion about the relationship between lab results and clinical presentation in diagnosing DIC.

6. Journal Club on DIC Diagnosis (1 hour)

Activity: Organize a journal club where students read and discuss recent studies on the accuracy and utility of the DIC score in clinical practice.

- Assign each group a relevant article that addresses different aspects of DIC diagnosis or scoring.
- Have each group present their findings, summarizing the article's key points and discussing its relevance to clinical practice.
- Encourage a class-wide discussion on how the DIC score influences diagnostic decisions.

Evaluation & Feedback: At the end of these practical activities, conduct a feedback session to assess how students have improved their physical and motor examination skills, diagnostic reasoning, and communication with parents. Self-reflection and peer feedback should be encouraged to further reinforce learning.

Practical Training 25.13 Types of blood component therapy,their constituents and guidelines .

Total practical time: 1 hour.

Teacher can conduct any one activity :

1.Interactive Lecture with Real-Time Polling (1 hour)

Activity: Conduct a lecture explaining different types of blood components (e.g., RBCs, platelets, plasma, cryoprecipitate) and their indications.

- Use real-time polling tools (e.g., Kahoot or Mentimeter) to quiz students on the content during the lecture.
- After explaining each blood component, ask students to select the appropriate blood product for various clinical scenarios (e.g., massive hemorrhage, thrombocytopenia, coagulation disorders).
- Discuss the correct answers and provide feedback on clinical decision-making.

2. Hands-On Workshop with Blood Component Bags (1 hour)

Activity: Set up a hands-on session where students can examine and identify various blood component bags (real or mock-up versions of RBCs, platelets, plasma, cryoprecipitate).

- Discuss the constituents of each blood component (e.g., RBCs contain red blood cells with hemoglobin, platelets contain thrombocytes for clotting).
- Explain the storage requirements, shelf-life, and handling precautions for each component.
- Demonstrate the proper administration procedures, including patient identification, cross-matching, and monitoring for adverse reactions.

3. Problem-Based Learning (PBL) (1 hour)

Activity: Present a complex clinical scenarios where a patient may need multiple types of blood components (e.g., a trauma patient with massive blood loss and coagulopathy).

- Divide students into small groups and provide them with patient histories and lab data.
- Ask each group to discuss and determine which blood components are required (e.g., RBCs for anemia, plasma for clotting factors) and explain their choices.
- Facilitate a discussion on how to prioritize blood products, the timing of administration, and the potential complications of transfusions.

4. Journal Club on Blood Transfusion Guidelines (1 hour)

Activity: Assign students to review and discuss recent research articles or clinical guidelines on the use of blood component therapy (e.g., transfusion thresholds for RBCs, platelets, and plasma).

- Divide students into groups, with each group focusing on a different blood component (e.g., RBCs, platelets, FFP).
- Have each group summarize key points from the guidelines and discuss any recent changes or controversies.
- Facilitate a discussion about how these guidelines are applied in clinical practice and their impact on patient outcomes.

5. Flowchart Creation (1 hour)

Activity: Ask students to create a flowchart that outlines the steps for deciding when to use each type of blood component in different clinical situations (e.g., anemia, thrombocytopenia, coagulation disorders).

- Students should include key steps such as assessing clinical need, reviewing lab values, matching blood type, and monitoring for adverse reactions.
- Once completed, students present their flowcharts to the class and explain how the decision-making process works in different scenarios.
- Consolidate the flowcharts into one comprehensive guideline.

6. Gamification (Blood Therapy Quiz) (1 hour)

Activity: Use an online quiz platform (e.g., Quizizz or Kahoot) to create a gamified quiz on blood component therapy, including questions about indications, constituents, guidelines, and complications.

- Prepare multiple-choice questions based on clinical scenarios where students must choose the correct blood component.
- Include questions on the constituents of each blood product, the guidelines for their use, and potential adverse reactions.
- Review the answers with the class, providing detailed explanations for each correct choice.

Evaluation & Feedback: At the end of these practical activities, conduct a feedback session to assess how students have improved their physical and motor examination skills, diagnostic reasoning, and communication with parents. Self-reflection and peer feedback should be encouraged to further reinforce learning.

Practical Training 25.14 **Prothrombin time(PT) ,partial thromboplastin time (aPTT), Thrombin time,Bleeding time,fibrinogen, D-dimer.**

Total practical time : 2 hours.

Teacher must conduct first activity i.e.Lab Demonstration Workshops in 1 hour followed by next second activity from the following for next 1 hour :

FIRST ACTIVITY:Lab Demonstration Workshops (1 hour) : Compulsory activity

Instructions:

- Teacher will organize a lab session where students observe and participate in the process of conducting PT, aPTT, thrombin time, bleeding time, fibrinogen, and D-dimer tests.
- A lab instructor demonstrates how to prepare samples, use testing equipment, and interpret results. Students take turns conducting these tests under supervision.
- Students gain hands-on experience and become familiar with laboratory techniques essential for performing coagulation tests.

FOLLOWED BY ANY ONE ACTIVITY FROM THE FOLLOWING FOR NEXT 1 HOUR:

1.Case-Based Learning (CBL) Sessions (1 hour) :

- Teacher will present clinical cases where students must decide which coagulation tests to order based on a patient's history and symptoms.
- After ordering and reviewing the test results, students work in small groups to interpret the results and diagnose potential bleeding disorders.
- Faculty provides **feedback.**

2. Interactive Simulation Exercises (1 hour) :

- Use digital simulation tools that mimic the process of conducting and interpreting coagulation tests.
- Students perform virtual lab tests by selecting and applying reagents, observing reaction times, and recording data. They then analyze and interpret the results.
- Faculty review and feedback are incorporated to enhance observational accuracy.

3. Problem-Based Learning (PBL) with Real-World Scenarios (1 hour) :

- Teacher will provide scenarios involving patients presenting with symptoms such as excessive bleeding or suspected clotting disorders.
- Students must select the appropriate tests to order, calculate and interpret the values, and formulate a differential diagnosis.
- Guide students through evaluating the symptoms, interpreting lab values, and suggesting a diagnosis.

4. Interactive Lectures with Q&A (1 hour) :

- Teacher will conduct a lecture that covers the purpose, methodology, and interpretation of PT, aPTT, thrombin time, bleeding time, fibrinogen, and D-dimer tests.
- Integrate interactive elements by pausing to ask students questions and engaging them in small group discussions about example test results.

- Conduct a debrief to reflect on the interaction.

5. Lab Report Interpretation Workshop (1 hour) :

- Teacher will provide students with mock lab reports containing various coagulation test results (e.g., elevated PT, reduced fibrinogen, high D-dimer).
- Students work individually or in groups to interpret the reports and present their findings, suggesting possible diagnoses and further investigations.
- Guide students through interpreting lab values, and suggesting a diagnosis.

6. Discussion on Clinical Guidelines (1 hour) :

- Teacher will organize a discussion focused on current clinical guidelines for the use of coagulation tests in various settings.
- Assign students to read relevant articles or clinical guidelines on coagulation testing.
- Facilitate a discussion on the rationale behind specific tests and the implications of abnormal results.
- Encourage students to consider how guidelines inform clinical practice.

Evaluation & Feedback: At the end of these practical activities, conduct a feedback session to assess how students have improved their physical and motor examination skills, diagnostic reasoning, and communication with parents. Self-reflection and peer feedback should be encouraged to further reinforce learning

Practical Training 25.15 **Guideline for pediatric red blood cell transfusion.**

Total practical time : 1hour.

Teacher can conduct any one activity.

1. Virtual Blood Transfusion Case Simulation (1 hour)

Method: AI-Based Virtual Simulation

- Teacher will led the students to interact with a **virtual pediatric patient** with anemia, trauma, or sickle cell disease.
- Student must **interpret hemoglobin levels, assess clinical need, and decide transfusion volume and type** (e.g., packed RBCs, leukocyte-depleted RBCs).Guide students through evaluating the symptoms, interpreting lab values, and suggesting a diagnosis.

2. Hands-on Blood Compatibility Testing Workshop (1 hour)

Method: Lab-Based Learning

- Under the guidance of teacher students conduct **ABO and Rh blood typing** using real or simulated blood samples.
- Faculty explains **the importance of crossmatching in preventing transfusion reactions**.

3. Pediatric Transfusion Protocol OSCE (1 hour)

Method: Objective Structured Clinical Examination (OSCE)

- Teacher will arrange OSCE stations which include:
    1. **A child with severe anemia due to thalassemia** → Indicate **threshold for transfusion**.
    2. **A preterm neonate with anemia of prematurity** → Choose appropriate **transfusion strategy**.
    3. **A child with sickle cell disease in crisis** → Identify indications for **exchange transfusion**.
- Teacher should guide and have them differentiate based on features.

4. Interactive AR-Based Hematology Visualization (1 hour)

Method: Augmented Reality (AR) Interactive Learning

- Teacher will led the students to use **AR tools like Visible Body or Anatomy 4D**, to explore:
    - RBC circulation and oxygen delivery
    - **Indications for transfusion in different pediatric conditions**
    - **Risks of iron overload with repeated transfusions.**
    - Conduct a debrief to reflect on the activity.

5. Gamification – "Transfusion Guidelines Challenge" (1 hour)

Method: Digital Quiz & Case-Based Learning

- Teacher will led the students to participate in a **digital game where they answer case-based questions** under time constraints.
- Example Scenarios:
    - **A febrile neonate with anemia** → Should transfusion be given?
    - **A child with leukemia on chemotherapy** → When to transfuse?

- **A trauma patient with active bleeding** → Choose between whole blood or packed RBCs. Peer review and feedback are incorporated to enhance observational accuracy.

6. Pediatric Blood Transfusion Procedure Demonstration (1 hour)

Method: Hands-on Skill Training

- Faculty demonstrates:
  1. **Setting up transfusion tubing and filters**
  2. **Calculating transfusion volume (10-15 mL/kg for pediatric patients)**
  3. **Monitoring for transfusion reactions (tachycardia, hypotension, fever, hematuria)**
- Students practice on **manikins or simulated models**.

7. Case-Based Learning (CBL) – Pediatric Transfusion Guidelines (1 hour)

Method: Interactive Small-Group Learning

- Faculty presents **real-world cases**, and students **work in teams** to recommend RBC transfusion based on guidelines.
- Cases include:
  - **Hemolytic anemia**
  - **Neonatal jaundice requiring exchange transfusion**
  - **Sepsis with anemia requiring urgent transfusion.**
- Allow peer review and faculty feedback to refine the skill of students.

8. Telemedicine-Based Pediatric Transfusion Case Discussion (1 hour)

Method: Virtual Grand Rounds via Zoom/MS Teams

- Faculty and students discuss **complex pediatric transfusion cases from multiple hospitals**.
- Key discussions:
- **Alternatives to transfusion (EPO therapy, iron supplementation)**
- **New developments in RBC transfusion safety**

9. Journal Club & AI-Assisted Research on Pediatric Transfusion (1 hour)

Method: AI-Based Literature Review & Discussion

- Teacher will led the students to use **AI-powered research tools to find recent studies** on pediatric transfusion protocols.
- Topics for discussion:
  - **Restrictive vs. liberal transfusion strategies**
  - **Advances in leukocyte-depleted RBC transfusions**
  - **Gene therapy for transfusion-dependent anemias**

Outcome: Improved **evidence-based medicine and critical appraisal skills**.

Practical Training 25.16 **Guideline for pediatric Platelet transfusion.**

Total practical time: 1 hour.

Teacher can conduct any one activity from the following:

1. Virtual Case-Based Platelet Transfusion Simulation (1 hour)

Method: AI-Based Virtual Patient Simulation

- Teacher will led the students to interact with **virtual pediatric patients** with thrombocytopenia due to leukemia, sepsis, or immune thrombocytopenic purpura (ITP).
- They must decide **when and how to transfuse platelets** based on guidelines.Encourage and guide students to present their findings.

2. Hands-on Platelet Compatibility and Crossmatching Workshop .(1 hour)

Method: Lab-Based Learning

- nder the guidance of teacher, students perform **ABO typing and crossmatching for platelet transfusion**.
- Faculty explains **HLA-matching for platelet transfusion in alloimmunized patients**.

3. OSCE: Pediatric Platelet Transfusion Protocols (1 hour)

Method: Objective Structured Clinical Examination (OSCE)

- Teacher will arrange OSCE stations which include:
    1. **A child with chemotherapy-induced thrombocytopenia** → Decide **when to transfuse platelets**.
    2. **A neonate with sepsis and DIC** → Choose appropriate **platelet transfusion dose**.
    3. **A trauma patient with active bleeding** → Select **correct transfusion strategy**.Guide students through out the evaluation.

4. Augmented Reality-Based Hematology Visualization (1 hour)

Method: AR-Based Interactive Learning

- Teacher will led the student to use **AR tools like Visible Body** and encourage them to explore:
    - Platelet production and destruction
    - **Indications for transfusion in thrombocytopenic conditions**
    - **Risks of platelet transfusion (alloimmunization, refractoriness, infections)**

5. Gamification – "Platelet Transfusion Guidelines Challenge" (1 hour)

Method: Digital Quiz & Case-Based Learning

- Teacher will organize the **digital game where student will answer time-limited case-based questions**.
- Example Scenarios:
    - **A child with ITP and a platelet count of 10,000** → Transfusion needed?
    - **A neonate with NEC (necrotizing enterocolitis) and thrombocytopenia** → What is the threshold for transfusion?
    - **A leukemia patient with fever and low platelets** → What are the transfusion criteria? Peer review and feedback are incorporated to enhance observational accuracy.

6. Platelet Transfusion Procedure Demonstration (1 hour)

Method: Hands-on Skill Training

- Faculty demonstrates:
    1. **Setting up transfusion tubing and platelet bags**
    2. **Calculating platelet transfusion dose (10-15 mL/kg in neonates, 1 unit/10 kg in children)**

3. **Monitoring for transfusion reactions (fever, hypotension, rash, thrombosis)**

- Students practice on **manikins or simulated models**.

7. Telemedicine-Based Pediatric Platelet Transfusion Discussion (1 hour)

Method: Virtual Grand Rounds via Zoom/MS Teams

- Faculty and students discuss **complex pediatric platelet transfusion cases from multiple hospitals**.
- Key discussions:
  - **Alternatives to platelet transfusion (TPO agonists, IVIG, antifibrinolytics)**
  - **New research on platelet storage and safety .**

8. AI-Assisted Research on Platelet Transfusion (1 hour)

Method: AI-Based Literature Review & Discussion

- Teacher will led students to use **AI-powered research tools to find recent studies** on pediatric platelet transfusion.
- Topics for discussion:
  - **Restrictive vs. liberal platelet transfusion strategies**
  - **Platelet transfusion risks in neonates vs. older children. Teacher will encourage and give feedback to the students.**

Experiential Learning Activity

Experiential-Learning Learning 25.1: **Evaluation in case of Anemia.**

Total Experential time: 2 hours.

Teacher can conduct any two activities each for one hour :

1. **Patient Simulation Exercise (1 hour);**

Activity: Use standardized patients or high-fidelity simulators to simulate cases of anemia.

- Divide students into small groups, assigning each group a specific scenario (e.g., iron deficiency anemia, vitamin B12 deficiency).
- Students should take turns acting as both the physician and the patient.

- During the encounter, students will conduct history taking and perform a focused clinical examination.Student would create an investigation plan followed by treatment plan for a given case o Anemia ,presenting their plan to group.
- After the simulation, provide feedback on their communication, history-taking techniques, and clinical examination skills.

2. **Peer-Led Workshops (1 hour);**

Activity: Conduct workshops where students teach each other about history taking and examination techniques related to anemia.

- Organize students into pairs or small groups. Each group is assigned a particular aspect of history taking or clinical examination (e.g., signs of pallor, dietary history).
- Groups prepare a short presentation and demonstrate their assigned topic, followed by a practice session.
- Encourage groups to role-play different scenarios, allowing for practice in history taking and examination. Student would create an investigation plan followed by treatment plan for a given case of Anemia ,presenting their plan to group.
- Conclude with a group discussion on challenges faced and lessons learned.

3. **Clinical Case Discussions (1 hour);**

Activity: Review real or hypothetical cases of anemia in a group discussion format.

- Present a clinical case of a patient with suspected anemia, including symptoms and initial laboratory findings.
- Students should discuss potential causes, relevant history questions, and examination findings.
- Each group must propose a set of appropriate investigations based on their findings.
- Facilitate a discussion where each group presents their case and rationale for the investigations, followed by class feedback.

4. **History Taking Role Play (1 hour);**

Activity: Role-play exercises focusing on patient interactions.

- Provide students with a case outline of a patient suspected of anemia, including key symptoms and background information.
- One student acts as the physician, while another plays the role of the patient. The "physician" conducts a full history interview, advice appropriate investigation,etc.
- After the role-play, students swap roles to practice both perspectives.

- Encourage participants to provide constructive feedback on their questioning techniques and how well they elicited relevant information

5 . Problem-Based Learning (PBL) for Treatment Planning (1 hour);

- Present a clinical scenario in which a patient has been diagnosed with a specific type of anemia (e.g., iron deficiency anemia). Guide students through formulating a personalized treatment plan, considering dietary changes, pharmacotherapy, and follow-up plans.
- In small groups, students discuss appropriate treatment options for different anemia types, considering patient adherence, costs, and possible side effects.

6. Interactive Lab Interpretation and Case Discussion (1 hour);

- Distribute anonymized or hypothetical lab results related to anemia cases (e.g., hemoglobin levels, MCV, MCH, ferritin, and vitamin B12 levels).
- Students interpret these lab findings, connect results to clinical cases, and discuss which type of anemia each lab result suggests. Follow up with a group discussion on further management steps.

7. Clinical Skills Lab (1 hour);

Activity: Conduct a clinical skills lab focusing on examinations related to anemia.

- Demonstrate specific examination techniques, such as checking for pallor, jaundice, or splenomegaly.
- Allow students to practice these techniques on each other or on mannequins, ensuring they understand how to assess for signs of anemia.
- Provide scenarios where students must identify signs of anemia based on their physical examination findings and correlate them with potential laboratory investigations.

8. Integrated Assessment of Skills (1 hour);

Activity: Conduct an Objective Structured Clinical Examination (OSCE) focused on anemia.

- Set up multiple stations where students must take a history, perform a clinical examination, and recommend investigations based on different anemia cases.
- Use checklists to assess their performance on history taking, clinical findings, and communication skills.
- Provide individual feedback after the OSCE to help students identify strengths and areas for improvement.

9. Community Engagement Activity (1 hour);

Activity: Organize a community health outreach program focused on anemia awareness.

- Students can participate in health camps where they take patient histories and perform basic anemia screenings (if appropriate).
- Encourage discussions about dietary habits and preventive measures for anemia.
- After the activity, hold a reflection session where students discuss what they learned about anemia management in a community setting.

Debriefing and Reflection Sessions (Compulsory after practical session

- Facilitate discussions where students can share their experiences from simulations or role-plays.
- Ask reflective questions like:
- What did you find challenging during history taking?
- How did you feel interacting with the patient?
- What insights did you gain regarding the importance of patient history in diagnosing anemia?
- Encourage students to document their reflections and discuss how they will apply their learning in future clinical encounters

Experiential-Learning Learning 25.2: **Drugs that causes Megaloblastic Anemia.**

Total Experential time : 1 hour.

Teacher can conduct any one activity from the following :

1: Drug Card Creation (1 hour):

1. Assign each student a set of index cards or paper.

2. Ask each group to create a drug card for each medication that causes megaloblastic anemia.

3. Include: Drug name, Mechanism of action, Classification (folate antagonist, vitamin B12 antagonist, other), Clinical implications

2. Group Research Project (1 hour):

- Assign small groups to research specific drugs associated with megaloblastic anemia.
- Each group selects a drug (or a class of drugs) known to cause megaloblastic anemia.
- Students prepare a presentation covering the drug's mechanism of action, clinical uses, side effects, and specific patient populations at risk.

- Groups present their findings to the class, followed by a Q&A session.
- Encourage discussion on preventive measures and monitoring strategies for patients on these medications

3. **Drug-Case Analysis Workshop (1 hour):**

Activity: Conduct a workshop where students analyze patient cases for potential drug-related causes of anemia.

- Present several patient case scenarios where megaloblastic anemia is suspected.
- Have students work in pairs to review the patient's medication history, identifying potential culprits and justifying their reasoning.
- Groups should discuss alternative medications or monitoring strategies to avoid or manage drug-induced megaloblastic anemia.
- Facilitate a class discussion after the workshop to review findings and reinforce learning points.

4. **Debate on Risk vs. Benefit of Certain Drugs (1 hour):**

Activity: Organize a debate on the use of specific drugs known to cause megaloblastic anemia.

- Divide the class into two groups: one supporting the use of a specific drug and the other opposing it due to the risk of megaloblastic anemia.
- Each group researches the drug's benefits, risks, and alternatives.
- Conduct the debate, allowing each side to present arguments, followed by a discussion on the findings.
- Summarize key points at the end, highlighting the importance of balancing efficacy with safety

5. **Clinical Guidelines Discussion (1 hour):**

Activity: Review clinical guidelines regarding the use of drugs associated with megaloblastic anemia.

- Provide students with access to relevant clinical guidelines from reputable organizations (e.g., American Society of Hematology).
- Discuss monitoring strategies and preventive measures for patients on these drugs.
- Encourage students to explore how guidelines influence clinical decision-making.

6. Pharmacology-Pathophysiology Integration Workshop (1 hour):

- Organize a workshop where students explore how different drugs interfere with folate metabolism or DNA synthesis, leading to megaloblastic anemia.
- They can perform role-plays where they counsel a "patient" on avoiding or managing drug-induced anemia.

Tips for Instructors:

- Encourage students to consider the pathophysiology of megaloblastic anemia.
- Provide feedback on drug listing and classification accuracy.
- Emphasize the importance of medication monitoring and patient education.
- Consider inviting a hematologist or clinical pharmacist to provide expert insight**s**

Evaluation & Feedback: At the end of these Experential activities, conduct a feedback session to assess how students have improved their physical r examination skills, diagnostic reasoning, and communication with . Self-reflection and peer feedback should be encouraged to further reinforce learning

Experiential-Learning Learning 25.3: Metabolic causes of Megaloblastic Anemia.

Total experential time: 1 hour

Teacher can conduct any one activity from the following:

1. Case-Based Learning (CBL) (1 hour)

- Provide them with a patient case presenting with fatigue, pallor, glossitis, and macrocytic anemia.
- Ask the students to investigate the underlying cause using the clinical history, blood tests, and a bone marrow biopsy report showing megaloblastic changes.
- Students will connect the clinical presentation with metabolic disruptions such as vitamin B12 or folate deficiency.
- They will identify how disrupted DNA synthesis leads to megaloblastic changes in the bone marrow.

Example Case: A 13-year-old vegetarian girl presents with fatigue and memory issues. Blood tests show low hemoglobin, elevated mean corpuscular volume (MCV), and hypersegmented neutrophils.

2. Biochemical Pathway Mapping (1 hour)

- Ask students to create a visual representation of the biochemical pathways of DNA synthesis that are disrupted in megaloblastic anemia.
- Focus on the roles of vitamin B12 (cobalamin) and folate (vitamin B9) in nucleotide synthesis.
- Discuss the consequences of B12 and folate deficiencies, including the trapping of homocysteine and methylmalonic acid metabolism.

3. Laboratory Simulation: Blood Smear and Bone Marrow Examination (1 hour)

- Provide simulated blood smear slides (virtual or actual) showing characteristic findings in megaloblastic anemia (e.g., macrocytes, hypersegmented neutrophils).
- Ask students to identify these features and explain their significance.
- Similarly, show a bone marrow biopsy with megaloblastic changes and ask students to interpret the findings.
- They will relate these changes to impaired DNA synthesis and understand the role of metabolic deficiencies in these alterations.

4. Role-Playing: Nutritional Deficiency Counseling (1 hour)

- One student plays the role of a healthcare provider, and another plays a patient diagnosed with megaloblastic anemia caused by a nutritional deficiency.
- The "provider" should explain the metabolic cause, dietary recommendations (such as folate or B12-rich foods), and the importance of supplementation.
- They will develop skills in providing dietary counseling and understanding the importance of treating underlying metabolic deficiencies.

Experiential-Learning Learning 25.4: Reasons for non response to hematinic therapy in Iron Deficiency Anemia.

Total experential hours: 1 hour.

Teacher can do any one activity.

1.Case-Based Learning (CBL) with Root Cause Analysis (1 hour)

- Present a real or hypothetical case where a patient with iron deficiency anemia has not responded to hematinic therapy. Include clinical notes, lab results, and the patient's treatment history.
- Divide students into small groups to review the case, identify possible reasons for treatment failure (e.g., poor adherence, malabsorption, ongoing blood loss), and outline a root cause analysis.

2.Interactive Simulation: Patient Adherence Interview (1 hour)

- Set up a simulated interview where one student acts as a patient and another as the physician investigating treatment adherence. The "patient" is given scripted responses, some indicating poor adherence or misunderstandings about therapy.
- The "physician" conducts an interview to assess potential barriers to adherence, such as side effects, financial constraints, or misconceptions about iron therapy.

3.**Lab Investigation Workshop on Absorption Issues (1 hour)**

- Provide a selection of lab tests results (e.g., serum ferritin, transferrin saturation, and tests for malabsorption like celiac serology). Explain how these results can signal malabsorption as a reason for non-response.
- Students interpret the lab findings and suggest further tests for patients who may not be absorbing iron due to gastrointestinal conditions, such as celiac disease or inflammatory bowel disease..

4.Problem-Based Learning (PBL) for Alternative Treatment Approaches (1 hour)

- Assign groups to research and present on alternative treatment approaches for iron deficiency anemia in cases of non-responsiveness, such as IV iron therapy or combined iron supplementation with vitamin C for enhanced absorption.
- Each group presents a treatment plan for a hypothetical patient with non-response to oral iron therapy, explaining the rationale behind alternative approaches.

5.Flipped Classroom and Literature Review (1 hour)

- Assign pre-reading materials or video lectures on the causes of non-responsiveness to iron therapy, including factors like non-adherence, GI bleeding, and concurrent diseases.
- In class, facilitate a discussion where students apply this knowledge to case studies, debating the causes of non-response in each case and selecting suitable follow-up actions.

Reflective Group Discussion on Clinical Judgment and Decision-Making (Compulsory after Experential session) :

- After completing activities, hold a debrief session where students reflect on the factors they identified as causes for non-response to iron therapy and discuss any challenges they faced.
- Reflection fosters critical thinking and self-assessment, helping students recognize areas for improvement in their clinical judgment and decision-making process.

Experiential-Learning Learning 25.5: **Drugs Contraindicated in G6PD deficiency.**

Total experential time: 1 hour.

Teacher can do any one activity from the following:

1. Case-Based Learning (CBL) – Identifying Risky Medications in G6PD Deficiency (1 hour)

Provide a case scenario of a patient with **G6PD deficiency** presenting with **acute hemolysis (e.g., jaundice, pallor, dark urine, fatigue, shortness of breath)**.

1. Ask students to:
    - Identify **recent drug history** (e.g., antimalarials, sulfa drugs, NSAIDs, antibiotics).
    - Correlate **clinical symptoms with potential drug-induced hemolysis**.
    - Recommend **safe alternative medications**.
2. Conduct **group discussions** on cases, emphasizing drug safety and alternative treatment options

2. Virtual Reality (VR) or Augmented Reality (AR) Drug Interaction Simulation

1. Students use **VR/AR applications** to visualize:
    - **Red blood cell (RBC) destruction** upon exposure to contraindicated drugs.
    - **Pathophysiology of oxidative stress** in G6PD deficiency.
2. Instructors guide students through **interactive case-based VR scenarios** where they must:
    - **Identify hemolysis triggers**.
    - **Recommend alternative medications**.
    - **Observe real-time cellular changes and hemolysis progression**

3. Laboratory & Prescription Analysis – Safe Medication Selection

1. Students receive **sample prescriptions** containing various medications.
2. Tasks include:
    - **Identifying potential hemolysis-inducing drugs**.
    - **Suggesting modifications with safe alternatives**.
    - **Explaining drug mechanism & impact on RBCs**.
3. Faculty-led review session to discuss findings and **reinforce correct prescribing habits**.

4. Collaborative Drug Research Workshop

- Assign each group of students a category of drugs (e.g., antibiotics, pain relievers, antimalarials) to research for contraindications in G6PD deficiency. They should use reliable sources, such as pharmacology textbooks, drug databases, and recent research articles.
- Each group creates a list of contraindicated drugs in their assigned category, explaining the rationale behind each contraindication and presenting their findings to the class.

Experiential-Learning Learning 25.6: **Unani literature for *Faqru-ul-dum* & recent advance in case of Anemia.**

Total Experential time: 3 hours.

Teacher can conduct this experential activity step-wise. Following are the respective steps :

Step 1 : Library Research Session: Unani Text Exploration (40 minutes)

- Organize a session in the library where students can access classical Unani texts (such as *Al-Qanoon fi al-Tibb* by Avicenna, *Kitab al-Hawi* by Al-Razi, etc.).
- Provide a guided checklist for students to locate and summarize information on *Faqru-ul-Dam*, including symptoms, causes, and treatment.
- In pairs, students identify and note key Unani concepts related to *Faqru-ul-Dam*, with a focus on terminology, pathology, and therapeutic approaches.
- Each pair creates a summary and shares with another group.

Step 2: Peer Learning Workshop: Presentation on Unani Therapeutics (30 minutes)

- After the library session, each pair creates a presentation on a Unani treatment method for *Faqru-ul-Dam* (e.g.,(Ilaj bil ghiza or dietary recommendations such as Dates, murakkabat like *Sharbat-e-faulad etc.*) and compares it with modern anemia treatments.
- Students present their findings to the group, and peers discuss the similarities and differences between Unani and allopathic approaches to treating anemia

Step 3 : Guided Group Discussion: Recent Advances in Anemia Management(20 minutes)

Prior to the discussion, assign students recent articles on advances in anemia treatment (e.g., new iron formulations, erythropoiesis-stimulating agents, gene therapy). Provide discussion prompts to guide them in comparing these modern therapies with Unani approaches.

In small groups, students discuss how modern treatments align or contrast with Unani concepts of restoring blood balance. They explore questions like the safety and efficacy of Unani versus modern methods and the possible integration of both in clinical practice.

Step 4 : Peer-Led Journal Club: Analysis of Modern Anemia Research (40 minutes)

Select several journal articles focused on the pathophysiology and treatment of anemia. Each group selects one article to analyze and prepares to discuss its findings, relevance, and limitations.

Each group leads a journal club discussion, presenting their article and exploring its implications on modern treatment. The session concludes with a discussion on how new research findings could influence Unani practices or inspire integrative treatment strategies.

Step 5 : Collaborative Workshop: Developing a Unani-Based Anemia Management Protocol (20 minutes)

- Students use findings from the Unani literature and recent research to create a Unani-based management protocol for *Faqru-ul-Dam*, identifying principles that could complement modern treatments.
- In teams, students draft a protocol, including diagnosis, Ilaj bil ghiza or dietary recommendations, Unani Drugs, and other Unani therapeutic modalities. Teams then present and discuss their protocol with the group

Step 6 :Reflective Writing Assignment: Integrating Unani and Modern Perspectives (15 minutes)

- After completing the peer learning and library sessions, students write a reflection on how traditional Unani practices and modern scientific research can inform each other, focusing on the case of anemia.
- Students reflect on what they learned about *Faqru-ul-Dam* and propose ways in which Unani principles might enhance modern treatment approaches.

Step 7 : Role-Play Simulation: Patient Counseling Based on Unani and Modern Approaches (15 minutes)

- Set up a role-play scenario where students counsel a simulated patient with anemia using a combined Unani and modern approach. Provide students with a script that includes typical patient concerns, such as dietary preferences and safety of unani remedies.
- Each student practices counseling the patient, explaining both Unani and conventional medicine recommendations, and addressing any questions.

Experiential-Learning Learning 25.7: **Unani Treatment plan for Anemia.**

Total experential time :1 hour.

Teacher can conduct any one activity from the following:

Activity 1- Peer-Led Workshop on Unani Dietary Therapy for Iron Deficiency Anemia (1hour)

- Divide students into small groups and assign each group a specific dietary component (e.g., vegetables, fruits, meats, dairy) to research for its iron content and compatibility with Unani dietary principles.
- Groups compile their findings, then share their recommendations with the class. They also suggest meal plans and discuss their benefits, along with potential side effects or contraindications in certain patient populations.

Activity 2- Simulation of Treatment Planning: (1hour)

- Provide students with a simulated patient profile of a person diagnosed with iron deficiency anemia, including medical history and dietary habits. Students design a comprehensive treatment plan that includes Unani dietary recommendations, iron supplementation (if necessary), and lifestyle advice.
- Students work in pairs to develop and present their treatment plans. Peers and instructors provide feedback on each plan, emphasizing dietary aspects and the incorporation of Unani principles.

Activity 3- Library and Research Session on Traditional and Modern Nutritional Guidelines (1hour)

- Arrange a library session where students review Unani texts and current medical guidelines related to dietary interventions for anemia. Students should explore iron absorption enhancers (e.g., Vitamin C sources) and inhibitors (e.g., tannins in tea) in both Unani and conventional contexts.
- Each student shares insights from their research, discussing how Unani recommendations align or differ from modern dietary guidelines.

Activity 4- Group Case Study Analysis (1hour)

- Present a complex case study of a patient with iron deficiency anemia who has certain dietary restrictions (e.g., vegetarian, low tolerance for iron supplements). Students in small groups develop a treatment plan, prioritizing Unani dietary recommendations that respect these restrictions.
- Groups present their plans, outlining key dietary elements and any proposed modifications for the specific dietary constraints.

Activity 5-Cooking and Nutrition Workshop: Iron-Rich Recipes in Unani Therapy (1hour)

- Organize a hands-on cooking demonstration of iron-rich recipes aligned with Unani dietary principles. Provide students with recipes and allow them to explore ingredient substitutions based on patient preferences and cultural dietary patterns.

- Students participate in preparing and sampling recipes, such as lentil soup, drumstick soup, beetroot dishes, and pomegranate juice. Discuss the iron content, absorption factors, and potential benefits of each dish

Reflective Writing on Integrating Unani and Conventional Treatments (Compulsory After practical):

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  - **Instructions**: Ask students to write a brief reflection on the role of Unani dietary therapy in treating iron deficiency anemia and how it can be integrated with conventional approaches.
  - In their reflections, students should discuss any challenges they foresee in integrating Unani dietary therapies with modern medicine in clinical practice.

Experiential-Learning Learning 25.8: **Comparitive study of Sickle Cell and Normal Blood cells.**

Total experential time: 1 hour

Teacher can conduct any one activity :

1. Microscopy Lab Session: Observation of Blood Smears (1 hour)

- Provide students with prepared slides of normal red blood cells and sickle cells. Instruct them on how to properly use microscopes and identify the characteristic features of each cell type.
- Students observe the slides, sketch the differences in cell shape (biconcave disks vs. crescent-shaped sickle cells), and note the implications of these morphological differences on blood flow and oxygen transport

2. Interactive Seminar with Digital Imaging (1 hour)

- Organize a seminar where digital images of normal and sickle cells are projected. Discuss the structural differences, causes of sickling (mutated hemoglobin S), and effects on cell lifespan and function.
- Engage students by posing questions and encouraging them to point out the observed differences. Highlight the clinical relevance of these differences in terms of symptoms and complications

3. 3D Model Creation and Presentation (1 hour)

- Have students create 3D models or use software to digitally render models of normal and sickle cells. They should emphasize the differences in hemoglobin structure and cell shape.
- Each student or group presents their model, explaining how structural differences affect the mechanical properties and functionality of the cells

4. Journal Club Review: Latest Research on Sickle Cell Morphology (1 hour)

- Assign students to read recent studies about the latest findings on sickle cell morphology and its impact on disease management.
- Each student summarizes key findings and presents how these insights can influence current and future treatment strategies.

5. Comparative Data Analysis Workshop:**(1 hour)**

Provide students with data sets, including complete blood count (CBC) and reticulocyte count results from normal individuals and those with sickle cell disease.

- Students analyze the data and compare indicators like hemoglobin levels, red cell count, and MCV (mean corpuscular volume). They create a report summarizing their findings.

6. Hemoglobin Electrophoresis Simulation (1 hour)

- Simulate or demonstrate the process of hemoglobin electrophoresis, a test used to differentiate between normal hemoglobin (HbA) and sickle hemoglobin (HbS).
- Show how HbA migrates differently compared to HbS due to the genetic mutation in sickle cell disease.
- Explain how this test helps in the diagnosis of SCD

Experiential-Learning Learning 25.9: **Comprehensive examination with treatment strategies in Thallessemia and sickle cell disease cases.**

Total experential time: 2 hour.

Teacher can conduct any one activity from the following for both the disease i.e. Thalassemia and sickle cell disease,the time for each disease for the activity should be one hour :

1. Simulated Patient with Problem-Based scenarios for History Taking and treatment plan (2 hour)

- Facilitate a session in which teacher will create a scenario where students are presented with a clinical problem involving a thalassemia and sickle cell disease patient experiencing complications, such as iron overload or organ damage,acute chest syndrome,stroke etc.

- Students conduct thorough history-taking sessions, focusing on transfusion history, iron chelation adherence, family history,etc.
- Students work in teams to research the problem, discuss potential solutions, and develop a comprehensive care plan that includes medication, monitoring, and potential advanced treatments.
- Scenarios should include varied patient backgrounds, such as those with different levels of disease severity and treatment adherence.

2. Hands-On Physical Examination Workshops (2 hour)

- Set up stations where students practice physical examination techniques relevant to thalassemia and sickle cell disease cases. Include checking for pallor, jaundice, splenomegaly, and skeletal deformities.
- Students rotate through stations with manikins or trained volunteers who simulate physical findings. Instructors provide immediate feedback on examination techniques.

3. Case Study Analysis and Group Presentations (2 hour)

- Provide detailed patient case studies that include comprehensive medical history, physical examination findings, and lab results.
- Assign students to small groups to analyze the case and create a treatment plan.
- Each group presents their case analysis and proposed treatment strategy, including transfusion protocols, chelation therapy, and any potential curative options such as bone marrow transplantation.

4. Interactive Seminar on Modern Treatment Approaches (2 hour)

- Organize a seminar where students learn about current advancements in thalassemia and sickle cell disease management, such as gene therapy and new chelation drugs,stem cell transplant ,etc.Divide the seminar into expert lectures and interactive Q&A sessions.
- Students are encouraged to ask questions and discuss how to integrate these advancements into traditional treatment plans.

5. Visual Learning with Imaging and Lab Interpretation (2 hour)

- Provide examples of imaging and lab results of thalassemia and sickle cell disease patients (e.g., X-rays showing bone changes, MRI for iron overload). Teach students to correlate lab results with physical findings and patient history.
- Students practice interpreting these results and integrating them into their clinical assessments.

Reflective Practice Journals (Compulsory after practical Activities) :

- After completing the history-taking, examination, and treatment planning activities, students write a reflective journal entry on their learning experience.
- They discuss what they found most challenging and how they plan to improve their clinical approach to managing thalassemia.

Role-Playing for Patient Counseling and Education (Activity after practical activities) :

- Pair students to role-play scenarios where one acts as the physician and the other as a patient or caregiver. The “physician” explains the treatment plan, possible complications, and lifestyle modifications to manage thalassemia.
- Include common challenges patients face, such as medication adherence or managing side effects. The “patient” asks questions to test the “physician's” communication and counseling skills.

These activities incorporate experiential, hands-on learning that builds practical skills and integrates theoretical knowledge, preparing students for real-life clinical scenarios involving thalassemia.

Experiential-Learning Learning 25.10: **Thallessemia comorbidities.**

Total experential time: 1 hour.

Teacher can conduct any one activity from the following:

1.Case-Based Learning (CBL) with Group Discussions (1 hour)

- Present students with complex case studies of patients with thalassemia and various comorbidities, such as cardiomyopathy due to iron overload or endocrine dysfunctions.
- Students work in groups to analyze each case, identify the specific comorbidities, discuss the mechanisms involved, and propose management strategies. Afterward, groups present their findings for a class discussion led by an instructor.

2. Interdisciplinary Panel Discussions and Simulation (1 hour)

- Organize panel discussions that include hematologists, endocrinologists, cardiologists, and hepatologists. Follow this with a simulation exercise where students play the role of different specialists managing a patient with thalassemia and multiple comorbidities.

- Each student discusses their specialty's role in managing the patient, focusing on coordinated care and holistic treatment. The session ends with a simulated multi-disciplinary meeting to create a unified care plan.

3. Hands-On Diagnostic Workshop (1 hour)

- Set up workshops where students practice interpreting diagnostic results related to common thalassemia comorbidities, such as echocardiograms, liver function tests, and blood glucose levels.
- Students review diagnostic cases that include lab results and imaging and discuss the findings in relation to thalassemia-related complications.
- An instructor provides feedback on their interpretations and connects them to treatment options.

4. Research and Literature Review (1 hour)

- Assign students to conduct literature reviews on recent advancements in the management of thalassemia comorbidities, focusing on new therapies or guidelines.
- Students prepare brief reports or presentations on their findings, discussing implications for clinical practice.

5. Interactive Lectures with Real-Life Scenarios (1 hour)

- Conduct a lecture that covers thalassemia and its common comorbidities, interspersed with real-life patient scenarios.
- After presenting each comorbidity, engage students in discussions about diagnosis, treatment options, and patient management strategies using the scenarios as case examples.

Reflective Learning through Case Journaling.

Assign students to maintain a reflective journal in which they document case studies involving thalassemia patients and comorbidities they encounter during clinical rotations.

Students write detailed reflections on their experiences, including diagnostic challenges, management strategies used, and lessons learned. These reflections are shared in small peer groups for discussion.

Experiential-Learning Learning 25.11: **Work shops and Awareness Programmes for Thallessemia & sickle cell disease.**

Total experential time :2 hours.

Teacher can conduct any one activity from the following:

1. Awareness Campaign Planning (2 hours).

- Have students work in groups to design an awareness campaign targeting local communities about thalassemia and sickle cell disease.
- Each group creates educational materials (brochures, posters, social media content) and presents their campaign plan to the class.

2. Role-Playing Scenarios (2 hours).

Create role-playing exercises where students act as healthcare providers educating patients and families about thalassemia and sickle cell disease.

Include scenarios that involve explaining the conditions, management plans, and lifestyle adaptations.

3. Community Health Fair (2 hours).

- Collaborate with local health organizations to host a health fair focused on thalassemia and sickle cell disease.
- Students set up booths with educational displays, conduct screenings, and provide informational sessions to attendees.

4. Interactive Workshops on Genetic Counseling (2 hours).

- Organize workshops on the principles of genetic counseling related to thalassemia and sickle cell disease.
- Include case studies, role-playing, and discussions on ethical considerations and patient communication.

5. Community Health Workshops (2 hours).

- Organize workshops in community centers where students will present on thalassemia and sickle cell disease.
- Students create engaging presentations that include key information about symptoms, management, and the importance of genetic testing.

6. Interactive Awareness Programs (2 hours).

- Plan interactive sessions involving games and quizzes related to thalassemia and sickle cell disease.
- Students facilitate activities where community members can learn facts, dispel myths, and discuss the diseases in an engaging format.

7. Health Fair Booths (2 hours).

- Set up booths at local health fairs where students provide information and resources on thalassemia and sickle cell disease.
- Include informational pamphlets, visuals, and demonstrations of how to conduct a self-assessment for symptoms.

8. Support Group Facilitation Training (2 hours).

- Train students to facilitate support groups for individuals and families affected by thalassemia and sickle cell disease.
- Conduct role-playing sessions where students practice leading discussions, addressing concerns, and providing emotional support.

9. Panel Discussions with Experts (2 hours).

- Organize panel discussions featuring healthcare professionals, genetic counselors, and patient advocates.
- Students moderate the panel, guiding discussions on topics such as management, advancements in treatment, and patient experiences.

10. Awareness Campaign Development (2 hours).

- Have students collaborate to create an awareness campaign that utilizes social media, posters, and community outreach.
- Students develop a message, create materials, and organize distribution strategies to reach a wider audience.

11. Documentary Screening and Discussion (2 hours).

- Select documentaries or films related to thalassemia and sickle cell disease and organize screening events.
- Following the screening, facilitate discussions led by students to reflect on the content and its implications for the community.

Feedback and Evaluation Sessions

- After each event or workshop, conduct feedback sessions with participants to evaluate the effectiveness of the program.
- Use surveys or open discussions to gather insights from attendees regarding their learning and suggestions for improvement.

Experiential-Learning Learning 25.12: **Differential diagnosis of Thrombocytopenia in children and Adolescents.**

Total experential time; 1 hour

Teacher can conduct any one activity from the following:

1. Case-Based Learning (CBL) - Clinical Scenarios (1 hour)

- Divide students into small groups and provide different thrombocytopenia case scenarios (ITP, leukemia, DIC, aplastic anemia, etc.).
- Have students discuss history, examination, and investigations to establish differential diagnosis.
- Facilitate group discussion and guide students toward correct diagnoses.

2. Gamified Quiz – "Thrombocytopenia Grand Challenge" (1 hour)

- Use platforms like Kahoot, Quizizz, or Socrative to create a competitive quiz.
- Include questions on symptoms, lab investigations, and distinguishing features of different causes.
- Divide students into teams and track scores to encourage participation.

3. Problem-Based Learning (PBL) - "Mystery Case Diagnosis" (1 hour)

- Present an evolving case of a child with thrombocytopenia.
- Release new clinical data gradually (e.g., first history, then lab results, then imaging).
- Ask students to adjust their differential diagnoses at each stage.
- Conduct a debriefing session.

4. Hands-on Microscopy Session - Peripheral Blood Smear Examination (1 hour)

- Provide real or virtual slides showing ITP (normal RBCs, increased megakaryocytes), leukemia (blast cells), DIC (schistocytes), etc.
- Guide students in identifying key morphological features.
- Discuss how these findings influence differential diagnosis.

Outcome: Students will develop skills in interpreting peripheral smears and correlating findings with clinical conditions.

5. Concept Mapping - Differential Diagnosis Flowchart (1 hour)

- Ask students to create a concept map starting with thrombocytopenia and branching into "destruction vs. production failure," then subcategories (e.g., immune-mediated, bone marrow failure, infections).
- Compare student-generated maps with standard diagnostic algorithms.

6. Role-Play - Doctor-Patient Communication (1 hour)

- Assign students roles (doctor, parent, patient).
- Provide a scenario (e.g., explaining ITP vs. leukemia).
- Have students practice delivering information empathetically and addressing concerns.
- Provide feedback on clarity, confidence, and patient education.

Experiential-Learning Learning 25.13: **Pediatric Hematology case evaluation.**

Total Experential learning time: 3 hours

1.Introduction and Overview of Hematological Disorders (30 minutes):

Brief overview of Immune Thrombocytopenic Purpura (ITP), Hemophilia, and Disseminated Intravascular Coagulation (DIC), focusing on complex pediatric cases..

2.Case-Based Learning and Group Work (1 hour)

- Students are divided into groups and each group is assigned a complex, real-world case for either ITP, Hemophilia, or DIC.
- Task: Groups will analyze the case by: Reviewing patient history, symptoms, and lab results.
- Formulating differential diagnoses.Proposing an evidence-based management plan.
- Considering potential complications and long-term management strategies.

3.Group Presentations and Peer Review (45 minutes)

- Each group presents their analysis of the case, including their diagnosis, treatment plan, and rationale. Time: 15 minutes per group presentation.
- Teacher Debriefing and Discussion (30 minutes), Teacher reviews key points from each group's case analysis, offering insights into common pitfalls and evidence-based best practices for diagnosis and management.

4.Open Discussion:(15 minutes)

- Scholars can ask questions and share insights on complex case management.
- Open forum for questions, clarification, and final thoughts.

Experiential-Learning Learning 25.14: **Causes of Disseminated Intravascular Coagulopathy.**

Total experential time: 1 hour.

Teacher can conduct any one activity from the following:

1. Case-Based Learning (CBL) - Clinical Presentation of DIC (1 hour)

- Present cases of patients with suspected DIC (e.g., sepsis, trauma, malignancy, obstetric complications).

- Ask students to analyze symptoms, laboratory findings (PT, aPTT, fibrinogen, D-dimer), and establish the underlying cause.
- Facilitate a discussion on differential diagnoses.

2. Concept Mapping - DIC Pathophysiology & Etiology Tree (1 hour)

- Have students construct a **concept map** with **DIC at the center**, branching into **infectious, neoplastic, perinatal, trauma-related, and other causes**.
- Guide them to include subcategories like **Gram-negative sepsis, leukemia, placental abruption, etc.**

3. Gamified Quiz - "DIC Etiology Challenge" (1 hour)

- Use Kahoot, Quizizz, or interactive whiteboards for a **team-based quiz**.
- Include **multiple-choice, image-based, and fill-in-the-blank questions** on disorders causing DIC.
- Award points for correct responses.

4. Virtual Case Discussions - Online Platform Analysis (1 hour)

- Assign students to analyze DIC cases from **Medscape, BMJ Case Reports, or NEJM clinical cases**.
- Ask them to list the **underlying disorders**, lab values, and pathophysiology.

5.Virtual Case-Based Learning (CBL) Using AI Chatbots or Online Platforms (1 hour)

- Use **AI-powered clinical simulators** (e.g., **Prognosis App, Medscape Case Simulations**) to present **virtual patients with DIC**.
- Students will **analyze symptoms, lab values (PT, aPTT, fibrinogen, D-dimer)**, and **establish the underlying cause**.
- After diagnosis, they must **compile a list of DIC-associated disorders** based on case data.

6. Augmented Reality (AR) Lab - Virtual Blood Coagulation Pathway Simulation (1 hour)

- Use **AR applications (e.g., Visible Body, Human Anatomy Atlas)** to **visualize blood coagulation pathways**.
- Students explore how **sepsis, malignancy, and trauma** trigger **DIC** and impact clotting factors.
- They interact with **3D models of platelets, fibrin, and thrombi formation** to observe **pathophysiological changes**.
- After the simulation, students **compose a list of disorders** with supporting mechanisms.

Experiential-Learning Learning 25.15: **Adapt the step for management of Acute bleeding .**

Total experential time: 2 hours.

Teacher can conduct any two activities each for one hour:

1. Virtual Pediatric Emergency Simulation (1 hour)

- Students interact with a **virtual simulation of a child in hemorrhagic shock due to DIC, hemarthrosis in Hemophilia, or severe thrombocytopenia in ITP**.
- They must **order lab tests, interpret results, and initiate emergency treatment** (e.g., Factor VIII, platelet transfusion, cryoprecipitate).

2. OSCE-Based Pediatric Bleeding Disorder Management (1 hour)

- Three OSCE stations:
    1. **A child with Hemophilia and hemarthrosis** → Assess severity, request **Factor VIII replacement**, and counsel caregivers.
    2. **A child with ITP and petechial rash** → Perform a **platelet count check**, determine if IVIG or steroids are needed.
    3. **A child with septic shock and DIC** → Initiate **plasma transfusion, cryoprecipitate, and anticoagulation** as needed.

3. Pediatric Code Blue Simulation – Massive Bleeding in DIC (1 hour)

- Students work in teams to manage a **simulated patient with severe trauma or sepsis-induced DIC**.
- Perform **ABC assessment, establish IV access, transfuse blood products, and monitor vitals**.

4. Gamification – "Stop the Bleed" Challenge (1 hour)

- Students compete in a **digital game where they diagnose and treat bleeding disorders under time constraints**.
- Examples:
    - **Hemophilia patient with a muscle bleed** → Administer Factor VIII, monitor for compartment syndrome.
    - **Child with ITP and GI bleeding** → Decide between **IVIG, steroids, or platelet transfusion**.
- **DIC in a child with septic shock** → Prioritize **FFP, cryoprecipitate, and hemodynamic stabilization**.

5. Case-Based Learning (CBL) – Pediatric Bleeding Disorders (1 hour)

- Faculty presents **three pediatric cases**, and students must **work in teams** to diagnose and manage them:
    1. **Hemophilia with spontaneous soft tissue bleeding** → Factor replacement therapy protocol.
    2. **ITP with epistaxis** → When to treat with steroids vs. IVIG.

3. **DIC in a child with meningococcemia** → Plasma and cryoprecipitate transfusion strategy.

6. Virtual OSCE – Adjusting Treatment Plans for Pediatric Bleeding (1 hour)

- Virtual OSCE cases where students must **modify Factor VIII dosing, choose between IVIG and steroids for ITP, and manage DIC-related bleeding**.

7. Telemedicine-Based Pediatric Hematology Grand Rounds (1 hour)

- Faculty presents **complex cases of pediatric Hemophilia, ITP, and DIC from multiple hospitals**.
- Students discuss **treatment challenges and new research updates**.

8. Pediatric Problem-Based Learning (PBL) – "Stepwise Management of Bleeding" (1 hour)

- Students analyze **mystery emergency cases** and must:
  - **List possible differentials**
  - **Order appropriate tests**
  - **Develop treatment strategies**

9. Journal Club & AI-Assisted Literature Review (1 hour)

- Students use **AI-powered research tools to find recent studies**.
- Discuss topics such as:
  - **Gene therapy for Hemophilia**
  - **New ITP treatments in children**
  - **Management of sepsis-induced DIC**

Experiential-Learning Learning 25.16: Guidelines for Pediatric Granulocyte Transfusions.

Total experential time: 1 hour.

Teacher can conduct any one activity from the following:

1. Case-Based Learning (CBL)

- Teacher will present real or simulated clinical cases of pediatric patients with severe neutropenia or infections requiring granulocyte transfusion.

- Teacher will divide students into groups and assign different case scenarios.
- Ask students to develop a treatment plan, including transfusion indications, donor selection, and risks.
- Facilitate a group discussion comparing approaches.

2. Problem-Based Learning (PBL)

- Teacher will provide a challenging case (e.g., a child with chemotherapy-induced neutropenia and sepsis).
- Ask students to discuss whether granulocyte transfusion is appropriate.
- Guide them to find evidence-based answers using current guidelines.
- Have them present their management plan and justify their choices.

3. Journal Club Discussion

- Teacher will assign students research articles or guidelines on granulocyte transfusions.
- Ask each group to summarize key findings, comparing old vs. new guidelines.
- Teacher will discuss clinical implications and gaps in the evidence.

4. Interactive Flowchart Creation

- Teacher will divide students into small groups.
- Teacher will assign each group a specific aspect (e.g., indications, donor selection, monitoring).
- Guide students to create a step-by-step flowchart summarizing the guidelines.
- Combine all flowcharts into a comprehensive visual guide.

5. Simulation-Based Learning

- Teacher will use a patient simulation model or virtual case scenario.
- Teacher will guide students through pre-transfusion workup, patient monitoring, and post-transfusion care.
- Include complications like transfusion reactions for real-time decision-making

Experiential-Learning Learning 25.17: Guidelines for Pediatric FFP transfusion.

Total experential time : 1 hour.

Teacher can conduct any one of the following activity :

1. Case-Based Learning (CBL)

- Present clinical cases requiring FFP transfusion (e.g., DIC, liver failure, coagulopathy).
- Ask students to evaluate the case and determine whether FFP is indicated.
- Discuss different approaches and the rationale behind decisions.

2. Problem-Based Learning (PBL)

- Provide students with a complex case (e.g., neonate with sepsis and coagulopathy).
- Guide them to identify indications, risks, and alternatives to FFP transfusion.
- Ask them to present their solutions, supported by guidelines.

3. Journal Club Discussion

- Assign groups different research papers or guideline updates on FFP transfusion.
- Each group presents key findings, strengths, and limitations of the studies.
- Conduct a discussion on how these findings affect clinical practice.

4. Flowchart/Algorithm Development

- Divide students into teams to design a step-by-step flowchart.
- Include indications, contraindications, dosing, monitoring, and complications.
- Have teams present their flowcharts, followed by faculty feedback.

5. Simulation-Based Learning

- Use a simulated patient or mannequin.
- Guide students through patient evaluation, consent, FFP preparation, administration, and monitoring.
- Include an unexpected complication (e.g., allergic reaction) for problem-solving.

6. Debate – Restrictive vs. Liberal Use of FFP in Pediatrics

- Assign students into two teams: one advocating for restrictive use and the other for liberal use.
- Provide clinical scenarios where FFP transfusion might be debated.
- Conduct a structured debate, followed by faculty moderation and feedback.

7. Whiteboard Challenge – Rapid Guideline Recall

- Write different aspects of FFP guidelines (indications, dose, monitoring) on flashcards.
- Randomly assign students a topic to explain within 2 minutes.
- Others ask follow-up questions to test their understanding.

8. Clinical Case Presentation & Ward Rounds

- Have students join clinicians during pediatric ward rounds.
- Observe cases where FFP is being considered or administered.
- Ask students to present a case and discuss their approach to transfusion decisions.

9. Infographic or Poster Presentation

- Assign students to design an infographic covering indications, dosage, administration, and risks.
- Allow peer review and faculty feedback.
- Display the best posters in clinical teaching areas.

Experiential-Learning Learning 25.18: Establish the Risk of blood Transfusion.

Total experential time : 1 hour.

