Competency-Based Dynamic Curriculum for MD/ MS Unani
(PRESCRIBED BY NCISM)

Semester II
Applied Basics of Moalajat
(Medicine)
(SUBJECT CODE : UNIPG-AB-MOA)

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

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BOARD OF UNANI, SIDDHA AND SOWA-RIGPA
NATIONAL COMMISSION FOR INDIAN SYSTEM OF MEDICINE
NEW DELHI-110026

Preface

The MD in Moalajat (Medicine) is a three-year postgraduate program designed to provide comprehensive training in diagnosing and treating common health problems and disorders, based on the principles of the Unani System of Medicine. The program also integrates relevant modern advanced knowledge along with scientific and technological developments, ensuring that graduates are equipped to tackle contemporary medical challenges with confidence and expertise while upholding the core values of medical ethics and patient-centred care.

Through a robust competency-based approach, the program trains specialists who are highly capable of addressing community health needs and adeptly managing a diverse range of conditions specific to their field. The program aims to nurture an entrepreneurial mindset among students, encouraging them to approach healthcare delivery creatively and effectively.

This program emphasizes Unani principles and modern advancements in diagnostic and therapeutic technologies. It ensures a comprehensive understanding through theoretical knowledge, practical experimentation, observation, and hands-on experience. Physicians will develop clinical skills necessary for accurate diagnosis, interpreting diagnostic tests, and considering cost-effectiveness in their treatment approaches.

The program's primary objective is to prepare candidates to efficiently diagnose and manage medical conditions, handle medical emergencies, and engage in meaningful research. Special attention is given to prevalent and treatable disorders, ensuring that physicians are well-prepared to make a significant impact in clinical practice. In addition to clinical competence, the program aims to cultivate a personalized and holistic approach to patient care, emphasizing empathy, social determinants of health, and medical ethics, thereby preparing physicians to deliver compassionate care and positively influence both clinical settings and the wider community.

Training includes hands-on experience in medical wards and critical care settings, equipping students with the skills necessary for delivering high-quality patient care. Additionally, the program familiarizes learners with research methodologies, evidence-based practices, and teaching strategies, preparing them to contribute as educators and innovators in their field.

This document, crafted by subject-content experts, serves as a strategic framework for both educators and learners, outlining clear guidelines aimed at achieving defined outcomes through structured learning and assessment. Together, we aspire to cultivate a new generation of healthcare professionals who are not only skilled clinicians but also pioneers of development in the field of Unani medicine.

INDEX

NCISM
(NATIONAL COMMISSION FOR INDIAN SYSTEM OF MEDICINE)
Competency-Based Dynamic Curriculum for MD/ MS Unani
Applied Basics of Moalajat (UNIPG-AB-MOA)
Summary & Credit Framework
Semester II

Module Number & Name	Credits	Notional Learning Hours	Maximum Marks of assessment of modules (Formative Assessment)
M 1. Medical Ethics, Clinical Pharmacology and Basics of Clinical Diagnosis طبی اخلاقیات، سریریات علم الادویہ و مبادیات سریریاتی تشخیص	2	60	50
M 2. Clinical Basics of Gastrointestinal, Uro-Genital and Musculoskeletal diseases امراض معدی و معوی، بول و تناسل اور عظام و مفاصل کی سریریاتی مبادیاتی	2	60	50
M 3. Clinical Basics of Respiratory, Cardiovascular and Skin Diseases امراض تنفس قلب و دوران خون اور جلد کی سریریاتی مبادیات	2	60	50
M 4. Clinical Basics of CNS, Psychiatry and Endocrinal diseases امرض دماغ و اعصاب، نفسیات اور غدد لاقناتیہ کے سریریاتی مبادیات	2	60	50
M 5. Clinical Biochemistry سریریاتی حیاتی کیمیا	2	60	50
M 6. Clinical Genetics سریریاتی جینیات	2	60	50
M 7. Clinical Immunology and Oncology سریریاتی امیونولوجی اور اونکولوجی	2	60	50
M 8. Emergency Medicine امر بیسی میڈیسن	2	60	50
	16	480	400

Credit frame work

UNIPG-AB-MOA consists of 8 modules totaling 16 credits, which correspond to 480 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. In case of difficulty and questions regarding the curriculum, write to syllabus24uni@ncismindia.org.

Course Code and Name of Course

Course code	Name of Course
UNIPG-AB-MOA	Applied Basics of Moalajat (Medicine)

Table 1 : Course learning outcomes and mapped Program learning outcomes

CO No	A1 Course learning Outcomes (CO) UNIPG-AB-MOA At the end of the course UNIPG-AB-MOA, the students should be able to	B1 Course learning Outcomes mapped with program learning outcomes.
CO1	Demonstrate comprehensive knowledge of the fundamental concepts of Unani medicine and proficiency in diagnosingand managing medical conditions using Unani methods and principles, with an emphasis on Holistic and patient-centered care.	PO1,PO6
CO2	Plan and deliver comprehensive management using Unani treatment guidelines. Apply integrated approaches that incorporates both Unani and contemporary diagnostic tools, using a systematic approach tailored to the specific needs of each patient, ensuring sustained patient wellness and improved quality of life.	PO1,PO4,PO5
CO3	Develop research and analytical skills by conducting and critically evaluating research relevant to Unani medicine. Engage in rigorous clinical research and support evidence-based practices contributing to the knowledge.	PO4,PO5,PO6,PO7
CO4	Exhibit advanced skills in managing complex disease conditions, employing a preventive, promotive, and curative approach integral to Unani medical practice, adopting pharmacological and non-pharmacological treatment modalities.	PO2,PO3
CO5	Manage emergencies efficiently by Unani and contemporary protocols including Basic Life Support (BLS) and Advanced Life Support (ALS). Recognize conditions that may be out of competence and refer them to appropriate specialist/ higher center and be well versed with medico-legal responsibilities as well.	PO1,PO5
CO6	Demonstrate skills in documentation of case details. Practice Unani medicine ethically maintaining a high standard of professional integrity, honesty, patient confidentiality, and exercise empathy and a caring attitude in line with Unani ethical values and guidelines.	PO6,PO7
CO7	Contribute to the Advancement of Unani Medicine through research, practice, and teaching, promoting its growth and integration within the broader healthcare system and implementing National Health Programmes.	PO3,PO4,PO5
CO8	Develop Personal and Professional skills by engaging in continuous learning, reflecting on personal practice, and incorporating feedback to improve clinical skills, knowledge, and therapeutic effectiveness in line with evolving Unani and conventional medicine practices.	PO6,PO7,PO8

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

2A Module Number	2B Module & units	2C Number of Credits	Notional Learning Hours			
			2D Lectures	2E Practical Training	2F Experiential Learning including Modular Assessment	2G Total
1	**M-1 Medical Ethics, Clinical Pharmacology and Basics of Clinical Diagnosis طبی اخلاقیات، سریریات علم الادویہ و مبادیات سریریاتی تشخیص** This module consists of 3 Units and carries weightage of 2 credits. This module will focus on Medical Ethics and etiquettes related to History taking, physical examination, and confidentiality of the patient information. This module will also focus on the general aspects of history taking and physical examination, and clinical pharmacology including guidelines and considerations of prescription writing, taking note of dose and dosage forms also. One unit is dedicated to the basics of Clinical diagnosis. • **M1.U1** Medical Ethics طبی اخلاقیات 1.1.1. Medical Ethics and Professional Conduct in Patient Care طبی اخلاقیات اور مریض کی نگہداشت میں پیشہ ورانہ سلوک 1.1.2. Etiquettes of Physical Examination of Patients مریضوں کے جسمانی معائنہ کے آداب 1.1.3. Principles & Etiquettes of online or Telephonic consultations آن لائن یا ٹیلی فونک طبی مشاورت کے اصول اور آداب 1.1.4. Ethical considerations in issuing different medical certificates مختلف طبی سند جاری کرنے کے اخلاقی اعتبارات • **M1.U2** Clinical Pharmacology سریریاتی علم الادویہ	2	10	20	30	60