Teacher can conduct any one of the following activity :

1. Activity: Case-Based Learning (CBL)

- Present a case scenario of a patient needing a blood transfusion (e.g., a patient with severe anemia, trauma, or surgery).
- The case should include history-taking details, blood type information, prior transfusion history, and risk factors (e.g., immunosuppression, history of transfusion reactions).

- Ask the students to evaluate the risks involved in this transfusion.
- Divide them into small groups and ask them to discuss the risks of transfusion (e.g., ABO incompatibility, allergic reactions, infections, iron overload, etc.).
- Each group should prepare a short presentation summarizing the identified risks and mitigation strategies.

2. Activity: Simulated Blood Transfusion and Monitoring

- Set up a simulation with a medical manikin or a computerized system that mimics a blood transfusion.
- Have students participate in the simulated transfusion process, including checking the blood product, verifying patient identification, and initiating the transfusion.
- During the transfusion, ask the students to monitor for signs of transfusion reactions (e.g., fever, rash, chills, shortness of breath).
- Provide scenarios where different reactions occur, such as an allergic reaction, hemolytic reaction, or bacterial contamination.
- Ask students to identify and act according to the protocols for managing transfusion reactions (e.g., stopping the transfusion, contacting the healthcare provider, administering antihistamines or other treatments).

3. Activity: Quiz or Gamification on Blood Transfusion Risks

- Create a quiz or interactive game (e.g., Kahoot, Quizizz) that focuses on the different risks associated with blood transfusion.
- Include multiple-choice, true/false, and scenario-based questions related to transfusion risks, infection control, blood group compatibility, adverse reactions, and management protocols.
- Students should be given time to answer and then engage in a discussion of each question to clarify their understanding.

4. Activity: Peer Teaching and Role Play

- Assign students into pairs or small groups. One student will play the role of a healthcare provider explaining the risks of blood transfusion to a patient, and the other will play the patient or family member.
- The healthcare provider must explain the risks, including allergic reactions, infections (e.g., HIV, hepatitis), transfusion-related acute lung injury (TRALI), and other risks, while addressing the patient's concerns.
- Encourage students to use clear, empathetic language and ensure the patient understands the risks.
- Afterward, the pairs should switch roles.

5. Activity: Discussion and Journal Club

- Select a few research articles or clinical guidelines related to blood transfusion risks and management.
- Ask students to read these articles beforehand and come prepared to discuss.
- Organize a journal club discussion where students present their findings, debate the significance of various risks, and discuss the latest advancements in minimizing transfusion reactions (e.g., pathogen reduction technologies).
- The instructor will facilitate the discussion, guiding students to understand the evidence-based strategies for reducing risk.

6. Activity: Blood Bank Visit or Virtual Tour

- Organize a visit to the blood bank or use a virtual tour (if available) where students can observe the blood donation, screening, and preparation process.
- Ask the staff to explain how blood is screened for infections, how blood type is matched, and the protocols followed to minimize risks.
- Students can ask questions about the management of blood transfusion-related risks (e.g., traceability, sterility, and storage).

Modular Assessment

Assessment	Hour
Instructions: Conduct a structured Modular assessment. The assessment will be for 50 marks. Keep a structured marking pattern. Use different assessment methods in each module for the semester. Keep a record of the structured pattern used for assessment. Calculate the modular grade points as per Table 6C. 1. Making of Charts Students create detailed charts on types of anemia, blood components, or hemophilia treatments, visually summarizing concepts. 10 marks and 1 hour - Create a chart on a specified topic, e.g., anemia types or blood transfusion protocols. - Include key details, classifications, and treatments. 2. Word Puzzle A crossword or word search including key terms related to hematology (e.g., thalassemia, ITP, DIC, hemoglobin types).	4

5 marks and 30 minutes - Complete the word puzzle accurately. - Terms are based on the module's topics to reinforce terminology and definitions. 3. Simulated Patient Interaction Practical assessment where students interact with a simulated patient presenting with symptoms of anemia or hemophilia. 15 marks and 1.25 hours - Conduct an interview and examination of a simulated patient. - Focus on history-taking, differential diagnosis, and patient counseling. 4. Mini-CEX (Clinical Evaluation Exercise) A focused assessment of clinical skills, such as performing a blood examination or interpreting lab values in a case scenario. 20 marks and 1.25 hours - Perform a physical or simulated examination related to hematological disorders. - Interpret lab results and propose a management plan. Detailed Assessment Breakdown 1. Making Charts Components: Students create charts that visually organize information on hematological topics like anemia classifications, blood components, or treatment algorithms for hemophilia. Marks Breakdown: Content accuracy and completeness (5 marks) Visual clarity and organization (3 marks) Inclusion of Unani perspective where relevant (2 marks) 2. Word Puzzle Components: A puzzle that includes critical terms related to blood disorders and treatments, testing familiarity with module terminology.	

Marks Breakdown: Correct completion of all terms (3 marks) Understanding of definitions for terms found (2 marks) 3. Simulated Patient Interaction Components: Students interact with a simulated patient presenting with a hematological disorder, such as anemia or hemophilia, performing history-taking, physical examination, and patient counseling. Marks Breakdown: Thorough history-taking and communication skills (5 marks) Clinical reasoning and identification of key symptoms (5 marks) Patient counseling and explanation of treatment options (5 marks) 4. Mini-CEX (Clinical Evaluation Exercise) Components: Students perform a clinical skill (e.g., interpreting blood smear results, assessing lab values) relevant to conditions like DIC, ITP, or sickle cell disease. Marks Breakdown: Accuracy of interpretation and analysis (5 marks) Clinical reasoning and diagnostic skill (5 marks) Clarity in management recommendations and Unani integration if applicable (5 marks) Professionalism and examination technique (5 marks) Or Any Practical in converted form can be taken for assessment (20 marks). and Any experiential, such as portfolios/ reflections/ presentations can be taken as assessment (30 marks).	
Module 26 : Drugs and Drug's Dosage	

Module Learning Objectives

(At the end of the module, the students should be able to)

1. Describe the different categories of single (Mufrad) and compound (Murakkab) Unani drugs commonly used in pediatrics, with examples.
2. Describe the therapeutic indications for Unani drugs in managing pediatric diseases such as neurological, respiratory, gastrointestinal, Cardiovascular, renal, dermatological and other conditions.
3. Demonstrate the preparation of common Unani formulations (syrups, decoctions, tablets) suitable for children and calculate appropriate dosages based on age, weight, and temperament (Mizaj).
4. Analyze case scenarios to apply Unani drugs for pediatric conditions and explain the rationale behind the selection of single or compound formulations.
5. Define pharmacovigilance, with a focus on its importance in monitoring the safety and efficacy of Unani drugs in children.
6. Identify common adverse drug reactions associated with Unani and conventional drugs in pediatric patients and differentiate between mild, moderate, and severe reactions
7. Integrate the therapeutic uses, benefits, and potential risks of conventional and Unani drugs in managing common pediatric conditions.
8. Acquire the knowledge of common conventinal drugs used in pediatric's population.

Unit 1 Unani Drugs and Drug's dosage- 1

26.1.1 Concept of dose calculation in Classical literature.

26.1.2 Brief introduction to Pharmacovigilance concerning infants and younger pediatric group and rational use of drugs.

26.1.3 Recent studies of Unani drugs on children

26.1.4 Single drugs used in pediatric population (Dose, dosage, indications, contraindications, substitute, side effects, correctives)

References: 44,64,74,77

3A	3B	3C	3D	3E	3F	3G
CO4,CO5,CO7	Describe the concept of unani drugs and dosage, dose calculation, with the brief introduction to Pharmacovigilance concerning infants	1	Lecture	CC	Knows-how	L&PPT ,L&GD

	and younger pediatric group and recent studies of Unani drugs on childrena and rational use of drugs.					
CO4,CO5,CO7	Describe single drugs used in pediatric population (Dose, dosage, indication, contraindications, substitute, side effects, correctives)	3	Lecture	CC	Knows-how	L&PPT ,L&GD
CO4,CO5,CO7	Demonstrate how to apply single unani drugs according to different systemic diseases in paediatrics.	7	Practical26.1	CAN	Shows-how	LS,RP,RLE,D ,DIS
CO4,CO5,CO7	Discuss dose of single drugs according to age of children.	1	Practical26.2	CE	Shows-how	FV,LS,PSM,S IM,RLE
CO4,CO5,CO7	Identify and value unani drugs (mufradat) and with their affect on different systems of body.	8	Experiential-Learning26.1	AFT-VAL	Does	C_L,GBL,PS M,RLE,CBL
CO4,CO5,CO7	Discuss and document Adverse drug reactions (ADRs), understanding the risk-benefit analysis in pediatric populations	2	Experiential-Learning26.2	PSY-MEC	Does	DIS,W,RP,C_ L,RLE

Unit 2 Unani Drugs and Drug's Dosage- 2

26.2.1 Compound Unani drug's (Dosage form, dose, indications, route of administration, correctives contraindications, side effects)

26.2.2 Systemic categorization of compound drugs.

References: 78

3A	3B	3C	3D	3E	3F	3G
CO4,CO5,CO7	Describe correctives contraindications, side effects- Ma'jun, Jawarish, Itrifal, Khamira, La'uq, Murabba, Harira, Sharbat,	3	Lecture	CC	Knows-how	L&PPT ,L&GD

	Sikanjabin, Araq, Habb, Qurs Safuf, Dharur, Barud, Bukhur, Qatur, Dimad, Marham, Shamum, Qairuti, firzaja etc)					
CO4,CO5,CO7	Demostrate how to manage pediatric diseases through unani compound drugs.	6	Practical26.3	PSY-GUD	Shows-how	CBL,FV,DIS, PER
CO4,CO5,CO7	Formulate the treatment plan with compound drugs for different pediatric local and systemic diseases.	8	Experiential-Learning26.3	PSY-MEC	Does	DIS,CBL,RP

Unit 3 Conventional Drugs

26.3.1 Common Conventional Drugs and thier dose, dosage form, indications, contraindications, side effects

26.3.2 Rational use of conventional drugs

26.3.3 Adherence to drugs in certain conditions.

References: 44,63

3A	3B	3C	3D	3E	3F	3G
CO4,CO5,CO7	Describe conventional drugs, their dose, dosage form, indication, contraindication, side effects- (Analgesics, antipyretics, antiinflammatory, Antibiotics, Antifungal, Antiviral agents, Anthelminthics, Antiprotozoal, Antimalarial, Antiemetics, gastrointestinal drugs, Anticonvulsants, Anticougulants, Antihistaminics, Bronchodilators, Diuretics, Antitubercular, Hormones)	3	Lecture	CC	Knows-how	L&GD,L&PPT
CO4,CO5,CO7	Discuss the common drugs in contemporary medicine and their adherence with the pediatric patients.	6	Practical26.4	CC	Shows-how	PL,SIM,RP,CBL,DIS

CO4,CO5,CO7	Discuss and present the conventional drugs, their dose, dosage form, indication, contraindication, side effects, adverse effects, drug interaction, etc	7	Experiential-Learning26.4	PSY-MEC	Does	DIS,W,PBL,JC,SIM
CO4,CO5,CO7	Discuss and present use of conventional drugs in emergency if necessary.	1	Experiential-Learning26.5	CE	Does	DIS,SIM,W,RP,CBL

Practical Training Activity

Practical Training 26.1 System wise application of Single unani drugs

One or more activities can be chosen (Total time- 7 hours)

1. Case-based Discussions - Therapeutic Application in Pediatrics (90 mins)

Activity:

- Teacher will give brief introduction about single unani drugs according to system and Case scenarios of common pediatric illnesses affecting different systems (e.g., respiratory infections, digestive problems, nervous system disorders).
- Present a case scenario to each group, and ask them to recommend Unani single drugs that could be used for treatment.
- Have them explain why they chose a specific drug, focusing on its action on the body system involved.
- End with a class discussion about the correct application and any potential risks or limitations.

2. Pharmacological Demonstration - System-specific Effects (90 mins)

Activity:

- Use animations or videos to explain how specific Unani drugs influence pediatric patients (e.g., influencing digestion, improving respiratory function, etc.).
- Follow this with a discussion where students classify the drugs based on system action and dose calculation principles for pediatric patients.
- Provide an overview of dose calculation for pediatric patients based on age and weight.

3. Role Play - Physician and Family Interaction (2 Hours)

Activity:

- Students act as pediatricians explaining to parents how a Unani single drug can help their child's condition, focusing on the specific system involved (e.g., respiratory relief with Unani drugs like Mulethi for cough).
- After the role-play, review the accuracy of the explanations and any system-specific considerations.

4. Review of Key Research Studies (2 Hours)

Activity:

- Present and discuss relevant **clinical studies** or **case reports** on the use of Unani drugs in pediatrics.
- Evaluate **safety**, **efficacy**, and **dosage considerations** for younger populations, citing recent findings.
- Discuss the integration of Unani drugs with conventional treatments, where applicable.
- Discuss **pharmacovigilance** and the importance of monitoring for side effects and interactions, especially in children.

Practical Training 26.2 Age based dose calculation of single drugs

One or more activites can be chosen (Total time- 1 hour)

1. Interactive Workshops on Dose Calculation (60 mins)

Activities:

- Teacher will give give an introduction on age based dose calculation.
- He will present case studies with pediatric patients of various ages and conditions.
- Check whether the students calculate appropriate dosages for each case, considering the age and weight of the child.
- Facilitate a group discussion to compare calculations and address any discrepancies.

OR

2. Case-Based Learning (CBL) (10 mins per case)

Activities:

- Divide students into small groups to review assigned cases.
- Each group will discuss the appropriate drug and calculate the dosage based on the patient's age and weight.

- Groups will present their findings and dosing strategies to the class.

OR

3. Research Assignments on Drug Formulary (60 mins)

Activities:

- Each student or group will research a medication and create a dosage guideline table based on age categories (e.g., neonates, infants, toddlers, children, and adolescents).
- Present findings to the class, focusing on the differences in dosing across age groups.

Practical Training 26.3 Application of compound drugs

One or more activities can be chosen (Total time- 6 hours)

1. Case-Based Learning (CBL) (90 Minutes)

- **Approach**: Teacher will present real or hypothetical pediatric cases requiring specific compound drug treatments.
- **Activities**:
  - Teacher will give brief introduction about the appliaction of compound drugs and divide the students into small groups to discuss assigned cases.
  - Each group will identify appropriate compound Unani drugs and justify their use based on the patient's condition.
  - Groups will present their findings to the class.

2. Interactive Group Discussions (60 mins)

- **Approach**: Encourage open dialogue among students about various drugs, focusing on their benefits, risks, and clinical evidence.
- **Activities**:
  - Facilitate a discussion on specific compound Unani drugs, inviting students to share experiences, research, or clinical observations.
  - Use prompts to guide discussions on efficacy, safety, and cultural considerations in using these drugs.

3. Research and Presentation Assignments (90 mins)

- **Approach**: Assign each student or group a specific compound Unani drug to research thoroughly.

- **Activities**:
    - Students will prepare presentations detailing the drug's pharmacological properties, clinical indications, potential side effects, and relevant studies or case reports.
    - Presentations will be shared with the class, followed by a Q&A session to encourage peer learning.

4. Field Visits to Unani Clinics or Pharmacies (2 Hours)

- **Approach**: Organize visits to local Unani clinics or pharmacies specializing in pediatric care.
- **Activities**:
    - Students will observe consultations where compound Unani drugs are prescribed and discuss the rationale with practitioners.
    - Encourage students to ask questions about the preparation, usage, and patient outcomes related to Unani compounds

Practical Training 26.4 Common conventional drugs and importance of drug adherence

One or more activities can be chosen (Total time- 6 hours)

1. **Case-Based Learning (CBL) (60 Minutes)**

- **Approach**: Teacher will present real-life pediatric cases requiring specific drug treatments. He will discuss the drug selection, dose adjustment based on age, weight, and disease severity.
- **Activity**: Divide students into small groups to review a case (e.g., pediatric asthma or congenital heart disease), discuss the pharmacotherapy plan, and present a rationale for drug choice, dose, and monitoring.

2. **Simulation and Role-Playing (90 mins)**

- **Activity**: Set up a pediatric ward simulation where students interact with standardized patients or mannequins. They can be tasked with prescribing medications and addressing potential complications, teaching dose calculations, and anticipating adverse drug reactions.

3. **Peer Teaching (60 mins)**

- **Activity**: Assign different drug categories (antibiotics, antivirals, bronchodilators, etc.) to student groups. They can prepare presentations on clinical use, dosing guidelines, side effects, and monitoring parameters in pediatrics

4. **Role-play on Communication for Medication Adherence (90 mins)**

- **Preparation**: Provide a scenario where the student plays the role of a pediatrician explaining to parents the importance of adhering to a medication regimen for their child.
- **Task**: Each student pairs up. One is the doctor, the other the parent. The “doctor” must explain how to administer the medication, address the parent’s concerns, and reinforce adherence strategies.
- **Feedback**: Peers and instructor provide feedback on the clarity of communication and practical strategies provided.

5. **Adherence Barriers Simulation (60 mins)**

- **Preparation**: Set up stations with different simulated adherence barriers (e.g., large pill size, bad-tasting liquid medication, a complex dosing schedule).
- **Task**: Students rotate through the stations and brainstorm ways to overcome each barrier using clinical and practical tools (e.g., using pill crushers, flavored syrups, adherence calendars).
- **Reflection**: A class discussion on the most challenging barriers and practical solutions to overcome them.

Experiential Learning Activity

Experiential-Learning Learning 26.1: Sytemic classification of unani single drugs

One or more activities can be chosen (Total time- 8 hours)

1. **Group Discussion and Drug Identification (Collaborative Learning) (2 Hours)**

- **Activity**: Divide students into small groups. Each group will be assigned a body system (e.g., digestive, respiratory, nervous). They will be asked to classify Unani drugs (Mufridat) relevant to that system and identify their properties and indications.
- **Instruction**: Provide resources such as Unani pharmacopoeia or material medica. Allow the groups to present their findings, discuss the rationale behind the classifications, and identify key drugs based on their uses in each system.

2. **Unani Drug Identification Lab (Hands-On Learning) (2 Hours)**

- **Activity**: Set up a lab with samples of various Unani drugs. Each student will identify the drugs based on their appearance, smell, and taste, and classify them according to their system-specific uses.

- **Instruction**: Provide a checklist with different drug names and their respective systems of action (e.g., digestive system – Ispaghula, Nervous system – Asaroon). Have students rotate through stations, filling in their observations.

3. **Case-Based Learning (Scenario Analysis) (2 Hours)**
   - **Activity**: Present case scenarios, such as a patient with respiratory distress or digestive issues, and ask students to classify and select appropriate Unani drugs for treatment.
   - **Instruction**: Provide a case study related to each system of the body. Students must analyze the case, determine the underlying problem, and suggest a list of Unani drugs to treat the condition.
4. **Gamified Drug Classification (Gamification) (2 Hours)**
   - **Activity**: Create a digital or physical board game where students must match Unani drugs to their correct system of the body (e.g., nervous, digestive). Each correct match earns points.
   - **Instruction**: Develop flashcards or game tokens that represent different Unani drugs. The game could be played individually or in groups, with rewards for the fastest or most accurate classifiers.

Experiential-Learning Learning 26.2: Adverse drug reactions (ADRs) reporting

One or more activities can be chosen (Total time- 2 hours)

1. **Case-Based Learning (Scenario Analysis) (60 Minutes)**
   - **Activity**: Provide students with case scenarios of pediatric patients receiving Unani treatments. Students must identify potential ADRs based on the symptoms, correlate them with specific drugs, and determine the course of action.
   - **Instruction**: Present cases of common pediatric conditions like fever, asthma, or digestive issues, treated with Unani drugs. Include ADR symptoms for students to recognize. They will then report the ADR, assess the risk-benefit ratio of continuing or discontinuing the drug, and suggest alternatives.
2. **Simulation-Based Learning (Role Play) (60 mins)**
   - **Activity**: Conduct a simulated clinical setting where students act as practitioners and report ADRs. Pediatric patients (played by actors or other students) present with potential ADRs from Unani drugs.

- **Instruction**: Students will interact with the simulated patients, gather symptoms, and document any adverse reactions. They will practice filling out ADR forms and assess the therapeutic risk-benefit of continuing the treatment.

OR

3. **Group Discussion and Peer Review (Collaborative Learning) (60 mins)**
   - **Activity**: Students work in small groups to discuss real-life case studies where Unani drugs led to ADRs in pediatric patients. Each group performs a risk-benefit analysis for the continued use of the drug in pediatric populations and presents their findings.
   - **Instruction**: Assign different Unani drugs (e.g., Asaroon, Aabresham) to each group with known ADRs. Ask them to assess the risks and benefits, based on pediatric physiology and the susceptibility of children to drug reactions, and propose steps for reporting and managing ADRs.

Experiential-Learning Learning 26.3: Sytemic use of compound drugs

One or more activities can be chosen (Total time- 8 hours)

1. **Case-Based Learning (Scenario-Based Treatment Planning) (2 Hours)**
   - **Activity**: Present clinical case scenarios of pediatric patients with local and systemic diseases. Students are tasked with designing treatment plans using relevant Murakkabat drugs.
   - **Instruction**: Provide case studies such as a child with bronchitis (systemic disease) or eczema (local disease). Students will analyze the symptoms, determine the correct Unani compound drug (Murakkabat), adjust dosages for pediatric use, and explain their rationale for treatment.
2. **Practical Workshop on Murakkabat Formulation (Hands-On Learning) (2 Hours)**
   - **Activity**: Conduct a workshop where students learn to prepare Unani compound drugs commonly used for pediatric diseases. They then design treatment plans for hypothetical pediatric patients.
   - **Instruction**:Students will prepare the drugs and then apply them to case scenarios such as Sharbat-e-Akseersual (for respiratory issues) or ItrifalMulayyin (for digestive complaints).
3. **Role Play and Simulation (Clinical Interaction) (2 Hours)**
   - **Activity**: In a simulation, students act as Unani practitioners with parents bringing in pediatric patients with either local or systemic diseases. The students must design a treatment plan and explain the drug choice and regimen to the parent.

- **Instruction**: Provide a set of patient profiles and symptoms. Students will simulate a consultation, taking a history, designing a treatment using Murakkabat, and counseling the parent on dosage, administration, and expected outcomes.

4. **Group Discussion and Peer Review (Collaborative Learning) (2 Hours)**

- **Activity**: In groups, students discuss and design treatment plans for pediatric diseases like asthma, diarrhea, or skin infections using Murakkabat. Each group presents their plan, and peers provide feedback.
- **Instruction**: Assign different diseases to groups and ask them to select appropriate Murakkabat. For example, a group may be tasked with treating pediatric asthma using Sharbat-e-sadar,Lauq ,etc. (to support respiratory health). After the group presents their treatment plan, peers review and critique the effectiveness, safety, and practicality.

Experiential-Learning Learning 26.4: General information of conventional drugs

One or more activities can be chosen (Total time- 7 hours)

1: Drug Profiling Workshop (2 Hours)

Method: Small Group Discussion + Problem-Based Learning (PBL)

Instructions:

- Divide students into small groups.
- Assign each group a set of conventional drugs from different categories (e.g., antibiotics, NSAIDs, antihypertensives).
- Each group must research and present the following for their assigned drugs:
    - Generic name and brand names
    - Dose and dosage forms (oral, IV, etc.)
    - Indications and contraindications
    - Common side effects
    - Serious adverse effects
    - Drug interactions

2: Clinical Case Simulations (2 Hours)

Method: Role-Playing + Simulation

Instructions:

- Present a clinical case to the students (e.g., a patient with sepsis, meningitis,etc).
- Ask students to propose a treatment plan, choosing appropriate drugs based on the patient's condition.
- After selecting drugs, they should explain:
    - The rationale for drug choice
    - Dosing adjustments based on patient characteristics (e.g., weight, age)
    - Monitoring parameters for efficacy and toxicity
- Instructors will play the role of patients asking questions, pushing students to think about contraindications and possible adverse effects.

3: Journal Club on Drug Safety (90 mins)

Instructions:

- Provide students with recent research articles on adverse drug reactions (ADR) and drug safety.
- Ask students to present a summary of the article, focusing on:
    - Reported adverse effects of a particular drug or drug class.
    - Risk factors for ADRs and how they can be prevented.
    - Current guidelines on monitoring and management of ADRs.
- After presentations, open the floor for group discussion to evaluate how findings might change practice.

4: Drug Information Database Development(90 Minutes)

Method: Collaborative Learning + Technology-Enhanced Learning (30 mins on regular basis)

Instructions:

- Assign students to work collaboratively in groups to create a digital drug information database.
- Each student or group will input detailed profiles of specific drugs, including all relevant details (dosage, indications, side effects, etc.).

- Encourage the use of available drug databases and recent literature to gather information.
- Periodically review and update the database as new information or drug recalls are released.

Experiential-Learning Learning 26.5: Judicial use of conventional drugs

One or more activities can be chosen (Total time- 1 hour)

1. **Case-Based Scenarios (60 mins)**

Instructions:

1. Students work in groups to assess each case, discuss potential drug choices, and justify their reasoning based on clinical guidelines.
2. Emphasize the need for rapid assessment and appropriate drug selection based on indications and contraindications.
3. After each group's response, conduct a debrief where key teaching points and best practices are discussed.

OR

2. **Simulation of Emergency Interventions (60 mins)**

Instructions:

1. Set up a simulated emergency scenario where students need to quickly evaluate the patient, select the appropriate drug, calculate the dose, and administer it.
2. Provide feedback on technique, timeliness, and adherence to protocol after the simulation.

OR

3. **Drug Protocol Review and Comparison Workshop (60 mins)**

Instructions:

1. Assign each student or group a specific drug to research in the context of emergency use (e.g., atropine, amiodarone, diazepam).
2. Each group presents their findings, covering the clinical use of the drug, adverse effects, contraindications, and the rationale for choosing this drug over alternatives.
3. Facilitate a discussion on the importance of protocol adherence and the implications of deviations.

OR

4. **Role-Playing and Ethical Decision-Making Discussion (60 mins)**

Instructions:

1. Present a situation where students must prioritize drug administration, such as multiple patients with limited doses.
2. Afterward, facilitate an open discussion to analyze their decision-making process, ethical considerations, and prioritization strategies.

Modular Assessment

Assessment	**Hour**
Instructions: Conduct a structured Modular assessment. The assessment will be for 50 marks. Keep a structured marking pattern. Use different assessment methods in each module for the semester. Keep a record of the structured pattern used for assessment. Calculate the modular grade points as per Table 6C. **1. Class Presentation** **Description:** Students prepare and deliver presentations on selected topics from the module. This assessment focuses on content, comprehension, clarity, and presentation skills. **Topics Covered (example):** Overview and classifications of single and compound Unani drugs, Principles of pharmacovigilance in Unani medicine, Recent advances in Unani medicine and comparative study with conventional drugs. **Instructions:** Each student presents for 5–7 minutes. They are expected to answer 2–3 follow-up questions from peers or faculty. **Marks:** 15 and **Time:** 1 hour 30 min **Criteria and Marks distribution (15 marks)** Content Accuracy: Clarity and depth of understanding-5 marks Presentation Skills: Confidence, communication, and organization-5 marks Engagement: Ability to handle questions and encourage discussion-5 marks	4

2. Quiz **Description:** A short quiz with questions designed to assess foundational knowledge and immediate recall of key concepts in the module. **Topics Covered:** Definitions and classifications of single and compound Unani drugs, Dosage forms and principles of dosage calculation in Unani medicine, Common conventional drugs used alongside Unani practices. **Instructions:** The quiz comprises 10 multiple-choice or short-answer questions (1 mark each). Students have 3 minutes per question. **Criteria and Marking:** Each question is awarded 1 mark for correct answers. Emphasis is on accuracy and relevance. Marks: 10 and Time: 30 minutes **3. Oral Viva** **Description:** An oral examination to test depth of understanding, reasoning, and application skills in real-time scenarios. **Topics Covered:** Justification of the use of specific Unani drugs for particular conditions, Safety monitoring and pharmacovigilance protocols in pediatric applications, Recent studies and developments comparing Unani and conventional drugs. **Instructions:** Each student answers five questions from the faculty. **Marks:** 15 and **Time:** 1 hour **Criteria and Marks distribution (3 marks per question)** Accuracy and Depth of Knowledge: Correct, comprehensive response-1 mark Analytical Reasoning: Justification and reasoning in answer-1 mark Communication Skills: Clarity and articulation-1 mark **4. Chart Making** **Description:** Students create charts to visually organize information on drug classifications, dosage calculations, and indications. **Topics Covered:** Visual layout of single and compound Unani drugs, focusing on structure and benefits, Indications, dosage forms, and frequency of administration, Recent developments and pharmacovigilance checkpoints. **Instructions:** Each student is allotted materials to create a chart summarizing key aspects. They have 1 hour to complete and submit.	

Marks: 10 and **Time:** 1 hour **Criteria and Marks distribution (10 marks)** Accuracy of Information: Information should be correctly represented-4 marks Organization and Clarity: Logical flow and readability-3 marks Creativity and Visual Appeal: Effective use of colors, labels, and layout-3 marks OR Any Practical in converted form can be taken for assessment (15 marks) and Any experiential, such as portfolios/ reflections/ presentations can be taken as assessment. (35 marks)	

Paper No : 4(امراض اطفال نظامی دوم)(Amraze Atfal Nizami Dowem) Systemic Pediatrics - Part 2)

Semester No : 3

Module 27 : امراض نظام ہضم اور امراض کبدی۔ا:Amrāḍ-i-Niẓām-i-Haḍm aur Amrāḍ-i -Kabidi-I(Gastro Intestinal and Hepatobiliary Disorder -1)

Module Learning Objectives

(At the end of the module, the students should be able to)

1. Obtain and record a detailed history and perform comprehensive Examination for the evaluation of Gastrointestinal and Hepatobiliary system
2. Discuss the indication and limitation of the special investigations of Gastrontestinal system and learn the interpretation.
3. Describe Common paediatric gastrointestinal diseases and recognise the severity of clinical presentation and need of immediate care.
4. Describe Gastrointestinal sign and symptoms with various pathophysiologic conditions along with Unani concept of disease(Asbab , aqsam ,alamat, mahiyat wa tashkis)
5. Develop skills in managing Gastrointestinal(GIT) patient with Unani treatment (usul-i Ilaj, IBT regimen, ghida wa parhez) along with conventional medicine as required.
6. Counsel parents about treatment ,prognosis and prevention and vaccination
7. Review from Medical Journal and Literature about Gastrointestinal diseases.

Unit 1 نظام ہضم کی طبی تشخیص و خصوصی تشخیصی طریقہ کار Tibbi Tashkhis of Niẓām-i-Haḍmand Khususi Tashkhisi Tariqa-i-kar (Clinical Evaluation and Special Investigation of Gastro Intestinal System)

27.1.1 Clinical parameters for the assessment of Gastrointstinal and hepatobiliary disorders.

27.1.2 Special Diagnostis procedures for the evaluation of Gastrointstinal and Hepatobiliary disorders.

27.1.2.1 Imaging test

27.1.2.2 Non Invasive & Invasive test

27.1.2.3 Serology test

27.1.2.4 Blood test

27.1.2.5 Stool test **References:** 34,63						
3A Course Outcome	**3B Learning Objective (At the end of the (lecture/practical training /experiential learning) session, the students should be able to)**	**3C Notional learning Hours**	**3D Lecture/ Practical Training/ Experiential Learning**	**3E Domain/ Sub Domain**	**3F Level (Does/Shows how/Knows how/Know)**	**3G Teaching Learning Methods**
CO1,CO4,CO5,CO6,CO7,CO8	Describe detailed history taking and complete examination in patient of Gastrointestinal and Hepatobiliary Disorder.	1	Lecture	CE	Knows-how	L&PPT ,L&GD
CO1,CO2,CO4,CO5,CO6,CO7,CO8	Describe special Investigations of the Gastrointestinal system (GIT) and interpret its findings.	1	Lecture	CC	Knows-how	L_VC,L&PPT
CO1,CO2,CO4,CO5,CO6,CO7,CO8	Demonstrate how to diagnose paediatric gastroenterology diseases.	2	Practical27.1	PSY-GUD	Shows-how	DIS,CBL,RP
CO1,CO2,CO4,CO5,CO6,CO7,CO8	Demonstrate techniques for sample collection(blood test, stool test), hands on training on evaluating, performing and interpreting special investigations for gastrointestinal disorders e.g. endoscopy, barium meal & swallow)	2	Practical27.2	PSY-GUD	Shows-how	C_L,D-M,SIM,RP,D-BED

CO1,CO2,CO4,CO5,CO6,CO7,CO8	Practise comprehensive examination and sample collection (stool, blood) in clinical skill labs.	4	Experiential-Learning27.1	PSY-GUD	Does	RP,CBL,SIM,RLE
CO1,CO2,CO4,CO5,CO6,CO7,CO8	Interpret laboratory investigations and document the gastrointestinal disorders in pediatrics.	2	Experiential-Learning27.2	PSY-GUD	Does	LRI,W,DIS,SIM

Unit 2 امراض دہن (Amrāḍ-i-Dehan) Diseases of oral cavity

27.2.1 ورم اللسان *Waram-al Lisān* (Glossitis)

27.2.2 بثور دہن *Basoor-i- dehan* (Stomatitis)

27.2.3 قلاع *Qulā* (Thrush)

27.2.4 اورام لثہ *Awrām-i-Litha* (Gingivitis)

27.2.5 Geographical Tongue

27.2.6 تاکل الاسنان Ta'akkul al-Asnān (Dental Carries)

27.2.7 شق الشفہ والحلق *Shakkushifa-wal-Halaq (*Cleft lip and palate)

References: 34,63

3A	3B	3C	3D	3E	3F	3G
CO1,CO2,CO4,CO5,CO6,CO7,CO8	Describe Unani and Conventional concept of diseases of Oral cavity (Stomatitis, Thrush, Gingivitis, Glossitis, Dental caries, Cleft lip and Palate)and its aetiology, pre disposing factor,clinical features, types, diagnosis , differential diagnosis, complication management and prevention)	2	Lecture	CC	Knows-how	L&PPT

CO1,CO2,CO4,CO5,CO6,CO7,CO8	Demonstrate examination of Oral cavity.	1	Practical27.3	PSY-GUD	Shows-how	D,D-M,SIM
CO1,CO2,CO4,CO5,CO6,CO7,CO8	Analyze various Oral Cavity diseases and integrate management strategies in Unani and conventional medicine.	1	Practical27.4	CAN	Shows-how	DIS,L_VC,PER
CO1,CO2,CO4,CO5,CO6,CO7,CO8	Demonstrate technique for oral Swab Collection and Show topical application of medicine(painting of mouth, massage of gums ,dusting the mouth)	1	Practical27.5	PSY-MEC	Shows-how	RP,SIM,D
CO1,CO2,CO4,CO5,CO6,CO7,CO8	Discuss the preventive measures and precaution of Oral cavity diseases.	1	Practical27.6	CC	Shows-how	DIS,RP
CO1,CO2,CO4,CO5,CO6,CO7,CO8	Demonstrate and document examination and treatment plan for oral Cavity independently.	6	Experiential-Learning27.3	PSY-GUD	Does	CBL,SIM,CD,RP,PER

Unit 3 اسہال Ishāl (Diarrhoea)

27.3.1 اسہال حاد Ishāl -i-Haad (Acute diarrhoea)

27.3.2 اسہال مزمن Ishāl -i-Muzmin (Chronic diarrhoea)

27.3.3 اسہال دائمی Ishāl -i-Daimi (Persistent diarrhoea)

27.3.4 اسہال دوری (Recurrent diarrhoea)

27.3.5 اسہال اطفال Ishāl-i-Aṭfāl (Infantile diarrhoea)

27.3.6 ORT (Oral Rehydration Therapy)

27.3.6.1 Dehydration, Assessment of severity of dehydration and treatment with plan A,B and C of Oral Rehydration Therapy.

References: 43,57,63

3A	3B	3C	3D	3E	3F	3G
CO1,CO2,CO4,CO5,CO6,CO7,CO8	Describe Diarrhoea and its epidemiology, etiology, types pathogenesis, clinical features, diagnosis complication and its management.	1	Lecture	CE	Knows-how	L_VC,L&PPT
CO1,CO2,CO4,CO5,CO6,CO7,CO8	Describe Unani concept of */shāl/* and its asbab wa alamat according to aqsam of ishaal, usul-i ilaj, ila,j ghidha, parhez and its tahafuzzi tadabir.	1	Lecture	CE	Knows-how	L&PPT ,L_VC
CO1,CO2,CO4,CO5,CO6,CO7,CO8	Describe Dehydration,assessment of dehydration,Rehydration therapy,its types(Conventional ORT& Fluid therapy) and WHO guiidelines on dehydration)	1	Lecture	CAN	Knows-how	L&PPT ,L_VC
CO1,CO2,CO4,CO5,CO6,CO7	Demonstrate the clinical assessment of diarrheal dehydration by proper history taking and examination.	2	Practical27.7	PSY-GUD	Shows-how	D-BED,DIS,CBL,SIM,D
CO1,CO2,CO4,CO5,CO6,CO7	Discuss the treatment plan A, B and C for diarrhoeal dehydration according to WHO.	2	Practical27.8	CC	Shows-how	CBL,DIS,PER,RP,PL

CO1,CO2,CO4,CO5,CO6,CO7,CO8	Demonstrate how to rehydrate orally and through Intravenous(IV) fluid administration in children.	2	Practical27.9	PSY-GUD	Shows-how	SIM,DIS,D
CO1,CO2,CO4,CO5,CO6,CO7,CO8	Perform patient interview & clinical examination with patient of diarrhoea	3	Experiential-Learning27.4	PSY-MEC	Does	BS,D-BED,RP,DIS,CBL
CO1,CO2,CO4,CO5,CO6,CO7,CO8	Counsel patient for dietary changes, medication adherence, hydration (ORT) and prevention strategies for diarrhoea	3	Experiential-Learning27.5	AFT-CHR	Does	SIM,D,DIS,RP,BS

Unit 4 زحیر Zaḥīr (Dysentery)

27.4.1 زحیرامیبائی *Zaḥīr amebayi* (Amoebic Dysentery)

27.4.2 Bacillary dysentery

27.4.3 زحیرصادق *Zaḥīr Ṣādiq* (Had & Muzmin)

27.4.4 زحیرکاذب *Zaḥīr Kādhib* (Had & Muzmin)

References: 31,41,46,63

3A	3B	3C	3D	3E	3F	3G
CO1,CO2,CO4,CO5,CO6,CO7	Describe Dysentery and its etiopathogenesis, epidemiology types, clinical features, diagnosis, management ,prognosis and prevention.	1	Lecture	CE	Knows-how	L&PPT

CO1,CO2,CO4,CO5,CO6,CO7,CO8	Describe the Unani concept of Zaḥīr and its asbab ,alamat according to aqsam ,tashkis tashkis farqa ,usul-i- Ilaj n Ilaj)	1	Lecture	CC	Knows-how	L&PPT
CO1,CO2,CO4,CO5,CO6,CO7,CO8	Desmontrate diagnostic tests like stool test, blood test and stool culture and interpret investigations like Endoscopy.	2	Practical27.10	PSY-GUD	Shows-how	PBL,L&GD,D
CO1,CO2,CO4,CO5,CO6,CO7,CO8	Diagnose and manage cases of Dysentery in pediatrics.	2	Practical27.11	PSY-GUD	Shows-how	DIS,SIM,D,CBL,D-M
CO1,CO2,CO4,CO5,CO6,CO7,CO8	Identify Clinical Presentation ,conduct Evaluation and Manage the patient of Dysentery independently.	2	Experiential-Learning27.6	AFT-RES	Does	DIS,SIM,CBL,RP
CO1,CO2,CO4,CO5,CO6,CO7,CO8	Manage cases of Dysentery with treatment strategies (Unani & Conventional medicine,ORT and IV fluid replacement therapy)	2	Experiential-Learning27.7	AFT-SET	Does	SIM,PBL,RP,DIS,D

Unit 5 نقص انجذاب Naqs-e-inzijab (Mal absorption)

27.5.1 Malabsorption Syndrome

27.5.2 Coeliac Diseases (Gluten Sensitive Enteropathy)

27.5.3 Lactose Intolerance

27.5.4 Milk protein Allergy

27.5.5 Protein Losing Enteropathy

27.5.6. Gut Health/ Gutbiome

References: 31,34,41,43,44,63

3A	3B	3C	3D	3E	3F	3G
CO1,CO2,CO4,CO5,CO6	Describe Malabsorption Syndrome,Celiac Diseases, Lactose Intolerance ,protein losing enteropathy and its definition, etiopathogenesis, clinical presentation, investigation and management	1	Lecture	CE	Knows-how	L&PPT
CO1,CO2,CO4,CO5,CO6,CO7,CO8	Demonstrate diagnostic procedures like stool examination ,serology ,D xylose test, faecal fat excretion studies ,Lactose tolerance test, Breath test ,Barium meal follow, Jejunal biopsy used in malabsorption.	2	Practical27.12	PSY-GUD	Shows-how	LRI,DIS,CBL,SIM
CO1,CO2,CO4,CO5,CO6,CO7,CO8	Counsel patient for Diet Restriction (lactose, gluten) and Diet management in Malabsorption.	2	Experiential-Learning27.8	AFT-CHR	Does	RP,SIM,DIS,TUT
CO1,CO2,CO4,CO5,CO6,CO7,CO8	Diagnose and manage cases of malabsorption and chronic diarrhoea.	2	Experiential-Learning27.9	PSY-MEC	Does	SIM,PER,RP

Practical Training Activity

Practical Training 27.1 Gastro Intestinal disorders

Total learning hours :2 hours

Evaluation of Gastro intestinal disorders in Pediatrics

1.Case Base Discussion:(50 minutes)

Instructions: The teacher will present a case-based discussion (CBD) focusing on common pediatric GIT symptoms (vomiting, diarrhoea, abdominal pain).

- Divide Studentss into groups to analyze the case, identifying relevant history and physical examination findings.
- students will be asked to discuss the differential diagnosis based on history and clinical signs.

2.Patient Scenario using Role-Playing : (50 minutes)Teacher presents a hypothetical or real-life scenario involving

- pediatric GIT issue.Divide learners into groups to play role of 'doctor' and 'patient'.
- Encourage students to approach the case from the perspective of a pediatrician, considering history, physical examination, and family history.
- Teacher interexchange role within the group.
- Group Discussion & feedback where teacher facilitate the session where group present their case and finding.

3. Conclusion: (20 minutes) The teacher leads a group reflection session.

Practical Training 27.2 Routine and Special Investigations in GIT Disorders

Total learning hours: 2 hours

1. Demonstration for sample collection and interpretation (blood test ,stool test) (30 minutes)

Conduct a step-by-step live demonstration on how to collect and interpret stool samples and blood samples.

Present a Case requiring interpretation of blood tests (CBC, liver function) and stool studies.

Hands-On Practice : After the demonstration, learners will be given the opportunity to practice collecting samples (stool or blood) in a simulated environment.

Simulation-Based Learning: Use pediatric manikins to simulate real-life scenarios requiring GIT evaluation and sample collection. students will practice performing abdominal palpation and interpreting sign.

2. Illustrate the Role of Imaging and Endoscopic Procedures(30 minutes)

- **Discuss indications, Demonstration of procedures by Video clipping and simulation of interpretation.**Use Video Clipping to demonstrate the methods and techniques of imaging and endoscopic procedures and the role of imaging in detecting structural abnormalities.
- teacher will simulate the interpretation of a barium meal study, explaining how it aids in diagnosing motility disorders or obstructions.

- Discuss indications for pediatric endoscopy, including its role in diagnosi

Role-Playing Exercise

- Organize a role-playing scenario where students take on the roles of pediatricians, interpreting imaging findings.
- After role play,teachers and students come together for discussion on indication and interpretation of special investigation of GIT system

3. Case-Based Group Discussion and Feedback (60 minutes)

- The teacher divided students into small groups and give different case to each group.
- The teacher will present the findings from the case, including results from stool studies, blood tests, and imaging.
- Groups will analyze the results and discuss potential diagnosis for the patient.
- Teacher will provide feedback on the diagnostic and clinical approaches used by students.
- Teacher will provide a summary of the key takeaways from the session, including the significance of history taking, physical examination, and diagnostic testing in pediatric GIT cases.
- Encourage students to ask questions and review any areas of uncertainty.

Practical Training 27.3 Oral Cavity Examination

Total learning hours: 1 hour

Demonstration of examination of oral cavity.

1.Demonstration :(30 minutes)

Teacher demonstrates the complete examination of oral cavity (lips, teeth, gum, buccal cavity, tongue, palate, tonsils) and interpret about the findings by Demo on model or practical case taking .

2.Simulation: (20 minutes)

Divide students into pairs:Assign role of 'Examiner'and 'Patient' using simulation mannequins.Encourage students to evaluate clinically different diseases of oral cavity.

Assessment: (10 minutes) Teacher evaluates the student's skill of performing examination of oral cavity on model or mannequins.

Practical Training 27.4 Variuos Oral Cavity Diseases

Total learning hours :1 hour

1. Group discussion: Discuss clinical features of various oral cavity diseases and show pictures or images for differential diagnosis by audio video presentation and plan management strategies in unani and conventional medicine.(20 minutes)

2. Presentations: Assign one disease to one student and asked to review literature and text books and prepare presentation on key differentiating feature, diagnosis and management strategies of their disease with the help of visual aids like charts diagram, videos etc

Each student will present their presentation and share their finding about the concept of disease and its treatment plan **(usul-i Ilaj,Ilaj wa tadabir)** in Unani as well as Conventional medicine. (30 minutes)

3. Conclusion: Teacher will discuss and give constructive feedback on each student's presentation. (10 minutes)

Practical Training 27.5 Oral swab collection and application of topical medicine.

Total learning hour : 1 hour

Demonstration of correct technique for oral swab collection and topical application of Unani medicine

1. **Demonstration :**Teacher will Introduce the significance of oral swab collection for diagnostic purpose.Discuss the role of formulating effective nuskha and its application for alleviating the symptoms. Demonstration of oral swab collection and local application of drug on mannequin or case present (20 minutes)
2. **Hands on training** : The students should divide into small 3 groups and first group practise on mannequin for oral swab collection .second group formulate nuskha for hypothetical case and third group practise local application (zaroor, tila) on mannequin .(30 minutes)
3. **Conclusion**: In Group discussion talk on challenges during practise, emphasize on infection control.(10 minutes)

Practical Training 27.6 **Prevention of Oral Cavity Diseases in pediatrics**

Total learning hours: 1 hour

Objectives.Students must able to know the preventive measures of oral cavity diseases and precautions used in it.

1. **Group Discussion**- Teacher will discuss preventive and precautionary measure of oral cavity diseases as keeping oral hygiene, limit high sugar consumption, healthy diet ,regular checkups(20 minutes)
2. **Role Playing** : Teacher assign roles to students of 'Doctor', 'Parent', 'child' and present scenario of counselling of parents and child by doctor for preventing measures like Primary Prevention like Dietary modification, Oral hygiene practises and regular checkup with the help of visual aid (charts and posters) (30 minutes
3. **Conclusion** :The teacher shall summarise the key concepts covered in the practical. (10 minutes)

Practical Training 27.7 Clinical Evaluation of Diarrhoea

Total learning hour:2 hour

Evaluate the Clinical Presentation of Pediatric Diarrhoea

Demonsteration and Observation: Teacher will arrange Clinical evaluation sessions in pediatric wards where students learn to evaluate patients presenting with diarrhoea.

1. **Demonstration :(40 minutes)** Teacher will demonsterate the detailed history taking and and focus on clinical presentation such as the duration of diarrhoea, frequency of stools, dehydration, abdominal discomfort, and associated symptoms like vomiting and fever, fluid intake and urine output and show complete examination and assessment of dehydration
2. **Observation**: Students will observe teachers and seniors as they assess pediatric patients for signs of diarrhoea, focusing on hydration status, stool characteristics, and abdominal tenderness.
3. **Hands on practise**:**(60 minutes)**.Students will conduct complete physical examination for assessment of diarrhoeal dehydration and identify WHO classification of dehydration states as No, Mild, moderate and severe dehydration on real case or mannequins.
4. **Reflective Discussion: (20 minutes)** After the observation and practice, students will discuss their evaluation with teacher, focusing on recognizing key clinical signs of diarrhoea and signs of dehydration.

Practical Training 27.8 Treatment of diarrohea according to WHO

Total learning hour:2 hours

1.**Case Scenarios(50 minutes)** Use case scenarios to have practice determining the management plans of diarrhoea based on dehydration level of patient.

- Teacher will divide students in four groups and assign each group a hypothetical case of diarrhoea with no hydration, mild dehydration, moderate dehydration and severe hydration respectively.
- Ask each group to decide treatment plans of their case (plan A or B or C) and present thier case to teacher.

2.**Role playing (50 minutes)** Student role play as healthcare providers and patients.One student can present symptoms and states of dehydration and other prescribed treatment plan accordingly

3.**Conclusion and Feedback (20 minutes)**

- Teacher conduct group discussion and peer discussion to evaluate students 'understanding of dehydration and rehydration protocol.teacher give constructive feedback on presentation by students

Practical Training 27.9 Rehydration Therapy in Diarrhoea

Total learning hour :2 hour

Perform Rehydration Therapy (ORT and IV)

Demonstration: (40 minutes) Teacher will demonstrate the preparation of ORS and show the steps involved in administering both ORT and IV fluids

.

Simulation-Based Learning: (40 minutes) Utilize mannequins or simulation models for learners to practice administering ORT and setting up IV lines for fluid therapy.

Real-Time Feedback: (20 minutes) After each student's practice session, teacher provide feedback on the accuracy of ORT administration and IV insertion.

Discussion: (20 minutes) students discuss when to use ORT versus IV therapy, considering factors like the severity of dehydration and the child's ability to tolerate oral fluid. Teacher will review the session and engage students in a reflective discussion on what they have learned about managing diarrhoea, especially in resource-limited settings.

Practical Training 27.10 Observation and Interpretation of Gastrointestinal system(GIT) investigations.

Total learning hours:2 hours

- .**Instructions:**

1. **Demonstration**: (60 minutes) Faculty will demonstrate the collection of stool samples for microscopy (e.g., parasites, bacterial culture), and how to interpret relevant laboratory results like stool cultures, blood tests (CBC, electrolytes), and tests for malabsorption.
2. **Clinical Lab Visits**: (30 minutes) Arrange visit for students to the lab to observe the analysis of stool and blood samples.
3. **Real-Time Interpretation:**(30 minutes): students interpret stool test results and blood parameters and imaging investigation (Endoscopy) with teachers guidance.

Practical Training 27.11 Evaluation and management of Dysentery

Total learning hour: 2 hours

1.Identify the Clinical Presentation of Various type of Dysentery (60 minutes)

- **Clinical Evaluation**: Arrange clinical rotations or observational sessions where students can witness pediatric patients presenting with dysentery, recognize the clinical signs of various types of dysentery in children, including amoebic, bacillary, ***Zaḥīr*** Sadiq and ***Zaḥīr*** Kazib, paying attention to the severity of dysentery and dehydration
- **Observation**: Students observe healthcare providers diagnosing and treating children with dysentery..
- **Group Discussion:** After the observation, students will discuss key signs and symptoms of dysentery, such as blood in stools, and develop initial management plans.
- **Reflective Discussion**: Students will discuss their observations with teacher, focusing on the clinical approach and differential diagnosis between dysentery and other causes of dysentery.

2.Plan and PerformManagement of Dysentery (ORT, Medicine and Fluid Replacement therapy) (60 minutes)

1. **Demonstration**: Faculty will demonstrate how to administer ORT, prescribe appropriate medicine based on stool culture result and Unani Drugs for Aqsam-e-Zaheer.

2. **Simulation-Based Learning**:

Activity: Use a simulation model or pediatric mannequins to simulate the management of a child with IV Fluid replacement therapy due to dysentery.

3.Demonstrate how IV fluids are administered, what types of fluids are used, and how healthcare providers monitor vital signs during treatment.

4. Discuss when IV fluids are necessary and how they restore electrolyte balance.

5 .Follow-up: Encourage participants to seek medical help immediately in cases of severe dehydration.

6. Hands on Practise:student practice rehydration and Unani Medicine prescription, receiving feedback on their clinical judgment.

7. Reflective Discussion : Teacher reflect on the key learning points from the clinical and simulation activities related to dysentery

Practical Training 27.12 Interpretation of diagnostic Procedures used in GIT disorders.

Total learning hour:2 hours

Interpretation of diagnostic Procedures used in Malabsorption

1.Clinical Case Studies & Simulation (30 minutes)

- Teacher will present students,patient case scenarios that mimic real-life malabsorption syndromes (e.g., celiac disease, lactose intolerance).
- Ask students to identify key clinical features, suggest differential diagnoses, order relevant investigations, and propose treatment plans.
- Student play role of simulated patients (actors) and doctor

2.Interpreting Laboratory Results (30 minutes)

Instructions: Provide students with sets of lab results including:

- **Blood tests:** Complete blood count (CBC), vitamin B12, folate, iron, calcium, and albumin levels.
- **Stool tests:** Stool fat quantification, fecal elastase, and occult blood tests.
- Ask students to match abnormal results to potential underlying conditions like fat, protein, or carbohydrate malabsorption.

3.**Small Group Discussion on Imaging & Endoscopic Findings(30 minute**)

- Present radiographic images (e.g., CT, MRI, or small bowel follow-through) and endoscopic findings (e.g., villous atrophy in celiac disease of different cases to students.

- Discuss how these findings correlate with specific malabsorption conditions and their pathophysiology.

4.**Conclusion and Reflection: (30 minutes)**

Instructions: To summarize the key learning points from the practical activities on the diagnosis of mal absorption, teacher will review the session and engage students in a reflective discussion on what they have learned about diagnosing malabsorption.

Experiential Learning Activity

Experiential-Learning Learning 27.1: Sample collection in clinical skill lab .

Total learning hours:4 hours

Perform and practise Clinical Evaluation and Investigations in Real or Simulated Settings

1. Student will participate in a supervised clinical setting or role play to perform a full GIT examination, including inspection, palpation, percussion, and auscultation of the abdomen.(90 minutes)
2. Students will also simulate the collection of stool samples and blood tests for further investigation.(60 minutes)
3. **Simulation-Based Learning:** Use pediatric manikins to simulate real-life scenarios requiring GIT evaluation and sample collection. Students will practice performing abdominal palpation and interpreting sign. (60 minutes)
4. **Feedback**: Teacher will give constructive feedback and assess the performance of clinical evaluation and diagnosis of students .(30 minutes)

Experiential-Learning Learning 27.2: Diagnostic Workshop.

Total learning hour: 2 hour

Workshop

Instructions: Students will attend workshop on recent diagnostic procedures used in GIT so as they better know indications ,contraindication and interpretations of special investigations by expertise pathologist and radiologist.

- In workshop they get chance to see different cases and learn correct interpretations knowledge and recent advancement in special diagnostic investigation of GIT disorders.

- if worksop is not available student will simulate workshop by bringing different cases with advanced investigation and work on its lab report interpretataion.

Discussion: Students will discuss and share key takeaways from workshop with faculty

Experiential-Learning Learning 27.3: Evaluation and Management of Oral Cavity Diseases

Total learning hours: 6 hours

Examination, Diagnosis and Management planningof Oral Cavity diseases.

1.Case Presentation: (3 hours)Teacher will assign each student different cases of oral cavity diseases.

Clinical Assessment: each students conduct a comprehensive clinical assessment including history taking and examination and diagnosis of different cases

Management plan: student also develop management (Unani and Conventional medicine) plans of oral cavity diseases which includes oral drugs, topical application ,diet restriction and prevention .

Assessment by faculty : In the end teacher will discuss remarks for presentation and documentaion of findings of every students after understanding and evaluating student skill for diagnosis and management of oral cavity diseases.

2..**Role Play or Simulation** :(3 hours)

- Divide students into pairs:
- Assign role of 'Examiner' and 'Patient' using simulation mannequins or roleplay(one student will play role of patient itself)
- Encourage students to evaluate clinically and manage different diseases of oral cavity.

Assessment: Teacher evaluates the student's skill of clinical evaluating and managing patient of different Oral cavity disease on simulation or roleplay.

Experiential-Learning Learning 27.4: Counselling for prevention for diarrhoea

Total learning hour : 3 hour

Role Playing and case scenario of Parent Counselling for diarrhoea patient

1.Scenario Set Up: (15 minutes) Create scenario where parents of child with diarrhoea are concerned about their child diet and nutrition. the lstudents are in two group .One will act as health care provider and other mimic parents role

2..**Counselling focus: (120 miutes)**

- the students acting as health care provider must focus followings points

1. Teach parents how to prepare and use **oral rehydration solutions (ORS)** to prevent dehydration, a common issue in diarrhoea(30 minutes).

Activity: Provide participants with ingredients (water, salt, sugar) and demonstrate how to make a homemade ORS. Show how to measure ingredients and explain the importance of each component for replacing lost fluids and electrolytes.