	1.2.1. Principles of Clinical Pharmacology سریریاتی علم الادویہ کے اصول 1.2.2. Prescribing in practice مطب و نسخہ نویسی 1.2.3. Adverse outcomes of drug therapy علاج بالدوا کے منفی نتائج 1.2.4. Drug regulation and management ادویات کے انضباط و انتظام • **M1.U3** Basics of Clinical Diagnosis مبادیات سریریاتی تشخیص 1.3.1. General interrogation and History Taking عمومی استفسارات و روداد مریض 1.3.2. General Physical Examination of Patient امتحان مریض عمومی 1.3.3. Examination of Vital signs حیاتی نشانیوں کا امتحان 1.3.4. Case Record and case presentation کیس کو قلمبند اور پیش کرنا					
2	**M-2 Clinical Basics of Gastrointestinal, Uro-Genital and Musculoskeletal diseases امراض معدی ومعوی، بول وتناسل اور عظام ومفاصل کی سریریاتی مبادیاتی** This module comprises three units and carries a weightage of 2 credits. It covers applied anatomy and physiology of Gastrointestinal, Urogenital and Musculoskeletal system. It also covers the history taking, physical examination, basic and advanced investigations for the diseases of gastrointestinal, urogenital, and musculoskeletal systems; moreover, the module focuses on proposing treatment plans and managing diseases related to the all three systems. • **M2.U1** Clinical Basics of Gastrointestinal diseases امراض معدی ومعوی کے سریریاتی مبادیت	2	10	20	30	60

	2.1.1. Applied Anatomy and Physiology of Gastrointestinal system نظام ہضم کی اطلاقی تشریح و منافع الاعضاء 2.1.2. Clinical Examination and Diagnosis of Gastrointestinal diseases امراض معدی و معوی کا سریریاتی امتحان و تشخیص 2.1.3. Investigations and Recent Advancements in Diagnosis of Gastrointestinal diseases تفتیشات و جدید اضافات برائے تشخیص امراض معدی و معوی 2.1.4. Uṣūl-i-Ilāj (Principles of treatment) اصول علاج i. Ilāj-Bil-Ghizā (Dietotherapy) علاج بالغذاء ii. Ilāj-Bit-Tadbīr (Regimenal therapy) علاج بالتدبیر iii. Ilāj-Bil-Dawā (Pharmacotherapy) علاج بالدواء • **M2.U2** Clinical Basics of Uro-Genital diseases امراض بول وتناسل کے سریریاتی مبادیت 2.2.1. Applied Anatomy and Physiology of Uro-Genital system نظام بول و تناسل کی اطلاقی تشریح و منافع الاعضاء 2.2.2. Clinical Examination and Diagnosis of Uro-Genital diseases امراض بول و تناسل کا سریریاتی امتحان و تشخیص 2.2.3. Investigations and Recent Advancements in Diagnosis of Uro-Genital diseases تفتیشات و جدید اضافات برائے تشخیص امراض بول و تناسل 2.2.4. Uṣūl-i-Ilāj (Principles of treatment) اصول علاج I. Ilāj-Bil-Ghizā (Dietotherapy) علاج بالغذاء II. Ilāj-Bit-Tadbīr (Regimenal therapy) علاج بالتدبیر III. Ilāj-Bil-Dawā (Pharmacotherapy) علاج بالدواء • **M2.U3** Clinical Basics of Musculoskeletal Diseases امراض عظام ومفاصل کے سریریاتی مبادیات 2.3.1. Applied Anatomy and Physiology of Musculoskeletal system نظام عظام و مفاصل کی اطلاقی تشریح و منافع الاعضاء					

	2.3.2. Clinical Examination and Diagnosis of Musculoskeletal diseases امراض عظام و مفاصل کا سریریاتی امتحان و تشخیص 2.3.3. Investigations and Recent Advancements in Diagnosis of Musculoskeletal diseases تفتیشات و جدید اضافات برائے تشخیص امراض عظام و مفاصل 2.3.4. Uṣūl-i-Ilāj (Principles of treatment) اصول علاج I. Ilāj-Bil-Ghizā (Dietotherapy) علاج بالغذاء II. Ilāj-Bit-Tadbīr (Regimenal therapy) علاج بالتدبیر III. Ilāj-Bil-Dawā (Pharmacotherapy) علاج بالدواء					
3	**M-3 Clinical Basics of Respiratory, Cardiovascular and Skin Diseases امراض تنفس قلب ودوران خون اور جلد کی سریریاتی مبادیات** This module comprises three units and carries a weightage of 2 credits. It covers the applied anatomy and physiology of Respiratory, Cardiovascular, and Integumentary systems. It also covers history taking, physical examination, necessary basic and advanced investigations of Respiratory, Cardiovascular, and Integumentary systems; moreover this module also focuses on proposing treatment plans and managing diseases of all these three systems. • **M3.U1** Clinical Basics of Respiratory Diseases امراض تنفس کی سریراتی مبادیات 3.1.1. Applied Anatomy and Physiology of Respiratory system نظام تنفس کی اطلاقی تشریح و منافع الاعضاء 3.1.2. Clinical Examination and Diagnosis of Respiratory diseases امراض تنفس کا سریریاتی امتحان و تشخیص 3.1.3. Investigations and Recent Advancements in Diagnosis of Respiratory diseases تفتیشات و جدید اضافات برائے تشخیص امراض تنفس 3.1.4. Uṣūl-i-Ilāj (Principles of treatment) اصول علاج I. Ilāj-Bil-Ghizā (Dietotherapy) علاج بالغذاء II. Ilāj-Bit-Tadbīr (Regimenal therapy) علاج بالتدبیر III. Ilāj-Bil-Dawā (Pharmacotherapy) علاج بالدواء	2	10	20	30	60