2. Must help parents to understand which foods to include and avoid during episodes of diarrhoea. (30 minutes)

- **Activity**: Provide parents with lists of foods that are easy on the digestive system (e.g., rice, bananas, applesauce, toast—often referred to as the BRAT diet) and those that should be avoided (e.g., high- fibre, greasy, or spicy foods). Let participants create a meal plan for one day of recovery, balancing easily digestible carbohydrates, low-fat proteins, and hydration

3. Teach participants how to monitor **hydration status and electrolyte balance** during diarrhoea.(30 minutes)

- **Activity**: Provide parents with tools like a urine colour chart to assess their hydration status. Discuss symptoms of dehydration (dry mouth, reduced urination, dizziness) and the role of electrolytes like sodium and potassium in recovery. Offer examples of foods rich in these electrolytes, such as bananas and coconut water.

4. Explain the role of **probiotics in restoring gut health** during and after diarrhoea.(30 minutes)

Activity: Provide different types of probiotics -rich foods (e.g., yogurt, fermented foods) for a taste test. Discuss how probiotics can help restore the gut's bacterial balance after diarrhoea caused by dysentery. Encourage participants to try including these foods in their diet once symptoms improve

3.**Feedback**: (45 minutes) After the role play,provide feedback to the students on their communication clarity ,empathy ,and ability to convey important health information.

Experiential-Learning Learning 27.5: Patient Interview for diarrhoea

Total learning hours :3 hours

Patient Interview for Diarrhoea

Instructions: teacher will arrange Clinical evaluation sessions in pediatric wards where student conduct patient interview and clinical examination to evaluate patients presenting with diarrhoea.

- Focus on the history taking and clinical presentation such as the duration of diarrhoea, frequency of stools, dehydration, abdominal discomfort, and associated symptoms like vomiting and fever, fluid intake and urine output

Role Play or Simulate Case Scenario: Student will create case scenario with peer where they play role of a' doctor ' , 'patient' and' parents' and interexchange their roles so every student can get chance to examine and interview patient. they will do in two parts :

Part 1: Patient Interview

1. Introduction and Rapport Building (20 minutes)

- **Student will introduce themself** to the patient (or simulated patient).
- **Explain the purpose** of the interview and examination.
- **Assure confidentiality** and establish a comfortable environment for open communication.

2.. Chief Complaint and History of Presenting Illness (20 minutes)

- **Ask open-ended questions** to elicit the patient's chief complaint.
- **Explore the details of the diarrhea**

3. Past Medical History (5 minute)

4. Dietary History and Travel (5minutes)

5. Family and Social History (10 minutes)

6. Review of Systems (10minutes)

Part 2: Clinical Examination

1. General Inspection (10min)

2. Vital Signs (10 minutes).

3. Abdominal Examination (20 minutes)

4. Hydration Assessment (10 minutes)

Part 3: Case Discussion , Reflection and feedback (60 minutes)

- **Discuss findings** from the interview and examination.
- **Formulate a differential diagnosis**:
- **Reflect on the process**: faculty will encourage participants to share their thoughts on what went well and areas for improvement in their interview and examination skills.
- **Provide feedback** on clinical reasoning, patient interaction, and examination techniques.

This activity should take about 3 **hours** in total and can be adjusted based on time and number of participant

Experiential-Learning Learning 27.6: Evaluation and management of dysentry

Total learning hours:2 hours

Identify the clinical presentation of Dysentery and its management

1. **Case-Based Learning:** Teacher will assign a different case of a child with symptoms suggestive of dysentery to each student.(10 minutes
    1. **Case Review:** student will develop a diagnostic approach for dysentery and plan management (usul-i- Ilaj)(50 minutes)
    2. **Role-Playing:** Students role-play interactions with a patient and their parents to discuss lifestyle modifications, dietary changes (Ghidha wa Parhez), and the use of probiotics.(30 minutes)
    3. **Reflective Discussion**: students will discuss their observations with teachers , focusing on the clinical approach and management(30 minutes)

Experiential-Learning Learning 27.7: Treatment strategies of Dysentery

Total learning hour :2 hours

Perform Management of Dysentery (medicine ORT and IV fluid therapy)

1.Problem based learning : (75minutes)

- Teacher will divide students into groups.teacher give different case of dysentery (amoebic, bacillary, zahir kazib zahir sadiq)with all lab reports **to** different students and ask to plan management for given case..
- Student will plan and develop management accordingly (Unani Usul-i-ilaj & Ilaj ,conventional medicine , ORT or fluid replacement therapy).

- One group will demonstrate usoole ilaj ,ilaj ,tadabeer ,ghiza and parhez (unani treatment)
- One group will demonstrate how to administer ORT and prescribe appropriate antibiotics based on stool culture results.
- One group will demonstrate the administration of fluid replacement therapy. Use pediatric maniquinss to simulate the management of a child with severe dehydration due to dysentery.

2.Feedback and Discussion:(45 minutes)

Teacher will give constructive feedback on student's performance of managing dysentery patient. Also discuss effectiveness of Unani drugs , when to initiate antibiotics and the choice of antibiotics based on the suspected bacterial cause (e.g., Shigella, E. coli),use of iv fluid replacement therapy.

Experiential-Learning Learning 27.8: Diet Counselling for malabsorption

Total learning hours:2 hours

1.. **Patient Role-Play: Counselling for Diet Management(60 minutes)**

Role-Play Counselling Sessions:

-
  - Assign students to pairs, where one plays the patient and the other the healthcare provider. Provide a brief clinical history for each "patient" with a specific malabsorption condition.
  - The "healthcare provider" will conduct a counselling session, discussing the appropriate dietary changes, addressing concerns, and creating a manageable diet plan.
  - Conditions to focus on include:
    - **Lactose intolerance**: Eliminate or limit dairy, suggest lactose-free alternatives.
    - **Celiac disease**: Strict gluten-free diet, reading labels, avoiding cross-contamination.
    - Rotates roles to ensure each student practices counselling.

Teacher's Role: Rotates roles to ensure each student practices counselling.Observe the role-play and provide feedback on communication skills, clarity of explanations, and empathy. Highlight the importance of assessing patient understanding and addressing barriers to adherence

2. Creating a Meal Plan for Malabsorption (30 minute)

Instructions:

- **Meal Planning Activity**: Assign each student a malabsorption condition (e.g., celiac disease, lactose intolerance, fat malabsorption). Ask them to create a 3-day meal plan that:
    - Avoids triggering foods.
    - Ensures adequate nutrition.
    - Fits the patient's lifestyle and preferences.

Materials: Provide sample templates for meal plans, lists of common foods (with labels indicating lactose-free, gluten-free, low-fat, etc.), and nutrient-rich alternatives.

Teacher's Role: Review meal plans for practicality and nutritional completeness. Encourage students to think about cultural preferences, access to foods, and convenience for patients

3.. Reflection and Discussion(30 minutes)

Instructions::

- **Group Reflection**: Organize a group discussion where students can share their experiences, challenges they faced, and lessons learned from the activities. Encourage them to reflect on how these skills will help them in future clinical practice.

Teacher's Role:Teacher facilitate the discussion, encouraging critical thinking and application of knowledge to real-world settings.

Experiential-Learning Learning 27.9: Malabsorption Syndrome Management

Total learning hours: 2 hours

1.Clinical Case Studies & Simulations (30 minutes)

- **Activity:** Present students with patient case scenarios that mimic real-life malabsorption syndromes (e.g., celiac disease, lactose intolerance, chronic pancreatitis).
- Symptoms: chronic diarrhoea, weight loss, nutritional deficiencies.

- Ask students to identify key clinical features, suggest differential diagnoses, order relevant investigations, and propose treatment plans.
- Use peer as actor in the role ‘health care provider’ and’ patient ‘ and perform evaluation and plan treatment , lifestyle modifications and diet restriction based on diagnosis.
- Teacher will interexchange the roles within the group
- **Assessment**: teacher will assess each student’s performance of evaluation case presented in case scenario and its management
- **Feedback:** facilitate discussions about the case evaluation and planning of management.

2.. **Patient Role-Play: Counselling for Diet Management(40 minutes)**

- **Role-Play Counselling Sessions**:
  - Assign students to pairs, where one plays the patient and the other the healthcare provider. Provide a brief clinical history for each "patient" with a specific malabsorption condition.
  - The "healthcare provider" will conduct a counselling session, discussing the appropriate dietary changes, addressing concerns, and creating a manageable diet plan.
  - Conditions to focus on include:
    - **Lactose intolerance**: Eliminate or limit dairy, suggest lactose-free alternatives.
    - **Celiac disease**: Strict gluten-free diet, reading labels, avoiding cross-contamination.
  -
  - Rotate roles to ensure each student practices counselling.

Teacher's Role: Observe the role-play and provide feedback on communication skills, clarity of explanations, and empathy. Highlight the importance of assessing patient understanding and addressing barriers to adherence

3. Creating a Meal Plan for Malabsorption(30 minutes)

Instructions:

- **Meal Planning Activity**: Assign each student a malabsorption condition (e.g., celiac disease, lactose intolerance, fat malabsorption). Ask them to create a 3-day meal plan that:

- Avoids triggering foods.
- Ensures adequate nutrition.
- Fits the patient's lifestyle and preferences.

Materials: Provide sample templates for meal plans, lists of common foods (with labels indicating lactose-free, gluten-free, low-fat, etc.), and nutrient-rich alternatives.

Teacher's Role: Review meal plans for practicality and nutritional completeness. Encourage students to think about cultural preferences, access to foods, and convenience for patients

4.. Reflection and Discussion (20 minutes)

- **Group Reflection**: Organize a group discussion where students can share their experiences, challenges they faced, and lessons learned from the activities. Encourage them to reflect on how these skills will help them in future clinical practice.

Teacher's Role: Facilitate the discussion, encouraging critical thinking and application of knowledge to real-world settings.

5. Assessment

.**Instructions:**

- **Practical Exam**: Have students perform a diet counselling session with a standardized patient or case-based scenario, including a dietary assessment, meal plan creation, and counselling.
- **Written Assessment**: Use a case study-based exam where students must recommend dietary interventions for patients with different malabsorption syndromes, identifying key food restrictions, substitutions, and supplements.

Teacher's Role: Provide detailed feedback, focusing on communication skills, accuracy of dietary advice, and empathy.

Conclusion: experiential activities like role-playing, meal planning, and food label reading help students gain hands-on experience in diet counselling for malabsorption syndromes. Encourage active participation, critical thinking, and patient-centred communication throughout these exercises to help prepare students for real-world clinical practice.

Modular Assessment

Assessment	Hour
Instructions- Conduct a structured Modular Assessment. The assessment will be for 50 Marks . Keep a structured marking pattern. Use different Assessment methods in each module for the semester. Keep a record of the structured pattern used for assessment. Calculate the Modular grade point as per Table 6C. 1. **Objective Structured Clinical Examination (OSCE**)(15 marks) • **Instructions**: Set up an OSCE station simulating a clinical scenario, like performing an abdominal examination or interpreting investigations results. • **Criteria**: 1.History Taking -2marks 2.Physical Examination -3marks 3.Diagnosis and Differential Diagnosis 2marks 4.Investigation and interpretation -3 marks 5.Treatment and Management plan -3 marks 6.Patient counseling and Communication-2 marks 2 **Class Presentation (10 Marks)CL-PR** • **Instructions**: Have students collaborate to present on a GastroIntestinal system disorder's treatment strategies, with each student focusing on a specific aspect • **Criteria**: o Content depth (4 marks) o Presentation skills (3 marks) o Team collaboration (2 marks) o Use of visual aids (1 mark) 3 **Conducting Interview (15 marks)C-INT**	4

- **Instructions:** Students conduct interview of patient for gastrointestinal disorders and document it properly.
- **Criteria:**

1. Introduction and Rapport Building (2Marks)

2. Patient History (5 Marks)

- Chief Complaint (1 Marks
- History of Present Illness (1 Marks)
- Past Medical History (1Marks)
- Family History (1 Mark)
- Social History (1 Marks)

3. Symptom Inquiry(2 Marks)

4. Physical Examination Components (2Marks)

5. Closure and Summary (2 Marks)

6. Professionalism and Communication Skills (2 Marks)

4. **Short Answer Questions (SAQs) (10 Marks)**

- **Instructions**: Provide SAQs related to pathophysiology, diagnosis, and treatment options for different GIT disorders.
- **Criteria**:
    - Accuracy of information (5 marks)
    - Conciseness (3 marks)
    - Relevance to the question (2 marks)

Any Practical in converted form can be taken for assessment (15 Marks)

and

Any Experiential, such as portfolios/ reflections/ presentation can be taken as an assessment. (35 Marks)

Module 28 : امراض نظام ہضم وامراض کبد۔دوم (Amrāḍ-i-Niẓām-i-Haḍm aur Amrāḍ-i Kabidi-II (Gastro intestinal and Hepatobiliary Disorders -2)

Module Learning Objectives

(At the end of the module, the students should be able to)

1. Discuss the symptoms of common paediatric Gastrointestinal system(GIT)disorders
2. Develop skill in evaluation and diagnosis of gastrointestinal diseases.
3. Describe patho-physiology process of GIT disorders can present differently in children than adults.
4. Discuss the indications and limitations for special investigations for GIT system.
5. Manage paediatric gastroenterological disorders.
6. Describe Unani concept of disease with their management (asbab, aqsam ,tashkis ,usul-i Ilaj ,Ilaj ,IBT regimen ,ghida wa parhez) and conventional medicine as required.
7. Diagnose and manage severe GI diseases.
8. Counsel parents for dietary restriction(ghida aur parhez) and nutrition.

Unit 1 Irritable Bowel Syndrome

28.1.1 Irritable bowel syndrome

28.1.2 Inflammatory Bowel Disease

References: 31,34,46,63

3A	3B	3C	3D	3E	3F	3G
CO1,CO2,CO4,CO5,CO6,CO7,CO8	Describe Inflammotory Bowel Disease (IBD)and its pathophysiology ,types,clinical feature, diagnosis, prognosis, complication and management	1	Lecture	CE	Knows-how	L&GD,L&PPT
CO1,CO2,CO4,CO5,CO6,CO7,CO8	Demonstrate how to diagnose Irritable Bowel Syndrome (IBS)	2	Practical28.1	CC	Shows-how	D,SIM

CO1,CO3,CO4,CO5,CO6,CO7,CO8	Discuss efficacy of Unani drugs in the treatment of IBS.	2	Practical28.2	CC	Shows-how	DIS,BS,PER
CO1,CO2,CO4,CO5,CO6,CO7,CO8	Discuss and present the concept of Asbabe sitta zaruriya and its relevance in IBS treatment.	2	Experiential-Learning28.1	PSY-MEC	Does	JC,DIS
CO1,CO2,CO4,CO5,CO6,CO7,CO8	Discuss and present diagnosis and management strategies for IBS.	2	Experiential-Learning28.2	PSY-MEC	Does	PL,PER,SIM,DIS,RP
CO1,CO2,CO4,CO5,CO6,CO7,CO8	Describe Irritable Bowel Syndrome (IBS) and its pathophysiology ,types,clinical feature, diagnosis, prognosis, complication and management	1	Lecture	CE	Knows-how	FC,L&PPT
Unit 2 قولنج Qūlanj /Abdominal colic (Qūlanj wa mugas) 28.2.1 قولنج Qūlanj / mugas (Abdominal colic) 28.2.2 ورم قولون Waram-i- qolon (Colitis) 28.2.3. Appendicitis **References:** 31,41,43,63						
3A	**3B**	**3C**	**3D**	**3E**	**3F**	**3G**

CO1,CO2,CO4,CO5,CO6,CO7,CO8	Describe Qūlanj and Mugas and its asbab, aqsam, tashkis, tashkis, usul- i- Ilaj,Ilaj, ghida, parhez and tadabir (abzan)	1	Lecture	CE	Knows-how	L&PPT ,L&GD
CO1,CO2,CO4,CO5,CO6,CO7	Describe Waram-i- qolon (Colitis) and its asbab,aqsam,alamat tashkis and ilaj.	1	Lecture	CC	Knows-how	L&PPT
CO1,CO2,CO4,CO5,CO6,CO7,CO8	Demonstrate how to assess abdominal pain in children.	2	Practical28.3	PSY-GUD	Shows-how	D,SIM,RP
CO1,CO2,CO4,CO5,CO6,CO7,CO8	Demostrate diagnostic test for (imaging studies and lab tests) for Abdominal Pain.	1	Practical28.4	PSY-GUD	Shows-how	CBL,LRI,D,DIS
CO1,CO2,CO4,CO5,CO6,CO7,CO8	Demonstrate how to manage abdominal Pain and provide fluid therapy if required.	1	Practical28.5	PSY-GUD	Shows-how	CBL,DIS
CO1,CO2,CO4,CO5,CO6,CO7,CO8	Diagnose and document abdominal pain of different aetiology.	2	Experiential-Learning28.3	PSY-MEC	Shows-how	SIM,PBL,CBL,DIS
CO1,CO2,CO4,CO5,CO6,CO7,CO8	Formulate usool e ilaj wa ilaj for a child with abdominal pain.	2	Experiential-Learning28.4	PSY-MEC	Does	RP,DIS,SIM

CO1,CO2,CO4,CO5,CO6	Review and present litrature about Qulanj (Abdominal pain)	2	Experiential-Learning28.5	PSY-MEC	Does	DIS,JC
Unit 3 قَيْء Qay' (Vomiting) 28.3.1 Cyclic Vomiting Syndrome **References:** 31,41,44,63,85						
3A	**3B**	**3C**	**3D**	**3E**	**3F**	**3G**
CO1,CO2,CO4,CO5,CO6,CO7,CO8	Describe Vomiting and its aetiology, types, diagnosis, differential diagnosis and management and explain Unani concept of Qay' and its asbab, aqsam, tashkis and ilaj.Also explain Cyclic Vomiting Syndrome.	2	Lecture	CE	Knows-how	L&GD,L&PPT
CO1,CO2,CO4,CO5,CO6,CO7	Demonstrate local and systemic examination and discuss different aetiology of Vomiting.	2	Practical28.6	PSY-GUD	Shows-how	SIM,D
CO1,CO2,CO4,CO5,CO6	Develop skills in use of medical equipment (IV cannula, nasogastric tube) for approach to Vomiting.	2	Practical28.7	CS	Shows-how	RLE,CBL,D-M
CO1,CO2,CO4,CO5,CO6,CO7,CO8	Demonstrate skills to manage Vomiting case.	2	Experiential-Learning28.6	PSY-MEC	Does	CBL,RP,PBL,SIM

CO1,CO2,CO4,CO5,CO6,CO7,CO8	Diagnose dehydration and electrolyte Imbalance in Vomiting cases.	2	Experiential-Learning28.7	PSY-GUD	Does	CBL,PBL,D,RP,PER
CO1,CO2,CO4,CO5,CO6,CO7,CO8	Counsel parents about diet for children with Vomiting	2	Experiential-Learning28.8	AFT-CHR	Does	PER,PAL
Unit 4 Qabd (Constipation) 28.4.1 Organic Constipation 28.4.2 Functional (Non Organic) Constipation **References:** 31,41,44,63						
3A	**3B**	**3C**	**3D**	**3E**	**3F**	**3G**
CO1,CO2,CO4,CO5,CO6,CO7,CO8	Describe Constipation and its predisposing factors, aetiology ,types, diagnosis, prevention ,treatment.	1	Lecture	CE	Knows-how	L&PPT
CO1,CO2,CO4,CO5,CO6,CO7	Describe Unani concept of *qabd* including asbaab, alaamat ,usul -i-Ilaj ,Ilaj ,ghida ,parhez and tadabir.	1	Lecture	CC	Knows-how	L&GD
CO1,CO2,CO4,CO5,CO6,CO7,CO8	Demonstrate how to diagnose Constipation.	2	Practical28.8	PSY-GUD	Shows-how	SIM,LRI,L&GD,DIS,L_VC

CO1,CO2,CO4,CO5,CO6,CO7	Demonstration of therapeutic regimen (use of rectal suppository, huqna) in Constipation.	2	Practical28.9	PSY-GUD	Shows-how	D,SIM
CO1,CO2,CO4,CO5,CO6,CO7,CO8	Diagnose constipation and document its usool e ilaj wa ilaj and Practise rectal examination and IBT regimen (huqna, shayaf takmeed) for Constipation on paediatric mannequin.a	2	Experiential-Learning28.9	PSY-MEC	Does	PER,CBL,DIS,D
CO1,CO2,CO4,CO5,CO6,CO7,CO8	Cousel parents to prevent Constipation through lifestyle modification, dietary changes and other strategies along with medicine to their children.	2	Experiential-Learning28.10	AFT-VAL	Does	D,RP,BS,RLE

Unit 5 . امراض المقعدAmrāḍ-i-Maq'ad (Diseases of Rectum

28.5.1 خروج المقعد Khurūj al-Maq'ad (Rectal prolapse)

28.5.2 ورم المقعد Waram al-Maq'ad (Proctitis)

References: 31,41,52

3A	3B	3C	3D	3E	3F	3G
CO1,CO2,CO4,CO5,CO6,CO7,CO8	Describe Warm-al Maqad and its aqsam,abab ,alamat tashkis ,usul -i-Ilaj , Ilaj wa tadabir(abzan,tila)	1	Lecture	CE	Knows-how	L&PPT
CO1,CO2,CO4,CO5,CO6,CO7,CO8	Describe Khurooj-al maqad (rectal prolapse) and its asbaab, alaamat usul- i-ilaj ,ilaj, tadabir and tahafuzzi tadabir	1	Lecture	CE	Knows-how	FC,L&GD

CO1,CO2,CO4,CO5,CO6,CO7,CO8	Demonstrate the skills to evaluate rectal prolapse and proctitis and understand procedures of specific investigation techniques.	2	Practical28.10	PSY-GUD	Shows-how	DIS,RP,SIM
CO1,CO2,CO4,CO5,CO6,CO7	Practise conservative treatment and therapies (IBT regimen like abzan, hamool) and physiotherapy for Rectal Prolapse and Proctitis and apply them to analyse effectiveness.	2	Practical28.11	AFT-SET	Shows-how	RP,D,SIM,DIS,BS
CO1,CO2,CO4,CO5,CO6,CO7,CO8	Review and present litrature about Rectal Prolapse and Proctitis	3	Experiential-Learning28.11	PSY-MEC	Shows-how	JC
CO1,CO2,CO4,CO5,CO6,CO7,CO8	Counsel parent for diet management and prevention of Rectal Prolapse and Proctitis.	3	Experiential-Learning28.12	PSY-MEC	Does	DIS,CBL,W,SIM,RP

Practical Training Activity

Practical Training 28.1 Evaluation and Diagnosis of Irritable Bowel Syndrome (IBS)

Total learning hours: 2 hours

1.Introduction to IBS:(20 minutes)

- teacher will introduce the session, discussing the etiology of IBS, including the role of gastrointestinal motility issues, gut-brain axis dysfunction, and psychological factors.
- Highlight the importance of a thorough history and the use of diagnostic criteria to differentiate IBS from other gastrointestinal conditions.

2.Clinical Evaluation of IBS: (40 minutes)

History Taking: Faculty will demonstrate how to collect a detailed history and documentation of it.

Physical Examination:

- Teacher will demonstrate the key components of the physical exam:
- Inspection and Palpation: Look for abdominal tenderness, bloating, or signs of obstruction.
- Auscultation: Evaluate bowel sounds to assess for hyperactive or hypoactive bowel activity.

3. Hands-On Practice: (40 minutes) After the demonstration, Students will be given the opportunity to practise diagnostic techniques to rule out other gastrointestinal disorders and confirm the diagnosis of IBS.

Instructions: Teacher will divide students into groups

- One group will practice history-taking and physical examinations on simulation models or peer volunteers, focusing on IBS symptoms.
- Second group discuss Diagnostic techniques for IBS
- **Rome IV Criteria:** Teach the Rome IV diagnostic criteria for IBS.
- Need of lab test to exclude other conditions from IBS as blood count, Thyroid Function Tests, Celiac Disease Serology etc.
- Imaging: Discuss the limited role of imaging unless red flag symptoms are present. Explain when a colonoscopy or abdominal ultrasound may be required.

4. Conclusion: (20 minutes)

- Faculty will provide a summary of the key takeaways from the session, including the significance of history taking, physical examination, and diagnostic testing in pediatric GIT cases.
- Encourage learners to ask questions and review any areas of uncertainty.
- Open the floor for questions to clarify any uncertainties regarding IBS diagnosis and management

Practical Training 28.2 Role of Unani Drug in treatment of IBS.

Total learning hours :2 hours

I.Group Discussion and Presentation(90 minutes)

Instructions: Teacher will present and discuss the efficacy of unani drugs in treatment of IBS .

1.Introduction of IBS: Teacher will introduce IBS by explaining the pathophysiology and clinical features of it.

2.Group Discussion and Brain storming session:

Assign each student one point of evaluation of IBS by literary research,discuss and present under following points:

a) Inclusion and Exclusion Criteria:

b)Baseline Assessment

- **Patient History**:
- **IBS Symptom Severity Score (IBS-SSS)**:
- **Quality of Life (QoL)**
- **Lab Tests**:

c)Unani Treatment:

-
  - Formulate the Unani treatment based on **Ilaj bil Dawa** (Pharmacotherapy) principles according to type of IBS of predominance. Treatment may include **Mullayinath (Laxatives)**, **Qabisath**(Astringent)**Muqawwi-e-Meda (digestive tonics)**, eg **Jawarish -e -shahi** are one of the good unani compound preparations.
  - **Dose & Administration**: Define the dosage, form (decoctions, pills, powders), and duration
- **d)Dietary Advice**: Unani treatments often include specific dietary modifications based on the patient's temperament (Mizaj). Provide these guidelines.

e)Monitoring & Follow up:

f)Outcome Assessment:

g)Data Analysis:

h)Documentation & Reporting

3.Wrap up and Discussion (30 minutes): Conduct a wrap up session where students share their experience from the presentation.

Practical Training 28.3 Evaluation of Abdominal pain

Total learning hour :2 hour

Clinical Evaluation of Abdominal Colic.

1. Demonstration: (40 minutes)

Faculty will demonstrate how to evaluate a patient with abdominal pain, focusing on:

History Taking:

- Onset, duration, and location of pain (e.g., colicky, cramping, or sharp)
- Associated symptoms (e.g., nausea, vomiting, diarrhea, constipation)
- Aggravating and relieving factors
- History of previous episodes and relevant surgical or medical history.

Physical Examination:

- Inspection for distension or visible peristalsis.
- Palpation for tenderness, guarding, or masses.
- Percussion for tympani (indicating gas) or dullness (indicating fluid).
- Auscultation for bowel sounds (e.g., hyperactive in obstruction or absent in ileus)

2.Hands-On Practice: (50 minutes)

- Learners will practice history-taking and abdominal examination techniques on simulation models or peer volunteers by role playing.

3. **Patient Scenario using Role-Playing**:

- Teacher presents a hypothetical or real-life scenario of abdominal colic
- Divide learners into groups to play role of ‘doctor’ and ‘patient’.
- Encourage learners to approach the case from the perspective of a pediatrician, considering history, physical examination, and family history.
- Teacher interexchange role within the group.
- Group Discussion & feedback where teacher facilitate the session where group present their case and finding.

4.Conclusion: The teacher leads a group reflection session. (30 minutes)

Practical Training 28.4 interpretation of Diagnostic tests for Abdominal Pain

Total learning hours: 1 hours

1. Indication and interpretation of diagnostic Techniques for Abdominal Colic .

1. Discussion: (15 minutes)

Laboratory Investigations: Teacher will discuss the role of various lab test and imaging studies eg.usg ,endoscopy ,ct scan etc to determine the cause of abdominal colic and interpret the imaging studies eg.usg ,endoscopy ,ct scan etc

2.Case Studies and Application. (20 minutes)

Clinical Scenario: teacher present case studies that require the application of these diagnostic procedures .Engage students in discussing and deciding which test has to be done based on clinical presentation.

Interpreting Results: then students will review and interpret the lab test reports and abdominal ultrasound or X-ray images of same patients case with suspected abdominal colic, guided by faculty.

3.Conclusion: teacher will facilitate a discussion where groups present their case analyses.(10 minutes)

Practical Training 28.5 Management of Abdominal Pain.

Total Learning hours:1 hour

Management of Abdominal Colic

- Engage students in group discussion and simulation scenarios on simulated case studies.

1. **Group Discussion (15 minutes)**

- Present real life or simulated case studies where student must identify the severity of pain and associated symptoms and requirement of fluid replacement therapy
- Teacher will discuss the role of hydration an d pain relief (e.g.I V fluid , conventional drugs and Unani management for pain (usoole ilaj, ilaj bil dawa, and ilaj bil tadbeer)
- Teacher will explain when to use antispasmodics, laxatives, or other group of medicine depending on the cause.

2. **Scenario-Based Learning: (20 minutes)**

- Teacher will present case scenarios (e.g., a child with abdominal colic with moderate dehydration), and teacher will develop appropriate treatment plans (pain management and rehydration) and demonstrate IV fluid replacement therapy on mannequins.

3. **Hands on Practise:(15 minutes)**

- Learners observe teacher's demonstration of pain relief management.
- Practise it on a hypothetical case given by teacher and develop management plan for that case, perform IV fluid replacement therapy on mannequins if required and present to the teacher.

4.Feedback and Discussions : (10 minutes)

- Teacher will provide constructive feedback on assessment, evaluation and management of pain in case presents by learner and also on skills to administer IV fluid replacement therapy.

5.Conclusion and Q&A

- Faculty will recap the essential points covered during the session, focusing on the importance of differentiating between functional and serious causes of abdominal colic and ensuring proper management.
- Open the floor for questions to clarify any uncertainties regarding the evaluation and management of abdominal colic.

Practical Training 28.6 Comprehensive examination for diagnosis of Vomiting

Total learning hour :2 hours

Clinical Evaluation of Vomiting

1.Demonstration of Comprehensive Examination:(40 minutes)

Instruction: teacher will demonstrate the following key aspects of examination on real patient or mannequin for clinical evaluation of vomiting

1.Physical Examination

2.General Examination

3.Abdominal Examination

4.Neurological Examination

2.Group Discussion: (20 minutes)

- Teacher will discuss the result of complete history taking and comprehensive examination finding and its correlation with different etiology of vomiting .they also discuss various clinical presentation and associated symptoms with vomiting .

3.Hands-On Practice: (40 minutes)

Simulation- Based Activities

- **Simulate vomiting scenario:** students will practice history-taking and conducting physical examinations on simulation models or peers, with a focus on identifying possible causes of vomiting.

Assessment: Teacher will assess performing complete examination done by students on simulation models for approach to vomiting.

3Feedback:(20 minutes) Conduct a feedback and discussion session where students share their key takeaways of demonstration done by teacher and from the activity and challenges face during hands on practices.

Practical Training 28.7 Practice of InterVenous (IV) cannula and Nasogastric tube in management of vomiting

Total learning hours:2 hours

1.Group Based Discussion: (30 minutes)

Instruction

- teacher will present real life or simulated case where students discuss the importance of fluid replacement and electrolyte rebalancing, especially in cases of dehydration or persistent vomiting. Explain when to use oral rehydration vs. intravenous (IV) fluids. identify the need of iv administration

2. **Demonsteration and Hands on skills training :(60 minutes)**

Instructions:

- Demonstrate correct technique to administer IV cannula or naso gastric tubes for management of vomiting on mannequins by teacher

- Ask students to practise for mannequin under guidance of teacher
-

3.**Feedback and Discussion(20 minutes)**

Instructions:

Provide constructive feedback on clinical reasoning and therapeutic interventions, emphasizing the importance of early detection and management in serious causes of vomiting.

4. **Conclusion and Q&A (10 minutes)**

Instructions:

- teacher will recap the essential points covered during the session, focusing on the importance of differentiating between functional and life-threatening causes of vomiting and ensuring proper management.
- Open the floor for questions to clarify any uncertainties regarding the evaluation and management of vomiting.

Practical Training 28.8 Evaluation of Constipation by history taking and examination

Total learning hours :2 hours

1. Group Discussion and Demonsteration with the help of videos and PPT: (60 minutes)

- teacher will introduce constipation, discussing its prevalence, classifications and common causes.
- Highlight the importance of accurate diagnosis for effective management.
- teacher will demonstrate the steps for evaluating a patient with constipation, focusing on:

1. **History Taking**:
2. **Physical Examination:**Demonstrate a digital rectal examination if indicated to assess for faecal impaction or anatomical abnormalities.
3. **Laboratory Investigations**:Discuss common laboratory tests that may be useful and demonstrate video of specific diagnostic investigation

   e.g. i)**Radiologic Studies:** Explain the role of abdominal X-rays, barium studies, or other imaging modalities to evaluate for obstruction or anatomical

issues .ii)**Anorectal Manometry**: Briefly discuss the use of this technique for assessing rectal function and muscle coordination in chronic constipation cases

2. Clinical Scenario:(40 minutes)Present case studies that require the evaluation of constipation with proper history taking and clinical examination and investigation.Engage students in discussing and deciding which test has to be done based on clinical presentation.

3. Conclusion: 20 minutes) students will discuss with teacher and clear doubts in the key takeaways from this informative discussion.

Practical Training 28.9 Application of Ilaj-Bil-Tadabir (IBT) regimen in Constipation.

Total learning hour: 2 hours

1.Demonstration by videos and simulation practice

- teacher will demonstrate the preparation and administration of a regimen therapy by high quality instructional videos demonstrating methods (30 minutes)
- Ensure that videos include clear explanation of indications and application.
- teacher will also demonstrate on simulation models.(30 minutes)

2.Hands-On Practice:

After demonstration and videos, Learners will discuss case scenarios and practice hands on training using simulation models.(40 minutes)

3.Assessment and Evaluation: Conduct knowledge and skill assessment to assess students understanding its need, preparation and application.(20 minutes)

Practical Training 28.10 **Clinical Evaluation of Rectal Prolapse and Proctitis**

Total learning hour :2 hours

1. Clinical Evaluation of Rectal Prolapse and Proctitis (1 hour)

Demonsteration: History Taking: teacher will demonstrate how to take a comprehensive history from a patient presenting with rectal prolapsed and proctitis.(10 minute)

Physical Examination:.(20 minutes)

- teacher will demonstrate the physical examination techniques for rectal prolapsed and proctitis.
- Inspection: Visualize the prolapsed or after positioning the patient in a squatting position.
- Digital Rectal Examination: Assess the sphincter tone and rectal wall integrity.
- **Hands-On Practice on Simulation model (20 minutes)**
- Divide learner into groups, after demonstration by faculty on real case or mannequin, students will practise rectal examination one by one. with an emphasis on correctly identifying rectal prolapsed and proctitis
-
- **Assessment and feedback: (10 minutes)** Teacher will assess and give feedback on the performance of rectal examination done by learners and wrap-up session for rectal examination.

2. Demonstration and Discussion with video clips (1 hour):

- **Demonsteration:** teacher will demonstrate following procedures with help of audio-video presentation.(20 minutes)

Anoscopy/Proctoscopy: teacher will demonstrate the procedure for direct visualization of the rectum using an anoscope or proctoscope to identify inflammation, ulcers, or lesions with help of audio video presentation. Learner can understand the procedure.

Colonoscopy: Discuss when a full colonoscopy may be necessary to assess the extent of inflammation or rule out other causes

Rectal Swab: If infection is suspected, perform a rectal swab for bacterial cultures and infection screening.

- **Group Discussion**: (10 minutes)
- Lead a discussion about what students observe in the videos. Key discussion point may include indication, contraindication, procedures, post procedure care.
- **Hands-On Practice(15 minutes)**

students will review imaging results of rectal prolapse and proctitis cases, guided by the teacher, to understand the radiologic features of these conditions.

- **Conclusion and Q&A** (15 minutes)

- teacher will recap the essential points covered during the session, focusing on the importance of differentiating between benign and serious causes of rectal prolapse and proctitis.
- Open the floor for questions to clarify any uncertainties regarding the evaluation and management of rectal prolapse and proctitis

Practical Training 28.11 ConservativeTtreatment and therapies for Proctitis and Rectal Prolapse

Total learning hours: 2 hours

1. Group discussion for Conservative Treatment (Conventional & Unani) for Proctitis and Rectal Prolapse (45 minutes)

- Engage students in a discussion of conservative treatment of Unani and conventional medicine

Unani medicine and conventional medicine treatment: Teacher will divide students into two groups .one group will discuss Unani treatment on following points:

- **Ilaaj bil Ghidha (Dietotherapy)**:
- **Ilaaj bil Dawa (Pharmacotherapy)**:
- **Ilaaj bil Tadabir (Regimenal Therapy)**

Other group will discuss conservative treatment of conventional medicine:

- **Medications**:
- **Lifestyle Modifications**:
- **Pelvic Floor Exercise:**
- **Dietary Adjustments**:

2. Simulation and Demonstration (45 minutes)

- Use mannequins or simulated patient to demonsterate how to prepare simple herbal concoctions apply topical application (zimad ,tila) or IBT (,Hijama ,Abzan ,Hamool) for Rectal Prolapse andProctitis.
- Demonstrate Pelvic floor rehabilitation exercises, such as Kegel exercises

3. Open Discussion: (15 minutes) Encourage open discussions about the limitations of conservative treatments and the importance of follow-up care, particularly for chronic conditions.

4.Conclusion: (15 minutes) Teacher will emphasize the importance of patient compliance with lifestyle modifications and therapy.

- Discuss the role of continuous monitoring and adjustments in treatment plans to manage symptoms effectively.

Experiential Learning Activity

Experiential-Learning Learning 28.1: Role of Asbabe Sitta Zaruriya in management of IBS

Total learning hour :2 hours

Journal Club : Teacher will organise a journal Club where student will review literature and collect text and discuss recent studies on role of lifestyle modification or application of concept of Asbabe sitta zaruriya (six essentials) such as diet sleep etc. in IBS management .Each student present different presentation with help of various references followed by group discussion on the findings.

Experiential-Learning Learning 28.2: IBS and its management strategies.

Total learning hour: 2 hour

Simulation of case scenario of IBS& its management strategies.

1.Case Scenario using Role-Playing: (60 minutes)

- Teacher presents a hypothetical or real-life scenario involving IBS issues.
- Assign roles to 2 students in which they play role of ‘doctor’ and ‘patients’.
- studentss will play role of patient of several clinical cases including:
- A patient with IBS-C (constipation predominant) and bloating.
- A patient with IBS-D (diarrhoea predominant) who also has anxiety.
- A patient with mixed-type IBS (IBS-M) who has dietary triggers..
- Encourage students who play ‘doctors’ to approach the case from the perspective of a pediatrician, considering history, physical examination and develop management plans accordingly.
- Teacher interexchange role within the groups.

2.Group Discussion:

- students will discuss the cases, identify key symptoms, propose diagnostic tests, and develop tailored management plans for each IBS subtype

Management of IBS (60 minutes)

1.Presentation and Peer Feedback

- Teacher divide the task to each student who will present management plans for different sub types of IBS along with dietary and Lifestyle management
- **Presentation format:** students prepare presentation that includ

  a)Dietary Modifications:

  b) Lifestyle and Psychological Approaches:

  c)Pharmacologic Management:

Discuss the use of specific medications (Unani and Conventional) based on IBS subtypes:

- IBS-C (Constipation-Predominant): Laxatives
- IBS-D (Diarrhoea-Predominant): Antidiarrheals.
- Antispasmodics: For abdominal cramping and pain
- Antidepressants: For pain modulation and improving bowel symptoms

2.Peer Feedback: Encourage classmates to Provide constructive feedback on clinical reasoning, emphasizing the importance of a holistic approach that combines dietary, pharmacological, and psychological interventions in managing IBS

Experiential-Learning Learning 28.3: Analysis of case studies of abdominal pain.

Total learning hour :2 hours

Problem Based Learning

1..**Distribute Case Studies: (30 minutes)**

- Assign different case studies to different students covering various presentation of abdominal colic(different aetiology)

2.**Analyse Case Studies: (30 minutes)**

Discussion

- Student read and discuss the case studies ,focusing on :
- Clinical presentation and diagnostic criteria.
- Possible under lying causes and aggravating factors.
- Suggest management (Unani and conventional medicine)
- Recognise complications and when to refer

3.Develop Simulation: Students use simulation or mannequins

4. Role play Preparation: (30 min)

Each student creates a short role play based on one case study ,including

- A clinician patient interaction
- Evaluation and management simulation.
- Counselling parents for diet.

5.**Discussion and Feedback:(30 minutes)**

- Teacher facilitates discussion and constructive feedback where student present their analysis of case.

Experiential-Learning Learning 28.4: Diagnosis and management of Abdominal pain .

Total learning hours: 2 hours

1.Roles in the Simulation: Case Scenario creation (2 hour)

Case Scenario: Plan a case scenario and to every student give different role to play simulation of approach of abdominal pain :(60 minutes)

- **Student Roles**: One or more students can act as the treating physicians, making decisions on history-taking, examination, and treatment.
- **Instructor/Facilitator Role**: Provides cues, adjusts patient responses based on student actions, and offers feedback.
- **Standardized Patient or Virtual Reality Components**: If available, standardized patients can enhance realism, especially for communication and history-taking skills.

Instructions for Students/Trainees: student can evaluate the simulated patient under following points:

1. **Initial Assessment**
    - **Obtain History**:
    - **Vital Signs Check**:
2. **Physical Examination**
    - **Inspection**:
    - **Palpation**:
    - **Percussion**:
    - **Auscultation**:
    - **Special Tests**:

Differential Diagnosis

2.Debrief and Discussion: (30 minutes)

- **Feedback Session**: After the scenario, teacher provides constructive feedback. Highlight areas of strength (e.g., good history taking) and areas for improvement (e.g., more thorough examination techniques).
- **Reflection**: Ask students to reflect on what went well and what they could improve for future similar cases.
- **Case Review**: Discuss the case in depth, reviewing the pathophysiology of the suspected diagnosis and alternative differential diagnoses

3.Evaluation of the Activity: (30 minutes)

- **Assessment**: teacher can use checklists or rubrics to evaluate student performance in history taking, examination, diagnostic reasoning, and patient communication.
- **Peer Review**: Encourage students to observe and provide feedback to each other on their performance.

Experiential-Learning Learning 28.5: Journal Club for Abdominal Pain.

Total Learning Hours: 2 hours

Conducting a Journal Club on Qūlanj(Abdominal pain).

1. Select articles Preparation for the Journal Club

- ***Article Selection: Choose 1–2 high-quality articles for review:***
  - **Clinical Approaches to abdominal pain.**
  - **Sonographic approaches to abdominal pain**
  - **Concept of Qulanj in Unani Classical Text**

2. Pre-Reading:

- Distribute articles to participants 1–2 weeks before the journal club. Encourage participants to read the full text and highlight key points, noting strengths, weaknesses, and clinical relevance.

3. Structure of the Journal Club

a) Introduction :

- Provide a brief overview of abdominal pain. Unani concept of Abdominal pain(qulanj)
- Outline the goals of the journal club and why these topics are clinically relevant.

b) Article Presentation :

- **Presenter(s)**: Designate a student or participant to present each article.
- **Key Points to Cover**:
  - **Study Objective**:
  - **Methods**: .
  - **Results**:
  - **Limitations**:
  - **Clinical Implications**:

c) Group Discussion :

- Facilitate a group discussion on the presented articles. Encourage critical thinking by using the questionnare

Prepare for Q&A: anticipate questions and different view points

Experiential-Learning Learning 28.6: Management of Vomiting case

Total learning hour :2 hours

teacher can choose any two activies from following for better understanding of students

1.Simulation-Based Learning (60 minutes)

- **Method**: Use a high-fidelity mannequin or standardized patient to simulate various scenarios (e.g., gastroenteritis, pyloric stenosis in infants, or gastrointestinal obstruction). Students should perform a focused history, physical examination, and initial management
- **Assessment**: Direct observation using a checklist, followed by debriefing and reflective discussion.

or

2. **Case-Based Learning (CBL) (60 minutes)**

- **Method**: Present students with a structured clinical case of a patient with vomiting. They should work in small groups to discuss and solve the case, covering history, differential diagnosis, investigations, and treatment.
- **Outcomes**:
  - Develop a stepwise approach to evaluating vomiting in different age groups.
  - Interpret clinical findings and relevant investigations.
- **Assessment**: Present case findings and justify management plans in a group discussion, with feedback provided.

or

3. **Problem-Based Learning (PBL) (60 minutes)**

- **Method**: Assign a clinical problem involving a patient with severe vomiting. Students explore the underlying causes, mechanisms, and management options, guiding their research and sharing their findings.
- **Outcomes**:
  - Develop a comprehensive understanding of pathophysiology.

- Engage in peer teaching and learn from diverse perspectives.

- **Assessment**: Facilitate a group discussion where students reflect on their learning process.

or

4. **Role-Playing (60 minutes)**

- **Method**: Students role-play as doctors explaining to patients or caregivers the causes and management of vomiting. Emphasize clear communication, empathy, and patient education about dietary and fluid intake.
- **Outcomes**:
  - Demonstrate effective communication techniques.
  - Address patients' and families' concerns compassionately.
- **Assessment**: Evaluate communication skills using a rubric, focusing on clarity, empathy, and completeness.

Experiential-Learning Learning 28.7: Dietary Counselling in Vomiting

Total Learning hours: 2 hours

Patient counseling for diet and nutrition.

1.Presentation (90 minutes)

Instruction

Have each student present their presentation of diet plan during and after the vomiting episodes.

Student will prepare presentations with help of visual aids that include :

- Diet restriction
- Diet advised for restoring nutrition and health.

- Ors preparation methods for rehydration at home

Encourage students to counsel parents for diet and nutrition for better health of child with Vomiting with help of presentation in case scenario or real case.

Peer Feedback (30 minutes) :classmates will give feedback on presentation on counseling and discuss alternatives approaches of consideration

Experiential-Learning Learning 28.8: Dehydration and Electrolyte Imbalance Assessment in Vomiting

Total learning hours: 2 hours

Choose any two activities among following multiple activities for better understanding of students.

1.(Presentation) (60 minutes)

Instruction: student prepare presentation on basic knowledge of dehydration and its assessment with help of visual aid (PPT,Video clips,case studies) focusing on following points

- **Physiology**:
- **Types of Dehydration**:
- **Signs and Symptoms**:
  - **Dehydration:**
  - **Electrolyte Imbalance**:.
- **Complications**

or

2. Simulation: (60 minutes)

Instructions:

-
  - Use simulation labs with patient mannequins or live actors to create a clinical scenario where students must evaluate a patient with vomiting.
  - Student will practice physical examination ,ability to order appropriate laboratory investigation
- **Physical Examination**: students will practise physical examination under following points:

- **Vital signs**:
- **Skin and Mucous Membrane Assessment**:
- **Urine Output**:
- **Weight Loss**:

- **Laboratory Investigations**:
  - Students learn how to interpret basic lab results for dehydration and electrolyte imbalances (serum sodium, potassium, chloride, blood urea nitrogen (BUN), and creatinine).
- **Electrolyte Monitoring**:
  - Provide guidelines for recognizing abnormal electrolyte values and how they correlate with clinical symptoms

or

3. Interactive Learning (Case-Based Learning) (60 minutes)

Instructions: Provide students with clinical case studies involving patients with vomiting, dehydration, and electrolyte imbalance. Divide them into small groups to discuss:

- History-taking focused on fluid loss (frequency of vomiting, associated diarrhea, intake of fluids).
- Differential diagnosis: Discuss potential causes of vomiting and related conditions.
- Development of management plans for rehydration (oral rehydration therapy (ORT), IV fluids) and correction of electrolyte imbalances

or

.4 **Role-Playing (60 minutes)**

Objective : Create realistic, hands-on scenarios in controlled environments to reinforce learning.

Instructions:

- Use high-fidelity simulations where students assess and manage patients showing signs of dehydration or electrolyte imbalance.
- Assign roles: One student as a healthcare provider and another as a patient. Use this method to teach communication skills, such as how to explain rehydration strategies and the importance of fluid intake to the patient.

or

5. Problem-Based Learning (PBL) (60 minutes)

Instructions: Teacher present students with a complex clinical scenario:

- e.g.A patient with repeated vomiting due to gastroenteritis.
- Encourage students to work through the problem, identify signs of dehydration, hypothesize the electrolyte imbalances, and propose a treatment plan.
- Teacher facilitate discussion on students performance in assessing dehydration and electrolyte imbalance in presented clinical scenario.

Experiential-Learning Learning 28.9: Management of Constipation

Total learning hour:2 hour

Teacher will divide students into two group .each students of one group will practise rectal examination on mannequins and in other group, each member will practise IBT regimen (huqna, shayaf) used for constipation on mannequin and interexchanged thier practises

1. Conducting the Rectal Examination:(45 minutes)

Students will conduct the rectal examination on mannequin keeping following steps in mind.

Step-by-Step Guide:

1. Explain the Procedure:
2. Positioning:
3. Inspection:
4. Lubrication and Glove Use:
5. Digital Rectal Examination (DRE):

2. Treatment Principles Using Ilaj Bil Tadbeer (45 minutes)

- Huqna (Therapeutic Enema):

- Massage and Oil Application (Dalk)
- Shayaf (suppository)
- Diet and Lifestyle Adjustments (Ilaj Bil Ghiza)

3.Case Presentation: student will present their finding**.(15 minutes)**

4. Assessment and Evaluation (15 minutes): teacher will conduct a discussion and skill assessment to assess students skill of rectal examination and IBT used in constipation which they have done on mannequins and present case report.

Experiential-Learning Learning 28.10: Patient education for prevention of Constipation

Total learning hour :2 hours

Demonstrate the role of health educator to treat and prevent constipation. (120 minutes)

Identifying Target Audience: Determine who will benefit from health education (e.g. child, parents, and caregivers).

Develop Educational Content : Create clear, engaging materials (handouts, presentations) that highlight lifestyle modification, dietary changes and other strategies for treatment and prevention of constipation.

Incorporate Interactive Activities: Plan hands on activities such as meal planning ,light exercises etc

Use Real Life Examples: Share success stories or case studies that illustrate positive changes in lifestyle and eating pattern due to health education.

Encourage Participation: Facilitate discussions and Q&A sessions to address question and concern.

Assess Impact: Use surveys or feedback forms to evaluate changes in knowledge and attitudes post education.

Experiential-Learning Learning 28.11: Journal club for Proctitis and Rectal Prolapse .

Total learning hours :3 hours

Conducting a Journal Club on Proctitis and Rectal Prolapse (3 article can be presented)

1. Select articles Preparation for the Journal Club

- ***Article Selection: Choose 1–2 high-quality articles for review:***

  Rectal Prolapse:

-
    - Conservative management (Unani and Conventional medicine) and quality of life post-treatment.
    - Risk factors for recurrence after rectal prolapse repair.
    - Different Etiology of Rectal Prolapse in Classical(Unani)Text.

Proctitis:

-
    - Differentiating radiation-induced proctitis from inflammatory causes (e.g., IBD, infection).
    - . Conservative management (Unani and Conventional medicine) and quality of life post-treatment.
    - Different Etiology of Proctitis in Classical(Unani)Text.

Pre-Reading: Distribute articles to participants 1–2 weeks before the journal club. Encourage participants to read the full text and highlight key points, noting strengths, weaknesses, and clinical relevance.

3. Structure of the Journal Club

a) Introduction (10 minutes):

- Provide a brief overview of rectal prolapse and proctitis.
- Outline the goals of the journal club and why these topics are clinically relevant.

b) Article Presentation (30 minutes per article):

- **Presenter(s)**: Designate a student or participant to present each article.
- **Key Points to Cover**:
    - **Study Objective**:
    - **Methods**: .
    - **Results**:
    - **Limitations**:
    - **Clinical Implications**:

c) Group Discussion (10 minutes): Facilitate a group discussion on the presented articles. Encourage critical thinking by using the questions

Summarise: (10 minutes) Key Points to Cover During the Journal Club.

Prepare for Q&A: anticipate questions and different view points

Experiential-Learning Learning 28.12: Diet counselling for patient of Rectal prolapse and proctitis.

Total learning hours :3 hours

Teacher can choose any three activites for better understanding of students

1.Interactive Lectures:(60 minutes)

- **Method**: Use interactive presentations with embedded quizzes and case studies. Engage students through discussions and questions about the best dietary practices and prevention guidelines.
- **Outcome**: Students will be able to outline key dietary recommendations and prevention strategies confidently.

or

2. **Role-Playing Scenarios (60 minutes)**

- **Method**: Pair students, where one acts as a healthcare provider and the other as a parent. Present scenarios involving diet-related concerns for a child at risk of rectal prolapse or proctitis. Discuss ways to explain the importance of fiber-rich diets and hydration

or

3. **Case-Based Learning (CBL) (60 minutes)**

- **Method**: Present detailed case histories of pediatric patients with rectal prolapse or proctitis. In small groups, students work to create diet management plans and develop prevention strategies, which they then present to the class.

or

4. **Workshop with Nutritionists (60 minutes)**

- **Method**: Organize a workshop where a nutritionist discusses dietary guidelines and practical meal planning. Follow up with activities where students create diet plans based on various age groups and medical history

or

5. **Simulation Training (60 minutes)**

- **Method**: Use standardized patients (actors trained to present parent concerns). Students counsel these parents and receive feedback on their counseling effectiveness, clarity, and empathy.

or

6. **Small Group Discussions (60 minutes)**

- **Method**: Divide students into small groups to discuss different prevention strategies. Each group focuses on a specific aspect, such as increasing fiber intake, proper hydration, or physical activity recommendations. They then share their findings.

Modular Assessment

Assessment	**Hour**
Instructions- Conduct a structured Modular Assessment. The assessment will be for 50 Marks. Keep a structured marking pattern. Use different Assessment methods in each module for the semester. Keep a record of the structured pattern used for assessment. Calculate the Modular grade point as per Table 6C. 1. **Viva - Review of published article (15 marks)VV-viva** • **Instruction:** Encourage students to review published research article of disease like constipation,abdominal pain etc • **Criteria:** 1.Selection of appropriate guidelines (3marks) 2.Review of article by ticking off the checklist(2 marks) 3.Summary of review mentioning guidelines, describing missed elements ,and positive aspect of paper(10 marks) 2.**Case-Based Assessment (10 Marks)CBA** • **Instructions**: Present a case on a GIT disorders , Students should analyze the case, identify the main issues, and propose a diagnostic and treatment plan.	4

- **Criteria**:
    - Case understanding (3 marks)
    - Diagnostic approach (3 marks)
    - Treatment plan (3 marks)
    - Professional presentation (1 mark)

3. **Direct Observation of Procedural Skills (DOPS) 25 marks**

Instructions: students are observed performing a procedures done for diagnostic and therapeutic use in Gastrointestinal and Hepatobiliary disorders.

Criteria:

1. Preparation and Knowledge (5 marks)
2. Patient Interaction and Communication (5 marks)
3. Technical Skills and Procedure Execution (10 marks)
4. Post-Procedure Skills and Documentation (3 marks)
5. Reflection and Case Discussion (2 marks)

Any Practical in converted form can be taken for assessment (15 Marks)

and

Any Experiential, such as portfolios/ reflections/ presentation can be taken as an assessment. (35 Marks)

Semester No : 4

Module 29 : امراض نظام ہضم وامراض کبد سوم Amrāḍ-i-Niẓām-i-Haḍm aur Amrāḍ-i Kabidi-III (Gastro intestinal and Hepatobiliary Disorders-3)I

Module Learning Objectives

(At the end of the module, the students should be able to)

1. Describe Amrāḍ-i-*Kabid (*liver disease) with detail history, proper examination and routine liver tests.

2. Describe the patterns of liver disease of as either predominantly hepatocellular or biliary (cholestasis) and differential diagnosis based on the results of routine liver tests.
3. Manage and prevent liver diseases by Unani measures as well as Vaccination.
4. Apply Unani principles for the management of liver disorders and develop skills in prescribing Unani medications and lifestyle modifications.
5. Apply Unani diagnostic methods (e.g., pulse, diagnosis, urine analysis).
6. Identify clinical manifestations of hepatic failure and other Amrāḍ-i-*Kabid (*liver diseases) that require hospitalization.

Unit 1 ورم کبد و مرارہ/Waram al-Kabid wa Marara (Hepatitis and Cholecystitis)

29.1.1. Definition,Aetiology,Types,Clinical Features,Diagnosis, Differential diagnosis and Management.

References: 39,62

3A	3B	3C	3D	3E	3F	3G
CO1,CO2,CO5,CO7,CO8	Describe *Warm-al-Kabid* (Hepatitis) and *Warm-i- Mirara* (Cholecystitis), its types with co-relation with classical as well as modern concept, transmission modes and age-related differences in presentation.	2	Lecture	CK	Knows-how	L_VC
CO1,CO2,CO6,CO7,CO8	Demonstrate physical examination, suggest biochemical tests and imaging techniques.	2	Practical29.1	PSY-GUD	Shows-how	CBL,CD,LRI,DL
CO1,CO2,CO5,CO6,CO7,CO8	Formulate Unani principle of treatment and individualised tratment plans (according to the temperament) on the basis of examination and routine investigations.	2	Practical29.2	PSY-ADT	Shows-how	PSM,LRI,CBL,CD
CO1,CO2,CO4,CO5,CO8	Diagnose and discuss the cases of hepatitis in children.	3	Experiential-Learning29.1	PSY-MEC	Does	EDU,D,GBL

CO1,CO4,CO5,CO6,CO7,CO8	Counsel families to improve the food, water, proper hand hygiene, environmental sanitation and importance of vaccination for prevention of disease.	3	Experiential-Learning29.2	AFT-RES	Does	EDU,D-M,D,IBL

Unit 2 فرط ضغط الدم البابی/Fart zaght-ul-dam albabi (Portal Hypertension) ورم کبد مزمن(Waram al-Kabid Muzmin)

29.2.1Definition,Aetiology,Types(Intrahepatic, Extrahepatic),Clinical Features,Diagnosis and Management.

References: 61,63

3A	3B	3C	3D	3E	3F	3G
CO1,CO6,CO7,CO8	Describe *Waram al-Kabid Muzmin (*chronic liver disease), its types and etiology.	1	Lecture	CK	Knows-how	L_VC
CO1,CO4,CO5,CO6	Describe *Fart zaght-ul-dam albabi* (portal hypertension) its types, causes and pathophysiology	1	Lecture	CC	Knows-how	L_VC
CO1,CO5,CO6,CO7,CO8	Demonstrate physical examination, correlate investigations to develop Unani principle of treatment and invidualised tratment plan (according to the temperament).	4	Practical29.3	PSY-GUD	Shows-how	CBL,DL,CD,LRI
CO1,CO2,CO5,CO7,CO8	Demonstrate and discuss patient's response to Unani therapy and arrange patient/caregiver/ public awareness programe on *Waram al-Kabid Muzmin (*chronic liver disease) and *Fart zaght-ul-dam albabi* (portal hypertension).	4	Experiential-Learning29.3	AFT-VAL	Does	D-M,D,EDU
CO1,CO4,CO5,CO6,CO7	Identify early diagnosis ofchronic liver disease and timely referral.	2	Experiential-Learning29.4	AFT-CHR	Does	RP

Unit 3 Wilson Disease (Hepatolenticular degeneration) and عملیہ زرع الکبد /Amlia Zarul kabid (Orthotopic Liver Transplantation)

29.3.1. Indication (Fulminant liver failure, End stage liver failure,Metabolic disorder, Unrescetable liver tumours).

29.3.2. Contra indication of Orthotopic Liver Transplantation.

29.3.3. Complications Orthotopic Liver Transplantation and Immunosuppression to prevent 'Rejection' and Results.

References: 50,62

3A	3B	3C	3D	3E	3F	3G
CO1,CO4,CO5,CO6,CO7	Describe Wilson's disease and its pathophysiology .	1	Lecture	CC	Knows-how	L_VC
CO1,CO6,CO7,CO8	Describe severity of disease and Liver involvement	1	Lecture	CC	Knows-how	L&PPT
CO1,CO4,CO5,CO6,CO7	Discuss orthotopic liver transplantation	4	Practical29.4	CC	Shows-how	D-M,BL,D
CO1,CO3,CO4,CO5,CO6	Educate parents, families and raise awareness about Willson's disease.	3	Experiential-Learning29.5	AFT-REC	Does	D,CBL,PER
CO1,CO4,CO6,CO7,CO8	Demonstrate and present dietary modifications to promote healthy digestion and liver health.Lifestyle adjustments as per Asbabe sitta Zarooriya for stress management and overall well-being.	3	Experiential-Learning29.6	PSY-GUD	Does	D

Unit 4 دبیلۃ الکبد/Dubayla al-Kabid Liver abscess and ضربات الکبد باستعمال الدواء(Drug Induced Liver Injury)

29.4.1.Definition, Aetiology,Types.

29.4.2.Direct (dose-dependent) hepatotoxicity.

29.4.3.Indirect (dose- dependent) hepatotoxicity.

29.4.4.Clinical features,Diagnosis and Management.

References: 37,55

3A	3B	3C	3D	3E	3F	3G
CO4,CO5,CO 6	Describe *Dubayla al-Kabid (*liver abscess) its types, causes as well as classical concept (Imbalance of humors- Safra, Sauda, Dam, Balgham. Waram/Iltihab, Sudda, Fasad-al-Hadm, excessive heat or cold and ufoonat)	1	Lecture	CC	Knows-how	L_VC
CO1,CO5,CO 6,CO7	Describe drug induced hepatotoxicity by the history of drug exposure, hypersensitivity symptoms such as rash, fever, and eosiniphilia with abnormal LFTs	1	Lecture	CC	Knows-how	L_VC
CO1,CO2,CO 5,CO6,CO7	Demonstrate how to diagnose liver abscess and evaluate investigations (USG,CT scan and MRI,) which confirm the diagnosis and adapt lifestyle modifications as per Asbabe sitta zarooriya	4	Practical29.5	PSY-GUD	Shows-how	CBL,PBL,LRI
CO1,CO2,CO 6,CO7,CO8	Identify drug-Induced Liver Injury (DILI) and its complications and red flag signs for timely referral.	2	Experiential-Learning29.7	AFT-REC	Does	BL,EDU,FC
CO1,CO5,CO 6,CO7,CO8	Identify common offending agents of drug induce liver injury, its diagnosis and appropriate Unani treatment	2	Experiential-Learning29.8	AFT-SET	Does	D
Unit 5 استسقا/Istisqā (Ascites)						

29.5.1.Definition, Aetiology,Clinical Features, Diagnosis and Management.

References: 31,34

3A	3B	3C	3D	3E	3F	3G
CO1,CO4,CO5,CO6	Describe Istisqa (Ascites) and it's aetiology, types and explain the Unani concept of "Ratubah" (humors) ,"Mizaj" (temperaments) and clinical features with pathphysiology of ascites.	2	Lecture	CC	Knows-how	L_VC
CO1,CO2,CO5,CO6,CO7	Demonstrate the procedure of Amal-e- Bazl (therapeutic paracentesis) (Simulation study on therapeutic paracentesis)	2	Practical29.6	AFT-REC	Shows-how	PER,SIM,D-M
CO1,CO2,CO6,CO7,CO8	Apply Ilaj bil Tadbir techniques for ascites.	2	Practical29.7	PSY-ADT	Shows-how	RLE,PBL,PL,D-M,D
CO1,CO2,CO6,CO7,CO8	Integrate paracentesis procedure between classical and conventional method, Recent Advances and Future Directions by Artificial intelligence-assisted paracentesis	4	Experiential-Learning29.9	AFT-RES	Does	SDL,IBL,SIM,CBL,JC

Practical Training Activity

Practical Training 29.1 Liver disese case presentation.

Practical Learning Session (2 Hours)

Activity 1: Systematic Physical Examination Practice (40 Minutes)

Description:

- Students will practice a head-to-toe physical examination in a simulated patient setup.
- Emphasis on inspection, palpation, percussion, and auscultation techniques for abdominal, respiratory, cardiovascular, and neurological systems.

- Findings to be noted in a structured format.

Activity 2: Identification of Clinical Clues and Correlation with Investigations (30 Minutes)

Description:

- Based on physical signs, students will list differential diagnoses.
- Suggest relevant **biochemical tests** (e.g., CBC, LFT, KFT, blood glucose, lipid profile, etc.) to confirm suspected conditions.
- Justify why specific tests are chosen.

Activity 3: Imaging Techniques Selection and Justification (30 Minutes)

Description:

- For selected cases (e.g., suspected liver disease, kidney stones, respiratory issues), recommend appropriate **imaging**:

  X-ray, Ultrasound, CT, MRI, etc.
- Discuss indications, pros/cons, and what each imaging method reveals.

Activity 4: Group Case Presentation and Discussion(20 Minutes)

Description:

- Each group presents a summary of:
  1. Physical exam findings
  2. Suggested tests and imaging
  3. Possible diagnosis
- Facilitator provides feedback on clinical reasoning and diagnostic choices

Practical Training 29.2 Management of Hepatitis.

Practical Learning Session (2 Hours)

Activity 1: Temperament Assessment through Physical Examination **(** 30 Minutes)

Description:

- Perform physical examination (pulse, skin texture, voice, sleep, habits, etc.) to assess individual temperament (Mizaj).
- Classify the temperament (e.g., Damvi, Balghami, Safravi, Saudavi).
- Use Unani charts/forms to record findings.

Activity 2: Review of Routine Investigations and Case History(30 Minutes)

Description:

- Analyze investigation reports (e.g., CBC, LFTs, urine analysis) and patient history.
- Discuss how these findings align with Unani diagnostic principles (A'raz-o-Alamat, Amraz-e-Muzmin, etc.).

Activity 3: Designing Unani-Based Individualized Treatment Plans(30 Minutes)

Description:

- Based on temperament and investigations, students create treatment plans using Ilaj-bit-Tadbeer (regimenal therapy), Ilaj-bit-Dawa (medicinal), and Ilaj-bit-Ghiza (dietotherapy).
- Consider drug selection, dosage, and lifestyle advice as per Mizaj.

Activity 4: Peer Review and Feedback (30 Minutes)

Description:

- Present the treatment plan to peers or faculty for feedback.
- Discuss how temperament and investigation findings influenced decisions.
- Reflect on individualization and rationale of therapies.

Practical Training 29.3 Clinical Case presentation of portal hypertension

Practical Learning Session (4 Hours)

Activity 1: Physical Examination Based on Unani Principles (1 Hour)

Description:

- Hands-on demonstration and practice of Unani physical examination techniques (Nabz – pulse examination, observation of tongue, urine, stool, and general signs).
- Assessment of Su-e-Mizaj (disturbed temperament) and general condition.

Activity 2: Interpretation of Modern Investigations in Light of Unani Concepts (1 Hour)

Description:

- Group work on correlating CBC, LFTs, imaging, and urine/stool analysis with Unani diagnostic framework.
- Match signs/symptoms and lab reports with the appropriate dystemperament (e.g., sue-mizaj haar, barid, yabis, ratab).

Activity 3: Development of Unani Treatment Principles (1 Hour)

Description:

- Select patient cases and outline Unani treatment principles (Ilaj bil-Zid, Ilaj bil-Ghiza, Ilaj bil-Dawa).
- Identify appropriate herbs and formulations suited to the diagnosed Mizaj and condition.

Activity 4: Designing Individualized Treatment Plan (1 Hour)

Description:

- Prepare a patient-specific Unani treatment plan including diet (Ghiza), regimenal therapy (Ilaj bil-Tadbeer), and drugs (advia mufrada/murakkaba).
- Justify each intervention according to the patient's temperament and underlying pathology.

Practical Training 29.4 Orthotopic liver transplantation

Practical Learning Session (4 Hours)

Activity 1: Introductory Briefing on Liver Transplantation (1 Hour)

Description:

Facilitator-led session introducing the concept of orthotopic liver transplantation. This includes:

- Definition and difference between orthotopic and heterotopic liver transplantation
- Indications, contraindications, and patient selection criteria

- Pre-transplant evaluations and listing protocols

Activity 2: Surgical Video Demonstration and Interactive Discussion (1 Hour)

Description:

Watch a real or animated surgical video of OLT followed by discussion. Key focus on:

- Steps of the transplant: hepatectomy, graft implantation, vascular and biliary anastomoses
- Surgical instruments and techniques used
- Potential intraoperative challenges

Activity 3: Hands-On Simulation with Anatomical Models or Virtual Tools (1 Hour)

Description:

Use 3D liver models or virtual simulation software to demonstrate the procedure:

- Identify anatomical landmarks
- Simulate vascular connection and biliary drainage
- Practice safe graft placement techniques

Activity 4: Post-Transplant Management and Case Discussion (1 Hour)

Description:

Group activity analyzing one or more clinical case studies of post-OLT patients:

- Discuss immunosuppressive therapy, infection control, and rejection monitoring
- Long-term follow-up, quality of life, and psychosocial aspects
- Ethical considerations and donor-recipient dynamics

Practical Training 29.5 Liver abscess evaluation and management.

Practical Learning Plan : Total Duration: 4 Hours

Format: Clinical Case-Based, Imaging Interpretation, and Unani Lifestyle Integration

Activity 1: Clinical Case Presentation and History Taking (1 Hour)

- **Method:** Case-based Group Work
- **Content:**
    - Presentation of 2–3 real or simulated cases of liver abscess (e.g., amoebic, pyogenic)
    - Detailed elicitation of clinical features: fever, RUQ pain, hepatomegaly
    - Identification of risk factors (alcoholism, poor hygiene, chronic infections)
    - Group discussions and summary of clinical impressions

Activity 2: Radiological Imaging Interpretation Workshop (1 Hour)

- **Method:** Hands-on Radiology Session
- **Content:**
    - Evaluate **USG**, **CT scan**, and **MRI** images of liver abscess cases
    - Compare sensitivity, specificity, and findings of each modality
    - Mark characteristic signs: hypoechoic lesions, rim enhancement, abscess wall, loculation
    - Interpretation under radiologist or faculty guidance

Activity 3: Unani Perspective & Lifestyle Prescription (1 Hour)

- **Method:** Interactive Discussion & Charting
- **Content:**
    - Integrate Unani understanding of liver abscess (*Warm-e-Kabid*, *Abscess of Kabid*)
    - Discuss dietary and regimental modifications as per *Asbāb-e Sitta Zarūriyya*:
        - Hawa (Air)**:** Clean, ventilated environment
        - Makool-o-Mashroob (Diet & Drink): Avoid heavy, hot foods; use barley water, pomegranate juice
        - Harkat wa Sukoon-e-Badan (Physical Activity): Light movement after recovery
        - Harkat wa Sukoon-e-Nafsani (Mental Balance): Stress management, sleep hygiene

- Naum-o-Yaqza (Sleep & Wakefulness): Proper sleep routine
- Ehtibas wa Istifragh (Evacuation): Regulation of bowel and bladder function

  - Learners chart a lifestyle prescription plan for each case

Activity 4: Reflection, Presentation & Feedback (1 Hour)

- **Method:** Learner Presentations & Peer Review
- **Content:**
  - Group-wise case presentation including:
    - Summary of diagnostic findings
    - Imaging interpretation
    - Tailored *Asbāb-e Sitta Zarūriyya*-based lifestyle plan
  - Peer and faculty feedback
  - Wrap-up of key takeaways and assessment through oral Q&A

Practical Training 29.6 Therapeutic paracentesis

Practical Activity Plan: Amal-e-Bazl (Therapeutic Paracentesis)Total Duration: 2 Hours

Activity 1: Orientation and Preparation(30 minutes)

- Method: Demonstration & Discussion
- Content:
  - Introduction to Amal-e-Bazl (Unani perspective and modern parallels)
  - Indications, contraindications, and patient consent
  - Equipment checklist and sterile preparation
  - Patient positioning and anatomical landmarks

Activity 2: Simulation of Classical Technique(30 minutes)

- **Method:** Hands-on Simulation
- **Content:**
    - Demonstration of landmark-based (classical) paracentesis
    - Learners practice on mannequins or anatomical models
    - Instructor supervision and technique correction

Activity 3: Simulation of Modified/Modern Technique (30 minutes)

- **Method:** Hands-on Simulation
- **Content:**
    - Demonstration of modern sterile or ultrasound-assisted approach
    - Learner practice session with feedback
    - Highlighting safety measures and procedural efficiency

Activity 4: Review and Reflection (30 minutes)

- **Method:** Group Discussion & Peer Review
- **Content:**
    - Error identification and troubleshooting
    - Discussion on aseptic technique, fluid analysis, and post-procedure care
    - Reflection on skill acquisition and self-assessment

Practical Training 29.7 Ilaj bil Tadbir techniques for ascites

Practical activity (2 hours)

The teacher will demonstrate the methods and the students will repeat the same.

Activity 1: Hijama (Cupping Therapy) Demonstration (30 min)

- Explanation of wet & dry cupping in managing ascites-related fluid retention.
- Live demonstration on a model/mannequin.
- Hands-on practice by participants under supervision.

Activity 2: Dalak (Therapeutic Massage) & Riyazat (Exercise) (30 min)

- Demonstration of abdominal massage techniques to aid lymphatic drainage.
- Guided practice on proper pressure application and duration.
- The introduction of light exercises is beneficial for ascites management.

Activity 3: Idrar-e-Baul (Diuresis) Techniques & Nutritive Regimen (30 min)

- Discuss natural diuretics (Ilaj bil Ghiza) and their pediatric application.
- Hands-on preparation of Unani herbal formulations used for mild diuresis.
- Case discussion on patient suitability for various techniques.

Activity 4. Reflection & Discussion (30 min)

- Compare traditional Unani approaches with modern management of ascites.
- Teacher will conclude with key findings and guidance.

Experiential Learning Activity

Experiential-Learning Learning 29.1: Public awareness on prevention of hepatitis:

Experiential Learning Session (3 Hours)

Activity 1: Case-Based Learning – Diagnosis and Severity Assessment of Hepatitis (45 Minutes)

Description:

- Analyze real or simulated clinical case scenarios with different types of hepatitis (A, B, C).
- Discuss diagnostic markers (e.g., LFTs, serology, imaging) and classify severity (acute, chronic, fulminant).
- Correlate findings with signs/symptoms and outcomes.

Activity 2: Group Discussion on Preventive Strategies for Hepatitis (45 Minutes)

Description:

- Small group brainstorming on how to prevent hepatitis transmission through safe practices (e.g., vaccination, hygiene, safe injections, avoiding contaminated food/water).
- Students identify key public messages and preventive behaviors.

Activity 3: Preparation of Educational Materials for Awareness Campaign(45 Minutes)

Description:

- Create posters, pamphlets, or short videos highlighting hepatitis prevention, symptoms, and treatment-seeking behavior.
- Use simple language suitable for public distribution.

Activity 4: Conducting a Mock Awareness Programme or Health Talk (45 Minutes)

Description:

- Students organize a mock public session simulating a health camp, school visit, or caregiver workshop.
- Present key messages, distribute materials, and answer mock questions from a "public" audience (played by peers).

Experiential-Learning Learning 29.2: Preventive measures for hepatitis

Experiential Learning Session (3 Hours)

Activity 1: Interactive Discussion and Demonstration on Hand Hygiene & Safe Water Practices (45 Minutes)

Description:

- Live demonstration of proper handwashing technique (WHO-recommended steps).
- Discuss safe water sources, purification methods (boiling, filtration, chlorination).
- Engage students in a Q&A on contamination routes and disease transmission.

Activity 2: Group Survey and Charting of Local Sanitation and Food Safety Issues (45 Minutes)

Description:

- In small groups, students conduct a quick environmental survey within the campus or nearby locality.
- Identify issues like improper waste disposal, stagnant water, uncovered food, etc.
- Create a poster/chart of findings with improvement suggestions.

Activity 3: Role Play and Skits on Public Awareness for Vaccination and Disease Prevention (45 Minutes)

Description:

- Students prepare and perform short skits demonstrating the impact of poor hygiene and the importance of vaccines (e.g., polio, hepatitis, typhoid).
- Emphasize public cooperation, herd immunity, and myth-busting around vaccines.

Activity 4: Development and Distribution of IEC Materials *(Information, Education & Communication) (*45 Minutes)

Description:

- Design leaflets, posters, or digital messages promoting cleanliness, food safety, water hygiene, and vaccination.
- Distribute them within the institution or community as part of an awareness initiative.

Experiential-Learning Learning 29.3: Chronic Liver Disease

Experiential Learning Session (4 Hours)

Activity 1: Clinical Case Review and Monitoring Response to Unani Therapy (1 Hour)

Description:

- Present 2–3 clinical case studies of patients undergoing Unani treatment for chronic liver disease or portal hypertension.
- Monitor signs and symptoms, laboratory results, and response to treatment.
- Discuss justification of therapy based on Mizaj (temperament) and drug properties (advia mufrada & murakkaba).

Activity 2: Designing a Patient Monitoring Chart (45 Minutes)

Description:

- Students design a follow-up chart to track therapeutic response (e.g., jaundice, ascites, spleen size, LFTs).
- Include Unani parameters such as strength of Quwwat-e-Mudabbira Badan and pulse, urine, stool examination.

Activity 3: Preparation for Awareness Program(1 Hour 15 Minutes)

Description:

- Plan and prepare an awareness session for patients/caregivers/public.
- Develop posters, pamphlets, and health education content in local languages explaining the disease, prevention, and Unani approach.
- Assign student groups for different roles (e.g., speaker, educator, counsellor).

Activity 4: Mock Public Awareness Program (1 Hour)

Description:

- Conduct a simulated awareness event in class.
- Students present on lifestyle modifications, Unani regimens, early symptoms, and need for timely treatment.
- Include Q&A interaction mimicking public participation.

Experiential-Learning Learning 29.4: Referal Criteria of chronic liver disease

Experiential Learning Session (2 Hours)

Activity 1: Case-Based Discussion on Early CLD Signs (30 Minutes)

Description:

- Analyze short clinical case scenarios of patients with early signs of CLD (e.g., fatigue, hepatomegaly, mild jaundice, abnormal LFTs).
- Emphasis on identifying red flags like ascites, coagulopathy, or hepatic encephalopathy.

Activity 2: Hands-On Interpretation of Diagnostic Reports (30 Minutes)

Description:

- Review and interpret liver function tests, ultrasound reports, and fibrosis markers (Fibroscan, APRI, FIB-4).
- Determine the stage of liver disease and need for referral.

Activity 3: Role Play – Patient Referral Simulation (30 Minutes)

Description:

- Role play between a general physician and hepatologist.
- Practice communicating clinical details, urgency, and rationale for referral.

Activity 4: Group Reflection and Referral Pathway Mapping (30 Minutes)

Description:

- Small groups map out referral pathways within their institution or healthcare system.
- Reflect on barriers to timely referral and strategies for improvement.

Experiential-Learning Learning 29.5: Awareness programe on Wilson disease.

Experiential Learning Session (3 Hours)

Activity 1: Understanding Wilson Disease (45 Minutes)

- **Method:** Expert talk or video module

Content:

- Overview of Wilson disease (genetics, copper metabolism, organ involvement)
- Symptoms, diagnostic tools, and treatment (chelators, diet, transplant)
- Importance of early diagnosis and awareness in paediatric and adult populations

Activity 2: Patient-Centric Education Role Play (45 Minutes)

Method: Role play in pairs or small groups

Content:

- Simulate educating a newly diagnosed patient or family member
- Include explanation of condition, medication compliance, dietary changes
- Emphasize use of simple language and empathetic communication

Activity 3: Designing IEC Material (45 Minutes)

Method: Group activity

Content:

- Create leaflets/posters/infographics for public education
- Include symptoms, importance of genetic testing, dietary tips
- Optionally use Canva or chart paper for presentation

Activity 4: Community Awareness Simulation (45 Minutes)

Method: Mock public awareness session

Content:

- Groups present their posters or conduct a mock health talk
- Use storytelling, visual aids, or a skit to engage audience
- Focus on preventive awareness, support groups, and timely diagnosis

Experiential-Learning Learning 29.6: Pre- and Post- Orthotopic Liver Transplantation (OLT) Unani Care

Total Experiential learning hours 3

Explain Pre- and Post-OLT Unani Care: Unani remedies to boost immune system and liver function. Dietary modifications to promote healthy digestion and liver health. Lifestyle adjustments as per Asbabe sitta Zarooriya for stress management and overall well-being. Experiential Learning Steps with Chart Display: This structured approach helps students actively engage with Unani principles and practices, deepening their understanding through hands-on preparation and educate by chart creation.

Activity 1:Understanding Unani Immunity Principles(30 Minutes)

Begin with a brief discussion or lecture on the core principles of Unani medicine, focusing on the balance of the body's humors (phlegm, blood, yellow bile, and black bile) and its approach to boosting the immune system (Quwwat-e-Mudabbira Badan).

Key Points: Highlight the importance of diet, lifestyle, and herbal medicine in enhancing immune health.

Activity 2: Charting Unani Immune Boosters(30 Minutes)

Students create or interact with a chart listing key Unani medicines, their ingredients, and benefits for boosting the immune system. Include herbs, dosage, and usage guidelines.

Chart Elements:

Herb/Medicine, Formulation, Dosage, Benefits.

Activity 3: Preparing Traditional Remedies(30 Minutes)

Organize a hands-on session where students prepare simple Unani immune-boosting remedies.

Key Points: Demonstrate how to prepare these using traditional methods, discussing their properties and benefits.

Activity 4:Unani Nutrition for Immunity(30 Minutes)

Have students compile a chart of foods recommended in Unani medicine to boost immunity.

Key Points: Focus on foods that balance the humors and strengthen the body's natural defenses.

Activity 5:Modern Insights into Traditional Wisdom(30 Minutes)

Integrate discussions on modern research supporting the efficacy of traditional Unani medicines, which have immune-boosting properties, during group work.

Key Points: Highlight any scientific studies that corroborate the benefits of Unani treatments.

Activity 6:Reflecting on Holistic Immune Care(30 Minutes)

Reflect on the use of Unani medicine for immune support.

Key Points: Focus on the experiential learning process, emphasizing the holistic approach of Unani medicine to immunity.

Experiential-Learning Learning 29.7: Drug-Induced Liver Injury

Experiential Learning Activity Plan: DILI – Complications & Referral Red Flags

Total Duration: 2 Hours

Activity 1: Case Vignette Review (30 minutes)

- **Method:** Small Group Case Analysis
- **Content:**

- Students are divided into groups, each analyzing a DILI case
- Identify complications (acute liver failure, coagulopathy, hepatic encephalopathy)
- Highlight red flag signs requiring urgent referral
- Group presentations with facilitator feedback

Activity 2: Role-play and Clinical Reasoning (30 minutes)

- **Method:** Simulation & Peer Interaction
- **Content:**
  - Simulate a consultation between physician and patient/family
  - Practice clinical decision-making and referral justification
  - Emphasize timely referral to higher centers or hepatology

Activity 3: Red Flag Recognition Game (30 minutes)

- **Method:** Gamified Learning
- **Content:**
  - Use flashcards or slides with DILI symptoms/signs
  - Teams race to classify as mild, moderate, or red flag indicators
  - Points awarded for accurate identification and justification

Activity 4: Reflection and Summary (30 minutes)

- **Method:** Individual Reflection + Group Wrap-up
- **Content:**
  - Students write 2–3 key takeaways on DILI complications and referrals
  - Group discussion: How can Unani physicians integrate this in practice?
  - Instructor summarizes key learning points and addresses doubts

Experiential-Learning Learning 29.8: Unani management of Drug induce liver injury

Experiential Learning Activity Plan: Drug-Induced Liver Injury (DILI) and Unani Management

Total Duration: 2 Hours

Activity 1: Interactive Case-Based Discussion (30 minutes)

- **Method:** Small Group Discussion
- **Content:**
    - Presentation of real-life or simulated cases of DILI
    - Identification of common causative drugs (e.g., paracetamol, anti-TB drugs, antibiotics, herbal preparations)
    - Group analysis of patient history, drug timeline, and presenting symptoms

Activity 2: Diagnosis and Investigation Workshop (30 minutes)

- **Method:** Hands-on/Role-play Simulation
- **Content:**
    - Practice interpreting LFT (Liver Function Test) values, ultrasound findings, and causality assessment tools (e.g., RUCAM score)
    - Simulate patient interviews to gather diagnostic clues
    - Discussion on distinguishing hepatocellular vs. cholestatic injury patterns

Activity 3: Unani Perspective & Ilaj bil Tadbeer (30 minutes)

- **Method:** Expert Demonstration & Group Learning
- **Content:**
    - Explanation of Unani concepts: *Suum-e-Advia*, *Zahar Asar Advia*, *Iltihab Kabid*
    - Discussion of Unani formulations used for liver detoxification and regeneration, e.g., *Sharbat Kasni*, *Jawarish Jalinus*, *Majoon Dabidul Ward*
    - Role of regimental therapy (*Ilaj bil Tadbeer*) such as *Fasd*, *Hammam*, *Hizam*, and *dietary measures*

Activity 4: Reflection & Integration Session (30 minutes)

- **Method:** Group Reflection & MCQ Quiz
- **Content:**

- Learners reflect on clinical integration of modern diagnostics and Unani management
- MCQ or flashcard-based quiz to reinforce identification of offending agents, diagnosis, and appropriate Unani treatment
- Open discussion on potential research opportunities in DILI and Unani medicine

Experiential-Learning Learning 29.9: Paracentesis then and now

Experiential Learning Activity Plan

Total Duration: 4 Hours

Activity 1: Introduction & Overview (45 minutes)

- Method: Interactive Lecture
- **Activities:**
  - Introduction to paracentesis: Indications and contraindications
  - Classical (landmark-based) vs. conventional (ultrasound-guided) methods
  - Recent advancements: AI-assisted paracentesis overview

Activity 2: Skill Station – Classical & Conventional Methods(1 hour)

- Method: Simulation-Based Hands-on Training
- **Activities:**
  - Perform mock paracentesis on anatomical mannequins
  - Practice both classical and ultrasound-guided techniques
  - Peer and instructor feedback sessions

Activity 3: Skill Station – AI-Assisted Paracentesis (1 hour)

- Method: Technology-enhanced simulation or Video Demonstration
- **Activities:**
  - Interactive demonstration of AI-based decision support for paracentesis

- Guided simulation using virtual or augmented reality (if available)
- Discussion on safety, accuracy, and clinical applications

Activity 4: Case-Based Discussion (45 minutes)

Method: Small Group Discussion

- **Activities:**
  - Analyze and compare real-life cases using different paracentesis methods
  - Discuss outcomes, complications, and decision-making challenges

Activity 5: Reflection & Wrap-Up (30 minutes)

- Method: Group Reflection
- **Activities:**
  - Share individual reflections and key learnings
  - Summarize advantages and limitations of each method
  - Discuss future learning goals and improvements

Modular Assessment

Assessment	**Hour**
Instructions- Conduct a structured Modular Assessment. The assessment will be for 50 Marks . Keep a structured marking pattern. Use different Assessment methods in each module for the semester. Keep a record of the structured pattern used for assessment. Calculate the Modular grade point as per Table 6C. **1. CBA (Case-Based Assessment)** Knowledge Application -8 marks Clinical Reasoning -7 marks	4

Decision Making -5marks Communication -3 marks Professionalism -2 marks **Short Answer Questions SAQs/LAQs** for *Amrāḍ-i-Niẓām-i-Haḍm aur* Amrāḍ-i-*Kabidi-III* Gastro intestinal and Hepato biliary DisorderIII **SAQ (Short Answer Question) -5x2 =10 marks** **Purpose:** Test factual knowledge and basic understanding. **Length:** Brief, typically 1-3 sentences or a short paragraph. **LAQ (Long Answer Question)-3 x 5=15 marks** **Purpose:** Evaluate deeper understanding, analysis, and critical thinking. **Length:** Longer, typically several paragraphs, depending on the complexity. **Components (**5 marks **):** **Introduction :** Brief overview or definition-0.5 marks **Main Explanation :** Detailed response including definitions, examples, or processes-2.5 marks **Supporting Details :** Additional facts, examples, or related concepts-1.5 marks **Conclusion :** Summarize or provide an insight related to the question-0.5 marks or Any practical in converted form can be taken for assessment.(25 marks) and Any of the experiential as portfolio/ refelections / presentations can be taken as an assessment.(25 marks)	
Module 30 : امراض نظام کلیہ/Amrāḍ-i-Niẓām-i-Kulya (Nephrologic disorders)	
Module Learning Objectives (At the end of the module, the students should be able to)	

1. Describe about the abnormal odor, colour, crystals, deposits, pus cells, transparency and volume of urine in different *Amrāḍ-i-Kulya (* renal diseases) and these changes in the urine present in different *Amrāḍ-i-Kulya (* renal diseases) as describe by Unani Physicians.
2. Prioritize Unani literature and compare between urine finding and kidney pathology accordingly.
3. Formulate Unani treatment to reduce -signs, symptoms, complications and severity of the *Amrāḍ-i-Kulya (* renal diseases).
4. Acquire evidence-based guidelines from Unani system of Medicines for managing *Amrāḍ-i-Kulya muzmin (*chronic kidney disease).
5. Follow Unani principles to manage *Amrāḍ-i-Kulya (*renal disorders) for prescribing Unani medications, diet and lifestyle modifications to keep the level of electrolytes, minerals and fluid in balance when patients have *Amrāḍ-i-Kulya muzmin* (chronic renal disorder) or on dialysis.
6. Explain early signs and symptoms of *Amrāḍ-i-Kulya (* renal diseases) in children, as changes in urination, swelling, fatigue, and high blood pressure.
7. Demonstrate how to choose Unani medicines and it's appropriate dose for children with renal impairment.

Unit 1 امراض نظام کلیہ کی مخصوص تفتیشات اور اسکا معائنہ/Amrāḍ-i-Niẓām-i-Kulyaki Makhsus Taftishat aur uska muaaina (Evaluation and special investigation in Renal System)

30.1.1. معائنہ بول وخون *(muaaina -e-Bawl, muaaina -e-khoon*).

References: 39,52,62

3A	3B	3C	3D	3E	3F	3G
CO6,CO7,CO8	Describe moaena-e-Bawl(urinalysis) in wide range of *Amrāḍ-i-Kulya (* renal diseases) and urinary tract (*Majrae bawl*) like-*Tadia e Majrae Bawl* (urinary tract infections), *Warm-al-mathana* (cystitis), *Warm al kulya* (Nephritis), *Bawl al dam* (blood in urine), *bawl al midda* (pyuria), *Khuruj al Ramal fil Bawl* (Passing of sand particles in urine) and Compare in between various types of urinary casts in different *Amrāḍ-i-Kulya (* renal diseases)	1	Lecture	CC	Knows-how	L_VC
CO1,CO2,CO6,CO7	Describe diagnosis of other systemic diseases that affect kidney function on the basis of *moaena-e-bawl*	1	Lecture	CC	Knows-how	L&PPT

CO1,CO2,CO5,CO7,CO8	Demonstrate and interpret moaena-e-bawl findings, patient symptoms and detailed medical history in the light of recent advancements	2	Practical30.1	PSY-GUD	Shows-how	LRI,DL,TBL,PT
CO1,CO2,CO4,CO5,CO6,CO8	Demonstrate and interpret *moaena-e-bawl* results to guide diagnosis and management of different *Amrāḍ-i-Kulya* (kidney diseases), *Amrāḍ-i Majare Kulya* (Urinary tract infections), *Hisat al kulya* (Kidney stones) and other *Amrāḍ-i Nizami* (Systemic diseases) to formulate Unani treatment plans based on *moaena-e-bawl*.	2	Practical30.2	PSY-ORG	Shows-how	D,GBL,DL
CO1,CO2,CO5,CO6,CO7,CO8	Diagnose different *Amrāḍ-i-Kulya* (kidney diseases)	3	Experiential-Learning30.1	AFT-SET	Does	LRI,PL,D
CO1,CO4,CO5,CO6	Demonstrate patients and caregivers for *Amrāḍ-i-Kulya* (kidney diseases) prevention and emphasize importance of proper hydration and Unani treatment.	3	Experiential-Learning30.2	AFT-VAL	Does	D,D-BED,D-M,W

Unit 2 ورم کلیہ/Waram al-Kulya (Glomerulonephritis)

30.2.1. ورم کلیہ حار/Waram al-KulyaHarr (Acute Glomerulonephritis)

30.2.2. متلازمہ کلیہ/Mutalazma kulyah (Nephrotic syndrome)

References: 37,46,55,61

3A	3B	3C	3D	3E	3F	3G
CO1,CO6,CO7,CO8	Describe Warme kulya harr (acute glomerulonephritis) and Nephrotic Syndrome and its causes.	2	Lecture	CC	Knows-how	L&PPT

CO1,CO4,CO5,CO6,CO8	Interpret urine and blood test results and develop individualized effective Unani management	4	Practical30.3	CAN	Shows-how	D,LRI,CD,DL
CO1,CO4,CO5,CO6,CO7	Diagnose and discuss *Warm al kulya harr* (acute glomerulonephritis) and *Mutalazma kulyah (*Nephrotic Syndrome), its diagnostic tests, risk factors and develop specific dietary plans with Unani management.	3	Experiential-Learning30.3	PSY-MEC	Does	PER,PBL,CBL,CD
CO1,CO2,CO5,CO6,CO7	Participate in monitoring patient's response to Unani therapy, complications and need of timely referral.	3	Experiential-Learning30.4	AFT-RES	Does	D
Unit 3 قصورالکلیہ/Qasurul kulia (Renal failure) 30.3.1.قصورالکلیہ حاد/Qasurul kulia had(Acute Renal failure) 30.3.2.قصورالکلیہ مزمن/*Qasur al Kulya muzmin (chronic renal failure)* **References:** 50,52,62,63						
3A	**3B**	**3C**	**3D**	**3E**	**3F**	**3G**
CO1,CO2,CO6,CO7,CO8	Discribe *Qasurul kulia haad (*Acute Renal failure) and *Qasur al Kulya muzmin (*Chronic Renal failure) its causes and monitor growth and development in pediatric patients.	2	Lecture	CK	Knows-how	L_VC
CO1,CO4,CO5,CO6,CO8	Analyzing and interpret urine and blood test results and develop individualized effective by Unani management.	4	Practical30.4	CAN	Shows-how	LRI,CD,CBL,DL
CO1,CO2,CO6,CO8	Classify signs and symptoms of *Qasurul kulia haad (*Acute Renal failure) and *Qasur al Kulya muzmin* (Chronic Renal) failure in pediatric patients and monitor urine output and fluid balance .	3	Experiential-Learning30.5	AFT-SET	Does	LRI,W,PER

CO1,CO4,CO5,CO6,CO7,CO8	Participate in monitoring patient response to Unani therapy, complications and need of timely referral	3	Experiential-Learning30.6	AFT-RES	Does	D

Unit 4 بول فی الفراش/Bawl Filfarash (Enuresis) and امراض کلیہ موروثی/Amrāḍ-i -Kulya Maurusi (Congenital & Hereditary Renal disorder)

30.4.1. بول فی الفراش/*Bawl Filfarash (*Enuresis)

30.4.2. امراض کلیہ موروثی/ *Amrāḍ-i -Kulya Maurusi* (Congenital & Hereditary Renal disorder).

References: 37,46,55,61

3A	3B	3C	3D	3E	3F	3G
CO1,CO5,CO6,CO7	Discuss Unani principles of treatment and their application to *Bawl Filfarash ,*define and classify *Amrāḍ-i -Kulya Maurusi* (congenital and hereditary renal diseases) and embryological development of the kidney with its relevance to congenital disorders	2	Lecture	CC	Knows-how	L&PPT
CO1,CO2,CO5,CO6,CO7,CO8	Perform clinical examination, make diagnosis, and interprete with investigations for *Amrāḍ-i -Kulya Maurusi* (Congenital & Hereditary Renal disorder) and monitor patients for complications and timely referral.	4	Practical30.5	PSY-GUD	Shows-how	D-BED,PBL,CBL
CO1,CO2,CO6,CO7,CO8	Identify and manage underlying causes of *bawl filfarash* for strengthening the kidneys and bladder by *Ilaj bil Ghidha* and *Ilaj bil tadbir* with specific diet and exercises	2	Experiential-Learning30.7	AFT-SET	Does	GBL,CBL,W
CO1,CO5,CO6,CO7,CO8	Classify genetic and molecular mechanisms underlying *Amrāḍ-i -Kulya Maurusi* (hereditary renal diseases)	2	Experiential-Learning30.8	AFT-SET	Does	IBL,SDL,BL

Unit 5 حصاۃالکلیہ ومثانہ/Hasat-al -Kulya -wa-Mathana (Renal and Bladder Stone)

30.5.1. حصاۃالکلیہ ومثانہ/Hasat-al -Kulya -wa-Mathana(Renal and Bladder Stone).

References: 31,52,62

3A	3B	3C	3D	3E	3F	3G
CO1,CO2,CO5,CO6	Describe *Hasat-al -Kulya -o-Mathana (*renal and bladder stones) understand it's types and causes on the basis of investigations and explain the age-related differences for severity of disease.	2	Lecture	CC	Knows-how	L&PPT
CO1,CO2,CO4,CO5,CO8	Perform clinical examination, make diagnosis by interpreting investigations of *Hasat-al -Kulya -o-Mathana* and demonstrate importance of preventive measures	4	Practical30.6	PSY-GUD	Shows-how	D-BED,D,W,LRI,D-M
CO1,CO2,CO5,CO6,CO7	Adapt Unani therapy and specific dietary plans of *Hasat-al -Kulya -o-Mathana*.	4	Experiential-Learning30.9	AFT-SET	Does	TUT,W,SY

Practical Training Activity

Practical Training 30.1 Moaena-e-bawl

Practical Learning Activities (2-Hours)

1. Case-Based Analysis: History, Symptoms & Moaena-e-Bawl Correlation

Duration: 60 minutes

Activity:

- Students are given detailed patient case sheets including history (e.g., pain, frequency, hematuria, fever), symptoms, and *moaena-e-bawl* reports (physical, chemical, and microscopic).
- Analyze and justify how the urine findings reflect the underlying pathology.
- Correlate historical symptoms with urine parameters (e.g., pus cells in UTI, RBCs in glomerulonephritis, crystals in renal calculi).
- Use Unani reasoning (e.g., Mizaj imbalance, Akhlat disturbances) alongside modern pathophysiological explanations.

2. Integration of Moaena-e-Bawl with Recent Diagnostic Advancements

Duration: 60 minutes

Activity:

- Students compare traditional *moaena-e-bawl* parameters with modern diagnostic tools like urine protein:creatinine ratio, microalbuminuria, urine culture, dipstick test interpretation.
- Discuss how newer methods enhance early detection, disease monitoring, and prognosis.
- Justify treatment direction (Unani and supportive) based on combined traditional findings and modern insights.

Practical Training 30.2 Moaena-e-bawl in Amrad-i- Kulya.

Practical Learning Activities (2-Hours)

1. Classification and Interpretation of Moaena-e-Bawl Reports

Duration: 60 minutes

Activity:

- Students are provided with a series of urine reports showing variations in color, clarity, odor, specific gravity, pH, presence of crystals, proteins, pus cells, RBCs, and casts.
- Classify findings according to disease types:
    - *Amrāḍ-i-Kulya* (e.g., nephritis – proteinuria, hematuria)
    - *Amrāḍ-i-Majārе Kulya* (e.g., UTI – pyuria, bacteriuria)

- *Hisat al-Kulya* (e.g., oxalate/phosphate crystals)
- *Amrāḍ-i-Nizāmī* (e.g., diabetes – glycosuria, ketonuria)

- Create a diagnostic matrix linking urine findings to specific conditions.

2. Development of Unani Management Plans Based on Urine Findings

Duration: 60 minutes

Activity:

- Students select one classified case from each category.
- Develop an individualized Unani management plan including:
  - *Ilaj bil Ghiza* (diet tailored to Mizaj and disease nature)
  - *Ilaj bil Dawa* (Unani pharmacotherapy like Habb-e-Kabid Naushadri, Sharbat Bazoori, etc.)
  - *Ilaj bil Tadbir* (supportive regimens like massage, Hammam, or cupping if indicated)
- Present and justify treatment choices based on classical Unani literature and urine analysis interpretation.

Practical Training 30.3 Basics of Urine examination

Practical Learning Activities (4-Hours)

1. Urine Report Analysis and Clinical Correlation

Duration: 60 minutes

Activity:

- Students examine various urine reports (routine/microscopy).
- Identify abnormalities such as proteinuria, hematuria, crystals, pus cells, and specific gravity changes.
- Correlate findings with common Unani renal conditions like *Warm al-Kulya*, *Hasat al-Kulya*, or *Qasur al-Kulya*.

2. Blood Test Interpretation in Renal Disorders

Duration: 60 minutes

Activity:

- Students interpret blood reports including serum creatinine, blood urea, uric acid, electrolytes, and complete blood count.
- Recognize patterns indicating acute or chronic renal dysfunction.
- Discuss implications from a Unani perspective (e.g., imbalance of Akhlat or Su-e-Mizaj).

3. Development of Individualized Unani Management Plan

Duration: 90 minutes

Activity:

- Based on provided cases and investigations, students formulate:
    - *Ilaj bil Ghiza* – specific dietary recommendations per Mizaj and disease stage.
    - *Ilaj bil Dawa* – selection of Unani pharmacological treatments with dosage and duration.
    - *Ilaj bil Tadbir* – lifestyle modifications like massage, fomentation, cupping, or exercise.
- Emphasis is placed on patient-specific customization.

4. Peer Presentation and Feedback

Duration: 30 minutes

Activity:

- Students present their case analysis and Unani management plan to peers.
- Justify their interpretation and treatment decisions using classical Unani texts.
- Receive feedback and revise plans accordingly.

Practical Training 30.4 Diagnosis of renal failure (acute and chronic) by Urine examination

Practical Learning Activities (4-Hours)

1. Interpretation of Urine Examination Reports

Duration: 60 minutes

Activity:

- Students are provided with various urine test reports (e.g., routine microscopy, proteinuria, hematuria).
- Analyze findings such as color, specific gravity, presence of proteins, RBCs, pus cells, or crystals.
- Correlate with possible renal pathologies (e.g., nephritis, stone disease, infections).

2. Analysis of Blood Investigations

Duration: 60 minutes

Activity:

- Students interpret blood test results including serum creatinine, blood urea nitrogen, electrolytes, uric acid.
- Identify patterns suggestive of renal insufficiency, dehydration, or metabolic imbalances.
- Compare findings with Unani diagnostic concepts (e.g., Su-e-Mizaj, imbalance in Akhlat).

3. Case-Based Diagnosis and Management Planning

Duration: 90 minutes

Activity:

- Students receive case scenarios combining symptoms, urine and blood reports.
- Formulate a Unani diagnosis considering Mizaj, affected organ, and Akhlat status.
- Develop a personalized Unani treatment plan including:
    - *Ilaj bil Ghiza* (dietary guidance),
    - *Ilaj bil Dawa* (Unani formulations),
    - *Ilaj bil Tadbir* (regimental therapy).

4. Peer Review and Justification of Management Plan

Duration: 30 minutes

Activity:

- Students present their management plan to peers.
- Justify the treatment components based on classical Unani texts and clinical reasoning.
- Receive feedback and make necessary modifications.

Practical Training 30.5 Clinical presentation of Congenital & Hereditary Renal disorder

Practical Learning Activities (4-Hours)

1. Clinical Examination Practice for Hereditary Renal Disorders

Duration: 60 minutes

Activity:

- Students practice physical examination techniques relevant to hereditary renal conditions (e.g., palpation for renal enlargement, assessment for edema, hypertension check).
- Simulated or volunteer patients are used to identify clinical features of conditions like polycystic kidney disease or congenital nephrotic syndrome.
- Findings are recorded and discussed in small groups.

2. Investigation Interpretation and Diagnostic Reasoning

Duration: 60 minutes

Activity:

- Students are provided with sample investigation reports:
    - Urinalysis, renal function tests, imaging (ultrasound, CT), and genetic testing results.
- Based on clinical and investigation data, students make a probable diagnosis and classify the condition.
- Each student submits a structured diagnostic summary.

3. Monitoring Parameters and Complication Identification

Duration: 60 minutes

Activity:

- Students assess mock follow-up data (e.g., rising creatinine, proteinuria trends, blood pressure logs).
- Identify potential complications like chronic kidney disease progression, electrolyte imbalance, or hypertension.
- Discuss warning signs that necessitate referral to higher care or nephrologist.

4. Referral Criteria and Case-based Roleplay

Duration: 60 minutes

Activity:

- Roleplay activity where students simulate a consultation with a patient/family.
- Communicate findings, explain the importance of referral, and give anticipatory guidance.
- Discuss referral criteria based on progression, complications, and availability of specialized care.

Practical Training 30.6 Preventive measures for renal and bladder stones

4-Hour Practical Learning Activities Breakdown

Activity 1. Physical Examination Practice for Renal and Bladder Disorders

Duration: 60 minutes

Activity:

- Students practice physical examination techniques on peers or mannequins:
    - Inspection, palpation (renal angle tenderness), percussion, auscultation
- Identify clinical signs suggestive of *Hasat-al-Kulya-o-Mathana*.

  Focus: Developing hands-on clinical examination skills relevant to urinary calculi.

Activity 2. Diagnostic Investigations Interpretation Workshop

Duration: 60 minutes

Activity:

- Provide mock or real patient investigation reports (urine analysis, KUB ultrasound, blood urea/creatinine).

- Students:
    - Interpret reports to identify type, size, and location of stone
    - Correlate findings with symptoms and make diagnosis

      Focus: Enhancing diagnostic reasoning using lab and imaging data.

Activity 3. Preventive Measures Discussion and Demonstration

Duration: 60 minutes

Activity:

- Group discussion on preventive strategies in Unani and modern perspectives:
    - Diet modification, hydration, lifestyle changes
    - Use of Unani preventive herbs (*Sharbat Bazoori, Majoon Hajrul Yahood*)
- Demonstrate preparation and dosage of preventive Unani remedies.

  Focus: Emphasizing prophylaxis and health maintenance in *Hasat*.

Activity 4. Clinical Case Simulation with Integrated Skills Demonstration

Duration: 60 minutes

Activity:

- Simulated patient encounters:
    - Take history, perform examination, interpret reports
    - Diagnose and explain preventive measures to the patient
- Faculty evaluates using checklist/rubric.

  Focus: Integration of examination, diagnosis, and patient education.

Experiential Learning Activity

Experiential-Learning Learning 30.1: Urine analysis

Experiential Learning Activities (3-Hours)

1. Hands-on Demonstration of Urine Examination Techniques

Duration: 60 minutes

Activity:

- Students observe and perform physical, chemical, and microscopic urine analysis (appearance, specific gravity, pH, protein, sugar, RBCs, pus cells, crystals, casts).
- Practice sample documentation and interpretation.

2. Comparative Analysis of Urine Reports from Different Renal Diseases

Duration: 60 minutes

Activity:

- Students are given sample reports from patients with different kidney diseases such as:
    - *Hasat al-Kulya* (renal stones): crystals, hematuria
    - *Warm al-Kulya* (nephritis): proteinuria, RBCs, casts
    - *Mutalazma Kulyah* (nephrotic syndrome): massive proteinuria, lipiduria
    - *Qasur al-Kulya* (renal failure): low specific gravity, cellular debris
- Compare and tabulate findings to differentiate disease types based on urine analysis.

3. Correlation with Clinical Features and Unani Diagnosis

Duration: 60 minutes

Activity:

- Students correlate urine findings with clinical symptoms and signs for each condition.
- Link laboratory data with Unani diagnostic principles (e.g., *Mizaj*, *Akhlat* imbalance, *Mafasil al-Baul* involvement).
- Formulate differential diagnosis and suggest preliminary Unani management directions.

Experiential-Learning Learning 30.2: Unani Management of Amrad-i-kulya

Experiential Learning Activities (3-Hour)

1. Patient & Caregiver Education Roleplay

Duration: 60 minutes

Activity:

- Students engage in roleplay sessions where they explain to simulated patients/caregivers:
    - Common causes and risk factors of kidney diseases.
    - Early signs to watch for.
    - Importance of preventive measures in daily routine.
- Practice using simple, non-technical language in both Urdu and English.

2. Hydration Awareness and Fluid Management Demonstration

Duration: 60 minutes

Activity:

- Students demonstrate proper hydration practices for different age groups and seasons.
- Discuss signs of dehydration and overhydration.
- Explain quantity, timing, and types of fluids suitable as per Unani principles and *Mizaj* of the individual.

3. Unani Preventive Strategies and Home-based Management

Duration: 60 minutes

Activity:

- Students explain Unani concepts related to renal health maintenance (e.g., *Hifz-e-Sehat*, *Tanqiya*, *Tadeel-e-Mizaj*).
- Demonstrate use of simple Unani formulations, dietary adjustments, and *Ilaj bil Tadbir* for kidney health.
- Create visual charts or leaflets to reinforce prevention messages for patients and caregivers.

Experiential-Learning Learning 30.3: Clinical presentation of acute glomerulonephritis and Nephrotic Syndrome

Experiential Learning Activities (3-Hours)

1. Symptom Comparison and Clinical Case Differentiation

Duration: 60 minutes

Activity:

- Students are presented with clinical scenarios showing key features of both conditions.
- Create a comparative chart listing the distinguishing signs and symptoms (e.g., hematuria vs. proteinuria, hypertension vs. edema).
- Discuss the acute vs. chronic nature, underlying Mizaj, and progression.

2. Diagnostic Interpretation and Risk Factor Mapping

Duration: 60 minutes

Activity:

- Students interpret diagnostic reports: urinalysis, serum proteins, creatinine, ASO titers, lipid profiles.
- Identify diagnostic markers for each condition and match with Unani parameters.
- List common risk factors such as infections, diet, temperament imbalance, and environmental triggers.

3. Unani Dietary Planning and Management Strategy

Duration: 60 minutes

Activity:

- Students develop individualized dietary plans for each condition based on Mizaj and disease nature:
    - For *Warm al-Kulya Harr*: light, cooling, anti-inflammatory foods.
    - For *Mutalazma Kulyah*: protein regulation, fluid and salt control, warm temperament foods.
- Draft a Unani management plan including *Ilaj bil Ghiza*, *Ilaj bil Dawa*, and *Ilaj bil Tadbir* for both conditions.

Experiential-Learning Learning 30.4: Procedure of referral

Experiential Learning Activities (3-Hours)

1. Review and Monitoring of Case Sheets

Duration: 60 minutes

Activity:

- Students review follow-up case sheets of patients under Unani treatment for renal or bladder conditions.
- Track symptom progression, vital signs, and relevant lab values across multiple visits.
- Assess the effectiveness of prescribed *Ilaj bil Dawa*, *Ilaj bil Ghiza*, and *Ilaj bil Tadbir*.

2. Identification of Complications and Red Flag Signs

Duration: 60 minutes

Activity:

- Students are given mock clinical scenarios where complications like persistent edema, uncontrolled blood pressure, worsening renal parameters, or side effects to Unani drugs are presented.
- Identify early signs of complications and discuss appropriate modifications to treatment or supportive measures.

3. Referral Decision-Making and Communication Practice

Duration: 60 minutes

Activity:

- Students role-play as Unani practitioners documenting referral notes for patients with poor therapeutic response or complications.
- Communicate referral reasons, clinical background, and urgency of the situation.
- Participate in simulated discussion with a senior practitioner or specialist.

Experiential-Learning Learning 30.5: Awareness program on renal failure (acute and chronic)

Experiential Learning Activities (3-Hours)

1. Symptom Classification Workshop

Duration: 60 minutes

Activity:

- Students review case vignettes of pediatric patients presenting with renal symptoms.
- Identify and classify signs and symptoms as belonging to acute or chronic renal failure based on onset, severity, and associated findings (e.g., oliguria, edema, fatigue, growth retardation).
- Chart comparison of *Qasūr al-Kulya Hādd* vs *Muzmin* based on classical and modern references.

2. Urine Output Monitoring Simulation

Duration: 60 minutes

Activity:

- Students participate in a hands-on demonstration using pediatric mannequins or urine measurement kits.
- Simulate 24-hour urine output monitoring and calculate urine output per kg body weight.
- Record and interpret findings in context of renal insufficiency.

3. Fluid Balance Assessment and Interpretation

Duration: 60 minutes

Activity:

- Students receive mock fluid intake/output charts of pediatric patients.
- Calculate fluid balance and identify signs of overload or dehydration.
- Discuss the importance of fluid restriction, replacement therapy, and Unani guidance on fluid regulation in renal dysfunction.

Experiential-Learning Learning 30.6: Procedure of referral

Experiential Learning Activities (3-Hour)

1. Case-Based Monitoring Exercise

Duration: 60 minutes

Activity:

- Students are given case records of patients undergoing Unani therapy for chronic renal or bladder conditions.
- Review progress notes, vital signs, symptom changes, and lab parameters.
- Assess patient response to therapy and identify signs of improvement or deterioration.

2. Identification of Complications and Red Flags

Duration: 60 minutes

Activity:

- Students work in groups to analyze follow-up data with potential complications (e.g., worsening renal function, fluid overload, persistent symptoms).
- Identify warning signs and categorize them into urgent, semi-urgent, and routine follow-up needs.
- Discuss how Unani principles interpret such complications and how to modify treatment accordingly.

3. Simulated Referral Planning and Communication

Duration: 60 minutes

Activity:

- Students engage in a roleplay activity where they simulate preparing a referral for a patient not responding to Unani therapy.
- Draft a referral note including diagnosis, treatment given, complications, and reason for referral.
- Present the case to a peer acting as a specialist and receive feedback.

Experiential-Learning Learning 30.7: Management of bowl filfarash (enuresis) by Gamification.

Experiential Learning Activities(2-Hours)

1. Clinical Case Identification and Analysis

Duration: 30 minutes

Activity:

- Students evaluate given case scenarios of children and adults with *Bawl fil Farāsh*.
- Identify possible underlying causes such as Mizaji imbalance, bladder weakness, excessive cold intake, or psychological factors.
- Document findings and propose a Unani-based diagnosis.

2. Diet Planning According to Temperament (Ilaj bil Ghidhā)

Duration: 30 minutes

Activity:

- Students design personalized dietary plans based on Mizaj of the patient and causative factors.
- Choose foods that strengthen kidneys and bladder (e.g., warm and dry temperament foods).
- Avoid foods aggravating cold and moist temperament.

3. Tadbeer-Based Management and Exercise Demonstration (Ilaj bil Tadbir)

Duration: 40 minutes

Activity:

- Students list lifestyle modifications such as regulation of fluid intake, sleep hygiene, bladder training.
- Demonstrate specific *Riyāzat* (exercises) and *Tadbīrāt* like massage, dry fomentation over the bladder region.
- Discuss seasonal and temperament adjustments.