	• **M3.U2** Clinical Basics of Cardiovascular Diseases امراض قلب و دوران خون کی سریریاتی مبادیات 3.2.1. Applied Anatomy and Physiology of Cardiovascular system نظام قلب و دوران خون کی اطلاقی تشریح و منافع الاعضاء 3.2.2. Clinical Examination and Diagnosis of Cardiovascular diseases امراض قلب و دوران خون کا سریریاتی امتحان و تشخیص 3.2.3. Investigations and Recent Advancements in Diagnosis of Cardiovascular diseases تفتیشات و جدید اضافات برائے تشخیص امراض قلب و دوران خون 3.2.4. Uṣūl-i-Ilāj (Principles of treatment) اصول علاج I. Ilāj-Bil-Ghizā (Dietotherapy) علاج بالغذاء II. Ilāj-Bit-Tadbīr (Regimenal therapy) علاج بالتدبیر III. Ilāj-Bil-Dawā (Pharmacotherapy) علاج بالدواء • **M3.U3** Clinical Basics of Skin Diseases امراض جلد کی سریریاتی مبادیات 3.3.1. Applied Anatomy and Physiology of Integumentary system جلد کی اطلاقی تشریح و منافع الاعضاء 3.3.2. Clinical Examination and Diagnosis of Skin diseases امراض جلد کا سریریاتی امتحان و تشخیص 3.3.3. Investigations and Recent Advancements in Diagnosis of Skin diseases تفتیشات و جدید اضافات برائے تشخیص امراض جلد 3.3.4. Uṣūl-i-Ilāj (Principles of treatment) اصول علاج I. Ilāj-Bil-Ghizā (Dietotherapy) علاج بالغذاء II. Ilāj-Bit-Tadbīr (Regimenal therapy) علاج بالتدبیر III. Ilāj-Bil-Dawā (Pharmacotherapy) علاج بالدواء					
4	**M-4 Clinical Basics of CNS, Psychiatry and Endocrinal diseases امرض دماغ واعصاب، نفسیات اور غدد لاقناتیہ کے سریریاتی مبادیات** This module consists of 3 Units and carries a weightage of 2 credits. This module encompasses applied anatomy and physiology of Central Nervous System and Endocrine System. It covers	2	10	20	30	60

	History taking, Physical examination, Required basic and Advanced investigations of diseases of CNS, Psychiatry and Endocrine system; moreover this module also covers the line of treatment and treatment for the diseases of CNS, Psychiatry and Endocrinal diseases. • **M4.U1** Clinical Basics of CNS diseases امراض دماغ واعصاب کی سریریاتی مبادیات 4.1.1. Applied Anatomy and Physiology of Central Nervous system نظام دماغ و اعصاب کی اطلاقی تشریح و منافع الاعضاء 4.1.2. Clinical Examination and Diagnosis of CNS diseases امراض نظام دماغ و اعصاب کا سریریاتی امتحان و تشخیص 4.1.3. Investigations and Recent Advancements in Diagnosis of CNS diseases تفتیشات و جدید اضافات برائے تشخیص امراض دماغ و اعصاب 4.1.4. Uṣūl-i-Ilāj (Principles of treatment) اصول علاج I. Ilāj-Bil-Ghizā (Dietotherapy) علاج بالغذاء II. Ilāj-Bit-Tadbīr (Regimenal therapy) علاج بالتدبیر III. Ilāj-Bil-Dawā (Pharmacotherapy) علاج بالدواء • **M4.U2** Clinical Basics of Psychiatric disorders امراض نفسیات کی سریریاتی مبادیات 4.2.1. Clinical Examination and Diagnosis of Psychiatric diseases امراض نفسیات کا سریریاتی امتحان و تشخیص 4.2.2. Investigations and Recent Advancements in Diagnosis of Psychiatric diseases تفتیشات و جدید اضافات برائے تشخیص امراض نفسیات 4.2.3. Uṣūl-i-Ilāj (Principles of treatment) اصول علاج I. Ilāj-Bil-Ghizā (Dietotherapy) علاج بالغذاء II. Ilāj-Bit-Tadbīr (Regimenal therapy) علاج بالتدبیر III. Ilāj-Bil-Dawā (Pharmacotherapy) علاج بالدواء • **M4.U3** Clinical Basics of Endocrinal diseases امراض غدد لاقناتیہ کی سریریاتی مبادیات					