4. Group Presentation and Peer Feedback

Duration: 20 minutes

Activity:

- Each group presents one complete management plan combining *Ilaj bil Ghidhā* and *Ilaj bil Tadbir*.
- Peers provide feedback on suitability, evidence from classical texts, and practical application.

Experiential-Learning Learning 30.8: Research Journals on hereditary renal diseases.

Experiential Learning Activities (2-Hours)

1. Interactive Overview with Visual Aids

Duration: 30 minutes

Activity:

- Brief instructor-led explanation of:
    - Genetic inheritance patterns (autosomal dominant, autosomal recessive, X-linked)
    - Common hereditary renal diseases (e.g., ADPKD, Alport syndrome, cystinosis)
    - Key genetic mutations and molecular mechanisms

2. Case-Based Group Work with Classification Task

Duration: 40 minutes

Activity:

- Small groups work on clinical case vignettes of different hereditary renal disorders.
- For each case, they:
    - Identify the inheritance pattern
    - Map symptoms to molecular/genetic abnormalities
    - Classify the disease accordingly

3. Pedigree Chart Interpretation Activity

Duration: 30 minutes

Activity:

- Students are provided mock family histories.
- They draw and interpret pedigree charts to identify mode of inheritance.

4. Group Discussion on Molecular Diagnosis and Prevention

Duration: 20 minutes

Activity:

- Discussion on:
    - Diagnostic techniques (e.g., genetic testing, counseling)
    - Importance of early detection and family screening
    - Preventive measures in both modern and Unani perspectives

Experiential-Learning Learning 30.9: Awareness program on prevention of renal and bladder stones

Experiential Learning Activities 4-Hours

Activity 1. Case-Based Mizaj Assessment & Clinical History Taking

Duration: 60 minutes

Activity:

- Learners are given simulated patient cases.
- They perform history taking and temperament (Mizaj) assessment using Unani parameters.
- Identify classical signs of *Hasat al-Kulya wa al-Mathana*.

  Focus: Diagnosis and temperament evaluation.

Activity 2. Diagnostic Report Analysis and Therapy Selection

Duration: 60 minutes

Activity:

- Students receive urine analysis, ultrasound reports, and symptom profiles.
- Based on findings, they choose suitable Unani formulations (*Hajrul Yahood, Majoon Suranjan, etc.*).
- Match pharmacotherapy with patient's Mizaj and type of stone.

  Focus: Therapy planning using Unani pharmacological principles.

Activity 3. Unani Dietary Plan Development and Roleplay Counseling

Duration: 60 minutes

Activity:

- Students develop individualized dietary plans based on temperament and Unani dietary principles.
- Conduct mock patient counseling sessions to communicate the plan.

  Focus: Application of food therapy (*Ilaj bil Ghiza*) and patient education.

Activity 4. Presentation, Feedback, and Reflection

Duration: 60 minutes

Activity:

- Each group presents their case summary, therapeutic and dietary plan.
- Faculty and peers provide feedback using a rubric.
- Students write a brief reflection: *"What did I learn, and how will I apply it clinically?"*

  Focus: Consolidation, peer learning, and reflective practice.

Modular Assessment

Assessment	**Hour**
Instructions- Conduct a structured Modular Assessment. The assessment will be for 50 Marks . Keep a structured marking pattern. Use different Assessment methods in each module for the semester. Keep a record of the structured pattern used for assessment. Calculate the Modular grade point as per Table 6C. **OSPE (Objective Structured Practical Examination)** Preparation and Setup -5 Execution of Technique -10 Observation and Recording - 2.5	4

Data Interpretation -5 Time and Resource Management -2.5 **Short Answer Questions SAQs/LAQs for *Amrāḍ-i-Niẓām-i- Kulya*** ***(Nephrologic disorders)*** **SAQ (Short Answer Question) -5x2 =10 marks** **Purpose:** Test factual knowledge and basic understanding. **Length:** Brief, typically 1-3 sentences or a short paragraph. **LAQ (Long Answer Question)-3 x 5=15 marks** **Purpose:** Evaluate deeper understanding, analysis, and critical thinking. **Length:** Longer, typically several paragraphs, depending on the complexity. **Components (**5 marks **):** **Introduction :** Brief overview or definition-0.5 marks **Main Explanation :** Detailed response including definitions, examples, or processes-2.5 marks **Supporting Details :** Additional facts, examples, or related concepts-1.5 marks **Conclusion** : Summarize or provide an insight related to the question-0.5 marks Or Any practical in converted form can be taken for assessment. (25 marks) and Any of the experiential as portfolio/ refelections / presentations can be taken as an assessment. (25 marks)	
Semester No : 5	
Module 31 : امراض عین اذن انف وحلق (Amrāḍ-i-'Ayn-Udhun wa Anf)	

Module Learning Objectives

(At the end of the module, the students should be able to)

1. Describe common paediatric diseases of Eye and ENT along with Unani concept (asbab, alamat ,tashkis usul-i-Ilaj ,Ilaj wa tadabir) .
2. Develop skills in evaluation and diagnosis of diseases by history taking, clinical features and examinations.
3. Describe the normal range of clinical finding of refraction& vision and show ability to differentiate abnormal findings of refraction and visual disorders.
4. Develop skills in conservative management of diseases of eye and ENT and recognise when to refer to the specialist.
5. Describe the symptoms of common ENT problems and its unani management (usul-i Ilaj, Ilaj tadabir,ghidha wa parhez)
6. Conduct awareness in community for preventive measures (regular check up, nutrition, good hygiene and vaccination)of Eye and ENT diseases.

Unit 1 (Amrāḍ-i-'Ayn I) Diseases of Eye-I امراض عین۔اول

31.1.1 امراض جفن *Amrāḍ-i-jafn*(Diseases of Eyelids)

31.1.1.1 سلاق Sulāq (Blephritis)

31.1.1.2 شعیرہ Sha'īra (Stye)

31.1.1.3 بردہ Barada (Chalazion)

31.1.2 امراض نظام دمعی Amrāḍ-i-Nizame Damei (Diseases of Lacrimal system)

31.1.2.1 Congenital Nasolacrimal Duct Obstruction

31.1.2.2 Dry Eye

References: 43,52,63

3A	3B	3C	3D	3E	3F	3G
CO1,CO2,CO4,CO5,CO6,CO7,CO8	Describe etiology, types, diagnosis and management of Unani and conventional medicine in diseases of Eye lid (Blephritis, Stye, Chalazion).	2	Lecture	CC	Knows-how	L&PPT ,L_VC

CO1,CO2,CO4,CO5,CO6,CO7,CO8	Describe Congenital Naso lacrimal Duct Obstruction and Dry Eye.	1	Lecture	CE	Knows-how	FC,L&PPT
CO1,CO2,CO4,CO5,CO6,CO7,CO8	Demonstrate how to diagnose eye related problems in children.	3	Practical31.1	PSY-MEC	Shows-how	D
CO1,CO2,CO4,CO5,CO6,CO7,CO8	Demonstrate examination of eyes and face for any swelling, lump, redness and pain.	3	Practical31.2	PSY-GUD	Shows-how	DIS,SIM,RP
CO1,CO2,CO4,CO5,CO6,CO7,CO8	Diagnose diseases of eyelid and lacrimal and plan management protocol.	3	Experiential-Learning31.1	PSY-MEC	Does	RP,RLE,CBL
CO1,CO2,CO4,CO5,CO6,CO7	Identify diseases of Eyelid and Lacrimal glands.	3	Experiential-Learning31.2	CAN	Does	SIM,CBL,RP,W

Unit 2 (Amrāḍ-i-'Ayn II) Diseases of eye (II)امراض عین۔دوم

31.2.1 انحراف بصرInherafe basar (Refractory Errors)

31.2.2. امراض قرنیہ Amrāḍ-i-Qarniyya (Diseases of Cornea)

31.2.2.1 نتوءالقرنیہ Nutū' Al- Qarniyya (Bulging Cornea)

31.2.2.2 التہاب القرنیہ Iltihab-al Qarniyya (Keratitis)

31.2.3 امراض ملتحمہ Amrāḍ-i Multahima (Diseases of Conjunctiva)

31.2.3.1 رمد Ramad (Conjunctivitis)

31.2.3.2 بثور ملتحمہ Basoor-i-Multahima (Dermoid cyst)

31.2.3.3 انتفاخ ملتحمہ Intifākh-i- Multahima (Chemosis)

References: 34,52,63

3A	3B	3C	3D	3E	3F	3G
CO1,CO2,CO4,CO5,CO6,CO7,CO8	Describe common type of refractory errors in children.	1	Lecture	CC	Knows-how	FC
CO1,CO2,CO4,CO5,CO6,CO7,CO8	Describe symptoms, types diagnosis,management (Unani and conventional medicine) and complications of Conjunctivitis, diseases of Cornea and conjunctivas.	2	Lecture	CE	Knows-how	L_VC,L&PPT,FC
CO1,CO2,CO4,CO5,CO6,CO7,CO8	Demonstrate and discuss refraction assessment (snellen chart).	2	Practical31.3	PSY-MEC	Shows-how	DIS,SIM,D,D-M
CO1,CO2,CO4,CO5,CO6,CO7,CO8	Demonstrate eye examination for disease of Conjunctiva and Cornea.	2	Practical31.4	PSY-GUD	Shows-how	D,DIS
CO1,CO2,CO4,CO5,CO6,CO7	Adapt skills to diagnose different type of Conjunctivitis and plan treatment	2	Practical31.5	PSY-GUD	Shows-how	CBL

CO1,CO2,CO4,CO5,CO6,CO7,CO8	Discuss and counsel refraction error management to children.	3	Experiential-Learning31.3	CC	Does	RP,DIS
CO1,CO2,CO4,CO5,CO6,CO7,CO8	Discuss prevention of Conjunctivitis and Refractive errors.	3	Experiential-Learning31.4	CC	Does	RP,GBL
CO1,CO2,CO4,CO5,CO6,CO7,CO8	Review and document Unani literature and correlate with modern concept of disease of Conjunctiva and Cornea	3	Experiential-Learning31.5	PSY-MEC	Does	JC,CBL,PER,DIS,PT

Unit 3 Visual disorders امراض بصر((Amrāḍ-i Basar)(Amrāḍ-i-'Ayn II) Diseases of eye (II)امراض عین۔دوم

31.3.1. امراض بصرAmrāḍ-i Basar(Visual disorders)

31.3.1.1. شب کوریShabkorī (Night blindness)

31.3.1.2. Retinitis pigmentosa.

31.3.1.3. Ambylopia (Lazy Eye)

31.3.1.4. Astigmatism

31.3.2. نزول الماء Nuzūl al-Mā' (Cataract)

References: 43,52,63

3A	3B	3C	3D	3E	3F	3G
CO1,CO2,CO4,CO5,CO6,CO7,CO8	Describe visual disorders as Night Blindness ,Ambylopia and Cataract and its causes, diagnosis and treatment and its Unani concept	2	Lecture	CE	Knows-how	L&PPT

CO1,CO2,CO4,CO5,CO6,CO7,CO8	Demonstrate visual acuity test and colour vision test	4	Practical31.6	PSY-GUD	Shows-how	D,RP
CO1,CO2,CO4,CO5,CO6,CO7,CO8	Discuss and document prevention of visual disorders.	3	Experiential-Learning31.6	PSY-MEC	Does	PT,GBL,D,L_VC,SIM
CO1,CO2,CO4,CO5,CO6,CO7,CO8	Identify various stage of Cataract and refer to ophthalmologist	3	Experiential-Learning31.7	AFT-RES	Does	L&GD,DIS,PSM,CBL,RP

Unit 4 امراض اذن وانف(Amrāḍ-i-Udhun wa Anf(Diseases of Ear and Nose

31.4.1 امراض اذن (Amrāḍ-i-Udhun) Ear Disorders

31.4.1.1 وجع الاذن Waja' al-Udhun (Otalgia)

31.4.1.2 سیلان الاذن Sayalān al-Udhun (Otorrhoea)

31.4.1.3 طرش Tarash (Hearing loss)

31.4.1.4 قذیٰ الاذن Qadhā al-Udhun (Foreign body in ear)

31.4.2. امراض انف (Amrāḍ-i-Anf) Nose Disorders

31.4.2.1 رعاف Ru'af (Epistaxis)

31.4.2.2. بواسیر الانف Bawasir-i-Al-Anf (Nasal Polyp)

31.4.2.2 قذیٰ الانف Qadha al-Anf (Foriegnbody in Nose)

31.4.2.3 التہاب تجاویف انف Iltihāb-i –tajawi f anf (Sinusitis)

References: 43,63

3A	3B	3C	3D	3E	3F	3G

CO1,CO2,CO4,CO5,CO6,CO7,CO8	Describe Otalgia and Otorrohea, and its etiology,diagnosis and management and explain Unani concept of *Waja-ul -Uzn* and *Sailan-ul-Uzn*.	1	Lecture	CE	Knows-how	L&GD,L&PPT
CO1,CO2,CO4,CO5,CO6,CO7	Describe *ruaf* (Epistaxis) and its asbab, alamat, usul-i-Ilaj wa tadabir.	1	Lecture	CE	Knows-how	L&PPT
CO1,CO2,CO4,CO5,CO6,CO7,CO8	Describe Foreign body in ear and nose and its ,etilogy , risk factors,clinical presentation ,evaluation ,diagnosis and management	1	Lecture	CAN	Knows-how	L&PPT
CO1,CO2,CO4,CO5,CO6,CO7	Discuss Hearing loss and its types, etiology ,and diagnosis.	1	Lecture	CC	Knows-how	L&PPT
CO1,CO2,CO4,CO5,CO6,CO7,CO8	Describe Sinusitis its etiology,clinical features,diagnosis ,complication and management and explain unani concept of *Iltihāb-e –tajaweef anf* and its asbab , alamat ,tashkis,usul-i-Ilaj ,ilaj wa ilaj bil tadabir	1	Lecture	CE	Knows-how	L&PPT
CO1,CO2,CO4,CO5,CO6,CO7,CO8	Diagnose and manage problems related to ENT.	4	Practical31.7	PSY-MEC	Shows-how	DIS,RLE,CBL,SIM,PBL
CO1,CO2,CO4,CO5,CO6,CO7,CO8	Demonstrate the examination of ear (otoscopy).	3	Practical31.8	PSY-ADT	Shows-how	D,DG,DIS

CO1,CO2,CO4,CO5,CO6,CO7,CO8	Demonstrate the therapeutic procedures for epistaxis (nasal packing and IBT regimen)	3	Practical31.9	PSY-GUD	Shows-how	D-M,D,DIS
CO1,CO2,CO4,CO5,CO6,CO7,CO8	Perform removal of foreign body in ear and nose and Understand post removal care .	3	Experiential-Learning31.8	CAP	Shows-how	CBL,SIM,RP
CO1,CO2,CO4,CO5,CO6,CO7	Apply skills to evaluate and manage the patient of common diseases of ENT.	3	Experiential-Learning31.9	CAP	Does	RP,W,CBL,PBL,DIS
CO1,CO2,CO4,CO5,CO6,CO7,CO8	Identify and discuss Hearing loss in school going children.	3	Experiential-Learning31.10	CAN	Does	FV
CO1,CO2,CO4,CO5,CO6,CO7,CO8	Counsel parents for hearing loss of child and its adverse effect.	3	Experiential-Learning31.11	AFT-CHR	Does	PER,CBL,ML,BS,SIM

Unit 5 . حلق امراض (Amrāḍ-i--Halaq) Throat Disorders ورم لوذتین Waram-i-Lawzatayn (Tonsillitis)

31.5.1 حلق امراض Amrāḍ-i--Halaq (Throat Disorders)

31.5.1.1 ورم لوذتین Waram-i-Lawzatayn (Tonsillitis)

31.5.1.2. ورم حلق Waram-i-Halaq (Pharyngitis)

31.5.1.3. Adenoid

References: 31,34,41,63

3A	3B	3C	3D	3E	3F	3G
CO1,CO4,CO5,CO6,CO7,CO8	Describe Tonsillitis and its definition , etiology ,clinical features ,types ,diagnosis management and unani concept of Waram-i-Lawzatayn and its asbaab,alamat,tashkis,usul–i-Ilaj ,Ilaj ,tadabir ,ghida wa parhez)	2	Lecture	CE	Knows-how	L&PPT
CO1,CO2,CO4	Demonstrate the comprehensive examination of mouth and throat for diagnosis of oral and throat diseases.	4	Practical31.10	PSY-GUD	Shows-how	CD,D,PBL,SIM,PAL
CO1,CO2,CO4,CO5,CO6,CO7,CO8	Diagnose throat disorders and plan management protocol.	2	Experiential-Learning31.12	PSY-MEC	Does	D,PBL,SIM,CBL,W
CO1,CO2,CO4,CO5,CO6,CO7,CO8	Counsel parents for referal process in surgical interventions for tonsillitis	2	Experiential-Learning31.13	AFT-CHR	Does	PER,DIS,CBL,SIM,C_L
CO1,CO2,CO4,CO5,CO6,CO7,CO8	Describe and demonstrate tonsilitis to Undergraduate students.	2	Experiential-Learning31.14	CC	Does	L&PPT ,Mnt
Practical Training Activity						
Practical Training 31.1 **History taking for Eye Diseases**						
Total learning hour: 3 hours						

1. Demonstration: .(60 minutes)Teacher instructs students on the importance of obtaining a thorough history including history of present illness, past history, family history,system review etc and demonstrate on real patients In OPD and IPD.

2. **Hands on practise:**.(60 minutes) Student will practice comprehensive history taking on real patient and document all finding related with eye symptoms concisely on patient medical record.

3. Conclusion:.(60 minutes) Teacher will discuss the importance and key takeaways from detailed history taking and its proper documentation.

Practical Training 31.2 Examination of Face

Total learning hour:3 hours

Role Playing or Simulation for Comprehensive Examination of eyes and face.

Teacher will divide Students into groups for interactive participation

1. **Role Assignment** : One student plays the Doctor, one the patient, one the observer.
2. **Present the Patient Scenario:** the teacher provides each group with a patient case involving eye symptoms.(30 minutes)
3. **Clinical Examination** :(Role Playing)(90 minutes)

- The student in the role of the doctor will examine the eyes and face for swelling ,lump ,redness and pain and document the finding.
- **Observer Role**: A student in role of the observer will monitor the interaction between the doctor and patient, noting examination method and communication skills

4.P**resentation** after the role play ,the teacher facilitate the session where the team present their findings(.30 minutes)

Rotate Roles: After the discussion ,rotate roles within the group assigning a new doctor, patient, observer,

5.Reflection and Wrap –Up :At the end of activity ,the teacher leads a group reflection session (30 minutes)

Practical Training 31.3 Assessment of eye refraction.

Total learning hours: 2 hours

1.Demonstration: (60 minutes).

Part 1: Demonstrating Eye Refraction (20 minutes)

- **Demonstrating with an Eye Model:** If available, Teacher use an eye model to show how light travels through the cornea and lens, and how it should focus on the retina for clear vision.

Part 2: Using the Snellen Chart: (20 minutes)The Snellen chart is used to measure **visual acuity. Instructions:** faculty will demonstrate the use of Snellen charts to illustrate refraction .he will conduct under following points step by step:

1. **Set up the Snellen Chart:**
2. **Explain the Process:**
3. **Conduct the Test:**
4. **Interpret Results:**

part 3 .Hands on practise:(20 minutes) :Student will practise conduction of refraction by Snellen chart and teacher will give feedback.

2.Simulation: (60 minutes)

Part 1. Students utilize simulation models or standardised patient to conduct Snellen chart.(40 minutes)

Part 2. Discussion and feedback :(20 minutes)

- After the test,teacher and students discuss:
  - **Normal vision** and what the different fractions (e.g., 20/40, 20/60) mean.
  - The role of glasses in correcting refractive errors.
  - How eye refraction tests in an optometrist's office help determine the right prescription for glasses or contact lens

Practical Training 31.4 Examination for Conjunctival and Corneal disease.

Total learning hours : 2 hours

1.Demonstration(40 minutes)

Instruction :teachers will demonstrate the complete examination of eye for diseases of conjunctiva on real patient or simulation model in clinical skills lab .they will illustrate examination step by step so student can learn correctl

2 .**Discussion after demonstration: (20 minutes)**

Discuss your findings of the patient with students.

- After diagnosis, explain potential causes and the **next steps** treatment (e.g., eye drops, further tests, or referral to a specialist)

Encourage students to **ask questions** during and after the demonstration.Remind students about the **importance of infection control** and patient comfort throughout the examination

3 **Hands on practise(40 minutes):** Allow time for **student practice** in pairs or using models

4 .**Feedback (20 minutes):**Assess students practise and give feedback what to improve.

Practical Training 31.5 Diagnosis and management of Conjunctivitis

Total learning hours:2hours

1.Case Base Learning :

1. Teacher will present cases of children with conjunctivitis of different clinical presentation and demonstrate examination findings in each case in real or model and discuss Unani and conventional medicine treatment (oral and local) (60 minute)
2. Hands On Practise : (40 minutes)

- Ask learners to identify key signs and symptoms
- Students will practise examination of eye for conjunctivitis on mannequin or real patients and discuss diagnosis and types of conjunctivitis and treatment .

3. Conclusion; Teacher will discuss and conclude the session.(20 minutes)

Practical Training 31.6 Vision and Colour blindness Test

Total learning hours :4 hour

1. Color Vision Test Demonstration :The **Ishihara test** is the most common color vision test and it is used to detect color blindness, particularly red-green color deficiency

1. **Introduction** : (45 minutes) Explain that the colour vision test is used to assess the ability to distinguish between different colours and
2. **Demonstration**: (75 minutes) Teacher will demonstrate the test with following points:

- **Positioning**:
- **Show the Plates**:
- **Response**:

3. Hands on Practise(Role Play): (75 minutes)

Every student will perform colour vision test one by one either by Role Playing in which one student play the role of 'patient ' and one of 'doctor 'and they interexchange their role

4. Feedback: (45 minutes) Teacher will give feedback on students practise and correct them if needed. These two tests—**Ishihara color vision** and **Snellen visual acuity**—are quick, non-invasive assessments that provide valuable information about a person's vision health.

Practical Training 31.7 Evaluation and management of ENT problems.

Total teaching hours :4 hours

Teacher can choose multiple activities of different teaching methods for better understanding.of students.

1.Case-Based Learning (CBL) (60 minutes)

Instructions: Teacher will present real-life or simulated cases of common ENT conditions. Teacher will facilitate group discussions, where students discuss diagnosis, management, and prognosis of ENT problems. This approach improves clinical reasoning and problem-solving skills.

or

2.Hands-On Practical Sessions: (60 minutes)Teacher demonstrate how to use an otoscope, tuning forks (for Rinne and Weber tests), and other examination tools. Students practice same above on models, mannequins, or peers under supervision, focusing on techniques for examining the ear, identifying landmarks, and recognizing abnormalities.

or

3.Simulation-Based Training: (60 minutes) Teacher use equipment like high-fidelity simulators or VR tools that mimic ENT pathologies. Offer learners a chance to practice ear, eye and nose examinations and management procedures in a risk-free environment, with immediate feedback from instructors.

or

4. Standardized Patient (SP) Encounters: (60 minutes)Teacher will teach communication, history- taking, and physical exam techniques. Teacher will use actors trained to present ENT-related symptoms, allowing learners to practice patient interaction and differential diagnosis.

or

5. Problem-Based Learning (PBL) Sessions:(60 minutes) Focus on complex or less common ENT conditions .Small group discussions where students identify learning objectives, discuss diagnostic and therapeutic approaches, and research solutions collaboratively

or

6. Clinical Rotations and Bedside Teaching: (60 minutes) Teacher give students exposure to real patient cases, including acute and chronic ENT issues. Students shadow experienced clinicians, participate in rounds, and discuss cases post-examination to understand nuances in patient presentation and management.

or

7. Peer-Assisted Learning (PAL): (60 minutes) Teacher will assign senior students to guide and teach junior students under supervision, reinforcing their knowledge and building confidence in performing procedure

Practical Training 31.8 Examination of ear

Total learning hours: 3 hours

1.Demonstration: (60 minutes)

Step-by-Step Instructions:

- **Teacher will demonstrate examination of ear (otoscopy) on real patient or model under following steps:**

1. Introduction:

2. Preparation:

3. Inspect the Outer Ear (Pinna):

4. Using the Otoscope:

- **Explain the Otoscope**: Show students the otoscope and how the light and magnification work to view inside the ear and demonsterate the otoscopic examination.

2. Hands on Practise: (60 minutes)Each student practise examination of ear on mannequin ,real patient or by ' Role Play' in which student plays role of' doctor' and ' patient ' and examine and exchanged thier roles so every student will get chance to practise examination if real patient is not present..

3. Discussion: (60 minutes)

a) Recording Findings:(45 minutes)

- Discuss how students document findings from the ear exam, noting any abnormalities
- Emphasize the importance of referring patients to an ear specialist if any concerns arise during the examination.

b) Encourage Questions:(15 minutes)

- Allow time for students to ask questions about the procedure.
- Discuss common ear conditions such as ear infections, wax buildup, swimmer's ear, etc., to reinforce the importance of ear examination.

Practical Training 31.9 Therapeutic procedures for epistaxis

Total learning hours :3 hours

1. Demonstrating Nasal Packing for Epistaxis (60 minutes)

Instructions: Teacher will explain and demonstrate Nasal Packing Method for epistaxis under following heading:

A)Preparation and Overview: teacher will give introduction of epistaxis and its treatment (nasal packing)

- **Explain the Indication:**
- **Patient Communication:**

B)Step-by-Step Demonstration:

- **Prepare the Patient:**
- **Visualize the Nasal Cavity:**
- **Apply Vasoconstrictor and Anesthetic**

- **.Insertion of Nasal Packing**

2) Demonsteration of Other Ilaj-Bil-Tadabir(regimenal Therapy). (120 minutes)

1. **Faculty** will demonstrate the use of different regimen therapies like ***Qatoor, Zimad*** (prepataion of nuskha Unani drugs used and its application on mannequins) (45 minutes)
2. **Hands On Training: (45 minutes)** Student will try the nasal packing procedures and IBT regimen therapies for Epistaxis on mannequins or Simulation Model.they will also practise to formulate Nuskha ,prepare and apply accordingly.
3. **Feedback: (30 minutes)** Teacher assess student's practise and give constructive feedback to students.
4. Discuss the significance of **interdisciplinary collaboration** with ENT specialists and haematologists for complicated cases of epistaxis

Practical Training 31.10 Examination of Mouth and Throat

Total learning hours :4 hours

1.**Lectures and Interactive Presentations:(30 minutes)**

- Teacher will Introduce basic anatomy, common pathologies and examination steps,diagnostic methods and management .

2.Demonstration Videos: (30 minutes)

- Teacher will show videos of a complete oral examination, throat inspection, diagnostic procedures like laryngoscopy.

3.Demonstration Live: (30 minutes)

- Teacher conduct a live demonstration of examination and diagnostic procedures(laryngoscopy .etc) on a mannequin or with a volunteer.

Emphasize the need for a systematic approach, hygiene, and patient comfort

4..**Hands-on Practice with Models/Simulators:(30 minutes)**

- Teacher will allow students to practice techniques on mannequins or models.

5. Role-Play with Peer Feedback: (30 minutes)

Teacher assign roles of a' Doctor 'and' patien't to students in groups. Students who play role of doctor will examine each other and receive feedback from teacher and peer .

6. Case Studies and Problem-Based Learning: (30 minutes)

- Student will create real-life scenarios to encourage critical thinking.about diagnosis and management

7. Conclusion and Reflection: (60 minutes)

Teacher summarize the key points covered in all activities and above session and clears the doubts and give constructive feedback

Experiential Learning Activity

Experiential-Learning Learning 31.1: Diagnosis and Management of diseases of eyelid and lacrimal .

Total learning hours: 3 hours

1. Case-Based Learning:(90 minutes)

- Teacher will present different clinical cases or photographs, ask students to:
  - Identify visible signs (e.g., swelling, erythema, discharge).
  - Document history and clinical examination of given cases.
  - Suggest likely diagnoses based on history and examination findings.
  - Recommend next steps in management (e.g., conservative (Unani usul-i-Ilaj,Ilaj and IBT eg.takmeed) and surgical intervention).
- Teacher will give constructive feedback where student present their case analysis.

2.Role Playing Scenario : (90 minutes)

- Teacher create scripts for Role Playing Scenario that include clinical presentation of diseases of eye lids and lacrimal system.
- Students will be divided into small groups of 3 member each .
- Teacher will assign roles of Doctor,Patient and Parent and different scripts to each group .
- Doctor role player will take and document detailed History from the patient role player and conduct comprehensive examination
- After each scenario ,teacher hold a debriefing session where students discuss their diagnosis and give feedback .
- Interexchange the roles within the group.

Experiential-Learning Learning 31.2: Differential diagnosis of Eyelid and Lacrimal disease.

Total learning hour:3 hours

Teacher can choose any three activities for better understanding of students

Designing Differential Diagnosis of Eyelid and Lacrimal Diseases

*1. **Case-Based Learning (CBL) (60 minutes)***

- **Method**: Provide cases with presentations of common eyelid and lacrimal conditions (e.g., chalazion, blepharitis, dacryocystitis). Use case discussions to differentiate symptoms, course, and physical findings between conditions.
- **Resources**: Patient case files, clinical images, and group discussion materials

or

*2. **Anatomy and Pathophysiology Review with Models (60 minutes)***

- **Method**: Conduct a brief review session using anatomical models, 3D simulations, or interactive software to revisit eyelid and lacrimal system anatomy and common disease mechanisms.
- **Resources**: Eyelid and lacrimal anatomy models, 3D simulation software.

or

*3. **Clinical Examination Workshop (60 minutes)***

- **Method**: Provide a hands-on session with live or simulated patients, focusing on inspection, palpation, and specific tests (e.g., fluorescein dye test for lacrimal duct patency).
- **Resources**: Standardized patients or mannequins, fluorescein dye, eye examination tools

or

*4. **Image-Based Diagnostic Exercises (60 minutes)***

- **Method**: Present images of various eyelid and lacrimal disorders and have students work in groups to diagnose and justify their choices based on image findings and clinical criteria.
- **Resources**: High-quality clinical images of conditions such as blepharitis and ptosis
- **Learning Outcome**: Reinforces students' visual diagnostic skills and understanding of characteristic features in different diseases.

or

*5. **Role-Playing with Standardized Patients (SPs) (60 minutes)***

- **Method**: Use SPs presenting with common complaints (e.g., watery eye, swelling, irritation) to practice patient interviews, focused examinations, and management recommendations.
- **Resources**: Standardized patients trained to present with common eyelid and lacrimal symptoms.

Experiential-Learning Learning 31.3: Management of refraction errors

Total learning hour :3 hours

Guidelines for Counseling Parents on Refractive Error Management

1.Role Playing for Parent Counselling

- **Scenario Set Up:** teacher will Create scenario where parents of child with refraction errors are concerned about their child vision and future performance . the students are in two group .one will act as health care provider and other mimic parents role.

  Counselling focus:

1. Introduction to Refractive Errors:.

- **Reassure Parents:** Let them know that refractive errors are very common and treatable, and wearing corrective glasses will significantly improve their child's vision.

2. Importance of Glasses:

3. Consistent Use of Glasses:

4. Regular Eye Checkup

5. Psychological Support

8. Cost and Acces

9. Encouraging Follow-Through:

- **Involve the Child:** Encourage parents to involve their child in selecting frames to make the process fun and ensure the child feel

By following these guidelines, students will be able to effectively counsel parents, helping them understand the importance of managing their child's refractive error and ensuring their vision is properly corrected with glasses.

Experiential-Learning Learning 31.4: Awareness Programme for prevention of Diseases of eye.

Total learning hours:3 hours

1. Pre-Program Planning

- **Audience Identification**: Decide who the primary audience will be—children, parents, teachers, or the general community

2. Role-Play on Identifying and Responding to Symptoms (90 minutes).

- **Instructions: teacher will** divide participants into small groups.
    1. Give each group a flashcard describing a scenario related to eye health.
    2. Ask them to role-play what to do in each situation, like washing hands and seeking medical help if needed.
    3. After each role-play, review key points and clarify any questions

3. Program Wrap-up and Feedback : (90 minutes)

- **Quiz or Recap Game**: teacher use a short quiz or group activity to reinforce what they learned.
- **Q&A Session**: Allow time for questions.
- **Takeaway Materials**: Hand out pamphlets or fact sheets on eye health.

Experiential-Learning Learning 31.5: Correlation of Unani and Modern concept of diseases of Conjunctiva and Cornea.

Total learning hours:3 hours

Teacher can choose three activities from following activites for better understanding of students

1. Literature Review and Text Analysis Workshop: (60 minutes0

- **Materials**: Copies or translations of classic Unani texts (e.g., "Kitab al-Tasrif" by Al-Zahrawi or "Al-Qanun fi al-Tibb" by Ibn Sina), note-taking tools, and comparison charts.
- **Instructions**:

1. Divide students into small groups, and assign each group specific sections on eye health from Unani literature.
2. Ask students to identify and summarize descriptions of diseases related to the conjunctiva (e.g., conjunctivitis) and cornea (e.g., corneal opacity or ulcers).
3. Encourage each group to extract Unani concepts related to causes, symptoms, and treatments.
4. Guide students to organize this information in a comparison chart, where they can later add modern medical parallels.

or

2. Cross-Referencing Workshop with Modern Ophthalmology :(60 minutes)

- **Materials**: Modern ophthalmology textbooks or research papers, and comparative charts from the previous activity.
- **Instructions**:
    1. Have students refer to modern ophthalmology sources to find contemporary definitions, classifications, causes, symptoms, and treatments for conjunctival and corneal diseases.
    2. Instruct students to compare each Unani description with the modern understanding, noting similarities (e.g., symptoms) and differences (e.g., pathophysiological concepts).
    3. Ask students to identify any areas where Unani treatments align with or diverge from modern approaches and to think critically about these connections.

or

3. Practical Lab Session on Unani and Modern Remedies: (60 minutes)

- **Materials**: Samples of Unani herbal remedies for eye health (e.g., rose water, fennel extract), illustrations of modern medical treatments (eye drops, ointments), and relevant safety guidelines.
- **Instructions**:
    1. Introduce students to common Unani remedies traditionally used for eye conditions
    2. Demonstrate preparation methods for Unani eye treatments, emphasizing proper hygiene and application techniques.
    3. Have students research and present modern pharmaceutical treatments (e.g., antibiotic drops for bacterial conjunctivitis) and their mechanisms.

4. Facilitate a discussion on the benefits, limitations, and potential integrative uses of both Unani and modern approaches.

or

4. Presentation and Correlation Analysis (60 minutes)

- **Materials**: Presentation tools, posters, or digital slides.
- **Instructions**:
    1. Ask students to create a presentation summarizing their findings from each activity: traditional definitions, modern interpretations, case analyses, and treatment methods.
    2. Encourage them to focus on the core differences and potential complementarities between Unani and modern medical concepts.
    3. Students should present their work, followed by a Q&A session to clarify concepts and discuss the integration of Unani and modern perspectives.

Experiential-Learning Learning 31.6: Education for prevention of visual disorders.

Total learning hour: 3 hour

1.Workshop(90 minutes)

Workshop Structure & Methods:

A. Introduction (10 minutes)

- **Teaching Method:** Interactive Presentation
- **Activity:** Introduce the topic of visual disorders with a brief overview of common issues like myopia, cataracts, and glaucoma.

B. Regular Eye Checkups (20 minutes)

- **Teaching Method:** Demonstration & Role Play
- **Activity:**
    - Explain how regular eye exams help in early detection of problems.
    - Conduct a **live demonstration** of a basic eye check up procedure, explaining what is checked (visual acuity, pressure, etc.).
    - Role-play between two people showing the interaction during a check up (one as the doctor, the other as the patient).

- Encourage participants to ask questions about their own experiences with eye checkups

C. Importance of Nutrition (10 minutes)

- **Teaching Method:** Group Discussion & Practical Demonstration
- **Activity:**
  - Introduce **key nutrients** important for eye health, such as Vitamin A, Omega-3 fatty acids, and antioxidants (e.g., from leafy greens, fish, carrots).
  - Organize a **group discussion** where participants list foods they think are good for eye health, then compare with the scientific recommendations.
  - Bring some food samples or images, and explain the nutritional benefits.
  - Demonstrate how to create a simple, eye-healthy recipe (e.g., a smoothie or salad rich in eye-friendly nutrients

D. Vaccination and Eye Health (20 minutes)

- **Teaching Method:** Video Demonstration & Q&A
- **Activity:**
  - Show a short **educational video** about the role of vaccines (e.g., for rubella or measles) in preventing eye disorders in children.
  - Follow with a **Q&A session** where participants ask about vaccine schedules and their role in preventing conditions like congenital cataracts.

E. Good Hygiene Practices for Eye Care (30 minutes)

- **Teaching Method:** Hands-On Demonstration
- **Activity:**
  - Demonstrate **proper hand washing techniques** to avoid transferring bacteria or dirt to the eyes.
  - Show the correct way to clean contact lenses and eyeglasses.
  - Discuss the dangers of **sharing eye makeup** or using expired products.
  - Teach participants **how to recognize early signs of infections** (like redness, itchiness) and what to do if these occur.

2. Interactive Learning Methods :60 minutes

A. Quiz & Polls (30 minutes)

- At intervals, use **interactive quizzes** or quick polls to assess learning. For example, you can ask:

- "Which of these foods is rich in Vitamin A?"
- "How often should one go for an eye checkup?"

- Use online platforms like **Kahoot!** or simple paper quizzes.

B. Group Work & Role Play (30minutes)

- Divide participants into small groups. Assign each group a case study of a person with specific visual health problems (e.g., a child with poor nutrition, an elderly person skipping checkups).
- Have each group discuss preventive strategies based on the knowledge they gained.
- Present their solutions to the rest of the participants..

3,Conclusion: 30 minutes

- **Wrap up** by reviewing the main points of the workshop.
- Encourage participants to share what they learned and how they will apply it.
- Distribute a **feedback form** or **online survey** to get their thoughts on the workshop.
- Provide a list of local optometrists or eye clinics for those who wish to schedule a checkup.

Experiential-Learning Learning 31.7: Referral to ophthalmologist for Cataract.

Total leanring hours: 3 hours

Teacher can choose three activities for better understanding of students.

Identify various stage of Cataract and refer to ophthalmologist

1.Workshop Structure & Methods: (60 minutes)

- student will conduct a workshop for peers to identify early diagnosis of cataract to prevent complication and timely referral to ophthalmologist.
- teacher will assign different parts to different students to present in workshop focusing following point
- **Teaching Method:** Interactive Presentation with Visual aid
- One Student will present the introduction of cataract .

or

2. Case Studies & Role Play(60 minutes)

Activity:

- Teacher Present **case studies** of individuals with varying stages of cataract development and ask few students to identify the symptoms described in each case.
- **Role play:** One person plays a patient describing their symptoms (e.g., difficulty reading, halos around lights), while another plays a healthcare worker conducting a preliminary assessment.
- Discuss when a referral to an ophthalmologist should be made based on the described symptoms.

or

3. Lecture with Discussion (60 minutes)

Activity:

- One student explain the process of referring a patient to an ophthalmologist .
- One student discuss the **criteria for referral**, such as reduced vision despite corrective lenses or other red-flag symptoms (e.g., double vision, sudden changes in vision).
- Engage participants in a discussion about local referral networks and the importance of timely intervention.

or

4. Group Discussion & Problem Solving (60 minutes)

Activity:

- Divide participants into small groups and ask them to discuss common barriers to early cataract diagnosis (e.g., lack of awareness, financial constraints, access to healthcare).
- Have each group come up with solutions to these barriers, such as community outreach, mobile eye clinics, or education campaigns.
- Groups present their solutions, followed by a discussion on feasible strategies for improving early diagnosis in their communities.

Assessment: Quiz

Activity:

- Create a **short quiz** to test participants' knowledge of cataract symptoms, risk
- factors, and referral processes.
- Use online platforms like Kahoot! for a fun, interactive format or distribute paper-based quizzes.

Experiential-Learning Learning 31.8: Removal of foriegn body in ear and nose

Total learning hours:3 hours

1.Problem-Based Learning (PBL) (60 minutes)

- Teacher will present each students a real or hypothetical cases involving foreign bodies in the ear.
- Students work to assess the situation, propose diagnostic steps, and determine treatment plans.
- Encourage self-directed learning to research different types of foreign bodies and complications.

2. Role-Playing and Simulation-Based Learning(60 minutes)

- Have students role-play different scenarios, with one student playing the patient and another acting as the healthcare provider.
- Use simulation-based training (e.g., virtual reality or high-fidelity mannequins) to replicate complex cases where foreign bodies are difficult to access or remove.
- Student removed foreign body on mannequins and explain post removal care.

3. Case-Based Discussions (60 minutes)

- Present a series of case studies to students involving foreign bodies in the ear, student will analyse case studies and develop comprehensive management and present case to teacher and discuss:
  - Challenges in diagnosis.
  - Decision-making around removal techniques.
  - Complications like infection, perforation, or hearing loss.
  - Post removal care

- Encourage critical thinking by discussing cases with varying degrees of complexity

Experiential-Learning Learning 31.9: Evaluation and management of common diseases of ENT

Total learning hours :3 hours

Teacher can choose three activities for better understanding of students.

1. **Problem-Based Learning (PBL) (60 minutes)**

- **Case Discussions**: Present students with real or simulated cases of common ENT diseases and have them work through the diagnosis and management plan. For example:
    - A patient with chronic sinusitis and nasal congestion.
    - A child presenting with recurrent ear infections.
    - A patient with hoarseness and suspected laryngitis.
- Students will take a comprehensive history and propose appropriate investigations and treatments and present their evaluation and management to teacher for the given case.

or

2. **Case-Based Simulations (60 minutes)**

- Teacher use simulation-based learning (e.g., mannequins, standardized patients, or virtual reality) to immerse students in real-life clinical scenarios. These simulations can include different cases of ENT problem like epistaxis ,sinusitis ,otalgia etc .student evaluate and manage the case and present to teacher.
- After each simulation ,teacher debrief students by discussing their clinical reasoning, actions, and any challenges faced.

or

3. **Small Group Discussions and Case Reviews (60 minutes)**

- Organize discussions where students can review cases they've encountered during clinical practice.

- Assign a specific ENT condition (e.g., otorrhoea,, chronic sinusitis, tonsillitis) to a each of students, asking them to review literature, present the case, and discuss diagnostic approaches and management option

or

4. **Workshops on Hearing Aids and Audiometry (60 minutes)**

- **Skills**: Learn audiometric assessment, hearing aid selection, and counselling for hearing impairment.
- **Method**: Hands-on sessions with audiology professionals to understand how to interpret audiograms and guide patients on hearing aid use and maintenance.

Learning outcome: Student should be able to analyse clinical scenario and formulate appropriate management strategies.

Experiential-Learning Learning 31.10: Screening programme for Hearing loss

Total learning hours :3 hours

Field Visit :

1 . Field Preparation and Planning:

- **Introduction to School Environment**:
- **Planning the Screening Day**: students will plan with permission of faculty a screening schedule for a school visit.

2. **Field Activity: School Visit for Hearing Screening**

- **Supervised Screening at a School**: Take students to a local school to conduct **real-world** hearing screenings under supervision. Assign small groups of students to different tasks, suc
- **Data Collection**: students will collect and record data accurately, including normal and abnormal findings.
- **Communication Skills**: Encourage students to practice explaining the screening process to children in simple, age-appropriate language. Additionally, they should learn to communicate results to teachers or parents professionally.

3 **Post-Screening Debriefing and Reflection**

- **Discussion and Reflection**: After the screening, hold a debriefing session to discuss the students' experiences, challenges, and any interesting findings.

- **Feedback from Supervisors**: Provide constructive feedback on how the students performed during the screening, including technical skills and patient interaction.

4. **Follow-Up and Referral**

- **Referral Process**: Explain the referral process for children who may require further evaluation by an audiologist or ENT specialist. Ensure students understand the importance of follow-up care and providing clear recommendations to parents and school staff.
- **Parental Communication**: Teach students how to draft a letter to parents or guardians explaining the screening results and the need for follow-up, if applicable

Experiential-Learning Learning 31.11: Counselling for hearing loss

Total learning hours :3 hours

Teacher can choose multiples activities for better understanding of students.

Counselling for hearing loss: Counselling for hearing loss in children, using different teaching methods. Each activity includes objectives, teaching methods, and intended outcomes.

1. Role-Playing Session (60 minutes)

- **Teaching Method**: Role-playing, guided discussion.
- **Activity**: teacher will divide participants into pairs or small groups. One partner plays the role of the child with hearing loss, while the other plays the role of the parent. Ask parents to communicate without sound or while wearing earplugs.

or

2. Simulation Exercise with Visual Cues(60 minutes)

- **Teaching Method**: Simulation, visual aids, reflection.
- **Activity**: Conduct a communication exercise using only visual cues, facial expressions, and gestures. Instruct parents to communicate a message without using words or sounds, demonstrating how visual cues become essential.

or

3. Interactive Presentation with Hearing Loss Statistics and Scenarios(60 minutes0

- **Teaching Method**: Interactive lecture, Q&A, case study.
- **Activity**: Present statistics and common scenarios children with hearing loss might face (e.g., in school, social settings). Ask parents to share how they would feel and respond in these scenarios.

or

4. Use of Audiovisual Materials (Documentaries and Real Stories)(60 minutes)

- **Teaching Method**: Audio-visual presentation, group discussion.
- **Activity**: students will show short videos or documentaries about families with children with hearing loss, highlighting both the challenges and coping strategies.

or

5. Group Activity: Developing an Action Plan(60 minutes)

- **Teaching Method**: Group work, brainstorming, worksheet completion.
- **Activity**: students will provide a worksheet with categories like "Communication Strategies," "Education and Learning Support," and "Social Skills." Have parents brainstorm and write down ideas with other parents to create a supportive network

or

6. Parent and Child Bonding Exercises (60 minutes)

- **Teaching Method**: Hands-on activities, individual practice, family-focused.
- **Activity**: students organize activities such as sign language practice, sensory games, or interactive reading. Instruct parents to practice with their child, emphasizing patience and engagement.

Experiential-Learning Learning 31.12: Teaching skills

Total learning hours :2 hours

- **Teacher will assign different topic to each PG students to teach in UG class.**

- Student will prepare and present lecture in UG class with help of visual aid (ppt,video,charts,model)

Feedback: Teacher will take feedback from UG students about the presentation skill and give own constructive feedback to improve it.

Experiential-Learning Learning 31.13: Evaluation and management of Throat disorders

Total learning hours :2 hours

Teacher can choose any two activities among following multiple activities for better understanding of students.

1. **Case-Based Learning (CBL) (60 minutes)**
   - **Method**:
     - teacher will present cases of patients with throat disorders (e.g., recurrent tonsillitis).
     - Students work in small groups to discuss symptoms, diagnostic approach, and management plan.
     - Integrate the role of Unani medicine and modern pharmacological interventions
     - Instructors facilitate the discussion and guide students toward evidence-based solutions.

or

2. **Simulation-Based Learning (60 minutes)**
   - **Method**:
     - Create simulation scenarios where students have to diagnose and manage throat conditions using both conventional and Unani therapies.
     - Include scenarios on how to handle cases where patients prefer Unani medicine.
     - Implement virtual or augmented reality tools to simulate throat anatomy and examination procedures.

or

3. **Problem-Based Learning (PBL) (60 minutes)**
   - **Method**:
     - teacher present complex throat disorder scenarios with incomplete information.
     - Students research various aspects, including diagnostic methods, Unani treatments, and modern therapies.

- They reconvene to present their findings and collectively discuss management strategies.

or

4. **Workshops and Hands-On Unani Drug Preparation (60 minutes)**

- **Content**: student will do:
  - Formulation of common Unani nuskha (e.g.), Sharbat (syrups), .
  - Understand pharmacognosy, including the therapeutic properties of herbs used in Unani medicine.
  - Combine modern and traditional approaches—when to use Unani drugs alone or as both together
- **Method**: Interactive workshops where students prepare and administer Unani medications.

Experiential-Learning Learning 31.14: Pre-surgical councelling

Total learning hours :2 hours

Guidelines for Surgical Referral (Tonsillectomy Criteria)

1. Interactive Case Studies (90 minutes)

- **Scenario-Based Learning**: teacher will present clinical cases with different presentations of tonsillitis. Ask learners to decide when they would refer a patient for surgical intervention and justify their decision.
- **Group Discussions**: Engage learners in small groups to discuss cases where the decision for tonsillectomy might be less clear-cut, encouraging them to debate the pros and cons.
- **Simulation Training**: If possible, simulate the patient interaction, allowing learners to take a history, perform an exam, and make a clinical decision.

2. Assessment (30 minutes)

- **Case-Based Questions**: Assess knowledge through written exams or OSCEs (Objective Structured Clinical Examinations) that ask learners to evaluate tonsillitis cases and determine if referral is necessary.
- **Direct Feedback**: Provide constructive feedback during clinical rotations or simulations to help learners refine their decision-making skills.

Modular Assessment

Assessment	Hour
Instructions- Conduct a structured Modular Assessment. The assessment will be for 75 Marks . Keep a structured marking pattern. Use different Assessment methods in each module for the semester. Keep a record of the structured pattern used for assessment. Calculate the Modular grade point as per Table 6C. 1.**Case-Based Assessment (CBA) for Eye and ENT diseases.(15 marks)** • **Instructions:** Each student discusses a case with a faculty member, covering patient history, diagnosis, differential diagnosis, and management plan. • **Criteria:** 1. Case Presentation and History Taking - 3 Marks 2. Clinical Examination Skills - 3 Marks 3. Diagnosis and Differential Diagnosis - 3 Marks 4. Investigations and Interpretation - 2 Marks 5. Management Plan - 2 Marks 6. Communication and Professionalism - 2 Marks 2 **Problem-Based Learning (PBL) session for Eye and ENT diseases.(15 minutes)** • **Instructions:** Students work in small groups to discuss clinical cases, guided by faculty. • **Criteria** 1. Understanding of the Clinical Problem - 3 marks 2. Application of Knowledge - 2 marks 3. Problem-Solving and Analytical Skills - 4marks 4. Team Collaboration and Communication - 3marks 5. Reflective Skills and Self-Assessment - 3 marks 3. **Short Answer Questions (SAQs)** and **Long Answer Questions (LAQs)** for Eye and ENT diseases.(15 marks)	6

1. Etiology and Pathogenesis – 3 marks
2. Classification – 3 marks
3. Clinical Features – 3 marks
4. Diagnosis and Investigations – 3 marks
5. Management and Treatment –3 marks
6. Prevention and Public Health Implications – 5 marks

4 **Quizzes(QZ) (15 marks)**

- **Instructions:**: Periodic quizzes at the end of each module or topic.of Eye and ENT diseases.
- **Criteria:**
    - Accuracy and Correct Responses: 10 points
    - Depth of Knowledge (Extra points for detailed answers in open-ended sections): 5 points

5 **Direct Observation of Procedural Skills (DOPS) (15 marks)**

- **Instructions:**: Provide feedback on clinical skills during actual or simulated patient care.
- **Criteria**:
    - Procedural Competency: 5 marks
    - Patient Interaction & Comfort: 5 marks
    - Adherence to Safety Protocols: 5 marks

Any Practical in converted form can be taken for assessment (25 Marks)

and

Any Experiential, such as portfolios/ reflections/ presentation can be taken as an assessment. **(50 Marks)**

Module 32 : امراض جلد(Amrāḍ-i-jild) Skin Diseases

Module Learning Objectives

(At the end of the module, the students should be able to)

1. Describe Various types of skin rashes and lesions
2. Identify pigmentary skin disorders and learn differential diagnosis.
3. Perform a complete assessment of patient by History Taking and Clinical Examination.
4. Discuss clinical knowledge, skills to diagnose common paediatric dermatological problems.
5. Apply Unani Diagnostic (asbab ,aalamat wa tashkis) and Therapeutic (usul-i- Ilaj ,Ilaj bil Dawa ,Ilaj bil Tadbir, Ghida wa Parhez) interventions effectively along with conventional medicine as required.
6. Incorporate the knowledge with the latest researches and best dermatological practise.
7. Perform awareness programmes among community for preventive measures of common skin disorders..

Unit 1 جلدی لیجن(Jildi lejan) Skin rashes

32.1.1 Diaper rash

32.1.2 Heat rashes

32.1.3 شریٰShará (Urticaria)

References: 43,46,62,63

3A	3B	3C	3D	3E	3F	3G
CO1,CO2,CO4,CO5,CO6,CO7,CO8	Describe Skin Rashes and its types, aetiology, clinical manifestation,diagnosis, differential diagnosis and treatment in Unani and Conventional Medicine.	1	Lecture	CE	Knows-how	L&PPT

CO1,CO2,CO4,CO5,CO6,CO7	Demonstrate different skin rashes and develop diagnostic skills including history, physical examination and procedures.	1	Practical32.1	PSY-GUD	Shows-how	RP,CBL
CO1,CO2,CO4,CO5,CO6,CO7,CO8	Demonstrate therapeutic skipractises like applying topical medication(tila)	1	Practical32.2	PSY-GUD	Shows-how	PL,DIS,RP,CBL
CO1,CO2,CO4,CO5,CO6,CO7,CO8	Identify the different skin rashes , diagnose and manage the patient.	2	Experiential-Learning32.1	AFT-RES	Does	CBL,PER,DIS
CO1,CO2,CO4,CO5,CO6,CO7,CO8	Analyze the Papers and Journals for clinical experience. for skin rashes (AI)	1	Experiential-Learning32.2	CAN	Does	CBL,ML,JC,PL,W
Unit 2 Fasād al-Lawn (Pigmentary lesions)فسادالون 32.2.1 ErythemaMultiformae 32.2.2 نمش Namash(Naveus) 32.2.3 Albinism 32.2.4 Hypo and hyper pigmentation 32.2.5 برص Baraṣ (Vitiligo) **References:** 43,61,63						
3A	**3B**	**3C**	**3D**	**3E**	**3F**	**3G**

CO1,CO2,CO4,CO5,CO6,CO7,CO8	Describe different types of hyper and hypo pigmentary lesions(Erthyema multiformae, Albinism) and its aetiology, patho-physiology, clinical presentation , early diagnosis, differential diagnosis, complication and treatment.	1	Lecture	CE	Knows-how	L&GD,L_VC
CO1,CO2,CO4,CO5,CO6,CO7	Describe Unani concept of Baras (Vitilligo) and *namash* (Naveus) and its asbaab, aqsaam,usul-i-Ilaj ,Ilaj and ghida and parhez	1	Lecture	CE	Knows-how	L_VC,L&PPT
CO1,CO2,CO4,CO5,CO6,CO7,CO8	Identify and diagnose different pigmentary lesions and Show ability in document findings properly.	2	Practical32.3	PSY-MEC	Shows-how	RP,CBL,W,PL
CO1,CO2,CO4,CO5,CO6,CO7,CO8	Formulate multiple treatment strategies (oral drugs,topical application of drugs,laser therapy) for pigmentary lesions.	2	Practical32.4	CS	Does	D,CBL,TUT
CO1,CO2,CO4,CO5,CO6,CO7,CO8	Identify and manage pigmentary lesions.	2	Experiential-Learning32.3	CAN	Does	DIS,CD,RLE
CO1,CO2,CO4,CO5,CO6,CO7,CO8	Discuss the diagnosis and management of dermatological disorders.	2	Experiential-Learning32.4	CC	Knows-how	W

Unit 3 a)قوبا(Qūbā) Taenia b) جرب(Jarab) Scabies

32.3.1 قوبا (Qūbā) Taenia

32.3.2 جرب (Jarab) Scabies

References: 43,62,63

3A	3B	3C	3D	3E	3F	3G
CO1,CO3,CO4,CO5,CO6,CO7	Describe *jarab*(Scabies) and Quba(Taenia) its Unani concept.{ Asbaab wa Aqsam tashkis] , Holistic approach to the treatment (Usul-i- Ilaj, Ilaj bil ghida wa ilaj bil tadbir}	1	Lecture	CE	Knows-how	L_VC,FC,L&P PT
CO1,CO2,CO4,CO5,CO6,CO7,CO8	Analyze Clinical pattern of Scabies and conduct evaluation & diagnostic procedures of scabies.	1	Practical32.5	CAN	Does	CD,RP,CBL,SIM
CO1,CO2,CO4,CO5,CO6	Formulate nuskha and apply the topical formulations for *Qūbā* (tila)	1	Practical32.6	CS	Shows-how	CBL,D
CO1,CO2,CO4,CO5,CO6,CO7,CO8	Identify the type of Taenia and plan the effective treatment independentally.	1	Experiential-Learning32.5	AFT-SET	Does	DIS,CBL
CO1,CO2,CO4,CO5,CO6,CO7,CO8	Demonstrate prevention of skin diseases and its spread among community	2	Experiential-Learning32.6	PSY-MEC	Shows-how	RP,SY,PBL,D-BED,DIS

Unit 4 التہاب جلد (Iltihāb-e-jild) Dermatitis

32.4.1 نارفارسی Nār Fārsī (Eczema)

32.4.2 التہاب جلد حساس Iltihāb-I–jild hassas (Atopic Dermatitis)

32.4.3 التہاب جلد حزاز Ḥazāz (Seborrheic Dermatitis)

References: 34,43,62

3A	3B	3C	3D	3E	3F	3G
CO1,CO2,CO4,CO5,CO6,CO8	Describe the Unani and Modern Concept of *Iltihāb-i jild* (Dermatitis) and of its type.	1	Lecture	CE	Knows-how	L&PPT ,L_VC
CO1,CO2,CO4,CO5,CO6,CO7,CO8	Apply skills to evaluate Dermatitis and plan its management.	1	Practical32.7	CAP	Does	RP,DIS,D,SIM,PER
CO1,CO2,CO4,CO5,CO6,CO7,CO8	Counsel parent for prevention of Dermatitis	1	Practical32.8	AFT-REC	Does	D,RP,W,CBL,SIM
CO1,CO2,CO4,CO5,CO6,CO7,CO8	Apply skills in history taking and examination of patient and identify the types of Dermatitis and confirm with investigation and prescribing treatment accordingly.	2	Experiential-Learning32.7	CAP	Does	CBL,DIS
CO1,CO2,CO4,CO5,CO6,CO7,CO8	Discuss precaution and prevention of dermatitis.	1	Experiential-Learning32.8	CC	Does	TUT,D,W,GBL

Unit 5 امراض الشعر (Amrād-i-Sha'ar) Diseases of Hair

32.5.1. شیب Sheeb (Premature greying of hair)

32.5.2. داء الثعلب Da'-us Sa'alab (Alopecia)

References: 37,38,71

3A	3B	3C	3D	3E	3F	3G

Practical Training Activity

Practical Training 32.1 Different skin rashes

Total learning hours :1 hour

choose any activity among following multiple activities for better understanding of students .