	4.3.1. Applied Anatomy and Physiology of Endocrine system نظام غدد لاقناتی کی اطلاقی تشریح و منافع الاعضاء 4.3.2. Clinical Examination and Diagnosis of Endocrinal diseases امراض غدد لاقناتیہ کا سریریاتی امتحان و تشخیص 4.3.3. Investigations and Recent Advancements in Diagnosis of Endocrinal diseases تفتیشات و جدید اضافات برائے تشخیص امراض غدد لاقناتیہ 4.3.4. Uṣūl-i-Ilāj (Principles of treatment) اصول علاج I. Ilāj-Bil-Ghizā (Dietotherapy) علاج بالغذاء II. Ilāj-Bit-Tadbīr (Regimenal therapy) علاج بالتدبیر III. Ilāj-Bil-Dawā (Pharmacotherapy) علاج بالدواء					
5	**M-5 Clinical Biochemistry سریریاتی حیاتی کیمیا** This course module consists of 4 Units having a weightage of 2 credits. This module aims to provide a comprehensive understanding of essential biochemical concepts critical for medical and health sciences. It encompasses the structure, classification, and functions of carbohydrates, lipids, amino acids, and proteins, alongside an in-depth knowledge of enzymes, vitamins, minerals, metabolic pathways, and body fluids and their application in clinical diagnosis and treatment. • **M5.U1** Basic biochemistry and Clinical Considerations of Biomolecules مبادیات حیاتی کیمیااور جزئیات حیوی کے سریریاتی اعتبارات 5.1.1 Basic biochemistry of Carbohydrates,lipids, amino acids and Proteins کاربو ہائڈریٹ، لیپیڈس، امینو ایسڈ اور پروٹین کی بنیادی حیاتی کیمیا 5.1.2 Enzymes خامرات 5.1.2.1 General characteristics of enzymes خامرات کی عمومی خصوصیات 5.1.2.2 Classifications of enzymes خامرات کی تقسیم 5.1.2.3 Assay methods and Kinetics assay جانچ کے طریقے اور حرکی جانچ • **M5.U2** Vitamins and Minerals حیاتین ومعدنیات	2	10	20	30	60

	5.2.1 Clinical Biochemistry and Applications of Vitamins and Minerals سریریاتی حیاتی کیمیا اور حیاتین و معدنیات کے مواقع استعمال 5.2.2 IUBMB nomenclature ofEnzymes, Vitamins and other Bio-chemicals خامرات، حیاتین و دیگر حیاتی کیمیائیہ کی آئی یو بی ایم بی نام بندی • **M5.U3** Metabolic Pathways میٹابولک پاتھوے 5.3.1. Metabolic pathways of Carbohydrates, Proteins, Lipids, and Haemoglobin کاربو ہاے ڈریٹس، پروٹینس اور ہیمو گلوبن کے میٹابو لک پاتھ وے • **M5.U4** Body Fluids and Acid-Base Balance جسمانی سیالات اور توازن حمضی واکلی 5.4.1. Classification of body fluids and their biochemical co-relation جسمانی سیالات کی تقسیم اور انکا حیاتی کیمیائی ارتباط 5.4.2. Body fluids and Biochemical considerations of humours جسمانی سیالات اور اخلاط کا حیاتی کیمیاوی اعتبارات 5.4.3. Acid base balance, imbalance and its clinical significance ایسڈ اور بیس کا توازن و عدم توازن اور انکی سریریاتی اہمیت					
6	**M-6 Clinical Genetics سریریاتی جینیات** This course module consists of 3 Units having a weightage of 2 credits and it is designed to provide students with a comprehensive understanding of genetic material, molecular processes, and genetic alterations. This module provides an overview of the principles and applications of clinical genetics in healthcare. It covers the genetic basis of diseases, methods of genetic testing and counseling, and approaches to diagnosing, managing, and treating genetic disorders. Emphasis is placed on integrating genetic knowledge with Mizaj (temperament-based classification) and its implication in clinical practice for personalized patient care. • **M6.U1** Genetic Material and Mechanisms جینیاتی مواد اور میکانیہ 6.1.1. Genetic Materials جینیاتی مادے	2	10	20	30	60

	6.1.1.1. Structure of DNA ڈی این اے کی ساخت 6.1.1.2. Structure of RNA آر این اے کی ساخت 6.1.1.3. Molecular Processes مالیکیولر عملیات 6.1.1.3.1. DNA Replication ڈی این اے ریپلی کیشن 6.1.1.3.2. Transcription ٹرانس کرپشن 6.1.1.3.3. Translation ٹرانس لیشن • **M6.U2** Advances in Genetic Testing and Therapies جینیاتی جانچ اور علاج میں پیش رفت 6.2.1. DNA based Diagnosis ڈی این اے کی بنیاد پر تشخیص 6.2.2. Population based DNA testing آبادی کی بنیاد پر ڈی این اے ٹیسٹنگ 6.2.3. Mutation detection میوٹیشن کا اکتشاف 6.2.4. Gene therapy جین تھیراپی 6.2.5. Genomic Variations جینومک تغیرات 6.2.6. Application of Genomics in Diagnosis and Treatment تشخیص و علاج میں جینومکس کا اطلاق و استعمال • **M6.U3** Genetic Alterations and Disorders جینیاتی تبدیلیاں اور عوارضات/امراض 6.3.1. Basic concepts of mutations and Chromosomal abrasions میوٹیشن اور کروموسومل ایبریزنس کا بنیادی تصور 6.3.2. Genetic Disorders: Autosomal and sex chromosomal abnormalities جینیاتی عوارضات: آٹوسومل اور سیکس کروموسومل تغیرات 6.3.3. In-born errors of carbohydrate, protein, and lipid metabolism (general considerations) کاربوہائڈریٹس، پروٹین اور لپڈس کی خلقی خرابیاں (عمومی تصور)					
7	**M-7 Clinical Immunology and Oncology سریریائی امیونولوجی اور اونکولوجی** This 2 credit module with 3 Units is designed to equip students with essential knowledge and skills in immunology and oncology, fostering a comprehensive understanding vital for future healthcare professionals. Key topics include immune system functions, immune-mediated diseases, tumour immunology, and immunotherapy. The module also covers the mechanisms of cancer development, diagnostic approaches, and advancements in treatment strategies, equipping learners with a comprehensive understanding of immunological and oncological concepts in clinical practice. Through formative assessments, practical applications, and collaborative	2	10	20	30	60

	learning, students will bridge theoretical knowledge with clinical practice, integrating the principles of Unani medicine. The module adopts a holistic approach, blending the latest advancements in immunology and oncology with Unani fundamentals to provide a well-rounded understanding of these critical medical fields. • **M7.U1** Clinical Immunology (General Understanding and Brief Description) سریریاتی امیونولوجی (عمومی تفہیم اور مختصر بیان) 7.1.1 General understanding عام تفہیم 7.1.2. Fundamental concepts of the immune system امیون سسٹم کا بنیادی تصور 7.1.3. Mechanisms of immune response امیون رِسپونس کا میکانیہ 7.1.4. Common immunological disorders and their clinical implications عمومی امیونولوجیکل عوارضات اور انکے طبی مضمرات • **M7.U2** Clinical Oncology (General Understanding and Brief Description) کلنیکل اونکولوجی (عمومی تفہیم اور مختصر بیان) 7.2.1. General understanding عام تفہیم 7.2.2. Principles of cancer biology سرطانی حیاتیات کے اصول 7.2.3. Tumor development and progression سلعات کی تولید و ترقی 7.2.4. Diagnostic methods, treatment modalities تشخیصی ذرایع اور علاج کے طریقہ کار • **M7.U3** Palliative Care (پیلیےٹو کیر) 7.3.1. Introduction to palliative care پیلیےٹو کیر کا تعارت 7.3.2. Pain Management معالجاتِ وجع 7.3.3. Psychological, Social, and Spiritual care نفسیاتی، سماجی اور روحانی دیکھ بھال					
8	**M-8 Emergency Medicine امر بیسی میڈیسن** This module carries weightage of 2 credits and consisting 3 units. This module is designed to equip students with the essential skills and knowledge necessary for handling effective emergency medicine practice. It covers the clinical approach to critical care, the identification and assessment of deteriorating patients, and the principles of basic and advanced life support. This module offers	2	10	20	30	60