1.Case-Based Learning: (60 minutes)

- **Activity**: Use online or real case simulations presenting patients with various skin rashes. Students can interact with the real or virtual patient, taking a history, performing a virtual examination, and deciding on diagnostic steps.
- **Instructions**: Guide students to complete a structured patient history, including duration, progression, associated symptoms, and any relevant exposure or medical history. Prompt them to perform a virtual skin examination, describe the morphology, distribution, and pattern of rashes, and make differential diagnoses..

or

2. Clinical Photography and Descriptive Exercise (60 minutes)

- **Activity**: Teaher will present high-quality clinical images of various skin rashes (e.g., maculopapular, vesicular, pustular) and ask students to describe them accurately.
- **Instructions**: Teach students the standardized approach to dermatological descriptions (e.g., lesion type, color, shape, border, distribution). Instruct them to write detailed descriptions and match these to potential diagnoses.

or

3. Role-Playing Scenarios for Patient Interviews (60 minutes)

- **Activity**: Role-play patient interactions in pairs, with one student as the patient and the other as the doctor. "Patients" receive a script with specific rash characteristics and relevant history details.
- **Instructions**: Provide guidelines for history-taking, focusing on key questions that reveal lifestyle, environmental, or medical factors relevant to dermatology. The observing instructor or peers can provide feedback on their approach.

or

4. Hands-On Practice with Diagnostic Tools (60 minutes)

- **Activity**: teacher introduce students to dermatoscopes, Wood's lamps, and other diagnostic tools, with hands-on training using simulated or volunteer patients.
- **Instructions**: Teach students how to use each tool, and provide specific techniques for observing and analyzing various skin findings. Ensure they understand when each tool is indicated.

Practical Training 32.2 Demonsteration of therapeutic skin practises(tila)

Total learning hour :1 hour

Teacher can choose any activity for better understanding of students

1. Demonstration and Hands on Practice with Supervision (60 minutes)

- **Activity**: teacher will begin with a live demonstration of applying a topical medication (e.g., "tila" or other creams, ointments, gels) on a standardized patient or a mannequin, followed by supervised practice by students..
- **Instructions**: Explain the purpose of the medication, the method of application (e.g., circular or directional strokes), and any precautions to take. Provide students with gloves, applicators, and medication, and supervise their practice to ensure proper technique.

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2. Peer Practice with Simulated Products (60 minutes)

- **Activity**: Pair students to practice applying simulated topical medications on each other (using safe substitutes) while explaining the therapeutic goals.

- **Instructions**: Teach students to communicate the steps as they apply the product, detailing why each step is necessary. One student plays the "patient" to enhance role-playing and patient communication skills, while the other practices the application process.

or

3. Role-Playing Scenarios for Patient Education and Consent (60 minutes)

- **Activity**: Role-play scenarios where students educate a "patient" about the medication being applied, its purpose, possible side effects, and aftercare.
- **Instructions**: Provide students with a patient profile and require them to obtain verbal consent and explain the procedure. This includes patient-specific considerations, such as sensitivities, skin type and age.

Practical Training 32.3 Diagnosis of different Pigmentary lesions.

Total learning hours :2 hours

choose any activity among multiple activities for better understanding of students.

1. Clinical Photography and Documentation Exercise (60 minutes)

- **Activity**: Provide students with clinical photographs of various pigmentary lesions (e.g., vitiligo, melasma, freckles, nevi). Ask students to document their observations accurately.
- **Instructions**: Teach a standardized approach to documentation, including lesion size, shape, color, border definition, and distribution, using standardized dermatological terms

or

2. Role-Playing Diagnostic Scenarios (60 minutes)

- **Activity**: Conduct role-playing scenarios where one student acts as the patient with a pigmentary concern and the other as the physician.
- **Instructions**: Focus on patient-centered communication, gathering relevant history (e.g., sun exposure, family history, onset and progression), and documenting each finding.

or

3. Peer-Reviewed Documentation Practice (60 minutes)

- **Activity**: Students observe lesions on standardized patients or classmates, document their findings, and then review each other's documentation for accuracy and completeness.
- **Instructions**: Provide a checklist that emphasizes lesion characteristics, terminology, and proper formatting for medical documentation.

Practical Training 32.4 Multiple treatment strategies for pigmentary lesions

Total learning hours : 2 hours

Multiple treatment strategies for pigmentary

lesions

1: Case-Based Learning – Understanding Lesions and Treatment Options(40 minutes)

Group Work: Instructions:

- teacher will divide students into small groups and provide each group with a case study featuring a different type of pigmentary lesion (e.g., melasma, vitilligo, nevi).
- For each case, students will:
  - Identify the lesion based on description and images.
  - Formulate a treatment plan using usoole ilaj (topical, oral) or laser therapy options.
- Justify their choice of therapy based on lesion type, patient profile, and evidence-based guidelines; **Group Discussion:**
  - Each group presents their case and treatment strategy.
  - Instructor provides feedback, discussing alternative approaches and reinforcing key treatment principles.

2: Practical Demonstration of Topical and Oral Therapies (40 minutes)

1. **Topical Therapy Demonstration:**
   - teacher demonstrates the correct application techniques for topical treatments (unani and conventional medicine)

- Discuss how to monitor patient responses, the importance of compliance, and the potential side effects (e.g., irritation, depigmentation)

2. **Hands-on Activity:**
   - Students practice applying mock topical treatments (zimad, tila) on simulated patients (or mannequins).
   - Discuss the importance of proper application timing, especially for photosensitive agents, and the need for sun protection.
3. **Oral Therapy Overview:**
   - teacher explains the role of oral (in unani medicine like zalal) in managing pigmentary lesion

Review dosing, duration of treatment, potential side effects, and

contraindications.

3: Laser Therapy Demonstration (or Video Tutorial) (40 minutes

- **Laser Therapy Basics:**
  - Discuss different types of lasers
  - Explain the mechanism of laser therapy,

1. **Demonstration or Video:**
   - If a laser machine is available, perform a demonstration on a simulated patient or mannequin.
   - If not, use a high-quality instructional video showing a laser procedure for melasma

Assessment with quiz session:

- Assess the students on the mechanism of action for bothconventional32 and classical treatments ,asking them to explain how they would integrate both approaches (Usoole ilaj in unani system of medicine) in a clinical settings.

Practical Training 32.5 Diagnosis of Scabies

Total learning Hour :1 hour

Teacher can choose multiple activities among following activities for better understaing of students.

1. **Case-Based Learning (CBL) - Introduction to Clinical Patterns (30 minutes)**
    - **Activity:** Divide students into small groups and provide each group with a case study depicting typical scabies symptoms (e.g., itching, rashes, common affected sites).
    - **Method:** Case-based learning with guided discussion
    - Students should read the case, identify clinical features, and discuss in groups.
    - Each group should list down differential diagnoses and focus on features distinguishing scabies

or

2. **Visual Learning and Pattern Recognition - Identification of Scabies Rash(30 minutes)**
    - **Activity:** Show images/videos of scabies rashes, emphasizing unique clinical patterns such as burrows, nodules, and excoriated papules.
    - **Method:** Visual aids and interactive Q&A.
    - Show visual materials to students and ask them to describe what they see.
    - Use a Q&A format to reinforce key identifying features

or

3. **Role-Play and Patient Interview Simulation - Clinical Evaluation (30 minutes)**
    - **Activity:** Role-play sessions to simulate patient interviews focusing on scabies history-taking and evaluation.
    - **Method:** Role-play with feedback.
    - Students pair up; one plays the role of the physician and the other as a patient with scabies.
    - Provide guidelines on important history points: recent travel, family history, cohabiting conditions, and nocturnal itching.
    - Rotate roles and provide feedback on effective interviewing.

0r

4. **Interactive Quiz - Assessment and Knowledge Reinforcement (30 minutes)**
    - **Activity:** Conduct an interactive quiz to test knowledge on scabies patterns, diagnosis, and evaluation.

- **Method:** Quiz-based learning, can be online or classroom-based.
- Create questions on clinical features, diagnosis, and patient management.
- Allow time for discussion after each question to reinforce key points.

Practical Training 32.6 Application of topical formulation for *Qūbā*

Total learning hour : 1 hour

Treatment of Qūbā (Tenia)

a) Demonstration: Faculty will demonstrate the correct use of topical pharmacopeial formulations (Habb-e-qooba, Z imad-e-daad .Habb-e-tila, Marham-e-Qooba and discuss indications for oral medicine for *Qūbā)(* 15minutes)

b) Case-Based Learning: Present a case and have students develop a treatment plan, considering factors like severity, location, and patient history.(15 minutes)

c) Hands on training: The students should divide into small 2 groups and first group formulate nuskha for hypothetical case and second group practise local application (zimad or tila) on mannequin. (15 minutes)

d) Feedback: (15 minutes) teacher will give constructive feedback where learner present the case and prescribed treatment for given.

Practical Training 32.7 Evaluation and management of Dermatitis

Total learning hour : 1 hour

Choose any activity among following activities for better understanding of students.

1.Case-Based Learning (CBL) - Understanding Dermatitis Types (60 minutes)

- **Activity:** Analyze case studies of different dermatitis presentations.
- **Method:** Group discussions and presentations.
- **Instructions:**
    - Divide students into small groups and provide each group with different patient scenarios exhibiting various types of dermatitis (e.g., atopic dermatitis, contact dermatitis, seborrheic dermatitis).

- Groups will identify the type of dermatitis based on the case details, discuss possible triggers, and present their findings to the class, including a proposed management plan.(30 minutes

or

2. **Hands-On Dermatological Examination Workshop (60 minutes)**

- **Activity:** Practice dermatological examination techniques on peers.
- **Method:** Demonstration followed by practice.
- **Instructions:**
  - Instruct a knowledgeable faculty member to demonstrate the techniques for inspecting and palpating skin lesions.
  - Students pair up to practice these examination techniques on each other, focusing on identifying characteristics of dermatitis (e.g., erythema, scaling, papules).

or

3. **Comparative Analysis Discussion - Unani vs. Conventional Management (60 minutes)**

- **Activity:** Group discussions comparing management strategies.
- **Method:** Collaborative learning with presentations.
- **Instructions:**
  - Assign each group a specific type of dermatitis and ask them to research both Unani and conventional management strategies.
  - Each group presents their findings, highlighting treatment goals, differences in approach, benefits, and potential limitations of both systems

Practical Training 32.8 Councelling for prevention of dermatitis

Total learning hour :1 hour

Preventive Measures and Patient Education.

1. Discussion:

teacher will explain preventive measures such as:(20 minutes)

- Avoiding known irritants or allergens
- Proper skin care routines (e.g., moisturizing for atopic dermatitis).
- Discussing the importance of wearing protective clothing in cases of contact dermatitis.

2. Role-Playing Exercise:(30 minutes) Teacher will divide students into groups .In each group there is a' Doctor', 'Patient' and Parents .Learners will role-play scenarios where they educate patient and parents on managing their dermatitis, discussing treatment regimens, and preventive strategies.Exchange the roles in the group so everyone can get chance to explain .

3. Discussion and Feedback (10 minutes): After the role play,student and teacher come together for a discussion with faculty and learners:

- What were the challenges in explaining these preventions to the parents?

Experiential Learning Activity

Experiential-Learning Learning 32.1: Diagnosis and management of different skin rashes.

Total learning hour:2 hour

1. Case-Based Learning: (90 minutes)

Case Presentation: Teacher will present a series of clinical cases representing different skin rashes (e.g., heat rashes ,diaper rashes , urticaria, impetigo,) and assign one case to one student.

Student will identify key symptoms, make diagnosis, propose appropriate diagnostic tests and formulate treatment options. Student will present the complete case in front of teacher and peer.

2. **Feedback and Discussion:(30 minutes)**

1. teacher will facilitate a discussion where student present their case analyses and management plans.
2. Provide constructive feedback, emphasizing best practices in diagnosing and managing skin rashes.

Experiential-Learning Learning 32.2: Analysis of Paper and Journal .

Total learning hours: 1. hours

teacher can choose any activity among following multiple activities for better understanding of students.

1. **Journal Club Meetings - Critical Review of Literature (60 minutes)**

- **Activity:** Regular journal club sessions focusing on recent studies and reviews related to skin rashes.
- **Method:** Group discussions and critical analysis.
- Assign each student or group a relevant research paper or clinical study on skin rashes.
- Students should read the paper and prepare a summary, highlighting the study's objectives, methods, results, and conclusions.
- In the meeting, each student presents their paper, followed by a group discussion evaluating the study's validity, relevance, and clinical implications.

or

2. **Literature Search Workshop - Research Skills Development (60 minutes)**

- **Activity:** Workshop focused on developing literature search skills.
- **Method:** Hands-on training.
- Conduct a workshop where students learn how to effectively search for clinical papers and journals using databases like PubMed, Google Scholar, and institutional access points.
- Teach students how to identify relevant keywords, filters, and search techniques.
- Provide practice exercises where students find specific articles based on given criteria.

Experiential-Learning Learning 32.3: Diagnosis and Management of pigmentary lesions.

Total learning hours:2 hours

1.Case base learning: Case Diagnosis (60 minutes)

- **Teacher will present series of cases of different pigmentary lesion to each student.**
- Students present their diagnosis from findings of the case given to the group by teacher.
- Discuss each case with an emphasis on the differential diagnosi
- **Feedback:** Teacher provides feedback, highlighting correct approaches and areas for improvement.

2. **Real Case Examples: (40 minutes):RLE(real life experience)**
    - Show real cases (photos or videos) where the diagnosis was challenging.
    - Ask students how they would proceed and discuss the outcome
    - student will diagnose the case and plan management accordingly .

Self-Assessment and Reflection: **(20 minutes):**

Quiz or Short Evaluation: Teacher will provide a quiz with images of lesions and ask students to identify and describe the lesions.

Reflection: Ask students to write a brief reflection on what they found challenging and how they plan to improve.

Experiential-Learning Learning 32.4: Workshop and seminars of dermatology

Total learning hours:2 hours

Workshop and seminar:

- Students will attend workshop on recent diagnostic and therapeutic procedures used in dermatology so as they better know indications and interpretations of dermatological investigations and therapeutic procedures by expertise dermatologist.
- In workshop they get chance to see different cases and learn correct interpretations knowledge and recent advancement in skin disorders.

Discussion: Student will discuss and share key takeaways from workshop with faculty

Experiential-Learning Learning 32.5: Diagnosis and management of Taenia.

Total learning hours:1 hour

Case Presentation: (40 minutes)

- Teacher will present a case and have students develop diagnosis and treatment plan, considering factors like severity, location, and patient history and complete examination.

Feedback: (20 minutes) Teacher will guide discussions and provide feedback on clinical reasoning and decision-making. In diagnosis and management.

Experiential-Learning Learning 32.6: Awareness Seminar for prevention of skin diseases

Total learning hours:2 hours

Teacher can choose any two activities among following multiple activities for better understanding of students.

1. **Interactive Lectures and Case-Based Learning (60 minutes)**

- **Structure**: Begin with an overview of common skin diseases, their causes, and preventive strategies.
- **Case Studies**: Introduce case-based learning where students analyze patient cases of various skin conditions (e.g., acne, eczema, skin cancers) and discuss prevention.
- **Q&A Sessions**: After each topic, hold Q&A sessions to clarify doubts and deepen understanding.

or

2. **Group Discussions and Problem-Based Learning (PBL)(60 minutes)**

- **Group Activities**: Divide students into small groups, assigning each group a specific skin disease to research and present on.
- **Scenario-Based Problem Solving**: Present a scenario where students need to identify risk factors, advise on preventive measures, and educate a hypothetical patient.

or

3. **Hands-On Demonstrations and Practical Skills Workshops (60 minutes)**

- **Skin Examination Techniques**: Conduct a workshop on skin examinations and how to spot early signs of skin diseases.
- **Demonstration of Protective Measures**: Show techniques such as correct sunscreen application, using protective clothing, and daily skincare routines.

or

4. **Role-Playing and Communication Skills Training(60 minutes)**

- **Role-Playing Exercise**: Let students practice educating "patients" (played by fellow students) about skin disease prevention.
- **Effective Communication Training**: Teach strategies for conveying sensitive information about lifestyle changes to prevent skin diseases.

Experiential-Learning Learning 32.7: Evaluation and management of Dermatitis independently

Total learning hour :2 hour

I.Case base learning.(90 minutes)g

1.Case Study Review: Teacher will present students real life case studies or simulated patient scenario of children with Dermatitis.Ask them to conduct detailed history ,thorough examination ,order investigations , make diagnosis of dermatitis and prescribed treatment. **(40 minutes)**

2. Case presentation: student will present their case in front of class and faculty **(30 minutes)**

3. Feedback from Instructor :teacher will give constructive feedback where students present their case study analysis on the accuracy of identifying types of dermatitis and treatment according to conventional and unani concept **(20 minutes)**

II. Group discussion for comparing Conventional and Classical treatment of dermatitis : Engage students in a discussion comparing the mechanism of action in conventional pharmacological interventional (anti-allergic) and traditional methods (zimad, tila) **(30 minutes)**

Experiential-Learning Learning 32.8: Patient Education for prevention of Dermatitis

Total learning hours :1 hour

Patient Education for prevention of Dermatitis

Instructions: Student will educate and communicate parents or caregivers for prevention of dermatitis in different following ways .

1. Interactive Workshops on Skincare: 10 minutes)

- student will do
    - Hands-on demonstration of moisturizers, gentle cleansers, and how to properly apply products on real patient and or mannequin. Student can practice applying different creams, using hypoallergenic products, and learning the importance of regular moisturizing in children.

2. Trigger Identification Games:(10 minutes)

- Student will create scenarios with common triggers (such as soaps, laundry detergents, certain fabrics, or environmental conditions). Use cards, visuals, or small samples, and patients can guess which items might be problematic for sensitive skin. This helps them learn to recognize and avoid their specific triggers.

3. UV Light and Sun Protection Demo:(10 minutes).

- **Activity**: Use UV-sensitive beads or UV flashlights to show how different sun protection measures (sunscreens, clothing) work. Patients can apply sunscreen and see how it protects their skin under UV light.

4. Moisturizing Techniques Tutorial:(10 minutes)

- **Activity**: Patients practice applying moisturizers to different parts of their body (e.g., elbows, knees) and learn the difference between lotions, creams, and ointments. Instruct on how and when to moisturize to prevent flare-ups, particularly after bathing.

5. Fabric Test Stations:(10 minutes)

- **Activity**: Set up a station with samples of different fabrics (cotton, wool, synthetic materials, etc.). Let patients feel the textures and learn about which fabrics are gentler on the skin and which may trigger flare-ups.

6 Bathing Best Practices Demonstration (10minutes)

- **Activity**: Provide a demonstration of proper bathing techniques, such as using lukewarm water, avoiding harsh soaps, and applying moisturizers immediately after bathing.

Feedback and Assessment: teacher will give feedback on the communication skills, content, demonstration of precautions and preventions of dermatitis to parents ,caregivers

Modular Assessment

Assessment	Hour
Instructions- Conduct a structured Modular Assessment. The assessment will be for 25 Marks per Credit. Keep a structured marking pattern. Use different Assessment methods in each module for the semester. Keep a record of the structured pattern used for assessment. Calculate the Modular grade point as per Table 6C. 1 **Mini-Clinical Evaluation Exercise (Mini-CEX) assessing skin diseases. (15 Marks)** 1. History Taking (2 marks) 2. Physical Examination Skills (3 marks) 3. Clinical Reasoning and Diagnosis (3 marks)	2

4. Investigation and Interpretation (3 marks)
5. Management Plan (2 marks)
6. Patient Education and Communication Skills (2 marks)

2. **Scenario Based Assessment (10 marks)**

- ***Instruction:***
- ***Example Scenario***: You are asked to counsel a parent on the management of dermatitis for their 6-month-old baby.
- **Criteria**:
    - a. **Outline** the key points you would communicate to the parent about preventive measures. (5 marks)
    - b. **Describe** appropriate treatment options and when to seek further medical attention. (5marks)

or

Any Practical in converted form can be taken for assessment (10 Marks)

and

Any Experiential, such as portfolios/ reflections/ presentation can be taken as an assessment. (15 Marks)

Semester No : 6

Module 33 : امراض غدد لاقناتیہ/Amrāḍ-i-Gududde la Qanatiya (Endocrine Disorders)

Module Learning Objectives

(At the end of the module, the students should be able to)

1. Define and classify *Amrāḍ-i-Gududde la Qanatiya (*endocrine disorders) in the light of classical as well as conventional literature.
2. Explain about the *Amrāḍ-i-Gududde la Qanatiya (*endocrine disorders), Hormones control its functions like growth, development, metabolism, and reproduction.
3. Explain about common diseases associated with endocrine system dysfunction, and it's underlying pathologies such as hyper- or- hypo-functions of the glands

4. Exchange views about classical and Modern concept of endocrine system. According to the Unani, it is understood through the concept of "Akhlalat" (humors) and it's control by Tabiyat Mudabbira Badan .
5. Recognize various *Amrāḍ-i-Gududde la Qanatiya (*endocrine disorders) like short stature, gigantism, hypothyroidism, hyperthyroidism, Cushing's syndrome, obesity and others, its diagnostic tests, and Unani treatment.
6. Identify causes, symptoms, and diagnostic criteria for *Amrāḍ-i-Gududde la Qanatiya (*endocrine disorders), interpret laboratory results and imaging studies for developing Unani treatment plans.

Unit 1 Disorder of Pituitary Gland.

33.1.1.Growth Hormone Deficiency (Short Stature/Dwarfism).

33.1.2.Growth Hormone Excess (Gigantism).

References: 13,37

3A	3B	3C	3D	3E	3F	3G
CO5,CO6,CO7	Discuss Growth Hormone Deficiency (GHD) and Growth Hormone Excess (GHE) and its types and causes	2	Lecture	CK	Knows-how	L_VC
CO1,CO2,CO5,CO6,CO7	Demonstrate the cilinical assessment of Growth Hormone disorders in children.	2	Practical33.1	PSY-GUD	Shows-how	PBL,PER,CBL
CO1,CO4,CO5,CO6,CO7,CO8	Conduct comparison between GHD and GHE with other growth disorders by interpreting investigations.	2	Practical33.2	PSY-GUD	Shows-how	DL,LRI,SIM
CO1,CO2,CO6,CO7,CO8	Formulate Unani treatment plans for growth hormone deficiency GHD (dwarfism)	3	Experiential-Learning33.1	CAP	Does	DIS,PL,EDU

CO1,CO2,CO6,CO7,CO8	Evalute and analyse evidence-based medicine for growth harmone disorder in children.	3	Experiential-Learning33.2	CAN	Does	JC

Unit 2 ذیابیطس/Dhayābḭtus (Diabetes)

33.2.1ذیابیطس مائی/*Dhayā bḭtusMayee* (Diabetes Insipidus).

33.2.2. Disorder of Pancreatic Endocrine system: ذیابیطس شکری/*Ziabetes Shakri* (Diabetes mellitus).

References: 13,36

3A	3B	3C	3D	3E	3F	3G
CO1,CO2,CO5,CO6	Discuss diabetes insipidus, diabetes mellitus along with types and pathophysiology	1	Lecture	CC	Knows-how	L&PPT
CO1,CO4,CO5,CO8	Describe the physiology of water regulation and vasopressin.	1	Lecture	CC	Knows-how	L_VC
CO1,CO2,CO6,CO7,CO8	Demonstrate diagnostic techniques of *Dhayā bḭtus Mayee(*DI) and *Dhayā bḭtus Shakri (*DM)	2	Practical33.3	PSY-GUD	Shows-how	D,RLE,DIS
CO1,CO2,CO6,CO7,CO8	Demonstrate *Dhayā bḭtus Mayee(*DI) and *Dhayā bḭtus Shakri (*DM) by using clinical evaluation and laboratory tests.	2	Practical33.4	PSY-GUD	Shows-how	CD,D,LRI,CBL
CO1,CO2,CO5,CO6,CO7,CO8	Discuss causes of *Dhayā bḭtus Mayee(*DI) and *Dhayā bḭtus Shakri (*DM) and Unani Treatment plan.	3	Experiential-Learning33.3	CAP	Does	PL
CO1,CO2,CO5,CO6,CO8	Reveiw and analyse evidence-based Unani medicine for Diabetes Mallitus.	3	Experiential-Learning33.4	CAN	Does	JC,PrBL,SDL

Unit 3 Disorders of Thyroid Gland

33.3.1. قلت افراز درقیہ / *Qillat Ifraz Darqiya* (Hypothyroidism).

33.3.2. افرط افراز درقیہ / *Farte Darqiya* {Hyperthyroidism (Graves Disease).

References: 12,30,37,63

3A	3B	3C	3D	3E	3F	3G
CO1,CO5,CO6,CO7	Describe *Qillat Ifraz-i Darqiya (*Hypothyroidism) and *Farte ifraz-i Darqiya (*Hyperthyroidism) types, pathophysiology and clinical features.	2	Lecture	CC	Knows-how	L_VC
CO1,CO5,CO6,CO7	Demonstrate diagnostic criteria and investigations of *Amrāḍ-i-Darqiya* (thyroid disorder) and make diagnosis and design the Unani treatment for *Amrāḍ-i-Darqiya* (thyroid disorder)	4	Practical33.5	PSY-GUD	Shows-how	D-BED,SIM,D
CO1,CO4,CO5,CO6	Formulate Unani treatment plans for *Amrāḍ-i-Darqiya* (thyroid disorder) and educate patients and caregiver.	6	Experiential-Learning33.5	AFT-VAL	Does	SY,GBL,EDU,W

Unit 4 Disorder of Parathyroid Gland

33.4.1. Hypocalcaemia.

33.4.2. Hypercalcemia.

References: 37,55

3A	3B	3C	3D	3E	3F	3G
CO5,CO6,CO7	Describe Hypocalcemia and Hypercalcaemia, types and pathophysiology	2	Lecture	CC	Knows-how	L_VC

CO1,CO2,CO5,CO6,CO8	Demonstrate clinical features and diagnostic criteria of parathyroid disorders (Hypocalcemia & Hypercalcaemia) by evaluating laboratory tests.	4	Practical33.6	PSY-GUD	Shows-how	PBL,PrBL,CBL
CO1,CO2,CO5,CO6,CO7	Formulate Unani treatment plans for parathyroid disorders and educate patients/caregiver.	4	Experiential-Learning33.6	AFT-VAL	Shows-how	CBL,CD,PBL

Unit 5 Disorder of Adrenal Gland

33.5.1. Adrenocortical Excess (Cushing Syndrome).

33.5.2. Deficiency of Adrenocortical Hormone /congenital adrenal Hyperplasia.

33.5.3.Childhood Obesity

References: 31,53

3A	3B	3C	3D	3E	3F	3G
CO1,CO5,CO6	Describe Cushing's Syndrome, Obesity, types and explain the pathophysiology of Cushing's Syndrome.	1	Lecture	CK	Knows-how	L_VC
CO1,CO4,CO5,CO6	Demonstrate Adrenal Insufficiency, its types and pathophysiology	1	Lecture	CC	Knows-how	L_VC
CO1,CO2,CO5,CO6,CO7,CO8	Demonstrate clinical features of Cushing's Syndrome, Obesity and Adrenal Insufficiency, discuss diagnostic criteria and analyse laboratory tests	2	Practical33.7	PSY-GUD	Shows-how	EDU,GBL,DIS
CO1,CO2,CO5,CO6,CO8	Demonstrate clinical assessment of Childhood Obesity	2	Practical33.8	PSY-GUD	Shows-how	CBL,D-M,D,SIM

CO1,CO5,CO 7,CO8	Illustrate cuases of Cushing's Syndrome and Adrenal Insufficiency, design Unani treatment and educate patients/caregiver	4	Experiential-Learning33.7	AFT-VAL	Does	GBL,W,EDU

Practical Training Activity

Practical Training 33.1 Diagnosis of Growth Hormone disorders

2-Hour Practical Learning Activities

1. Clinical Observation and History Taking

Duration: 60 minutes

Activity:

- Students observe or interact with pediatric cases (real or simulated) suspected of having Growth Hormone disorders.
- Perform detailed history taking, focusing on:
    - Birth history
    - Growth milestones
    - Family history
    - Nutritional and psychosocial aspects
- Identify signs suggestive of GHD (short stature, delayed puberty) or GHE (tall stature, enlarged extremities).

2. Physical Examination and Clinical Feature Mapping

Duration: 60 minutes

Activity:

- Conduct a focused physical examination, including:
    - Height and weight plotting on growth charts
    - Proportionality assessment (upper/lower segment ratio)
    - Pubertal staging

- Craniofacial and skeletal abnormalities

- Compare findings with the history to form preliminary clinical impressions.
- Discuss differences between GHD, GHE, and other causes of abnormal growth (e.g., hypothyroidism, familial short stature).

Practical Training 33.2 Differential diagnosis between Growth Hormone Deficiency (GHD) or Growth Hormone Excess (GHE)

2-Hour Practical Learning Activities

1. Case-Based Interpretation of Investigations

Duration: 60 minutes

Activity:

- Students are provided with lab reports and growth charts of multiple pediatric and adult patients showing features of:
  - **GHD (dwarfism)**
  - **GHE (gigantism/acromegaly)**
  - **Other growth disorders** (e.g., hypothyroidism, Turner syndrome, constitutional growth delay).
- Investigations include:
  - Serum GH, IGF-1 levels
  - Bone age X-rays
  - Thyroid function tests
  - Karyotyping
- Students interpret and record distinguishing patterns for each condition.

2. Comparative Clinical Analysis and Documentation

Duration: 60 minutes

Activity:

- Students create a comparison table summarizing:

- Clinical features
- Hormonal profiles
- Radiological findings
- Growth velocity patterns

- Discuss how differences in investigation results guide diagnosis and treatment decisions.
- Present findings in group discussion or brief oral presentation.

Practical Training 33.3 Diagnosis of Diabetes Mellitus

2-Hour Practical Learning Activities

1. Clinical Case Evaluation and History Taking

Duration: 60 minutes

Activity:

- Students assess simulated or real patient cases by:
  - Taking focused history (onset, duration, thirst, urination frequency, weight changes).
  - Identifying distinguishing symptoms of **DI** (e.g., hypotonic polyuria, normal glucose) vs. **DM** (e.g., polyuria, polydipsia, polyphagia with hyperglycemia).
- Record findings and compare with Unani perspectives (*Su-e-Mizaj*, *Tafarruq-e-ittiṣāl*, etc.).

2. Investigation Review and Clinical Correlation

Duration: 60 minutes

Activity:

- Students interpret diagnostic test results:
  - **For DI:** Urine output volume, specific gravity, serum sodium, osmolality, and water deprivation test.
  - **For DM:** Fasting blood sugar, postprandial glucose, HbA1c, urine sugar.

- Correlate clinical features with lab results to confirm diagnosis.
- Discuss how Unani diagnosis aligns with modern findings.

Practical Training 33.4 Differential diagnosis between Diabetes Insipidus and Diabetes Mellitus.

2-Hours Practical Learning Activities

1. Clinical Evaluation and Symptom Differentiation

Duration: 60 minutes

Activity:

- Students perform or observe clinical evaluation of patients/simulated cases.
- Identify and differentiate classical signs and symptoms:
  - **Dhayābīṭus Mayee (DI):** Excessive thirst, polyuria, low specific gravity of urine, absence of glucosuria.
  - **Dhayābīṭus Shakri (DM):** Polyuria, polydipsia, polyphagia, weight loss, fatigue.
- Document relevant findings and associate them with patient *Mizaj* and Unani understanding.

2. Laboratory Test Interpretation and Diagnostic Differentiation

Duration: 60 minutes

Activity:

- Students analyze and interpret test reports:
  - **For DI:** Urine specific gravity, serum osmolality, water deprivation test.
  - **For DM:** Fasting blood glucose, postprandial glucose, HbA1c, urine sugar.
- Match test values with diagnostic criteria.
- Correlate findings with clinical evaluation to arrive at a confirmed diagnosis.

Practical Training 33.5 Examination of Hypothyroidism and Hyperthyroidism

4-Hours Practical Learning Activities

1. Clinical Feature Identification and History Taking

Duration: 60 minutes

Activity:

- Students perform or observe structured clinical examination of patients/simulated cases with suspected thyroid disorders.
- Elicit relevant signs and symptoms:
    - **Hyperthyroidism:** weight loss, tremors, heat intolerance, anxiety.
    - **Hypothyroidism:** weight gain, cold intolerance, fatigue, menstrual irregularities.
- Take detailed history including family history, drug intake, and dietary habits.

2. Diagnostic Criteria and Investigation Analysis

Duration: 60 minutes

Activity:

- Review diagnostic criteria based on classical Unani texts and current medical guidelines.
- Interpret laboratory tests:
    - TSH, Free T3, Free T4, Anti-TPO antibodies.
- Correlate lab values with clinical presentation to arrive at a clear diagnosis.

3. Diagnosis and Case Formulation

Duration: 60 minutes

Activity:

- Students formulate a structured diagnosis (e.g., *Su-e-Mizaj-e-Barid wa Yabis of Darqiya* for hypothyroidism).
- Discuss differential diagnosis and rule-out conditions with peer groups.

4. Designing Individualized Unani Treatment Plan

Duration: 60 minutes

Activity:

- Develop complete Unani management plan including:
    - **Ilaj bil Ghiza** – Diet suitable to patient's *Mizaj* and thyroid status.
    - **Ilaj bil Dawa** – Use of Unani drugs like *Kushta Qalai*, *Majoon-e-Azaraqi*, *Habb-e-Jadwar* (as appropriate).
    - **Ilaj bil Tadbir** – Regimens like *Riyazat*, *Dalk*, and *Hammam*.
- Present the plan with justification based on principles of Unani medicine and contemporary needs.

Practical Training 33.6 Diagnosis of parathyroid disorders

4-Hours Practical Learning Activities

1. Clinical Case Observation and Symptom Identification

Duration: 60 minutes

Activity:

- Students observe or review structured case profiles showing signs and symptoms of:
    - **Hypocalcemia**: muscle cramps, tetany, Chvostek's and Trousseau's signs.
    - **Hypercalcemia**: bone pain, abdominal discomfort, mental confusion, polyuria.
- Document clinical features and compare overlapping vs. distinguishing signs.

2. Diagnostic Criteria Review and Physical Signs Demonstration

Duration: 60 minutes

Activity:

- Review standard diagnostic criteria for parathyroid disorders:
    - Hypocalcemia: ↓ serum calcium, ↑ phosphate, ↓ or ↑ PTH
    - Hypercalcemia: ↑ serum calcium, ↓ phosphate, ↑ PTH in primary causes

- Practice physical examination techniques to elicit Chvostek's and Trousseau's signs using peer simulation or videos.

3. Laboratory Report Interpretation

Duration: 60 minutes

Activity:

- Evaluate real or simulated lab reports including:
    - Serum calcium, phosphate, PTH, vitamin D, renal function
- Correlate lab findings with clinical presentations and differentiate primary vs. secondary causes.

4. Group Work: Clinical Reasoning and Case Presentation

Duration: 60 minutes

Activity:

- In small groups, students prepare brief case presentations based on combined clinical and lab findings.
- Present diagnosis, underlying cause, and suggest initial Unani and general management direction.
- Peer discussion and facilitator feedback to enhance reasoning accuracy.

Practical Training 33.7 Approach to Cushing's Syndrome

2-Hours Practical Learning Activities

1. Clinical Observation and Feature Identification

Duration: 60 minutes

Activity:

- Students observe or review case scenarios displaying typical clinical features:
    - **Cushing's Syndrome:** moon face, truncal obesity, purple striae, hypertension.
    - **Obesity:** BMI assessment, acanthosis nigricans, gait changes, metabolic signs.
    - **Adrenal Insufficiency:** fatigue, weight loss, hypotension, skin hyperpigmentation.

- Record findings and compare overlapping vs. distinguishing features among conditions.

2. Diagnostic Criteria Discussion and Lab Test Analysis

Duration: 60 minutes

Activity:

- Discuss diagnostic criteria for each condition based on clinical guidelines.
    - Cushing's: 24-hour urinary cortisol, low-dose dexamethasone suppression test.
    - Obesity: BMI percentile for age and sex, lipid profile, fasting glucose.
    - Adrenal Insufficiency: serum cortisol, ACTH, electrolyte levels.
- Students analyse lab reports and interpret findings to confirm or rule out diagnoses.
- Relate results to Unani understanding of *Su-e-Mizaj*, *Imtila*, and *Amraz-e-Ghudood*.

Practical Training 33.8 Childhood Obesity-Clinical Presentation

2-Hours Practical Learning Activities

1. Clinical Case Review and Data Collection

Duration: 60 minutes

Activity:

- Students are provided with or observe a pediatric case of obesity.
- Collect and review clinical data including:
    - Anthropometric measurements (BMI, waist circumference)
    - Dietary history, physical activity level
    - Family history and socio-environmental factors
- Discuss associated complications (e.g., early puberty, insulin resistance, psychosocial issues).

2. Case Presentation and Management Planning

Duration: 60 minutes

Activity:

- Students present the case using structured format (chief complaints, history, examination findings, and investigations).
- Justify diagnosis and classification of obesity (based on BMI percentile for age).
- Propose an integrated management plan:
    - Lifestyle modification and physical activity
    - *Ilaj bil Ghiza* – Unani dietary recommendations based on *Mizaj*
    - *Ilaj bil Tadbir* – regimens like *Riyazat*, *Hammam*, or *Hijama*
    - Psychosocial support and follow-up strategies

Experiential Learning Activity

Experiential-Learning Learning 33.1: Growth hormone deficiency(dwarfism)-Case Discussions

3-Hour Experiential Learning Activities

1. Clinical Case Analysis and Mizāj Assessment

Duration: 60 minutes

Activity:

- Students review clinical features of GHD (short stature, delayed growth milestones, poor muscle tone).
- Assess *Mizāj* (temperament) and underlying Unani causative factors such as *Su-e-Hadm*, *Imtila*, or *Tafarruq-e-Ittisāl*.
- Correlate modern and Unani diagnostic approaches.

2. Designing Individualized Unani Treatment Plans

Duration: 60 minutes

Activity:

- Students formulate treatment using:

- **Ilāj bil Ghidhā:** Nutrient-rich Unani diets to promote growth (e.g., dates, eggs, goat milk, dry fruits).
- **Ilāj bil Dawa:** Use of Unani formulations like *Majoon Arad Khurma*, *Khamira Gaozaban Ambari Jawaharwala*, *Roghan Kadu* for strengthening brain and hormonal balance.
- **Ilāj bil Tadbīr:** Regimens like *Hammam*, *Dalk* (massage), and moderate exercise for stimulation of body growth.

- Justify selections with Unani texts and clinical rationale.

3. Simulation and Case Presentation

Duration: 60 minutes

Activity:

- Students present their treatment plans through role-play or case simulation.
- Discuss patient education, compliance strategies, and long-term monitoring.
- Engage in peer feedback on the appropriateness and effectiveness of Unani interventions.

Experiential-Learning Learning 33.2: Research journal on evidence-based Unani medicine in clinical practice.

3-Hours Experiential Learning Activities

1. Identifying and Evaluating Clinical Evidence

Duration: 60 minutes

Activity:

- Students review selected clinical guidelines, journal articles, or systematic reviews related to common conditions.
- Critically evaluate the strength of evidence, relevance to local practice, and clinical applicability.
- Summarize key findings for clinical use.

2. Case-Based Decision Making Using Evidence

Duration: 60 minutes

Activity:

- Students are presented with real or simulated patient cases.
- Apply reviewed evidence to make diagnostic and therapeutic decisions.
- Justify each decision by citing clinical studies or guidelines.

3. Role Play and Integration into Clinical Workflow

Duration: 60 minutes

Activity:

- Students simulate clinical interactions where they explain evidence-based decisions to patients.
- Practice documenting evidence-supported plans in a mock patient chart.
- Reflect on barriers to evidence integration and propose solutions for effective clinical use.

Experiential-Learning Learning 33.3: Etiology and management of Diabetes Mellitus in children-Group Discussion

3-Hours Experiential Learning Activities

1. Understanding and Justifying Causes

Duration: 60 minutes

Activity:

- Students analyze clinical case vignettes of patients with symptoms suggestive of Dhayābḭtus Mayee and Dhayābḭtus Shakri.
- Identify and justify pathophysiological causes:
    - **Dhayābḭtus Mayee (DI):** Deficiency or insensitivity to ADH, linked to *Baroodat-e-Dimagh* (cold temperament of the brain).
    - **Dhayābḭtus Shakri (DM):** Metabolic derangement, *Su-e-Mizaj* of pancreas (cold/dry or hot/dry), lifestyle, diet.
- Compare findings with Unani classical references and contemporary understanding.

2. Designing Unani Treatment Plans

Duration: 75 minutes

Activity:

- Students develop individualized Unani treatment plans based on the type of diabetes and patient *Mizaj*.
- Include:
    - **Ilaj bil Ghiza:** Dietary restrictions (e.g., avoid sweet, moist, and hot foods), recommend barley water, bitter vegetables.
    - **Ilaj bil Dawa:** Use of classical formulations such as *Qurs-e-Ziabetes*, *Dawa-ul-Misk Motadil*, *Majoon Dabeed-ul-Ward*.
    - **Ilaj bil Tadbir:** Moderate physical exercise, *Riyazat*, and *Hammam* for weight and metabolic control.
- Justify selections using traditional texts and current clinical insights.

3. Peer Discussion and Simulated Case Counseling

Duration: 45 minutes

Activity:

- Students present their treatment plans to peers and receive feedback.
- Engage in role-play of patient counseling sessions explaining the nature of the disease, treatment rationale, dietary advice, and lifestyle changes.
- Emphasize communication clarity and cultural sensitivity.

Experiential-Learning Learning 33.4: Evidence-based Unani medicine in clinical practice in Journal club

3-Hours Experiential Learning Activities

1. Literature Appraisal and Evidence Review

Duration: 60 minutes

Activity:

- Students review selected research articles, case studies, or clinical trials related to Unani formulations or regimens.
- Identify the level of evidence supporting the use of specific Unani interventions (e.g., *Habb-e-Jadwar* in neurological disorders, *Majoon Suranjan* in arthritis).
- Discuss how to critically appraise Unani literature using standard evidence-based tools.

2. Case-Based Application of Evidence

Duration: 60 minutes

Activity:

- Present clinical case scenarios where students must apply relevant Unani evidence to patient care.
- Choose appropriate **Ilaj bil Ghiza**, **Ilaj bil Dawa**, and **Ilaj bil Tadbir** backed by documented evidence.
- Justify treatment choices based on both traditional texts and research data.

3. Clinical Decision-Making and Integration Practice

Duration: 60 minutes

Activity:

- Simulate interdisciplinary clinical discussions where students integrate Unani interventions alongside modern diagnostics.
- Demonstrate how evidence-based Unani approaches can be explained to patients, documented in clinical records, and aligned with ethical practice.
- Reflect on challenges in integrating traditional evidence with modern protocols.

Experiential-Learning Learning 33.5: Awareness program on hyperthyroidism

6-Hours Experiential Learning Activities

1. Clinical Case Observation and Symptom Identification

Duration: 90 minutes

Activity:

- Students observe or review cases of different thyroid disorders:
    - **Hyperthyroidism:** weight loss, tremors, tachycardia, heat intolerance
    - **Hypothyroidism:** fatigue, weight gain, dry skin, cold intolerance
- Note and document presenting symptoms, pulse rate, and thyroid gland palpation findings.

2. Diagnostic Criteria Review and Lab Analysis

Duration: 90 minutes

Activity:

- Evaluate lab results: TSH, T3, T4, anti-TPO antibodies.
- Correlate lab findings with symptoms to confirm the diagnosis of hypo- or hyperthyroidism.
- Discuss modern and Unani perspectives on glandular dysfunction and *Su-e-Mizaj*.

3. Designing Unani Treatment Plans

Duration: 120 minutes

Activity:

- Students formulate Unani treatment plans tailored to the type of thyroid disorder and *Mizaj* of the patient, including:
    - **Ilaj bil Ghiza** – Diet regulation according to temperament and disorder type.
    - **Ilaj bil Dawa** – Use of Unani formulations like *Habb-e-Jadwar*, *Majoon-e-Suranjan*, *Kushta Qalai* (if indicated).
    - **Ilaj bil Tadbir** – Lifestyle management including *Hammam*, *Riyazat* (exercise), and *Hijama* (where applicable).
- Provide justification for each treatment element using classical references and clinical reasoning.

4. Patient and Caregiver Education Role-play

Duration: 60 minutes

Activity:

- Students role-play communication scenarios explaining:
    - Nature and course of thyroid disease
    - Importance of treatment adherence
    - Lifestyle modifications and follow-up protocols
- Focus on clear, culturally sensitive language and building rapport with patients/caregivers.

5. Peer Review and Reflection

Duration: 30 minutes

Activity:

- Students exchange feedback on each other's treatment plans and patient education approaches.
- Reflect on how Unani principles can be effectively applied in endocrine disorders.

Experiential-Learning Learning 33.6: Parathyroid disorder Case presentation

4-Hours Experiential Learning Activities

1. Clinical Scenario Analysis and Identification of Parathyroid Disorders

Duration: 60 minutes

Activity:

- Students review simulated or real patient cases of:
    - **Hyperparathyroidism** (e.g., bone pain, kidney stones, muscle weakness)
    - **Hypoparathyroidism** (e.g., muscle cramps, tetany, paresthesia)
- Identify clinical signs and symptoms, lab findings (calcium, phosphate, PTH levels), and differentiate between types.

2. Designing Individualized Unani Treatment Plans

Duration: 90 minutes

Activity:

- Students prepare Unani management plans based on diagnosis and *Mizaj*, including:
    - **Ilaj bil Ghiza**: calcium/phosphorus balancing diets using Unani foods
    - **Ilaj bil Dawa**: suggested Unani formulations (e.g., *Kushta Qalai*, *Majoon Suranjan*, *Habbe Shifa*) for strengthening bones and glands
    - **Ilaj bil Tadbir**: supporting regimens like *Dalk* (massage), *Hammam*, and light exercise if suitable
- Students justify treatment choices based on classical texts and modern understanding of glandular disorders.

3. Patient and Caregiver Education Demonstration

Duration: 60 minutes

Activity:

- Role-play or live demonstration of:
    - Patient counseling on disease nature and long-term implications
    - Guidance on dietary sources of calcium and lifestyle measures
    - Importance of medication compliance and signs requiring urgent care
- Use of handouts, dietary charts, and simplified language to ensure understanding.

4. Peer Feedback and Reflective Discussion

Duration: 30 minutes

Activity:

- Group discussion where students reflect on challenges in designing Unani care for hormonal disorders.
- Exchange feedback on communication techniques and completeness of treatment plans.

Experiential-Learning Learning 33.7: Cushing syndrome-Workshop

4-Hours Experiential Learning Activities

1. Clinical Observation and Case Review

Duration: 60 minutes

Activity:

- Students observe real or simulated cases of Cushing's Syndrome and Adrenal Insufficiency.
- Identify presenting features:
    - **Cushing's:** moon face, central obesity, striae, hypertension.
    - **Adrenal Insufficiency:** weight loss, fatigue, hypotension, hyperpigmentation.
- Review patient history, drug use (e.g., corticosteroids), and triggering factors.

2. Analysis of Laboratory Reports and Diagnostic Justification

Duration: 60 minutes

Activity:

- Interpret hormonal assay reports (cortisol, ACTH), blood glucose, electrolytes, and imaging findings.
- Correlate findings with signs/symptoms and justify the diagnosis using both conventional and Unani concepts (e.g., Su-e-Mizaj, Amraz-e-Ghudood).

3. Development of Unani Management Plan

Duration: 90 minutes

Activity:

- Students design an individualized Unani plan for each condition including:
  - *Ilaj bil Ghiza*: adrenal-supportive diet per Mizaj.
  - *Ilaj bil Dawa*: appropriate Unani formulations (e.g., *Majoon Dabidul Ward*, *Sharbat Unnab*) for detoxification and gland regulation.
  - *Ilaj bil Tadbir*: regimens like *Hammam*, *Hijama* (if indicated), physical activity moderation.
- Emphasize gradual withdrawal of causative drugs if applicable (under supervision).

4. Patient and Caregiver Education Demonstration

Duration: 30 minutes

Activity:

- Students conduct role-play sessions on counseling patients and caregivers.
- Focus on medication adherence, dietary and lifestyle guidance, symptom monitoring, and follow-up importance.

Modular Assessment

Assessment	Hour

Instructions- Conduct a structured Modular Assessment. The assessment will be for 50 Marks . Keep a structured marking pattern. Use different Assessment methods in each module for the semester. Keep a record of the structured pattern used for assessment. Calculate the Modular grade point as per Table 6C. **(A)OSCE (Objective Structured Clinical Examination)** Clinical Knowledge and Diagnosis -5 marks History Taking and Physical Examination -5 marks Procedural Skills -5 marks Communication Skills -5 marks Time Management and Organization -2.5 marks Professionalism -2.5 marks **(B)Short Answer Questions SAQs/LAQs** for *Amṛāḍ-i-Gududde la Qanatiya* (Endocrine Disorders) **SAQ (Short Answer Question) -5x2 =10 marks** **Purpose:** Test factual knowledge and basic understanding. **Length:** Brief, typically 1-3 sentences or a short paragraph. **LAQ (Long Answer Question)-3 x 5=15 marks** **Purpose:** Evaluate deeper understanding, analysis, and critical thinking. **Length:** Longer, typically several paragraphs, depending on the complexity. **Components (**5 marks **):** **Introduction :** Brief overview or definition-0.5 marks **Main Explanation :** Detailed response including definitions, examples, or processes-2.5 marks **Supporting Details :** Additional facts, examples, or related concepts-1.5 marks **Conclusion :** Summarize or provide an insight related to the question-0.5 marks Or	4

Any practical in converted form can be taken for assessment.(25 marks) and Any of the experiential as portfolio/ refelections / presentations can be taken as an assessment.(25 marks)	

Module 34 : Miscellaneous Diseases.

Module Learning Objectives

(At the end of the module, the students should be able to)

1. Describe *Waja' al-Mafāṣil (*arthralgia), *Iltihab-i Mafasil* / *Waja' al-Mafāṣil Tifli [*Juvenile Idiopathic Arthritis (JIA)], *Humma-i-Majhul-al-Asbab* [Pyrexia of Unknown Origin (PUO)] and *Zamur-al-azlaht (*muscular dystrophy).
2. Describe about the Unani concept of *Waja' al-Mafāṣil (*arthralgia), *Waja' al-Mafāṣil Tifli [*Juvenile Idiopathic Arthritis (JIA], *Humma-i-Majhul-al-Asbab [*Pyrexia of Unknown Origin (PUO)] and *Zamur-al-azlaht (*muscular dystrophy).
3. Discuss the etiology, pathogenesis, and clinical features of the miscellaneous diseases.
4. Diagnose on the basis of detailed history and proper examination and manage the miscellaneous diseases using Unani principles. of treatment.
5. Discuss the Unani principles of treatment which helps to control signs and symptoms, reduce complications, and slow progression of the miscellaneous diseases.
6. Adapt the lifestyle modifications and preventive measures in managing the miscellaneous diseases.
7. Identify red flags for timely referral

Unit 1 وجع المفاصل/Waja al Mafasil(Arthralgia) Waja' al-Mafāṣil (Arthralgia)

34.1.1. Approach to waja al mafasil in children.

References: 39,62

3A	3B	3C	3D	3E	3F	3G

CO1,CO6,CO7,CO8	Describe *Waja' al-Mafā.sil* (arthralgia) its clinical features and distinguish it from arthritis	1	Lecture	CC	Knows-how	L_VC
CO1,CO5,CO6,CO8	Describe the pathophysiology and etiology of *Waja' al-Mafā.sil* (arthralgia)	1	Lecture	CC	Knows-how	L&PPT
CO1,CO5,CO6,CO7,CO8	Diagnose and document a case of *Waja' al-Mafā.sil* (arthralgia).	2	Practical34.1	PSY-GUD	Shows-how	CBL,PBL,CD
CO1,CO2,CO4,CO5,CO6,CO7	Discuss and present effective communication with *Waja' al-Mafā.sil* (arthralgia) patients and their families.	2	Practical34.2	PSY-GUD	Shows-how	W,TUT,PER,DIS
CO1,CO2,CO5,CO6	Identify and manage common causes of *Waja' al-Mafā.sil* (arthralgia).	6	Experiential-Learning34.1	CAN	Does	GBL,BL,EDU

Unit 2 التہاب مفاصل طفلی Iltihab-i Mafasil /Waja' al-Mafāṣil Tifli (Juvenile Idiopathic Arthritis)

34.2.1. Definition, Aetiology, Clinical Features, Diagnosis and Management.

References: 44,61,62

3A	3B	3C	3D	3E	3F	3G
CO1,CO5,CO6,CO7	Describe *Waja' al-Mafā.sil Tifli [*Juvenile Idiopathic Arthritis (JIA)] and its classification	1	Lecture	CC	Knows-how	L_VC
CO4,CO5,CO6	Describe the pathophysiology and etiology of *Waja' al-Mafā.sil Tifli [*Juvenile Idiopathic Arthritis (JIA)].	1	Lecture	CC	Knows-how	L&PPT

CO1,CO2,CO6,CO7,CO8	Interpret laborotary tests in *Waja' al-Mafṣil Tifli* [Juvenile Idiopathic Arthritis (JIA)].	2	Practical34.3	CE	Does	D-BED,LRI,X-Ray
CO1,CO2,CO6,CO7,CO8	Identify and demonstrate other types of childhood rheumatic disease.	2	Practical34.4	CAN	Shows-how	D,GBL,D-BED,EDU
CO1,CO2,CO5,CO6,CO7	Formulate Unani treatment plan for *Mafṣil Tifli* [Juvenile Idiopathic Arthritis (JIA)] patients by Ilaj bit tadbeer (Dalak /Massage)	6	Experiential-Learning34.2	PSY-ORG	Does	SDL

Unit 3 Lymphadenopathy

34.3.1.Definition, Aetiology, Clinical Features, Diagnosis and Management.

References: 39,62

3A	3B	3C	3D	3E	3F	3G
CO1,CO4,CO5,CO6	Describe etiology, pathophysiology, types and diagnostic criteria of lymphadenopathy.	2	Lecture	CC	Knows-how	ML,L_VC
CO1,CO2,CO4,CO5,CO6	Demonstrate and present a case of lymphadenopathy.	2	Practical34.5	PSY-ADT	Shows-how	CBL,C_L
CO1,CO2,CO4,CO7,CO8	Perform diagnostic tests for early diagnosis and management of lymphadenopathy.	2	Practical34.6	PSY-GUD	Shows-how	D
CO1,CO2,CO4,CO7,CO8	Formulate the Unani treatment plan of lymphadenopathy.	3	Experiential-Learning34.3	CS	Does	PL,IBL,DIS
CO1,CO4,CO5,CO7,CO8	Identify red flag signs of lymphadenopathy for timely referral	3	Experiential-Learning34.4	AFT-REC	Does	D,SDL

Unit 4 حمی مجہول الاسباب Humma-i-Majhul-al-Asbab (Pyrexia of Unknown Origin)

34.4.1.Definition, Clinical Features, Diagnosis and Management.

References: 31,33,37,55,63

3A	3B	3C	3D	3E	3F	3G
CO1,CO5,CO6,CO7	Describe *Humma-i-Majhul-al-Asbab* (Pyrexia of Unknown Origin (PUO)] ,diagnostic criteria, types and classification	2	Lecture	CC	Knows-how	L_VC
CO1,CO2,CO5,CO6,CO8	Diagnose and Interpret laboratory investigations of *Humma-i-Majhul-al-Asbab* (Pyrexia of Unknown Origin (PUO)]	4	Practical34.7	PSY-MEC	Shows-how	LRI,D,CBL,D-BED
CO1,CO2,CO6,CO7,CO8	Interpret the laboratory and imaging studies and develop the Unani treatment plan of *Humma-i-Majhul-al-Asbab* (Pyrexia of Unknown Origin (PUO)] .	4	Experiential-Learning34.5	CE	Does	CD,LRI,SIM,CBL

Unit 5 ضمور العضلات Zamur-al-azlaht (Muscular Dystrophy)

34.5.1.Definition, Aetiology, Types, Clinical Features, Diagnosis and Management.

References: 31,63

3A	3B	3C	3D	3E	3F	3G
CO1,CO7,CO8	Describe *Zamur-al-azlaht* (Muscular Dystrophy), its types and explain the genetics and molecular basis of muscular dystrophy	1	Lecture	CC	Knows-how	L_VC
CO1,CO5,CO7,CO8	Describe the pathophysiology and clinical features of *Zamur-al-azlaht* (Muscular Dystrophy).	1	Lecture	CC	Knows-how	L&PPT

CO1,CO2,CO5,CO6,CO7,CO8	Diagnose a case of *Zamur-al-azlaht (*Muscular Dystrophy) and formulate unani treatment plan.	4	Practical34.8	PSY-GUD	Shows-how	EDU,SIM,GBL
CO1,CO2,CO5,CO6,CO7,CO8	Discuss and present a rehabilitation plan for *Zamur-al-azlaht (*Muscular Dystrophy) patients and apply assistive devices and adaptive techniques as needed.	4	Experiential-Learning34.6	PSY-MEC	Does	PBL,CBL,PER

Practical Training Activity

Practical Training 34.1 Clinical presentation on arthralgia

2-Hours Practical Learning Activities

1. Medical History Taking in Waja‘ al-Mafāṣil Patients

Duration: 60 minutes

Activity:

- Students interact with real or simulated patients presenting with joint pain.
- Elicit detailed history focusing on:
  - Onset, duration, and pattern of joint pain
  - Morning stiffness or diurnal variation
  - Joint involvement symmetry
  - Associated symptoms: fever, fatigue, rash, swelling
  - History of trauma, infections, or family history of autoimmune disease
- Record history using a structured format.

2. Physical Examination and Diagnosis Formation

Duration: 60 minutes

Activity:

- Perform focused musculoskeletal examination:
    - Inspect for joint swelling, redness, deformity
    - Palpate for tenderness, warmth, effusion
    - Assess range of motion and functional limitation
- Identify clinical signs suggestive of underlying causes (e.g., JIA, reactive arthritis, rheumatic fever).
- Formulate provisional diagnosis based on findings and document clinical reasoning.

Practical Training 34.2 Interaction with arthralgia patient and their attendant

total learning hours: 2 hours

Teacher's instructions for Practical Steps that how to participate in Communication effectively with pediatrics patients/care-giver by following steps:

Objective:

"Communicating effectively with pediatric patients experiencing arthralgia (joint pain) and their families"

Step1. Teacher's instruct learner how to Create a Child-Friendly Environment.

- **Use Play or Visual Aids**: Incorporate toys, drawings, or stuffed animals to help explain things. Teacher might demonstrate a procedure or pain location on a toy to make the child feel more comfortable.

Step 2. Teacher's instruct learner how to Listen and Observe Non-Verbal Cues

- **Observe Body Language**: Children may express pain through their behavior, such as limping, avoiding certain movements, or showing discomfort when touched. Acknowledge their body language and ask them about it.

Step 3. Teacher's instruct learner how to Simplify Medical Information for Parents

- **Break Down the Condition**: Use simple explanations to help families understand what arthralgia is and what causes it. Parents may be worried or confused, so clear, easy-to-follow explanations are important.

- **Offer Visual Aids for Parents**: Share diagrams or digital illustrations of joints to help parents understand what's happening in their child's body. Clear visual explanations help relieve anxiety.

Step 4. Teacher's instruct learner how to Validate the Family's Concerns:

- **Acknowledge Parents' Worries**: Parents may feel anxious about their child's condition or concerned about long-term effects. Show empathy by recognizing their worries and offering reassurance.
- **Encourage Parents to Ask Questions**: Let families know that it's okay to ask as many questions as they need to feel comfortable with the diagnosis and treatment.

Step 5. Teacher's instruct learner how to Engage the Child in Self-Management by following different methods:

- **Empower the Child**: Depending on their age, involve the child in their own care by explaining how they can help themselves feel better.
- **Make it Fun**: If the treatment involves exercises or other activities, turn it into a game or challenge, which helps children engage positively with their treatment.
- **School-Age Children (6-12)**: Provide a bit more detail, but still keep it simple. Explain why they need to follow certain instructions, like taking medicine or doing exercises.
- **Teenagers**: Engage in more direct communication and allow them to take part in decision-making. They may want to know more details about their condition and treatment.

Practical Training 34.3 Radiographic diagnosis of Juvenile Idiopathic Arthritis

Total learning hours: 2 hours

Teacher's instructions for Practical Steps of case base learning method for understanding Juvenile Idiopathic Arthritis (JIA) through study of radiography.

By incorporating radiography into JIA education, learners will develop a comprehensive understanding of the condition, improve their diagnostic skills, and enhance patient care.

Learning Objectives:

1. Identify radiographic features of JIA.

2. Understand the role of imaging in JIA diagnosis and management.

3. Recognize the limitations and potential complications of radiography in JIA.

Case Studies:

1. Review radiographs of patients with JIA.

2. Analyze imaging findings and correlate with clinical symptoms.

3. Discuss differential diagnoses.

Step 1. Teacher's instruct learner about Interprofessional Education:

1. Collaborate with rheumatologists.

2. Involve radiologists in teaching.

3. Incorporate patient perspectives.

Step 2. Teacher's explain learner about Radiographic Staging of JIA:

1. Early stages: Soft tissue swelling, joint effusion.

2. Intermediate stages: Joint space narrowing, bone erosion.

3. Advanced stages: Severe joint destruction, bony overgrowth.

Step 3. Teacher's explain learner about Radiography-Based Assessment Criteria:

1. Accuracy of image interpretation.

2. Understanding of JIA radiographic features.

3. Ability to correlate imaging findings with clinical symptoms.

Step 4. Teacher's explain learner about Radiographic Staging of JIA:

1. Early stages: Soft tissue swelling, joint effusion.

2. Intermediate stages: Joint space narrowing, bone erosion.

3. Advanced stages: Severe joint destruction, bony overgrowth.

Step 5. Teacher's explain learner about Radiographic Features of JIA:

1. Joint space narrowing.

2. Bone erosion.

3. Osteopenia.

4. Joint effusion.

5. Bony overgrowth.

Step 6. Teacher's explain learner about Interactive Learning Tools:

1. Image interpretation exercises.

2. Quiz-based learning.

3. Interactive case studies.

Practical Training 34.4 Differential diagnosis of Juvenile Idiopathic Arthritis (JIA) from other rheumatic conditions (by interactive demonstration)

2-Hours Practical Learning Activities

1. Clinical Case Evaluation and Comparison

Duration: 60 minutes

Activity:

- Students assess clinical cases of children with joint complaints.
- Observe and record presenting features: joint swelling, morning stiffness, fever pattern, rash, and systemic signs.
- Compare cases of JIA with other childhood rheumatic diseases like:
    - **Systemic Lupus Erythematosus (SLE)**
    - **Rheumatic Fever**
    - **Reactive Arthritis**
- Identify distinguishing features (e.g., migratory arthritis in RF, malar rash in SLE, enthesitis in reactive arthritis).

2. Diagnosis and Clinical Reasoning Exercise

Duration: 60 minutes

Activity:

- Students use structured templates to make differential diagnoses based on clinical data, lab results (ESR, CRP, ANA, RF), and imaging.
- Practice formulating a final diagnosis of JIA based on ILAR classification (e.g., oligoarticular, polyarticular, systemic).
- Discuss findings with peers and facilitators for refinement and clinical accuracy.

Practical Training 34.5 Lymphadenopathy case presentation

2-Hours Practical Learning Activities

1. Eliciting Focused Medical History

Duration: 60 minutes

Activity:

- Students take a detailed history from real or simulated patients presenting with lymphadenopathy.
- Focus areas include:
    - Duration, progression, and pattern of swelling
    - Associated symptoms: fever, weight loss, night sweats, fatigue
    - Recent infections, travel history, TB exposure, occupational and family history
    - Medication and immunization history
- Document findings using a structured clinical history proforma.

2. Performing Physical Examination of Lymph Nodes

Duration: 60 minutes

Activity:

- Students perform systematic examination of lymph node regions: cervical, axillary, inguinal, and supraclavicular.
- Identify and document:

- Size, tenderness, consistency (soft/firm/hard), mobility, and matted nature
- Skin changes over lymph nodes

- Differentiate between benign and suspicious findings.
- Faculty supervision and feedback to refine clinical technique.

Practical Training 34.6 Diagnosis of lymphadenopathy

2-Hour Practical Learning Activities

1. Observation and Interpretation of Imaging Studies

Duration: 60 minutes

Activity:

- Students observe and interpret imaging modalities commonly used in lymphadenopathy:
  - **Ultrasound** of superficial lymph nodes
  - **Chest X-ray** for mediastinal lymphadenopathy
  - **CT/MRI scans** for deep-seated nodes
- Identify radiological features suggestive of malignancy, TB, or reactive causes.
- Correlate findings with clinical history for diagnosis.

2. Demonstration and Reporting of Lymph Node Biopsy Procedures

Duration: 60 minutes

Activity:

- Demonstration (video/real-time) of **FNAC (Fine Needle Aspiration Cytology)** and **Excisional Biopsy** techniques.
- Students practice preparing biopsy requisition forms, labeling samples correctly, and documenting clinical indications.
- Interpretation of biopsy results in relation to diagnosis and decision-making for Unani or referral management.

Practical Training 34.7 Diagnostic Approach to Pyrexia of Unknown Origin

4-Hours Practical Learning Activities

1. Eliciting Detailed Medical History

Duration: 60 minutes

Activity:

- Students interact with real/simulated patients presenting with fever >3 weeks duration.
- Record history including:
    - Onset, pattern, and duration of fever
    - Travel, exposure, family and occupational history
    - Associated symptoms (e.g., night sweats, weight loss, joint pain)
    - Drug intake and past medical history
- Identify red flags and systemic involvement.

2. Performing Comprehensive Physical Examination

Duration: 60 minutes

Activity:

- Conduct a structured systemic examination with focus on:
    - Lymph nodes, hepatosplenomegaly, cardiac murmurs, joint swelling
    - Skin rashes, ulcers, or pallor
    - Neurological signs (e.g., neck stiffness, focal deficits)
- Document key findings on a clinical proforma.

3. Interpretation of Laboratory Investigations

Duration: 60 minutes

Activity:

- Analyze and interpret reports such as:

- CBC, ESR, CRP
- Blood and urine cultures
- LFT, RFT, Chest X-ray, abdominal ultrasound

- Identify abnormal patterns and suggest possible etiologies (e.g., TB, autoimmune disease, malignancy).
- Correlate findings with clinical history and signs.

4. Formulating a Provisional Diagnosis and Case Discussion

Duration: 60 minutes

Activity:

- Based on history, exam, and investigations, students present a clinical case with:
  - Provisional diagnosis and differentials
  - Justification for PUO classification
  - Suggested next steps (specialist referral, advanced imaging, etc.)
- Peer discussion and faculty feedback to reinforce diagnostic reasoning.

Practical Training 34.8 Management for Muscular Dystrophy (by game-based learning)

4-Hour Practical Learning Activities

1. Detailed Medical History Taking

Duration: 60 minutes

Activity:

- Students perform focused history taking from real/simulated patients, covering:
  - Onset and progression of muscle weakness
  - Family history of similar illness
  - Developmental milestones

- Functional limitations (walking, sitting, climbing stairs)
- Any prior interventions or therapies

- Document findings using structured clinical history format.

2. Systematic Physical Examination

Duration: 60 minutes

Activity:

- Conduct complete physical examination including:
  - Neuromuscular exam (muscle strength, tone, reflexes)
  - Gait analysis, postural abnormalities (lordosis, scoliosis)
  - Look for Gower's sign and calf pseudohypertrophy
- Use growth charts and muscle grading scales for recording.

3. Diagnostic Correlation and Clinical Impression

Duration: 60 minutes

Activity:

- Interpret examination and history findings to reach a clinical diagnosis.
- Compare with diagnostic criteria for types of muscular dystrophy.
- Discuss the role of lab tests (e.g., CPK levels), electromyography (EMG), and genetic studies in confirming diagnosis.

4. Formulating Unani Management Plan

Duration: 60 minutes

Activity:

- Students formulate an individualized Unani treatment plan, including:
  - **Ilāj bil Ghidhā:** High-protein, nutrient-rich Unani dietary recommendations
  - **Ilāj bil Dawa:** Use of tonics like *Majoon Suranjan*, *Kushta Faulad*, *Roghan Kadu* for nerve/muscle strengthening

- **Ilāj bil Tadbīr:** Dalk (massage), light exercise, steam therapy

- Discuss rationale for selected regimen and expected outcomes.

Experiential Learning Activity

Experiential-Learning Learning 34.1: Arthralgia case discussion with Unani Management.

Total learning hours: 6 hours

Experiential learning by learner for practicing of identification common causes of arthralgia by interactive learning process. For this purpose, entire group of students gather and discuss the common causes of arthralgia.

Sticky Note Matching (Interactive Learning) process:

- Write the **common causes of arthralgia** on sticky notes or index cards.
- Hand out these sticky notes to participants learners and ask them to place the sticky notes next to the corresponding **case studies** on a wall or board.
  - Example: The group that worked on a case child with knee pain might place " juvenile idiopathic arthritis" next to their case study.
- Discuss each match as a group to ensure understanding and clarify any misinterpretations.

Conclusion and Reflection:

- Summarize the key takeaways from the activity, focusing on the variety of causes for arthralgia and how different factors such as age, lifestyle, and medical history play a role in diagnosis.
- Ask participants learner to reflect on how this experiential activity helped them better understand the causes of joint pain and the importance of patient history in diagnosing arthralgia.
- **Experiential learning process by learner as community base learning by public awareness'to explain the importance of lifestyle modifications in arthralgia as per Asbabe Sitta Zarooriya and also explaining, that balance in these essentials maintain health and prevent disease.**

  Step 1. Explaining Importance of Following Physical Activity:
- Gentle exercises.
- 2. Strengthening exercises

- 3. Aerobic exercises (cycling, walking)

  4. Flexibility exercises (stretching)

  5. Regular physical activity (30 minutes/day)

  Step 2. Explaining Importance of Following Diet and Nutrition:

  1. Balanced diet (fruits, vegetables, whole grains)

  2. Omega-3 fatty acids (salmon, walnuts)

  3. Antioxidant-rich foods (berries, leafy greens)

  4. Vitamin D and calcium supplements

  5. Avoid inflammatory triggers (gluten, dairy)

  Step 3. Explaining Importance of following Weight Management tips:

  1. Maintain healthy weight

  2. Lose weight if overweight or obese

  3. Reduce joint stress

  Step 4. Explaining Importance of Following Stress Management tips:

- Quality dietary habits, nutrition.
- Balance in physical activity, exercise, and rest.
- Quality and proper duration of sleep.
- Relaxation techniques by exercise
- Deep breathing exercises
- **Step 5. Explaining Importance of Following Sleep and Rest pattern:**

  1. 7-8 hours of sleep/night

  2. Establish bedtime routine

  3. Avoid excessive daytime napping

4. Rest and relaxation techniques

Step 6. Explaining Importance of Following Other life style modifications:

1. Quit or reduce repetitive activities
2. Use assistive devices (canes, walkers)
3. Maintain good posture
4. Take regular breaks
5. Stay hydrated

Step 7. Explaining Importance of Following Specific Lifestyle Changes in different conditions of arthralgia:

1. Rheumatoid Arthritis (RA): Avoid excessive exercise, stress management
2. Osteoarthritis (OA): Maintain healthy weight, gentle exercises
3. Psoriatic Arthritis (PsA): Stress management, avoid triggers
4. Gout: Avoid purine-rich foods, maintain healthy weight

Experiential-Learning Learning 34.2: Unani Management of Juvenile Idiopathic Arthritis

6-Hours Experiential Learning Activities

1. Clinical Case Review and Diagnosis Confirmation

Duration: 90 minutes

Activity:

- Students review detailed case files of children diagnosed with JIA.
- Identify signs, symptoms, types (oligoarticular, polyarticular, systemic), and affected joints.
- Discuss diagnosis confirmation through clinical and laboratory findings (ESR, CRP, ANA, RF).
- Understand the chronic nature and systemic implications of the disease.

2. Understanding Unani Concepts and Principles Related to Mafāṣil Tifli

Duration: 60 minutes

Activity:

- Explore Unani pathophysiology of joint disorders in children.
- Correlate **Sue Mizaj**, **Imtila**, and **Tafarruq-e-Ittisāl** with signs of JIA.
- Discuss rationale behind Ilaj bit Tadbeer as supportive therapy.

3. Hands-on Demonstration of Dalak (Massage) Techniques

Duration: 90 minutes

Activity:

- Observe demonstration of therapeutic Dalak techniques specific to inflamed and stiff joints.
- Learn appropriate massage strokes, pressure application, and direction of movement for pediatric patients.
- Practice under supervision on peers or simulation models.

4. Formulate Individualized Tadbeer-Based Treatment Plan

Duration: 60 minutes

Activity:

- Students design personalized massage protocols based on joint involvement, severity, age, and Mizaj.
- Include use of Unani oils like **Roghan-e-Kunjad**, **Roghan-e-Baboona**, **Roghan-e-Zanjabeel** based on temperament and symptoms.
- Address frequency, duration, contraindications, and supportive regimens (rest, gentle exercise).

⏱ **5. Patient and Caregiver Education Session**

Duration: 60 minutes

Activity:

- Simulate communication with caregivers explaining the role of massage in JIA management.
- Highlight importance of regularity, precautions, and integration with other Unani or conventional treatments.
- Provide lifestyle and dietary advice as per Mizaj.

Experiential-Learning Learning 34.3: Unani Management of lymphadenopathy

3-Hour Experiential Learning Activities

1. Case Review and Diagnosis Correlation

Duration: 60 minutes

Activity:

- Students review clinical cases of patients with lymphadenopathy of different causes (e.g., infectious, tubercular, reactive).
- Identify associated symptoms, duration, and systemic involvement.
- Correlate with *Mizāj* (temperament) and classify the type of *Waram* (inflammatory swelling) based on Unani principles.

2. Formulation of Unani Treatment Plan

Duration: 60 minutes

Activity:

- Based on case findings, students select appropriate Unani treatment including:
  - **Ilāj bil Ghidhā:** Diet to balance *Mizāj* (light, easily digestible food, avoiding morbid humors)
  - **Ilāj bil Dawa:** Use of drugs like *Habbe Bukhar*, *Majoon Dabidul Ward*, *Sharbat Unnab*, *Roghan Baboona*
  - **Ilāj bil Tadbeer:** Local fomentation, massage with medicated oils, *Hijāmah* if indicated
- Justify choice of each modality and expected outcome.

3. Case Simulation and Peer Review

Duration: 60 minutes

Activity:

- Students present their treatment plans in small groups.
- Peers critique the plan for appropriateness, rationale, and comprehensiveness.
- Facilitator provides clinical insight and discusses integration with modern supportive care when necessary.

Experiential-Learning Learning 34.4: Procedure of referral

3-Hour Experiential Learning Activities

1. Case-Based Clinical Observation and Discussion

Duration: 60 minutes

Activity:

- Students observe real/simulated patients with various types of lymphadenopathy.
- Identify and record characteristics such as:
    - Size >2 cm
    - Hard, fixed, or matted nodes
    - Supraclavicular location
    - Persistent fever, weight loss, night sweats
- Discuss clinical significance of each feature and correlate with possible serious etiologies (e.g., lymphoma, TB, metastasis).

2. Hands-on Physical Examination Skills Practice

Duration: 60 minutes

Activity:

- Students practice examination techniques on peers or simulated patients, including:
    - Inspection and palpation of cervical, axillary, inguinal, and supraclavicular nodes
    - Differentiation between benign and suspicious features (tender vs. non-tender, mobile vs. fixed)
- Faculty supervises and provides feedback on technique and findings.

3. Simulation: Referral Decision-Making and Communication

Duration: 60 minutes

Activity:

- Students participate in role-play scenarios involving patients with red flag lymphadenopathy.

- Decide when to refer and how to explain the reason for referral to the patient or caregiver.
- Emphasize urgency, clarity, and empathy in communication.
- Peer and instructor debriefing to improve clinical judgment and patient interaction.

Experiential-Learning Learning 34.5: Unani management of Pyrexia of Unknown Origin

4-Hour Experiential Learning Activities

1. Review and Interpretation of Laboratory & Imaging Investigations

Duration: 60 minutes

Activity:

- Students analyze patient data sets with prolonged fever including:
    - CBC, ESR, CRP, blood cultures
    - Liver and renal function tests
    - Chest X-ray, abdominal ultrasound, echocardiography
- Identify patterns pointing to possible underlying causes (e.g., infections, autoimmune disorders, malignancy).
- Justify the need for each investigation in PUO workup.

2. Clinical Correlation and Diagnosis Formation

Duration: 60 minutes

Activity:

- Students correlate investigation findings with clinical symptoms (fatigue, weight loss, night sweats, etc.).
- Create differential diagnoses and identify criteria for PUO diagnosis.
- Discuss red-flag signs requiring urgent intervention or referral.

3. Designing an Individualized Unani Treatment Plan

Duration: 60 minutes

Activity:

- Based on Unani principles, students formulate management including:
    - **Ilāj bil Ghidhā:** Light, easily digestible diets to correct *Su-e-Mizaj* and support immune function.
    - **Ilāj bil Dawa:** Unani formulations like *Sharbat Unnab*, *Joshanda*, *Habbe Bukhar*, *Sharbat Khaksi* depending on symptoms and *Mizāj*.
    - **Ilāj bil Tadbir:** Steam inhalation, *Hijāmah* (if applicable), rest, and hydration.
- Justify selected regimen with references to classical Unani texts and PUO management principles.

4. Case Presentation and Peer Review Simulation

Duration: 60 minutes

Activity:

- Students present a complete case summary from history to Unani plan.
- Peers and facilitators ask questions and critique rationale behind investigations and treatment.
- Reflect on challenges in PUO diagnosis and scope of Unani integration.

Experiential-Learning Learning 34.6: Rehabilitation of muscular dystrophy

4-Hours Experiential Learning Activities

1. Clinical Case Review and Functional Assessment

Duration: 60 minutes

Activity:

- Students review case histories of Zamur-al-Azlaht patients, focusing on progression of muscle weakness, gait disturbances, and daily activity limitations.
- Perform or observe functional assessments such as muscle power grading, range of motion testing, and gait evaluation.
- Document individual rehabilitation needs.

2. Designing a Personalized Rehabilitation Plan

Duration: 60 minutes

Activity:

- Students develop tailored rehabilitation plans including:
    - **Ilāj bil Tadbīr** techniques: Massage (*Dalk*), dry cupping (*Hijāmah Yābis*), steam bath (*Hammām*).
    - Physiotherapy exercises to maintain joint flexibility and muscle function.
    - Nutritional guidance as per Unani principles to support muscular health.
- Plan includes frequency, duration, and expected outcomes.

3. Demonstration and Application of Assistive Devices

Duration: 60 minutes

Activity:

- Hands-on demonstration and practice of using assistive devices:
    - Walkers, orthotic supports, wheelchair transfers, adaptive eating tools.
- Students learn proper fitting, patient training, and safety precautions.
- Identify when and which devices are needed based on clinical presentation.

4. Patient and Caregiver Education Simulation

Duration: 60 minutes

Activity:

- Students simulate counseling sessions with caregivers, explaining:
    - The importance of rehabilitation
    - Use of assistive devices at home
    - Preventing complications (e.g., contractures, pressure sores)
- Emphasize caregiver involvement and regular follow-up.

Modular Assessment

Assessment	Hour
Instructions- Conduct a structured Modular Assessment. The assessment will be for 50 Marks . Keep a structured marking pattern. Use different Assessment methods in each module for the semester. Keep a record of the structured pattern used for assessment. Calculate the Modular grade point as per Table 6C. **(A) PBL (Problem-Based Learning)** Knowledge and Understanding -8 marks Problem-Solving Skills -7 marks Teamwork and Collaboration -5 marks Critical Thinking and Analysis-2.5 marks Communication -2.5 marks **Short Answer Questions SAQs/LAQs** for Miscellaneous **(B) SAQ (Short Answer Question) -5x2 =10 marks** **Purpose:** Test factual knowledge and basic understanding. **Length:** Brief, typically 1-3 sentences or a short paragraph. **LAQ (Long Answer Question)-3 x 5=15 marks** **Purpose:** Evaluate deeper understanding, analysis, and critical thinking. **Length:** Longer, typically several paragraphs, depending on the complexity. **Components (**5 marks **):** **Introduction :** Brief overview or definition-0.5 marks **Main Explanation :** Detailed response including definitions, examples, or processes-2.5 marks **Supporting Details :** Additional facts, examples, or related concepts-1.5 marks **Conclusion :** Summarize or provide an insight related to the question-0.5 marks **Short Answer Questions SAQs/LAQs** for Miscellaneous	4

SAQ (Short Answer Question) -5x2 =10 marks **Purpose:** Test factual knowledge and basic understanding. **Length:** Brief, typically 1-3 sentences or a short paragraph. **LAQ (Long Answer Question)-3 x 5=15 marks** **Purpose:** Evaluate deeper understanding, analysis, and critical thinking. **Length:** Longer, typically several paragraphs, depending on the complexity. **Components (**5 marks **):** **Introduction :** Brief overview or definition-0.5 marks **Main Explanation :** Detailed response including definitions, examples, or processes-2.5 marks **Supporting Details :** Additional facts, examples, or related concepts-1.5 marks **Conclusion :** Summarize or provide an insight related to the question-0.5 marks Or Any practical in converted form can be taken for assessment.(25 marks) and Any of the experiential as portfolio/ refelections / presentations can be taken as an assessment.(25 marks)	

Table 4 : Practical Training Activity

(*Refer table 3 of similar activity number)

Practical No*	Practical name	Hours
1.1	Nutrition Strategies	3
1.2	Food safety.	3
1.3	Malnutrition	4
1.4	Undernutrition	2
1.5	Feeding Techniques.	2
1.6	Pyloric stenosis.	2
1.7	Malnutrition.	4
2.1	Genetic Mutation	3
2.2	Deoxyribonucleic acid (DNA)	3
2.3	Punnett squares	2
2.4	Pedigree Charts	2
2.5	Genetic Tests	2
2.6	Quality control in Molecular genetics.	2
2.7	Genetic counselings	3
2.8	Genetic Risks.	3
3.1	karyotyping and fluorescence	3
3.2	Autosomal chromosomal abnormility.	3
3.3	Karyoping in aneuploidies.	3
3.4	Monosomy by analysing karyotypes	3
3.5	Sex chromosomal abnormal.	4

3.6	Triple X Syndrome	4
3.7	Dysmorphism.	4
3.8	Gene Therapy	3
3.9	Delivering therapeutic genes.	3
4.1	Hands-On Approaches to Developmental Theories.	2
4.2	Developmental Milestones	2
4.3	Growth Evaluation	2
4.4	Holistic Growth Assessment	3
4.5	Nomograms in Growth Assessment.	1
5.1	Nutritional and Diagnostic Strategies for Short Stature.	3
5.2	Puberty Disorder Assessment and Investigation.	2
5.3	Interactive Approach to Developmental Delays.	3
5.4	Understanding Tanner Stages.	2
6.1	Neonatal Screening.	4
6.2	Neonatal Examination.	2
6.3	Immediate Newborn Care	2
6.4	Airway Management.	2
6.5	Neonatal Resuscitation.	2
6.6	Formaula feeding.	2
6.7	Impact of types of feeding on neonate.	2
6.8	Complementary feeding.	2
6.9	Human Milk Fortification (HMF).	3
6.10	Long-Term Feeding Strategies.	3

6.11	Feeding Techniques.	2
6.12	Neonatal transport team (NNT)	4
7.1	Low birth weight (LBW) neonates.	2
7.2	Neonatal Hyperbilirubinemia.	2
7.3	Neonatal Resuscitation.	2
7.4	Care plan of preterm neonates.	2
7.5	Intrauterine Growth Restriction (IUGR).	2
7.6	Neutral thermal environment (NTE).	2
7.7	Thermoregulation.	2
7.8	Multidisciplinary approach to follow-up care.	2
7.9	Neonatal follow-up program.	2
7.10	Tracheoesophageal Fistula with oesophageal atresia.	3
7.11	Anorectal malformation and Diaphragmatic Hernia.	2
7.12	Demonstrate feeding challenges in Hirschsprung's diseases.	2
7.13	Urogenital anomalies, Necrotising Enterocolitis (NEC) and Congenital Labour emphysema.	3
7.14	Volvulus, Phimosis, Paraphimoses and Hypospadias.	2
8.1	Advancements in Psychological Disorders	2
8.2	Nutritional Behavior Shaping.	2
8.3	Polysomnography and Actigraphy in Sleep Disorders.	3
8.4	Managing Behavioural Disorders	3
9.1	Immune Response Regulation	2
9.2	Diagnosis of Hypersensitivity Reactions:.	4
9.3	Techniques and Routes of Vaccine Administration	2

9.4	Adverse Events Following Immunization.	2
10.1	Vaccine storage and transport.	2
10.2	Vaccine Preservation.	2
10.3	Vaccine Preservation.	2
10.4	Role of optional vaccines.	2
10.5	Cold Chain Management Strategies.	2
11.1	Chickenpox and Measles.	4
11.2	Rubella and Mumps	4
11.3	Management of poliomyelitis and Japanese Encephalitis.	4
11.4	Management of Rabies.	2
11.5	Management of Dengue.	3
11.6	Management of Chikungungya.	3
12.1	Management of HIV / AIDS	3
12.2	Management of CMV Infection.	2
12.3	Management of Infectious Mononucleosis.	1
12.4	Management of RSV infection.	2
12.5	Management of SARS COVID-19.	2
13.1	BCLS & ACLS	4
13.2	Arrhythmias management.	2
13.3	Management of Shock.	2
13.4	Emergency Management of Peadiatric Traumatic Brain Injury.	4
13.5	Emergency management of Status Epilepticus.	4
13.6	Management of Volvulus & Intussusception.	2

13.7	Severe Dehydration.	2
13.8	Allergic and anaphylactic emergencies.	2
13.9	Accident and Poisoning.	2
13.10	Acid-Base Imbalance.	2
13.11	Pre-Transport Stabilization.	2
13.12	Timely Referral to Appropriate Department.	2
14.1	Haemophilus Influenza	4
14.2	Clinical evaluation and assessment of Pertussis.	4
14.3	Brucellosis Evaluation.	2
14.4	"Leptospirosis" Analysis and Progression.	2
14.5	Tetanus pathogenesis.	4
14.6	Anaerobic Infections Diagnosis and management.	4
15.1	"H. pylori Test Review"	2
15.2	"Typhus Diagnostics"	2
15.3	Holistic Unani Approach to Fever Differentiation and Management	2
15.4	Interpreting the Widal Test.	2
15.5	Tuberculosis (TB) Diagnostic Skills.	2
15.6	Hepatoprotective medicines in Tuberculosis.	2
15.7	Investigating Leprosy.	2
15.8	Clinical examination of Leprosy cases.	2
15.9	Clinical Features of Syphilis.	2
15.10	Awareness of Nosocomial Infections.	1
15.11	Opportunistic Infections in Pediatrics.	1

16.1	Microscopic Examination of Blood Smears.	1
16.2	Case Study Analysis of Humma Ajamiyya.	2
16.3	Tropical Splenomegaly mnagement plan.	1
16.4	Demostration of diagnostic methods for filariasis.	2
16.5	Management of Da'al Fil (Filariasis)	2
16.6	Clinical Laboratory Integration Session.	4
16.7	Clinical Interpretation of Giardiasis in Pediatric Cases.	2
16.8	Case Evaluation of Giardiasis.	2
16.9	Kala-zar (Black Sickness)	4
17.1	Patient examination for Tapeworm.	2
17.2	Tapeworm, hydatid disease	2
17.3	Integrated Parasitological Diagnosis.	4
17.4	Interpretation for threadworm cases.	4
17.5	Interpretation for hookworm	4
17.6	Diagnosis of sporidiosis.	4
18.1	Classical concept of Tashkhis-i-Mizaj of Ala-i-Tanaffus, types of Nafs and Su'i Tanaffus.	1
18.2	Clinical evaluation of different pediatric respiratory diseases.	2
18.3	Various diagnostic tools and procedures in respiratory disorders.	1
18.4	Performing and interpreting investigations and procedures	1
18.5	Compare URTIs cases in Classical and conventional method of evaluation	1
18.6	Complicated and uncomplicated URTIs	1
18.7	Management plan for foreign body aspiration	1
18.8	Diagnosis of foreign body aspiration	1

18.9	Post-removal care for foreign body aspiration	1
18.10	Dignostic criteria of Acute respiratory distress syndrome (ARDS).	1
18.11	Oxygen titration, canulas, and oxygen delivery system	1
18.12	Diagnosis of Respiratory Distress syndrome	1
18.13	Differential diagnosis for cases of acute bronchiolitis and acute bronchitis.	1
18.14	Acute bronchiolitis and acute bronchitis management	1
18.15	Assessment of dehydration	1
18.16	Assessment of Pneumonia	2
18.17	Pneumonia cases management.	2
19.1	Evaluation and managment of bronchiectasis	1
19.2	Managment techniques for Bronchiectasis	1
19.3	Interpretation in bronchiectasis	1
19.4	Auscultation in dry pleurisy	1
19.5	Evaluation of dry pleurisy.	1
19.6	Differential diagnosis of Pleural effusion	1
19.7	Interpretation of investigations in pleural effusion	1
19.8	Thoracentesis and its interpretation	1
19.9	Evaluation of empyma thoracis cases	2
19.10	Evaluation of Lung abcess cases	2
19.11	Evaluation of asthmatic patients	1
19.12	Diagnosis and Management of Rabw	2
19.13	Medication adherence and follow up	1
19.14	Interpretation of sweat chloride test, genetic testing, and newborn screening results	1

19.15	Evaluation and management of cystic fibrosis	1
19.16	Diagnostic method for Obstructive sleep apnea	1
19.17	Polysomnography study in Obstructive sleep apnea	1
20.1	Evaluation and assessment of pediatric cardiac diseases.	1
20.2	Auscultation in cardiovascular cases.	1
20.3	Pediatric electrocardiography	1
20.4	Investigations in cardiac diseases.	2
20.5	Fetal circulatory system and transitional changes	1
20.6	Impact of umbilical cord clamping	1
20.7	Examination in a Congenital heart disease patient	3
20.8	Detection of heart murmurs	1
20.9	Evaluation of ECG	1
20.10	Interpretation of echocardiography results in CHDs	1
20.11	Diagnosis of congenital heart diseases in children	2
20.12	Examination in rheumatic fever patient	1
20.13	Investigations in rheumatic fever	1
20.14	Effects of Rheumatic heart disease on heart valves	1
20.15	Echocardiographic images analysis.	1
20.16	Diagnosis and management of Rheumatic heart disease.	1
21.1	Infective Endocarditis evaluation and management	1
21.2	Infective Endocarditis managment	1
21.3	Evaluation and management of myocarditis cases	1
21.4	Investigations in Myocarditis	1

21.5	Classical principles of treatment for pericarditis	1
21.6	Evaluation for pericarditis	1
21.7	Evaluation and intervention for hyperlipidemia	1
21.8	Nutritional counseling in children	1
21.9	Decision making on Antihypertensive therapy	1
21.10	Evaluation, diagnosis, and management of hypertension.	1
22.1	Peripheral Blood Smear examination in leukemia.	1
22.2	Bone Marrow Aspiration with interpretation .	1
22.3	Imaging studies in Leukaemia.	1
22.4	Recent Advances in Leukaemia.	1
22.5	Histopathology slide to identify Reed-Sternberg Cells in Hodgkin Lymphoma.	1
22.6	Lymph Node Palpation and Clinical Assessment in Lymphoma.	1
22.7	Histopathological slides of various pediatric tumour.	2
22.8	Steps for history taking & assessing symptoms in pediatric tumour.	2
23.1	History taking and comprehensive examination (physical and motor examination) of Neurological disorder.	2
23.2	Special investigation for neurological disorders.	2
23.3	Approach to a case of epilepsy.	2
23.4	Epilepsy diagnostic work-up.	2
23.5	Diagnostic criteria of GTCS & febrile seizure.	3
23.6	Management Protocols for Acute Febrile Seizure.	3
23.7	Ilaj-Bit-Tadbeer in Laqwa.	2
23.8	Feild visit to rehabilitation centre for Bell's palsy.	2

23.9	Unani treatment for Acute Flaccid Paralysis..	1
23.10	Guidelines for AFP surveillance.	1
24.1	Mental Handicap Grading.	2
24.2	Counselling of Parents in Intellectual disability & Cerebral palsy.	2
24.3	Ilaj Bit Tadbeer in Mental Reatardation & Cerebral palsy.	2
24.4	Evaluation of Hydrocephalus .	1
24.5	Surgical Management of Hydrocephalus.	1
24.6	Intra Cranial Space Occupying Lesion case evaluation.	2
24.7	Investigation & interpretation in Intra Cranial Space Occupying Lesion.	4
24.8	ILAJ BIT TADBEER in case of Sarsam.	3
24.9	laboratory Diagnosis in Meningitis.	1
24.10	Etiology of Encephalitis & Encephalopathy.	2
25.1	Clinical Findings in Anemia	2
25.2	Correlation of MCV(Mean corpuscular volume) & Reticulocyte count in Anemia.	2
25.3	Peripheral Blood Morphology in anemia.	2
25.4	Signs of accelerated Erythrocyte Destruction in haemolytic Anemia.	1
25.5	Signs of accelerated erythropoiesis in Haemolytic Anemia.	1
25.6	Algorithm for Therapeutic management of Thallessemia.	1
25.7	Sickle cell crisis and complications.	1
25.8	Peripheral blood smear identification in Sickle cell anemia and Thallessemia.	1
25.9	Recent advance techniques in hematology.	1
25.10	Treatment options for Immune Thrombocytopenic purpura.	1
25.11	Treatment plan and factor replacement dose in Hemophilia.	1

25.12	Algorithm for diagnosis of Disseminated Intravascular Coagulopathy(DIC).	1
25.13	Types of blood component therapy,their constituents and guidelines .	1
25.14	Prothrombin time(PT) ,partial thromboplastin time (aPTT), Thrombin time,Bleeding time,fibrinogen, D-dimer.	2
25.15	Guideline for pediatric red blood cell transfusion.	1
25.16	Guideline for pediatric Platelet transfusion.	1
26.1	System wise application of Single unani drugs	7
26.2	Age based dose calculation of single drugs	1
26.3	Application of compound drugs	6
26.4	Common conventional drugs and importance of drug adherence	6
27.1	Gastro Intestinal disorders	2
27.2	Routine and Special Investigations in GIT Disorders	2
27.3	Oral Cavity Examination	1
27.4	Variuos Oral Cavity Diseases	1
27.5	Oral swab collection and application of topical medicine.	1
27.6	Prevention of Oral Cavity Diseases in pediatrics	1
27.7	Clinical Evaluation of Diarrhoea	2
27.8	Treatment of diarrohea according to WHO	2
27.9	Rehydration Therapy in Diarrhoea	2
27.10	Observation and Interpretation of Gastrointestinal system(GIT) investigations.	2
27.11	Evaluation and management of Dysentery	2
27.12	Interpretation of diagnostic Procedures used in GIT disorders.	2
28.1	Evaluation and Diagnosis of Irritable Bowel Syndrome (IBS)	2

28.2	Role of Unani Drug in treatment of IBS.	2
28.3	Evaluation of Abdominal pain	2
28.4	interpretation of Diagnostic tests for Abdominal Pain	1
28.5	Management of Abdominal Pain.	1
28.6	Comprehensive examination for diagnosis of Vomiting	2
28.7	Practice of InterVenous (IV) cannula and Nasogastric tube in management of vomiting	2
28.8	Evaluation of Constipation by history taking and examination	2
28.9	Application of Ilaj-Bil-Tadabir (IBT) regimen in Constipation.	2
28.10	Clinical Evaluation of Rectal Prolapse and Proctitis	2
28.11	ConservativeTtreatment and therapies for Proctitis and Rectal Prolapse	2
29.1	Liver disese case presentation.	2
29.2	Management of Hepatitis.	2
29.3	Clinical Case presentation of portal hypertension	4
29.4	Orthotopic liver transplantation	4
29.5	Liver abscess evaluation and management.	4
29.6	Therapeutic paracentesis	2
29.7	Ilaj bil Tadbir techniques for ascites	2
30.1	Moaena-e-bawl	2
30.2	Moaena-e-bawl in Amrad-i- Kulya.	2
30.3	Basics of Urine examination	4
30.4	Diagnosis of renal failure (acute and chronic) by Urine examination	4
30.5	Clinical presentation of Congenital & Hereditary Renal disorder	4
30.6	Preventive measures for renal and bladder stones	4

31.1	History taking for Eye Diseases	3
31.2	Examination of Face	3
31.3	Assessment of eye refraction.	2
31.4	Examination for Conjunctival and Corneal disease.	2
31.5	Diagnosis and management of Conjunctivitis	2
31.6	Vision and Colour blindness Test	4
31.7	Evaluation and management of ENT problems.	4
31.8	Examination of ear	3
31.9	Therapeutic procedures for epistaxis	3
31.10	Examination of Mouth and Throat	4
32.1	Different skin rashes	1
32.2	Demonsteration of therapeutic skin practises(tila)	1
32.3	Diagnosis of different Pigmentary lesions.	2
32.4	Multiple treatment strategies for pigmentary lesions	2
32.5	Diagnosis of Scabies	1
32.6	Application of topical formulation for Qūbā	1
32.7	Evaluation and management of Dermatitis	1
32.8	Councelling for prevention of dermatitis	1
33.1	Diagnosis of Growth Hormone disorders	2
33.2	Differential diagnosis between Growth Hormone Deficiency (GHD) or Growth Hormone Excess (GHE)	2
33.3	Diagnosis of Diabetes Mellitus	2
33.4	Differential diagnosis between Diabetes Insipidus and Diabetes Mellitus.	2

33.5	Examination of Hypothyroidism and Hyperthyroidism	4
33.6	Diagnosis of parathyroid disorders	4
33.7	Approach to Cushing's Syndrome	2
33.8	Childhood Obesity-Clinical Presentation	2
34.1	Clinical presentation on arthralgia	2
34.2	Interaction with arthralgia patient and their attendant	2
34.3	Radiographic diagnosis of Juvenile Idiopathic Arthritis	2
34.4	Differential diagnosis of Juvenile Idiopathic Arthritis (JIA) from other rheumatic conditions (by interactive demonstration)	2
34.5	Lymphadenopathy case presentation	2
34.6	Diagnosis of lymphadenopathy	2
34.7	Diagnostic Approach to Pyrexia of Unknown Origin	4
34.8	Management for Muscular Dystrophy (by game-based learning)	4

Table 5 : Experiential learning Activity

(*Refer table 3 of similar activity number)

Experiential learning No*	Experiential name	Hours
1.1	Nutritional disorders.	5
1.2	Balanced Diet Chart	3
1.3	Common micronutrient deficiencies	3
1.4	Protein Energy Malnutrition	3
1.5	Vitamin Deficiency.	4
1.6	Feeding in critically ill child	4
1.7	Unani drugs in Malnutrition.	4
2.1	Molecular genetics.	3
2.2	Ethics in molecular genetics	3
2.3	Concept of genetic privacy	3
2.4	Genetic Risk Assessment	3
2.5	Patterns of inheritance	3
2.6	Multifactorial traits	3
2.7	Molecular diagnostic tools	3
2.8	Molecular diagnosis	3
2.9	Genetic Conselling	2
3.1	Chromosomal aberration.	3
3.2	Genetic karyotype charts	3
3.3	Polyploidy	3

3.4	Turner syndrome.	3
3.5	Aneuploidies	3
3.6	Down syndrom	3
3.7	Edward syndrome (trisomy 18).	4
3.8	Psychosocial Impact on sex chromosomal abnormalities	3
3.9	Klinefelter syndrome.	4
3.10	Communication Skills	3
3.11	Dysmorphic syndromes.	3
3.12	Regulatory Guidelines and Ethical Frameworks.	2
3.13	Types of gene therapy.	2
4.1	Genetic Effects and Ethical Choices.	2
4.2	Early Intervention for Developmental Delays.	2
4.3	Anthropometric Measurements and Interpretation	3
4.4	Impact of Temperament on Growth.	3
4.5	Nomograms in Paediatric Care.	3
5.1	Recent advances Short Stature	3
5.2	Clinical Studies on Precocious and Delayed Puberty	4
5.3	Diagnosis and Intervention for Developmental Delays.	3
5.4	Tanner Stages and Psychosocial Development.	3
6.1	Prenatal care.	3
6.2	Newborn care.	3
6.3	Respiratory distress and asphyxia in newborns.	3
6.4	Newborn assessment.	3

6.5	Bag-Mask Ventilation Techniques	3
6.6	Post-Resuscitation.	3
6.7	Breastfeeding challenges.	3
6.8	Bottle feeding	2
6.9	Formula feeding intolerance.	2
6.10	Complementary Feeding Plan.	2
6.11	Infants feeding.	3
6.12	Growth of preterm.	3
6.13	Neonatal resuscitation and neonatal transport.	6
7.1	High-risk infants.	4
7.2	Low birth weight (LBW), Intrauterine Growth Restriction (IUGR) Resuscitation and Phototherapy in neonatal jaundice.	4
7.3	Safe Transitions.	4
7.4	Hyperthermia.	4
7.5	Parent Counselling.	3
7.6	Referral Criteria.	3
7.7	Individualized follow-up	4
7.8	Surgical case and follow referal protocol.	3
7.9	Congenital Anomalies.	3
7.10	Emotional impact on child.	3
7.11	Urogenital Anomalies.	4
8.1	Child Mental Health Promotion.	4
8.2	Healthy eating habits-Education	3

8.3	Classical Approaches to Sleep Disorders	3
8.4	Behavioral Disorders and Classical Medicine.	3
9.1	Immune System Organs and Immune Response	3
9.2	Hypersensitivity Reactions	6
9.3	Vaccine Types and Immunization Principles with Updated Schedules.	2
9.4	Adverse Events Following Immunization.	2
10.1	Cold Chain Failures.	2
10.2	Vaccine Transport.	3
10.3	Cold Chain Protocols.	3
10.4	Vaccine Schedules	3
10.5	Effective Cold Chain Management	2
11.1	Management of Chickenpox and Measles.	5
11.2	Rubella and Mumps	5
11.3	Poliomyelitis and Japanese Encephalitis	5
11.4	Management of Rabies.	3
11.5	Management of Dengue.	4
11.6	Management of Chikungunya.	4
12.1	Management of HIV.	3
12.2	Management of CMV Infection.	3
12.3	Management of Infectious Mononucleosis (Epstein-Barr Virus)	2
12.4	Management of RSV Infection.	2
12.5	Management of SARS-COVID-19	3
13.1	BCLS & ACLS.	3

13.2	Management of Arrhythmias,	2
13.3	Management of Shock.	5
13.4	Management of Traumatic Brain Injury.	5
13.5	Management of Status Epilepticus.	5
13.6	Management of Volvulus & Intussusception.	3
13.7	Severe Dehydration.	3
13.8	Allergic and anaphylactic emergencies.	3
13.9	Accident and Poisoning.	3
13.10	Acid-Base Imbalances.	3
13.11	Pre-Transport Stabilization.	2
13.12	Timely Referral to Appropriate Department.	2
14.1	Haemophilus Influenza Management.	4
14.2	Pertussis and Diphtheria	6
14.3	Diagnosis and treatment of Brucellosis.	2
14.4	Diagnosis and treatment of Leptospirosis.	2
14.5	Demonstrate tetanus management.	2
14.6	Tetanus prevention.	4
14.7	Anaerobic infections/ Meningococcal Infections.	6
15.1	Integrated Case Management Clinic.	2
15.2	Epidemic Typhus Clinical Decision.	2
15.3	Typhoid Case Management	3
15.4	Unani Therapeutic Planning for Ḥummā Mi'wiyya.	3
15.5	Diagnosis and Management of Humma Diqqiya	3

15.6	Integrated Tuberculosis Awareness.	3
15.7	Leprosy Case Diagnosis.	3
15.8	Education and Counseling for Leprosy.	3
15.9	Atshak (Syphilis) Evaluation.	2
15.10	Nosocomial Infections.	2
16.1	Clinical Management of Malaria.	3
16.2	Ḥummā Nāfiḍa/ Humma Naiba.	3
16.3	Diagnosis and Differentiation of Tropical Eosinophilia	3
16.4	Patient Care for Tropical Eosinophilia.	3
16.5	Clinical Examination and Diagnostic Planning for ameobiasis.	3
16.6	Managing ameobiasis with Unani Treatment.	3
16.7	Comparative Analysis of Giardia Infection and Malabsorption Syndrome.	1
16.8	Management Planning for Giardiasis	2
16.9	Counseling for Giardiasis Management.	1
16.10	Clinical Recognition of Leishmania Donovani Infection.	2
16.11	Treatment Plan Development for Leishmaniasis.	2
17.1	Diagnosis and treatment of Tapeworm cases.	3
17.2	Management of tapeworm infestation.	3
17.3	Research Paper Review.	2
17.4	Pediatric Parasitic (Roundworm) Infestations	4
17.5	Threadworm Management.	2
17.6	Empathetic Parent Counseling for Threadworm Prevention.	2
17.7	Clinics for intestinal worm infestations.	6

17.8	Case-Based Management / Simulation (cryptosporidiosis)	2
17.9	Professional Values in Crypto-Care.	2
18.1	Diagnosis of respiratory diseases	4
18.2	Interpretation of investigations of respiratory disorders	2
18.3	Spirometry, pulse oximetry, montoux test	1
18.4	Management of URTIs with Unani Teatment	2
18.5	Nasopharyngeal suctioning	1
18.6	Diagnosis of foreign body aspiration	2
18.7	Evaluation and management of Chronic foriegn body aspiration	1
18.8	Awareness on Foriegn body aspiration	1
18.9	Acute respiratory distress syndrome evaluation	2
18.10	Stages of Acute Respiratory Distress Syndrome	1
18.11	Red flag sign for ARDS patients and referral	1
18.12	Evaluation and management of Acute Bronchiolitis and Acute Bronchitis	2
18.13	Warm-i-Shobat-ur-Ri'a and conventional pharmacotherapy.	2
18.14	Diagnosis and management of pneumonia.	2
18.15	Red flag signs of Pneumonia.	1
18.16	Pneumonia emergencies	1
19.1	Devices and techniques for bronchiectasis	1
19.2	Diagnosis and management of Bronchiectasis	2
19.3	Evaluation of Dry pleurisy cases	1
19.4	Management of Dry pleurisy	1
19.5	Normal and abnormal lung sounds in dry pleurisy	1

19.6	Observation of Thoracentesis and chest tube insertion	1
19.7	Evaluation and management of Pleural effusion	2
19.8	Interpretation of investigations related with empyma	1
19.9	Diagnosis and management of Empyma cases	2
19.10	Drainage procedure in lung abscess	1
19.11	Evaluation and management of lung abcess	2
19.12	Diagnosis and management of asthma	2
19.13	Management of acute asthmatic patient	2
19.14	Diagnosis and management of cystic fibrosis	2
19.15	Airway clearence technique in cystic fibrosis	1
19.16	Parent counselling for life style modification in cystic fibrosis.	1
19.17	Obstructive sleep apnea (OSA) diagnostic tools	1
19.18	Evaluation of Obstructive Sleep Apnea cases	1
19.19	Counselling of OSA patients	1
20.1	Diagnosis of cardiovascular diseases.	2
20.2	Clinical manifestation of different cardiac problem in different age groups	2
20.3	Normal and abnormal heart sounds	1
20.4	Electrocardiograph (ECG) interpretation, echocardiograph views and cardiac catheterization techniques	2
20.5	Cardiac magnetic resonance imaging (MRI) and computed tomography (CT) angiography	1
20.6	Fetal circulation and its transition	1
20.7	Changes in appearance of newborn due to fetal circulation transition	1
20.8	Different Congenital heart diseases	5

20.9	Electrocardiograph interpretation in different types of Congenital heart diseases.	1
20.10	Evaluation of Congenital heart diseases	2
20.11	Management of congenital heart diseases	2
20.12	Diagnosis and management of Rheumatic fever patient.	2
20.13	Diagnosis and management of Rheumatic heart diseases patients.	4
21.1	Identification of cases of Infective Endocarditis	2
21.2	Diagnosis, and management strategies in infective endocarditis	1
21.3	Myocarditis diagnosis and management	2
21.4	Classical criteria to diagnose and manage pericarditis	1
21.5	Diagnosis and management of pericarditis	1
21.6	Ilaj bil-ghaza (dietotherapy) and Ilaj-bit-Tadbir (regimenal therapy) in hyperlipidemia cases management.	2
21.7	Reinforcement activities on hyperlipidemia	1
21.8	Diagnosis and management of hypertension	1
21.9	Pharmacological management of hypertension	1
21.10	Community programs in relation to hypertension.	1
22.1	Evaluation of a case of leukemia along with Treatment Plan for Acute and Chronic Leukemia.	1
22.2	Counselling for Lukaemia Prognosis.	1
22.3	Bone Marrow Transplant.	1
22.4	Chemotherapy Protocols in Leukemia.	1
22.5	Cytogenetic and Molecular Techniques in leukaemia diagnosis.	1
22.6	Interpretation of Imaging Studies for Lymphoma Staging.	1
22.7	History taking and comprehensive clinical assessment in Lymphoma.	1

22.8	Differential Diagnosis and treatment plan for Hodgkin v/s. Non-Hodgkin Lymphoma.	1
22.9	Tumor Marker Analysis.	1
22.10	Review of unani literature.	1
22.11	Imaging studies in Pediatric tumour.	2
22.12	Comprehensive examination and diagnostic work-up in case of Pediatric tumour.	1
23.1	Approach to neurological diagnosis.	2
23.2	Interpretation of special investigation procedure.	3
23.3	Recent advances in Neurology.	1
23.4	Assessment & management of Status Epilepticus.	1
23.5	Ilaj Bit Tadbeer in Epilepsy	2
23.6	Unani Management for Sara or Ummus sibyan.	2
23.7	Assessment and management of Generalized Tonic - Clonic Seizure(GTCS).	3
23.8	Comprehensive examination and investigation for febrile seizure.	2
23.9	Unani treatment for Seizure disorders.	2
23.10	Unani treatment of Laqwa.	3
23.11	Evaluation and management of Bell's Palsy.	2
23.12	Assessment of Acute Flaccid Paralysis and Promt Referal if needed .	2
23.13	Parent counselling in AFP	1
24.1	Feild visit to Rehabilitation centre Intellectual disability & cerebral Palsy.	4
24.2	Assessment in case of Cerebral palsy & Intellectual disability.	2
24.3	Recent Advances in C/ O Intellectual disability & Cerebral palsy (Rhizotomy, Tenotomy,etc.) .	2
24.4	Counselling of parents in case of Hydrocephalus.	1
24.5	Ilaj Bit Tadbeer sessions in case of Hydrocephalus.	2

24.6	Signs of Increased Intracranial Tension(ICT).	3
24.7	Assessment & management in case of intracranial space occupying lesion with timely referrals to higher centre..	4
24.8	Assessment & management of Meningitis .	3
24.9	Demonstration of Lumbar puncture.	3
24.10	Laboratory Diagnosis in Encephalitis and Encephalopathy.	2
25.1	Evaluation in case of Anemia.	2
25.2	Drugs that causes Megaloblastic Anemia.	1
25.3	Metabolic causes of Megaloblastic Anemia.	1
25.4	Reasons for non response to hematinic therapy in Iron Deficiency Anemia.	1
25.5	Drugs Contraindicated in G6PD deficiency.	1
25.6	Unani literature for Faqru-ul-dum & recent advance in case of Anemia.	3
25.7	Unani Treatment plan for Anemia.	1
25.8	Comparitive study of Sickle Cell and Normal Blood cells.	1
25.9	Comprehensive examination with treatment strategies in Thallessemia and sickle cell disease cases.	2
25.10	Thallessemia comorbidities.	1
25.11	Work shops and Awareness Programmes for Thallessemia & sickle cell disease.	2
25.12	Differential diagnosis of Thrombocytopenia in children and Adolescents.	1
25.13	Pediatric Hematology case evaluation.	3
25.14	Causes of Disseminated Intravascular Coagulopathy.	1
25.15	Adapt the step for management of Acute bleeding .	2
25.16	Guidelines for Pediatric Granulocyte Transfusions.	1
25.17	Guidelines for Pediatric FFP transfusion.	1

25.18	Establish the Risk of blood Transfusion.	1
26.1	Sytemic classification of unani single drugs	8
26.2	Adverse drug reactions (ADRs) reporting	2
26.3	Sytemic use of compound drugs	8
26.4	General information of conventional drugs	7
26.5	Judicial use of conventional drugs	1
27.1	Sample collection in clinical skill lab .	4
27.2	Diagnostic Workshop.	2
27.3	Evaluation and Management of Oral Cavity Diseases	6
27.4	Counselling for prevention for diarrhoea	3
27.5	Patient Interview for diarrhoea	3
27.6	Evaluation and management of dysentry	2
27.7	Treatment strategies of Dysentery	2
27.8	Diet Counselling for malabsorption	2
27.9	Malabsorption Syndrome Management	2
28.1	Role of Asbabe Sitta Zaruriya in management of IBS	2
28.2	IBS and its management strategies.	2
28.3	Analysis of case studies of abdominal pain.	2
28.4	Diagnosis and management of Abdominal pain .	2
28.5	Journal Club for Abdominal Pain.	2
28.6	Management of Vomiting case	2
28.7	Dietary Counselling in Vomiting	2
28.8	Dehydration and Electrolyte Imbalance Assessment in Vomiting	2

28.9	Management of Constipation	2
28.10	Patient education for prevention of Constipation	2
28.11	Journal club for Proctitis and Rectal Prolapse .	3
28.12	Diet counselling for patient of Rectal prolapse and proctitis.	3
29.1	Public awareness on prevention of hepatitis:	3
29.2	Preventive measures for hepatitis	3
29.3	Chronic Liver Disease	4
29.4	Referal Criteria of chronic liver disease	2
29.5	Awareness programe on Wilson disease.	3
29.6	Pre- and Post- Orthotopic Liver Transplantation (OLT) Unani Care	3
29.7	Drug-Induced Liver Injury	2
29.8	Unani management of Drug induce liver injury	2
29.9	Paracentesis then and now	4
30.1	Urine analysis	3
30.2	Unani Management of Amrad-i-kulya	3
30.3	Clinical presentation of acute glomerulonephritis and Nephrotic Syndrome	3
30.4	Procedure of referral	3
30.5	Awareness program on renal failure (acute and chronic)	3
30.6	Procedure of referral	3
30.7	Management of bowl filfarash (enuresis) by Gamification.	2
30.8	Research Journals on hereditary renal diseases.	2
30.9	Awareness program on prevention of renal and bladder stones	4
31.1	Diagnosis and Management of diseases of eyelid and lacrimal .	3

31.2	Differential diagnosis of Eyelid and Lacrimal disease.	3
31.3	Management of refraction errors	3
31.4	Awareness Programme for prevention of Diseases of eye.	3
31.5	Correlation of Unani and Modern concept of diseases of Conjunctiva and Cornea.	3
31.6	Education for prevention of visual disorders.	3
31.7	Referral to ophthalmologist for Cataract.	3
31.8	Removal of foriegn body in ear and nose	3
31.9	Evaluation and management of common diseases of ENT	3
31.10	Screening programme for Hearing loss	3
31.11	Counselling for hearing loss	3
31.12	Teaching skills	2
31.13	Evaluation and management of Throat disorders	2
31.14	Pre-surgical councelling	2
32.1	Diagnosis and management of different skin rashes.	2
32.2	Analysis of Paper and Journal .	1
32.3	Diagnosis and Management of pigmentary lesions.	2
32.4	Workshop and seminars of dermatology	2
32.5	Diagnosis and management of Taenia.	1
32.6	Awareness Seminar for prevention of skin diseases	2
32.7	Evaluation and management of Dermatitis independently	2
32.8	Patient Education for prevention of Dermatitis	1
33.1	Growth hormone deficiency(dwarfism)-Case Discussions	3
33.2	Research journal on evidence-based Unani medicine in clinical practice.	3

33.3	Etiology and management of Diabetes Mellitus in children-Group Discussion	3
33.4	Evidence-based Unani medicine in clinical practice in Journal club	3
33.5	Awareness program on hyperthyroidism	6
33.6	Parathyroid disorder Case presentation	4
33.7	Cushing syndrome-Workshop	4
34.1	Arthralgia case discussion with Unani Management.	6
34.2	Unani Management of Juvenile Idiopathic Arthritis	6
34.3	Unani Management of lymphadenopathy	3
34.4	Procedure of referral	3
34.5	Unani management of Pyrexia of Unknown Origin	4
34.6	Rehabilitation of muscular dystrophy	4

Table 6 : Assessment Summary: Assessment is subdivided in A to H points

6 A : Number of Papers and Marks Distribution

Subject Code	Paper	Theory	Practical	Total
UNIPG-AA	4	100 x 4 Papers = 400	400	800

6 B : Scheme of Assessment (Formative and Summative Assessment)

Credit frame work

UNIPG-AA consists of 34 modules totaling 64 credits, which correspond to 1920 Notional Learning Hours. Each credit comprises 30 Hours of learner engagement, distributed across teaching, practical, and experiential learning in the ratio of 1:2:3. Accordingly, one credit includes 5 hours of teaching, 10 hours of practical training, 13 hours of experiential learning, and 2 hours allocated for modular assessment, which carries 25 marks.

Formative Assessment : Module wise Assessment:will be done at the end of each module. Evaluation includes learners active participation to get Credits and Marks. Each Module may contain one or more credits.

Summative Assessment: Summative Assessment (University examination) will be carried out at the end of Semester VI.

6 C : Calculation Method for Modular Grade Points (MGP)

Module Number & Name (a)	Credits (b)	Actual No. of Notional Learning Hours (c)	Attended Number of notional Learning hours (d)	Maximum Marks of assessment of modules (e)	Obtained Marks per module (f)	MGP =d*f/c*e*100
Semester No : 3						
Paper No : 1 (امراض اطفال عمومی اول)(Amraze Atfal Umoomi awwal) General Pediatrics -Part 1)						
M 1 تغذیہ Taghdhiya (Nutrition)	2	60		50		
M 2 علم الوراثت الجزئی (Ilmul virasatul-juz-ee) Molecular genetics and Pattern of Inheritance	2	60		50		
Paper No : 2 (امراض اطفال عمومی دوم)(Amraze Atfal Umoomi Dowem) General Pediatrics -Part 2)						
M 9 مناعت کے اصول وضوابط وافعال (Manaat ke usool wa zawabit wa afaal) Principles of Immunization and Function of Immune System	1	30		25		
M 10 حفاظت جدریہ، بارد ترسیل اور جدریہ کی اقسام (Hifazate judreena, Barid Tarseel aur judreena ki aqsam) Vaccine Preservation, Cold Chain, and Vaccination Types.	1	30		25		
M 11 بچوں میں نئے ابھرنے والے لیکن جدریہ سے قابل انسداد قشبی بیماریاں (Bachon m naye ubharne wali lekin judreena se qabile insedad Qashbi bimaryan) Emerging, Common and Vaccine-Preventable Viral Infections in Pediatrics.	2	60		50		
Paper No : 3 (امراض اطفال نظامی اول)(Amraze Atfal Nizami awwal) Systemic Paediatrics First)						
M 18 امراض نظام تنفس-اول Amrād-i-Nizām i-Tanaffus- I (Respiratory Disorders- 1)	2	60		50		
M 19 امراض نظام تنفس-دوم Amrād i-Nizām-i-Tanaffus -II (Respiratory Disorder- 2)	2	60		50		
Paper No : 4 (امراض اطفال نظامی دوم)(Amraze Atfal Nizami Dowem) Systemic Pediatrics - Part 2)						
M 27 امراض نظام ہضم اور امراض کبدی-ا :Amrāḍ-i-Niẓām-i-Haḍm aur Amrāḍ-i -Kabidi-I(Gastro Intestinal and Hepatobiliary Disorder -1)	2	60		50		

M 28 امراض نظام ہضم وامراض کبد۔دوم (Amrāḍ-i-Niẓām-i-Haḍm aur Amrāḍ-i Kabidi-II (Gastro intestinal and Hepatobiliary Disorders -2)	2	60		50		
	16	480		400		
Semester No : 4						
Paper No : 1 (امراض اطفال عمومی اول) (Amraze Atfal Umoomi awwal) General Pediatrics -Part 1)						
M 3 کروموسومی تفاوت/صبغی تفاوت سریریاتی بےقاعدگیاں سریریاتی خلل (Chromosomy tafa-ut/ Sibghi tafaut Sareeryati be qa-idgiyan/ sareeryati khakal) Chromosomal Variations and Clinical Abnormalities	3	90		75		
M 4 1-نشوونمو (Nushu wa numa-1) Growth and Development-1	1	30		25		
Paper No : 2 (امراض اطفال عمومی دوم) (Amraze Atfal Umoomi Dowem) General Pediatrics -Part 2)						
M 12 امراض تنفس میں تعدیہ ویروسی مزمن Chronic, and Respiratory Viral Infections in Pediatrics	1	30		25		
M 13 Pediatric Emergencies.	3	90		75		
Paper No : 3 (امراض اطفال نظامی اول) (Amraze Atfal Nizami awwal) Systemic Paediatrics First)						
M 20 امراض نظام قلب۔اول Amrād-i- Nizām-i-Qalb -I (Cardiovascular Disorders- 1)	2	60		50		
M 21 امراض نظام قلب۔دوم Amrād-i- Nizām-i-Qalb -II (Cardiovascular disorders- 2)	1	30		25		
M 22 علم السرطان Ilm-ul-Sartan (Oncology)	1	30		25		
Paper No : 4 (امراض اطفال نظامی دوم) (Amraze Atfal Nizami Dowem) Systemic Pediatrics - Part 2)						
M 29 امراض نظام ہضم وامراض کبد سوم Amrāḍ-i-Niẓām-i-Haḍm aur Amrāḍ-i Kabidi-III (Gastro intestinal and Hepatobiliary Disorders-3)I	2	60		50		
M 30 امراض نظام کلیہ/Amrāḍ-i-Niẓām-i-Kulya (Nephrologic disorders)	2	60		50		
	16	480		400		
Semester No : 5						

Paper No : 1 (امراض اطفال عمومی اول)(Amraze Atfal Umoomi awwal) General Pediatrics -Part 1)						
M 5 نشونما Nushu wa numa-2 (Growth and Development) – 2	1	30		25		
M 6 تدابیر وانتعاش نومولود (Tadabīr wa Intea'ash Naumaulood) Newborn Care and Neonatal Resuscitation	3	90		75		
Paper No : 2 (امراض اطفال عمومی دوم)(Amraze Atfal Umoomi Dowem) General Pediatrics -Part 2)						
M 14 جرثومی تعدیہ Jarsoomi Tadiya (Bacterial Infections I)	2	60		50		
M 15 II جرثومی تعدیہ ,Jarsoomi Tadiya II, (Bacterial Infections II)	2	60		50		
Paper No : 3 (امراض اطفال نظامی اول)(Amraze Atfal Nizami awwal) Systemic Paediatrics First)						
M 23 امراض نظام اعصاب ودماغ۔۔اول Amrād i-Nizām-i--Asaab-wa-Dimaagh –I (NEUROLOGICAL DISORDER –I)	2	60		50		
M 24 امراض نظام اعصاب ودماغ۔دوم I Amrad-i-Nizām-i-Asaab-wa-Dimaagh –II(Neurological Disorders-2)	2	60		50		
Paper No : 4 (امراض اطفال نظامی دوم)(Amraze Atfal Nizami Dowem) Systemic Pediatrics - Part 2)						
M 31 امراض عین اذن انف وحلق (Amrāḍ-i-'Ayn-Udhun wa Anf)	3	90		75		
M 32 امراض جلد (Amrāḍ-i-jild) Skin Diseases	1	30		25		
	16	480		400		
Semester No : 6						
Paper No : 1 (امراض اطفال عمومی اول)(Amraze Atfal Umoomi awwal) General Pediatrics -Part 1)						
M 7 نومولود سقیم (Maulood Saqeem) Sick Newborn	3	90		75		
M 8 نفسیاتی واخلاقی امراض Nafsīyātī wa AkhlāqiAmrāẓ (Psychological and Behavioral Disorders)	1	30		25		
Paper No : 2 (امراض اطفال عمومی دوم)(Amraze Atfal Umoomi Dowem) General Pediatrics -Part 2)						
M 16 طفیلی تعدیہ Tufaili Ta'dia (Parasitic Infections)	2	60		50		
M 17 دیدان امعاء Didan al Am'a' (Intestinal worm infestations)	2	60		50		
Paper No : 3 (امراض اطفال نظامی اول)(Amraze Atfal Nizami awwal) Systemic Paediatrics First)						
M 25 HEMATOLOGICAL DISORDERS.	2	60		50		

M 26 Drugs and Drug's Dosage	2	60		50		
Paper No : 4 (امراض اطفال نظامی دوم)(Amraze Atfal Nizami Dowem) Systemic Pediatrics - Part 2)						
M 33 امراض غدد لاقناتیہ/Amrāḍ-i-Gududde la Qanatiya (Endocrine Disorders)	2	60		50		
M 34 Miscellaneous Diseases.	2	60		50		
	16	480		400		
MGP = ((Number of Notional learning hours attended in a module) X (Marks obtained in the modular assessment) / (Total number of Notional learning hours in the module) X (Maximum marks of the module)) X 100						

6 D : Semester Evaluation Methods for Semester Grade Point Average (SGPA)

SGPA will be calculated at the end of the semester as an average of all Module MGPs. Average of MGPS of the Semester For becoming eligible for Summative assessment of the semester, student should get minimum of 60% of SGPA

SGPA = Average of MGP of all modules of all papers = add all MGPs in the semester/ no. of modules in the semester Evaluation Methods for Modular Assessment

Semester No : 3

Paper No : 1 امراض اطفال عمومی اول (Amraze Atfal Umoomi awwal) General Pediatrics -Part 1

A S.No	B Module number and Name	C MGP
1	M1. تغذیہ Taghdhiya (Nutrition)	C 1
2	M2. علم الوراثت الجزئی (Ilmul virasatul-juz-ee) Molecular genetics and Pattern of Inheritance	C 2

Paper No : 2 امراض اطفال عمومی دوم (Amraze Atfal Umoomi Dowem) General Pediatrics -Part 2

A S.No	B Module number and Name	C MGP
3	M9. مناعت کے اصول وضوابط وافعال (Manaat ke usool wa zawabit wa afaal) Principles of Immunization and Function of Immune System	C 3
4	M10. حفاظت جدرینہ، بارد ترسیل اور جدرینہ کی اقسام (Hifazate judreena, Barid Tarseel aur judreena ki aqsam) Vaccine Preservation, Cold Chain, and Vaccination Types.	C 4
5	M11. بچوں میں نئے ابھرنے والے لیکن جدرینہ سے قابل انسداد قشبی بیماریاں (Bachon m naye ubharne wali lekin judreena se qabile insedad Qashbi bimaryan) Emerging, Common and Vaccine-Preventable Viral Infections in Pediatrics.	C 5

Paper No : 3 امراض اطفال نظامی اول (Amraze Atfal Nizami awwal) Systemic Paediatrics First

A S.No	B Module number and Name	C MGP
6	M18.امراض نظام تنفس-اول Amrād-i-Nizām i-Tanaffus- I (Respiratory Disorders- 1)	C 6
7	M19.امراض نظام تنفس-دوم Amrād i-Nizām-i-Tanaffus -II (Respiratory Disorder- 2)	C 7
Paper No : 4 امراض اطفال نظامی دوم (Amraze Atfal Nizami Dowem) Systemic Pediatrics - Part 2		
A S.No	B Module number and Name	C MGP
8	M27.امراض نظام ہضم اور امراض کبدی-ا: Amrāḍ-i-Niẓām-i-Haḍm aur Amrāḍ-i-Kabidi-I(Gastro Intestinal and Hepatobiliary Disorder -1)	C 8
9	M28.امراض نظام ہضم وامراض کبد-دوم (Amrāḍ-i-Niẓām-i-Haḍm aur Amrāḍ-i Kabidi-II (Gastro intestinal and Hepatobiliary Disorders -2)	C 9
	Semester Grade point Average (SGPA)	(C1+C2+C3+C4+C5+C6+C7+C8+C9) / Number of modules(9)
Semester No : 4		
Paper No : 1 امراض اطفال عمومی اول (Amraze Atfal Umoomi awwal) General Pediatrics -Part 1		
A S.No	B Module number and Name	C MGP
1	M3.کروموسومی تفاوت/صبغی تفاوت سریریاتی بیقاعدگیاں سریریاتی خلل (Chromosomy tafa-ut/ Sibghi tafaut Sareeryati be qa-idgiyan/ sareeryati khakal) Chromosomal Variations and Clinical Abnormalities	C 1
2	M4.1-نشوونما (Nushu wa numa-1) Growth and Development-1	C 2
Paper No : 2 امراض اطفال عمومی دوم (Amraze Atfal Umoomi Dowem) General Pediatrics -Part 2		
A S.No	B Module number and Name	C MGP

3	M12. امراض تنفس میں تعدیہ ویروسی مزمن Chronic, and Respiratory Viral Infections in Pediatrics	C 3
4	M13.Pediatric Emergencies.	C 4
Paper No : 3 امراض اطفال نظامی اول (Amraze Atfal Nizami awwal) Systemic Paediatrics First		
A **S.No**	**B** **Module number and Name**	**C** **MGP**
5	M20. امراض نظام قلب۔اول Amrād-i- Nizām-i-Qalb -I (Cardiovascular Disorders- 1)	C 5
6	M21. امراض نظام قلب۔دوم Amrād-i- Nizām-i-Qalb -II (Cardiovascular disorders- 2)	C 6
7	M22. علم السرطان Ilm-ul-Sartan (Oncology)	C 7
Paper No : 4 امراض اطفال نظامی دوم (Amraze Atfal Nizami Dowem) Systemic Pediatrics - Part 2		
A **S.No**	**B** **Module number and Name**	**C** **MGP**
8	M29. امراض نظام ہضم وامراض کبد۔سوم Amrāḍ-i-Niẓām-i-Haḍm aur Amrāḍ-i Kabidi-III (Gastro intestinal and Hepatobiliary Disorders-3)I	C 8
9	M30. امراض نظام کلیہ/Amrāḍ-i-Niẓām-i-Kulya (Nephrologic disorders)	C 9
	Semester Grade point Average (SGPA)	(C1+C2+C3+C4+C5+C6+C7+C8+C9) / Number of modules(9)
Semester No : 5		
Paper No : 1 امراض اطفال عمومی اول (Amraze Atfal Umoomi awwal) General Pediatrics -Part 1		
A **S.No**	**B** **Module number and Name**	**C** **MGP**
1	M5. نشونما Nushu wa numa-2 (Growth and Development) – 2	C 1
2	M6. تدابیر وانتعاش نومولود (Tadabīr wa Intea'ash Naumaulood) Newborn Care and Neonatal Resuscitation	C 2

Paper No : 2 امراض اطفال عمومی دوم (Amraze Atfal Umoomi Dowem) General Pediatrics -Part 2		
A S.No	B Module number and Name	C MGP
3	M14. جرثومی تعدیہ Jarsoomi Tadiya (Bacterial Infections I)	C 3
4	M15.II جرثومی تعدیہ Jarsoomi Tadiya II, (Bacterial Infections II)	C 4
Paper No : 3 امراض اطفال نظامی اول (Amraze Atfal Nizami awwal) Systemic Paediatrics First		
A S.No	B Module number and Name	C MGP
5	M23. امراض نظام اعصاب و دماغ۔۔اول Amrād i-Nizām-i--Asaab-wa-Dimaagh –I (NEUROLOGICAL DISORDER –I)	C 5
6	M24. امراض نظام اعصاب و دماغ۔دوم I Amrad-i-Nizām-i-Asaab-wa-Dimaagh –II(Neurological Disorders-2)	C 6
Paper No : 4 امراض اطفال نظامی دوم (Amraze Atfal Nizami Dowem) Systemic Pediatrics - Part 2		
A S.No	B Module number and Name	C MGP
7	M31. امراض عین اذن انف وحلق (Amrāḍ-i-‘Ayn-Udhun wa Anf)	C 7
8	M32. امراض جلد (Amrāḍ-i-jild) Skin Diseases	C 8
	Semester Grade point Average (SGPA)	(C1+C2+C3+C4+C5+C6+C7+C8) / Number of modules(8)
Semester No : 6		
Paper No : 1 امراض اطفال عمومی اول (Amraze Atfal Umoomi awwal) General Pediatrics -Part 1		
A S.No	B Module number and Name	C MGP
1	M7. نومولود سقیم (Maulood Saqeem) Sick Newborn	C 1

2	M8.نفسیاتی واخلاقی امراض Nafsīyātī wa AkhlāqiAmrāẓ (Psychological and Behavioral Disorders)	C 2
Paper No : 2 امراض اطفال عمومی دوم (Amraze Atfal Umoomi Dowem) General Pediatrics -Part 2		
A **S.No**	**B** **Module number and Name**	**C** **MGP**
3	M16.طفیلی تعدیہ Tufaili Ta'dia (Parasitic Infections)	C 3
4	M17.دیدان امعاء Didan al Am'a' (Intestinal worm infestations)	C 4
Paper No : 3 امراض اطفال نظامی اول (Amraze Atfal Nizami awwal) Systemic Paediatrics First		
A **S.No**	**B** **Module number and Name**	**C** **MGP**
5	M25.HEMATOLOGICAL DISORDERS.	C 5
6	M26.Drugs and Drug's Dosage	C 6
Paper No : 4 امراض اطفال نظامی دوم (Amraze Atfal Nizami Dowem) Systemic Pediatrics - Part 2		
A **S.No**	**B** **Module number and Name**	**C** **MGP**
7	M33.امراض غدد لاقناتیہ/Amrāḍ-i-Gududde la Qanatiya (Endocrine Disorders)	C 7
8	M34. Miscellaneous Diseases.	C 8
	Semester Grade point Average (SGPA)	(C1+C2+C3+C4+C5+C6+C7+C8) / Number of modules(8)

S. No	**Evaluation Methods**
1.	Method explained in the Assessment of the module or similar to the objectives of the module.

6 E : Question Paper Pattern

MD/MS Unani Examination

UNIPG-AA

Sem VI

Time: 3 Hours ,**Maximum Marks:** 100

INSTRUCTIONS: All questions compulsory

		Number of Questions	Marks per question	Total Marks
Q 1	Application-based Questions (ABQ)	1	20	20
Q 2	Short answer questions (SAQ)	8	5	40
Q 3	Analytical based structured Long answer question (LAQ)	4	10	40
				100

6 F : Distribution for summative assessment (University examination)

S.No	List of Module/Unit	ABQ	SAQ	LAQ
Paper No : 1 (امراض اطفال عمومی اول)(Amraze Atfal Umoomi awwal) General Pediatrics -Part 1)				
(M-1) تغذیہ Taghdhiya (Nutrition) (Marks: Range 5-20)				
1	**(U-1)** احکامات غذاء اطفال (Aḥkāmāt-i-Ghidhā' atfal) Principles of Feeding Practices in Children	Yes	No	Yes
2	**(U-2)** نقص تغذیہ (Nuqṣ-i-Taghdhiya) Malnutrition)	Yes	Yes	Yes
3	**(U-3)** تغذیہ بحالت خاص (Taghziya Ba-Halat i Khas) Nutrition in Special situation	No	Yes	Yes
(M-2) علم الوراثت الجزئی (Ilmul virasatul-juz-ee) Molecular genetics and Pattern of Inheritance (Marks: Range 5-20)				
1	**(U-1)** علم الوراثت الجزئی (Ilmul virasatul-juz-ee) Molecular genetics	No	Yes	Yes
2	**(U-2)** طرز توارث (Tarz-e tawarus) Pattern of inheritance	Yes	Yes	Yes
3	**(U-3)** سلامتی تشخیص (Salmati tashkheesh) Molecular diagnosis	No	Yes	Yes
4	**(U-4)** وراثتی مشاورت (Virasati mushawarat) Genetic Counselling	No	Yes	Yes
(M-3) کروموسومی تفاوت/صبغی تفاوت سریریاتی بیقاعدگیاں سریریاتی خلل (Chromosomy tafa-ut/ Sibghi tafaut Sareeryati be qa-idgiyan/ sareeryati khakal) Chromosomal Variations and Clinical Abnormalities (Marks: Range 5-20)				
1	**(U-1)** شکلی اور عددی انحراف (Sakhti aur adadi inhiraf) Structural and Numerical Aberrations	Yes	Yes	Yes
2	**(U-2)** عددی انحرافات (Adadi inhirafat) Aneuploidies	Yes	Yes	Yes
3	**(U-3)** غیر طبعی جنسی کروموسومز (Ghair tabaee Jinsi chromosomes) Sex chromosomes abnormalities	Yes	Yes	Yes
4	**(U-4)** شکلی خرابی/بدشکلی/شکلی اختلال (Shakli kharabi/ bad shakli/ shakli ikhtilal) Dysmorphism	Yes	Yes	Yes
5	**(U-5)** علاج جینی (Ilaj Jeeni) Gene Therapy	No	Yes	Yes
(M-4) نشوونما-1 (Nushu wa numa-1) Growth and Development-1 (Marks: Range 5-20)				

1	**(U-1)** نشوونماکے اصول Nushū wa Numū ke Uṣūl (Principles of Growth and Development)	No	Yes	Yes
2	**(U-2)** سن صباوسن ترعرع Sinn-i-Ṣabā se Sinn- i-Tara'ru' (Normal growth and development in childhood and adolescence)	Yes	Yes	Yes
3	**(U-3)** نمواورنشوکی تقویم Numū aur Nushū kī Taqwīm /Assessment of Growth and Development،	Yes	Yes	Yes
4	**(U-4)** نمواورترقی کامعائنہ Numū aur Taraqqī ka Mu'āina (Developmental assessment) according to unani concept.	No	Yes	No
5	**(U-5)** مروجہ/معیاری شماری خاکہ (Muravvajah/ me-aari shumari khakah) Standards /nomograms	Yes	No	No
(M-5) نشونما Nushu wa numa-2 (Growth and Development) – 2 (Marks: Range 5-20)				
1	**(U-1)** قصیرالقامت کانقطہ نظر Qaseer al qamat ka nuqta-i-nazar (Approach to Short Stature)	Yes	Yes	No
2	**(U-2)** سن بلوغت Sinn-i-Bulughat (Puberty)	Yes	No	Yes
3	**(U-3)** تاخرنمو Taakhur i namu (Developmental Delay)	Yes	Yes	No
4	**(U-4)** طبعی جنسی نمواضطرابات Al-Numū al-Ṭab'īJinsī Iḍṭirābāt (Normal Sexual Maturation and Its Disturbances)	Yes	No	Yes
(M-6) تدابیروانتعاش نومولود (Tadabīr wa Intea'ash Naumaulood) Newborn Care and Neonatal Resuscitation (Marks: Range 5-20)				
1	**(U-1)** تدابیردوران ولادت Tadabīr duran-e-Wilāda (Perinatal care)	No	Yes	Yes
2	**(U-2)** تدابیروامتحان نومولود Tadabīr wa Imtehan-e- Nau Mawlūd (Newborn Care and Assessment)	Yes	Yes	Yes
3	**(U-3)** رضاعت نومولود (Raḍā'at naumaulood) Newborn feeding	No	Yes	Yes
4	**(U-4)** خاص حالات میں غزائی معمولات (Khas halat m ghizai mamoolat) Feeding practices in special cases	No	Yes	Yes
5	**(U-5)** نومولود کی منتقلی (Naumaulood ki Muntaqli) Neonatal Transportation	No	Yes	Yes
(M-7) نومولود سقیم (Maulood Saqeem) Sick Newborn (Marks: Range 5-20)				

1	**(U-1)** خطرے سے دوچار نوزائدہ (Khatre se do-char nauzaeda) High Risk Infant	Yes	Yes	Yes
2	**(U-2)** توازن حرارت (tawazun hararat) Thermoregulation	Yes	Yes	Yes
3	**(U-3)** مراجعت نومولود (Muraje-at naumaulood) Neonatal follow up	No	Yes	Yes
4	**(U-4)** جراحتی مسائل (بروقت تشخیص اور حوالگی) (Jarahati masa-el (bar waqt tashkheesh aur hawalgi) Surgical problems (Early diagnosis &Referral)	No	Yes	Yes
(M-8) نفسیاتی واخلاقی امراض Nafsīyātī wa AkhlāqiAmrāẓ (Psychological and Behavioral Disorders) (Marks: Range 5-20)				
1	**(U-1)** امراض نفسیاتی کا یونانی نظریہ (Concept of psychological disorders in classical medicine.)	No	Yes	No
2	**(U-2)** اضطرابات اکل Iḍṭirābāt al-Akl (Eating disorders)	Yes	No	Yes
3	**(U-3)** اضطراب نوم/ذاتویہ Dhātawiyyah/ Iḍṭirāb al-Naūm (Sleep disorders))	Yes	Yes	No
4	**(U-4)** اخلاقی امراض Akhlāqi Amrāẓ (Behavioral Disorders)	Yes	No	Yes
S.No	**List of Module/Unit**	**ABQ**	**SAQ**	**LAQ**
Paper No : 2 (امراض اطفال عمومی دوم Amraze Atfal Umoomi Dowem) General Pediatrics -Part 2)				
(M-9) مناعت کے اصول وضوابط وافعال (Manaat ke usool wa zawabit wa afaal) Principles of Immunization and Function of Immune System (Marks: Range 5-15)				
1	**(U-1)** تعارف مناعتی نظام (Taaruf-i Manaati nizam) Introduction to the Immune System.	No	Yes	Yes
2	**(U-2)** مدافعتی ردعمل اور زود حساسیت (Mudafi-ati radde amal aur zood-hassasiyat) Immune Responses and Hypersensitivity	No	Yes	Yes
3	**(U-3)** مناعت کے اصول وجدید مناعتی خاکہ (Manat ke usul wa jaded manati khaka) Immunization Principles and Updated Schedule:	No	Yes	Yes
4	**(U-4)** تمنیع کے بعد منفی اثر التعارف، تقسیم، تشخیص اور انتظام وعلاج (Tamnee k bad manfi asrat-Ta-aaruf, Taqseem, Tashkheesh aur intzam/ ilaj) Adverse Effects Following Immunization (AEFI) - Introduction and Classification,diagnosis& management:	No	Yes	Yes

(M-10)حفاظت جدرینہ،بارد ترسیل اور جدرینہ کی اقسام(Hifazate judreena, Barid Tarseel aur judreena ki aqsam) Vaccine Preservation, Cold Chain, and Vaccination Types. (Marks: Range 5-15)				
1	**(U-1)** حفاظت جدرینہ کا تعارف اور بارد ترسیل (Hifazate hudreena ka taaruf aur barid tarseel) Introduction to Vaccine Preservation and Cold Chain	No	Yes	Yes
2	**(U-2)** باریدترسیل ک آلات،بارد ترسیل کی مرمت،اور حرارت کی نگرانی(Barid tarseel k Aalat, barid tarseel ki marammat, aur Hararat ki nigrani) Cold Chain Equipment ,cold chain repair and Temperature Monitoring	No	Yes	Yes
3	**(U-3)** ذخیرہ اندوزی،اسکہ سمبھالنا اور اسکی منتقلی کے لیے رہنما خطوط (Zakheera andozi, usko sanbhalna aur uski muntaqli k liye rahnuma khutoot) Guidelines for Vaccine Storage, Handling, and Transport	No	Yes	Yes
4	**(U-4)** مروجہ اور اختیاری جدرینہ (Muravvajah aur ikhtiyari judreena) Standard and Optional Vaccines.	No	Yes	Yes
5	**(U-5)** تاریخ اختتام،مدت استعمال،بقا اور سرد ترسیل کا انتظام (Tareekh e ikhtetam, muddate istemal/ baqa aur sard tarseel ka intezam) Vaccine Expiry, Shelf Life, & Cold chain maintenance	No	Yes	Yes
(M-11)بچوں میں نئے ابھرنے والے لیکن جدرینہ سے قابل انسداد قشبی بیماریاں(Bachon m naye ubharne wali lekin judreena se qabile insedad Qashbi bimaryan) Emerging, Common and Vaccine-Preventable Viral Infections in Pediatrics. (Marks: Range 5-20)				
1	**(U-1)** قسبی امراض طفحیہ بیرونی،اور عہد طفلی کے امراض (Qasbi amraze tafahiya bairooni, aur ahde Tifli k amraz) Viral Exanthems and Childhood Diseases	Yes	Yes	Yes
2	**(U-2)** جدرینہ سے قابل انسداد، قسبی دماغی امراض (judreena se qabile insdad, qashbi dimaghi Amraz) Neurological and Vaccine-Preventable Viral Infections	Yes	Yes	Yes
3	**(U-3)** نئے وقوع پزیر قشبی تعدیہ (Naye waqoo pazer qashbi taadiya) Emerging Viral infections	Yes	Yes	Yes
(M-12) امراض تنفس میں تعدیہ ویروسی مزمن Chronic, and Respiratory Viral Infections in Pediatrics (Marks: Range 5-20)				
1	**(U-1)** Chronic and Opportunistic Viral Infections	Yes	Yes	Yes
2	**(U-2)** ویروسی تنفس امراض تعدیہ Viral Respiratory Infections	Yes	Yes	Yes
(M-13) Pediatric Emergencies. (Marks: Range 5-20)				

1	**(U-1)** Cardiovascular Emergencies	Yes	Yes	Yes
2	**(U-2)** Neurological Emergencies	Yes	Yes	Yes
3	**(U-3)** Gastrointestinal Emergencies	Yes	Yes	Yes
4	**(U-4)** Allergic ,Toxicological Emergencies& Metabolic derangements	Yes	Yes	Yes
5	**(U-5)** Pre-Transport and Referral Protocols	No	Yes	Yes
(M-14) جرثومی تعدیہ Jarsoomi Tadiya (Bacterial Infections I) (Marks: Range 5-20)				
1	**(U-1)** عفونت کا نظریہ Ufūnat ka nazariya (Classical concept of Infections)	No	Yes	Yes
2	**(U-2)** شہیقہ shahiqa (Whooping Cough) and Diphtheria	Yes	Yes	Yes
3	**(U-3)** Brucellosis and Leptospirosis.	No	Yes	Yes
4	**(U-4)** کزاز Kuzāz (Tetanus)	Yes	Yes	Yes
5	**(U-5)** Anaerobic Infection	No	Yes	Yes
(M-15) جرثومی تعدیہ II, Jarsoomi Tadiya II, (Bacterial Infections II) (Marks: Range 5-20)				
1	**(U-1)** ورم معدہ Waram Mi'da (Helicobactor Pylori)	No	Yes	Yes
2	**(U-2)** تدرن، سل و دق Tadarrun, Sill wa Diq (Tuberculosis)	Yes	Yes	Yes
3	**(U-3)** حمی معویہ Humma Mi'wiyya (Typhoid Fever)	Yes	Yes	Yes
4	**(U-4)** جذام Judham (Leprosy)	Yes	Yes	Yes
5	**(U-5)** آتشک Ātshak (Syphilis)	Yes	Yes	Yes
(M-16) طفیلی تعدیہ Tufaili Ta'dia (Parasitic Infections) (Marks: Range 5-20)				
1	**(U-1)** حمی اجامیہ Humma Ajamiyya (Malaria)	Yes	Yes	Yes
2	**(U-2)** داءالفیل Da'al Fil (Filariasis)	No	Yes	Yes
3	**(U-3)** زحیر Zaḥīr Wabā'ī(Amebiasis)	Yes	Yes	Yes
4	**(U-4)** Giardiasis	No	Yes	Yes
5	**(U-5)** کالازار Kalazar (Black Sickness)	No	Yes	No

(M-17)دیدان امعاءDidan al Am'a' (Intestinal worm infestations) (Marks: Range 5-20)				
1	**(U-1)** حب القرع' Ḥabb al-Qar (Tape worm)	Yes	Yes	Yes
2	**(U-2)** حیات Ḥayyāt (Roundworm)	No	Yes	Yes
3	**(U-3)** صغارṢighār (Threadworm)	No	Yes	No
4	**(U-4)** مستدیرہMustadira (Hookworm)	No	Yes	No
5	**(U-5)** Cryptosporidiosis	No	Yes	No
S.No	**List of Module/Unit**	**ABQ**	**SAQ**	**LAQ**
Paper No : 3 (امراض اطفال نظامی اول)Amraze Atfal Nizami awwal) Systemic Paediatrics First)				
(M-18)امراض نظام تنفس اولAmrād-i-Nizām i-Tanaffus- I (Respiratory Disorders- 1) (Marks: Range 5-20)				
1	**(U-1)** نظام تنفس کی طبی تشخیص و خصوصی تشخیصی طریقہ کارNizām i- Tanaffus ki Tibbi Tashkhis wa Khususi Tashkhis-i-Tariqa-i-kar (Clinical evaluation of respiratory system and special diagnostic procedures	Yes	Yes	Yes
2	**(U-2)** تعدیہ امراض نظام تنفس علیTa'diya Amrād-i- Nizām-i- Tanaffus A'lā (Upper respiratory tract infections)	No	Yes	Yes
3	**(U-3)** Foreign body in lower respiratory tract	No	Yes	Yes
4	**(U-4)** Acute respiratory distress syndrome	No	Yes	Yes
5	**(U-5)** ورم شعبۃ الریہ و سعال صبیانWaram-i-Shu'bat-ur-Ri'a and Su'āl-i-Sibyan (Acute bronchiolitis and Acute Bronchitis)	Yes	Yes	Yes
6	**(U-6)** ذات الریہDhāt al-Ri'a (Pneumonias)	Yes	Yes	Yes
(M-19)امراض نظام تنفس دومAmrād i-Nizām-i-Tanaffus -II (Respiratory Disorder- 2) (Marks: Range 5-20)				
1	**(U-1)** اتساع الشعبIttisa' al Shu'ab (Bronchiectasis)	No	Yes	Yes
2	**(U-2)** ذات الجنبDhāt al-Janb (Dry pleurisy)	Yes	Yes	Yes
3	**(U-3)** ذات الجنب مائیDhāt al-Janb Ma'i (Pleural effusion)	No	Yes	Yes
4	**(U-4)** تقیح صدرTaqayyuh-i-Sadr (Empyema thoracis)	No	Yes	Yes

5	**(U-5)** دبیلہ الریہ Dubayla al- Ri'a (Lung abscess)	No	Yes	Yes
6	**(U-6)** ربو Rabw (Bronchial asthma)	Yes	Yes	Yes
7	**(U-7)** Cystic Fibrosis	No	Yes	Yes
8	**(U-8)** Obstructive Sleep Apnea	No	Yes	Yes
(M-20) امراض نظام قلب۔اول Amrād-i- Nizām-i-Qalb -I (Cardiovascular Disorders- 1) (Marks: Range 5-20)				
1	**(U-1)** نظام قلب کی طبی تشخیص و خصوصی تشخیصی طریقہ کار Nizām i-Qalb ki Tibbi Tashkhis wa Khususi Tashkhisi Tariqa-i-kar (Evaluation of cardiovascular system and Special diagnostic procedures)	Yes	Yes	Yes
2	**(U-2)** دوران خون جنینی Dauran-i-Khun Janini (Fetal Circulation(	No	Yes	Yes
3	**(U-3)** خلقی امراض قلب Khalki Amrād i-Qalb (Congenital heart diseases)	Yes	Yes	Yes
4	**(U-4)** Acquired heart diseases	Yes	Yes	Yes
(M-21) امراض نظام قلب۔دوم Amrād-i- Nizām-i-Qalb -II (Cardiovascular disorders- 2) (Marks: Range 5-20)				
1	**(U-1)** التہاب درون قلب Iltihab Darun-i-Qalb (Infective endocarditis)	Yes	Yes	Yes
2	**(U-2)** التہاب عضلات قلب Iltahab i- Adhalat-i-Qalb (Myocarditis)	No	Yes	Yes
3	**(U-3)** ورم غشاء القلب Waram Ghisha i-Qalb (Pericarditis)	No	Yes	Yes
4	**(U-4)** فرط تدسم فی الدم Fart-i-Tadassum fid-Dam (Hyperlipidemia in children)	Yes	Yes	Yes
5	**(U-5)** ارتفاع ضغط الدم نظامی Irtifa-i-Zaght-ul-Dam Nizāmi (Systemic hypertension in children)	Yes	Yes	Yes
(M-22) علم السرطان Ilm-ul-Sartan (Oncology) (Marks: Range 5-20)				
1	**(U-1)** Leukemia	Yes	Yes	Yes
2	**(U-2)** Lymphoma	No	Yes	No
3	**(U-3)** Concept of Sartan and other pediatric tumour.	Yes	Yes	Yes
(M-23) امراض نظام اعصاب و دماغ۔اول Amrād i-Nizām-i--Asaab-wa-Dimaagh –I (NEUROLOGICAL DISORDER –I) (Marks: Range 5-20)				

1	**(U-1)** Nizam- i-Asaab-wa-Dimāgh ki Tibbi Ta نظام اعصاب ودماغ کی طبی تشخیص وخصوصی تشخیصی طریقہ کار Tibbi Tashkhis of Nizam- i-Asaab-wa-Dimāgh and KhususiTashkhisi Tariqa-i-kar(Evaluation of Central Nervous System and Special diagnostic procedures)	Yes	Yes	Yes
2	**(U-2)** Seizure Disorders Part- A	Yes	Yes	Yes
3	**(U-3)** Seizure Disorders Part-B	No	Yes	No
4	**(U-4)** لقوہ Laqwa (Bell's Palsy)	No	Yes	Yes
5	**(U-5)** Acute Flaccid Paralysis (AFP)	No	Yes	No
(M-24) امراض نظام اعصاب ودماغ۔دوم Amrad-i-Nizām-i-Asaab-wa-Dimaagh –II(Neurological Disorders-2) (Marks: Range 5-20)				
1	**(U-1)** a) حمق Humq (Intellectual Disability) b) فالج دماغی Fālij-i-Dimāghī (Cerebral Palsy)	Yes	Yes	Yes
2	**(U-2)** ماءالراس Mā' al-Ra's (Hydrocephalus)	No	Yes	Yes
3	**(U-3)** زواید سلعات دماغیہ Zawaid-i-sulaat Dimaghiya (Intracranial Space Occupying Lesions)	Yes	Yes	Yes
4	**(U-4)** سرسام Sarsām (Meningitis)	Yes	Yes	Yes
5	**(U-5)** Encephalitis / Encephalopathy	No	Yes	No
(M-25) HEMATOLOGICAL DISORDERS. (Marks: Range 5-20)				
1	**(U-1)** فقرالدم Faqr-ul- dam (Anemia)	Yes	Yes	Yes
2	**(U-2)** Hemoglobinopathies	No	Yes	No
3	**(U-3)** Hemorrhagic and Thrombotic Diseases:	No	Yes	Yes
4	**(U-4)** Blood component & Blood Transfusion	No	Yes	No
(M-26) Drugs and Drug's Dosage (Marks: Range 5-15)				
1	**(U-1)** Unani Drugs and Drug's dosage- 1	No	Yes	Yes
2	**(U-2)** Unani Drugs and Drug's Dosage- 2	No	Yes	Yes

3	**(U-3)** Conventional Drugs	No	Yes	Yes
S.No	**List of Module/Unit**	**ABQ**	**SAQ**	**LAQ**
Paper No : 4 (امراض اطفال نظامی دوم)(Amraze Atfal Nizami Dowem) Systemic Pediatrics - Part 2)				
(M-27) امراض نظام ہضم اور امراض کبدی۔ا:Amrāḍ-i-Niẓām-i-Haḍm aur Amrāḍ-i -Kabidi-I(Gastro Intestinal and Hepatobiliary Disorder - 1) (Marks: Range 5-20)				
1	**(U-1)** نظام ہضم کی طبی تشخیص وخصوصی تشخیصی طریقہ کار Tibbi Tashkhis of Niẓām-i-Haḍmand Khususi Tashkhisi Tariqa-i-kar (Clinical Evaluation and Special Investigation of Gastro Intestinal System)	Yes	Yes	Yes
2	**(U-2)** امراض دہن (Amrāḍ-i-Dehan) Diseases of oral cavity	No	Yes	No
3	**(U-3)** اسہال Ishāl (Diarrhoea)	Yes	Yes	Yes
4	**(U-4)** زحیر Zaḥīr (Dysentery)	Yes	Yes	Yes
5	**(U-5)** نقص انجذاب Naqs-e-inzijab (Mal absorption)	No	Yes	Yes
(M-28) امراض نظام ہضم وامراض کبد۔دوم(Amrāḍ-i-Niẓām-i-Haḍm aur Amrāḍ-i Kabidi-II (Gastro intestinal and Hepatobiliary Disorders -2) (Marks: Range 5-20)				
1	**(U-1)** Irritable Bowel Syndrome	Yes	Yes	Yes
2	**(U-2)** قولنج Qūlanj /Abdominal colic (Qūlanj wa mugas)	Yes	Yes	Yes
3	**(U-3)** قیء Qay' (Vomiting)	Yes	Yes	Yes
4	**(U-4)** Qabd (Constipation)	No	Yes	Yes
5	**(U-5)** . امراض المقعد Amrāḍ-i-Maq'ad (Diseases of Rectum	No	Yes	Yes
(M-29) امراض نظام ہضم وامراض کبد۔سوم Amrāḍ-i-Niẓām-i-Haḍm aur Amrāḍ-i Kabidi-III (Gastro intestinal and Hepatobiliary Disorders-3)I (Marks: Range 5-15)				
1	**(U-1)** ورم کبد ومرارہ Waram al-Kabid wa Marara (Hepatitis and Cholecystitis)	No	Yes	Yes
2	**(U-2)** فرط ضغط الدم البابی Fart zaght-ul-dam albabi (Portal Hypertension) ورم کبد مزمن (Waram al-Kabid Muzmin)	No	Yes	Yes

3	**(U-3)** Wilson Disease (Hepatolenticular degeneration) and عملیہ زرع الکبد /Amlia Zarul kabid (Orthotopic Liver Transplantation)	No	Yes	Yes
4	**(U-4)** دبیلۃ الکبد/Dubayla al-Kabid Liver abscess and ضربات الکبد باستعمال الدواء(Drug Induced Liver Injury)	No	Yes	Yes
5	**(U-5)** استسقا/Istisqā (Ascites)	No	Yes	Yes
(M-30) امراض نظام کلیہ/Amrāḍ-i-Niẓām-i-Kulya (Nephrologic disorders) (Marks: Range 5-15)				
1	**(U-1)** امراض نظام کلیہ کی مخصوص تفتیشات اور اسکا معائنہ/Amrāḍ-i-Niẓām-i-Kulyaki Makhsus Taftishat aur uska muaaina (Evaluation and special investigation in Renal System)	No	Yes	Yes
2	**(U-2)** ورم کلیہ/Waram al-Kulya (Glomerulonephritis)	No	Yes	Yes
3	**(U-3)** قصور الکلیہ/Qasurul kulia (Renal failure)	No	Yes	Yes
4	**(U-4)** بول فی الفراش/Bawl Filfarash (Enuresis) and امراض کلیہ موروثی/Amrāḍ-i -Kulya Maurusi (Congenital & Hereditary Renal disorder)	No	Yes	Yes
5	**(U-5)** حصاۃ الکلیہ ومثانہ/Hasat-al -Kulya -wa-Mathana (Renal and Bladder Stone)	No	Yes	Yes
(M-31) امراض عین اذن انف وحلق(Amrāḍ-i-'Ayn-Udhun wa Anf) (Marks: Range 5-20)				
1	**(U-1)** (Amrāḍ-i-'Ayn I) Diseases of Eye-I امراض عین۔اول	No	Yes	Yes
2	**(U-2)** (Amrāḍ-i-'Ayn II) Diseases of eye (II) امراض عین۔دوم	Yes	Yes	Yes
3	**(U-3)** Visual disorders امراض بصر((Amrāḍ-i Basar)(Amrāḍ-i-'Ayn II) Diseases of eye (II) امراض عین۔دوم	Yes	Yes	Yes
4	**(U-4)** امراض اذن وانف(Amrāḍ-i-Udhun wa Anf(Diseases of Ear and Nose	No	Yes	Yes
5	**(U-5)** . حلق امراض(Amrāḍ-i--Halaq) Throat Disorders ورم لوذتین Waram-i-Lawzatayn (Tonsillitis)	Yes	Yes	Yes
(M-32) امراض جلد(Amrāḍ-i-jild) Skin Diseases (Marks: Range 5-20)				
1	**(U-1)** جلدی لیجن(Jildi lejan) Skin rashes	No	Yes	No

2	**(U-2)** Fasād al-Lawn (Pigmentary lesions)فسادللون	No	Yes	Yes
3	**(U-3)** a)قوبا(Qūbā) Taenia b) جرب(Jarab) Scabies	Yes	Yes	Yes
4	**(U-4)** التہاب جلد(Iltihāb-e-jild) Dermatitis	Yes	Yes	Yes
5	**(U-5)** امراض الشعر(Amrād-i-Sha'ar) Diseases of Hair	No	Yes	Yes
(M-33)امراض غدد لاقناتیہ/Amrāḍ-i-Gududde la Qanatiya (Endocrine Disorders) (Marks: Range 5-15)				
1	**(U-1)** Disorder of Pituitary Gland.	No	Yes	Yes
2	**(U-2)** ذیابیطس/Dhayābīṭus (Diabetes)	No	Yes	Yes
3	**(U-3)** Disorders of Thyroid Gland	No	Yes	Yes
4	**(U-4)** Disorder of Parathyroid Gland	No	Yes	Yes
5	**(U-5)** Disorder of Adrenal Gland	No	Yes	Yes
(M-34) Miscellaneous Diseases. (Marks: Range 5-15)				
1	**(U-1)** وجع المفاصل/Waja al Mafasil(Arthralgia) Waja‘ al-Mafāṣil (Arthralgia)	No	Yes	Yes
2	**(U-2)** التہاب مفاصل طفلی Iltihab-i Mafasil /Waja‘ al-Mafāṣil Tifli (Juvenile Idiopathic Arthritis)	No	Yes	Yes
3	**(U-3)** Lymphadenopathy	No	Yes	Yes
4	**(U-4)** حمی مجہول الاسباب Humma-i-Majhul-al-Asbab (Pyrexia of Unknown Origin)	No	Yes	Yes
5	**(U-5)** ضمور العضلات Zamur-al-azlaht (Muscular Dystrophy)	No	Yes	Yes

6 G : Instruction for the paper setting & Blue Print for Summative assessment (University Examination)

Instructions for the paper setting.

1. University examination shall have 4 papers of 100 marks.

Each 100 marks question paper shall contain:-

• Application Based Question: 1 No (carries 20 marks)

• Short Answer Questions: 8 Nos (each question carries 05 marks)

• Long Answer Questions: 4 Nos (each question carries 10 marks)

2. Questions should be drawn based on the table 6F.

3. Marks assigned for the module in 6F should be considered as the maximum marks. No question shall be asked beyond the maximum marks.

4. Refer table 6F before setting the questions. Questions should not be framed on the particular unit if indicated “NO”.

5. There will be a single application-based question (ABQ) worth 20 marks. No other questions should be asked from the same module where the ABQ is framed.

6. Except the module on which ABQ is framed, at least one Short Answer Question should be framed from each module.

7. Long Answer Question should be analytical based structured questions assessing the higher cognitive ability.

8. Create Blueprint based on instructions 1 to 7.

6 H : Distribution of Practical Exam (University Examination)

S.No	Heads	Marks
1	Long case or procedure/Major practical (2 Number, 1 Hour 30 Minutes, 2X50 Marks/Each) 1. History Taking and Clinical Examination of any disease from the Syllabus 2. Anthropometry (Growth Measurement) 3. Assessment of Developmental Milestones 4. Nutritional Assessment and Counseling 5. Immunization Practices and Schedule Evaluation 6. Neonatal Resuscitation and Care 7. Pediatric Emergency Management (e.g., shock, dehydration) 8. Interpretation of Lab Investigations (CBC, LFT, etc.) 9. Pediatric Drug Dosage Calculation	100
2	Short case or procedure/Minor practical (5 Number, 50 minutes, 5X10 Marks/Each) 1. Temperature Measurement and Recording 2. Pulse and Respiratory Rate Monitoring 3. Blood Pressure Measurement in Children 4. Oxygen Therapy Setup 5. Intravenous Cannulation and Fluid Calculation 6. Neonatal Reflex Examination 7. Peak Flow Meter Usage and Interpretation 8. Urine Dipstick Test 9. Any Practical or Experiential activity form the syllabus can be taken as a short cases	50
3	Spotters (5 Numbers, 25 Minutes, 5x10 Marks/Each) 1. Growth Charts and Interpretation 2. Vaccines and Vials Identification 3. Pediatric ECG Interpretation 4. Common Pediatric Instruments 5. Radiographs (Chest X-ray, Abdominal X-ray) 6. Newborn Screening Tests (e.g., Guthrie card)	50

	7. Pediatric Skin Conditions (e.g., Impetigo, Chickenpox) 8. Congenital Anomalies (e.g., Cleft Lip, Talipes) 9. Drug Preparations (e.g., ORS packet, Iron syrup) 10. Pediatric Nutritional Products (e.g., Formula Milk, RUTF) 11. Pulse oximeter 12. Nebulizer- jet, mesh 13. Inhaler- metered dose Inhaler, dry powder inhaler 14. Spacer device 15. Drugs for inhalation 16. Nasal prongs 17. High flow nasal canula and other types of canula 18. Face masks, it's types 19. Oxygen concentrator 20. Oxygen cylinder - operating procedure 21. Spirometer 22. PEP therapy device 23. Ambubag 24. Types of Pediatric cuffs for BP monitoring 25. Photos of peculiar clinical manifestations of CVS and respiratory disorders 26. Normal and abnormal recorded respiratory sounds 27. Normal ad abnormal recorded heart sounds and murmurs 28. X-rays of different disorders related with respiratory and CVS 29. Laryngoscope	
4	Assessing teaching ability	25
5	Assessing presentation skills	25
6	Viva (4 examiners: 25 marks/each examiner)#	100
7	Logbook	25
8	Practical/Clinical Record	25
Total Marks		**400**

No separate marks for dissertation viva.

Reference Books/ Resources

S.No	References
1	M. Sabita, Sadler T.W.: Langman’s Medical Embryology, 2nd South Asian edition
2	Datta A.K., Essentials of Human Embryology
3	T.W. Sadler. Langman's Medical Embryology, 14th Edition, Wolters Kluwer, China: 2019
4	Inderbir Singh, G.P. Pal, Human Embryology, 8th Edition, Macmillan: 2007
5	Kumar Ranjan, Textbook of Clinical Neonatology; AYPEE Publications
6	T.L. Gomella, F.G. Eyal, F. B. Mohammad. Gomella’s Neonatology, 8th edition. Mac Graw, Hill. 2020
7	Thakre Rhishikesh, Murki Srinivas; IAP Atlas & Synopsis of Neonatology
8	SAE of Avery & MacDonald's Neonatology: Pathophysiology and Management of the Newborn 8th Edition
9	Satyanarayana U, Chakrapani U. Biochemistry. 5th ed. Hyderabad: Elsevier; 2021.
10	Devlin TM. Textbook of Biochemistry with Clinical Correlations. 7th ed. New Jersey: Wiley; 2011.
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Abbreviations

Domain		T L Method		Level	
CK	Cognitive/Knowledge	L	Lecture	K	Know
CC	Cognitive/Comprehension	L&PPT	Lecture with PowerPoint presentation	KH	Knows how
CAP	Cognitive/Application	L&GD	Lecture & Group Discussion	SH	Shows how
CAN	Cognitive/Analysis	L_VC	Lecture with Video clips	D	Does
CS	Cognitive/Synthesis	REC	Recitation		
CE	Cognitive/Evaluation	SY	Symposium		
PSY-SET	Psychomotor/Set	TUT	Tutorial		
PSY-GUD	Psychomotor/Guided response	DIS	Discussions		
PSY-MEC	Psychomotor/Mechanism	BS	Brainstorming		
PSY-ADT	Psychomotor Adaptation	IBL	Inquiry-Based Learning		
PSY-ORG	Psychomotor/Origination	PBL	Problem-Based Learning		
AFT-REC	Affective/ Receiving	CBL	Case-Based Learning		
AFT-RES	Affective/Responding	PrBL	Project-Based Learning		
AFT-VAL	Affective/Valuing	TBL	Team-Based Learning		
AFT-SET	Affective/Organization	TPW	Team Project Work		
AFT-CHR	Affective/ characterization	FC	Flipped Classroom		
		BL	Blended Learning		
		EDU	Edutainment		
		ML	Mobile Learning		
		ECE	Early Clinical Exposure		
		SIM	Simulation		
		RP	Role Plays		
		SDL	Self-directed learning		

		PSM	Problem-Solving Method		
		KL	Kinaesthetic Learning		
		W	Workshops		
		GBL	Game-Based Learning		
		LS	Library Session		
		PL	Peer Learning		
		RLE	Real-Life Experience		
		PER	Presentations		
		D-M	Demonstration on Model		
		PT	Practical		
		X-Ray	X-ray Identification		
		CD	Case Diagnosis		
		LRI	Lab Report Interpretation		
		DA	Drug Analysis		
		D	Demonstration		
		D-BED	Demonstration Bedside		
		DL	Demonstration Lab		
		DG	Demonstration Garden		
		FV	Field Visit		
		JC	Journal Club		
		Mnt	Mentoring		
		PAL	Peer Assisted Learning		
		C_L	Co Learning		