	a holistic approach to essential medical fields, combining the latest advancements in emergency medicine with Unani medicine, empowering students to practice medicine in a culturally competent and scientifically informed manner. • **M8.U1** Clinical approach in critical care نازک احوال کی نگہداشت میں سریریاتی اسلوب 8.1.1. Clinical approach to critical care شدید حالت کی دیکھ بھال کا طبی نقطہ نظر 8.1.2. Assessment and Management of critically ill patients شدید بیمار مریض کا تجزیہ اور علاج 8.1.3. Implemenation of basic and advanced life support techniques بنیادی اور اعلیٰ لائف سپورٹ تکنیک کا نفاذ • **M8.U2** Identification and assessment of deteriorating patient بگڑتے ہوئے مریضوں کی شناخت اور تجزیہ 8.2.1. Identification and assessment of deteriorating patients بگڑتے ہوئے مریضوں کی شناخت اور تجزیہ 8.2.2. Assessment of Unconscious patients بے ہوش مریض کا تجزیہ • **M8.U3** Basic and advanced life support بنیادی واعلیٰ قلبی لائف سپورٹ 8.3.1. Cardiopulmonary resuscitation (CPR) کارڈیو پلمونری ریسّی ٹیشن یا قلبی و ریوی افعال کی بحالی 8.3.2. Airway management تنفس کے مجاری کی دیکھ بھال 8.3.3. Advanced cardiac life support (ACLS) protocols اعلیٰ قلبی لائف سپورٹ پروٹوکالس					
		16	80	160	240	480

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

3A Course Outcome	3B Learning Objective (At the end of the (lecture/practical/experiential) learning session, the students should be able to)	3C Notional Learning Hours	3D Lecture/ Practical/ Experiential Learning	3E Domain/ Sub Domain	3F Level (Does/ Shows how/ Knows how/ Know)	3G Teaching Learning Methods
Module 1 : Medical Ethics, Clinical Pharmacology and Basics of Clinical Diagnosis طبی اخلاقیات، سریریات علم الادویہ ومبادیات سریریاتی تشخیص						
Module Learning Objectives **(At the end of the module, the students should be able to)** Describe the Medical Ethics and Etiquettes, Principles of Clinical Pharmacology and Prescription writing, Important aspects of History taking and General Physical Examination Conduct History taking and General physical examination exhibiting Medical ethics. Perform and Record the History taking and General physical examination and present it effectively.						
Unit 1 Medical Ethics طبی اخلاقیات 1.1.1. Medical Ethics and Professional Conduct in Patient Care طبی اخلاقیات اور مریض کی نگہداشت میں پیشہ ورانہ سلوک 1.1.2. Etiquettes of Physical Examination of Patients مریضوں کے جسمانی معائنہ کے آداب 1.1.3. Principles & Etiquettes of online or Telephonic consultations آن لائن یا ٹیلی فونک طبی مشاورت کے اصول اور آداب 1.1.4. Ethical considerations in issuing different medical certificates مختلف طبی سند جاری کرنے کے اخلاقی اعتبارات **References:** 1,2,3,4,5,6,7,8,9,10,11,12,13,14,15						

3A	3B	3C	3D	3E	3F	3G
CO1,CO5,CO6	Describe the Medical Ethics and Professional Conduct in patient care and Physical examination	1	Lecture	AFT-VAL	Knows-how	L,L&GD
CO1,CO5,CO6	Describe the Etiquettes of online or Tele-consultation and Ethical consideration in issuing different medical certificates	1	Lecture	AFT-VAL	Knows-how	L,L&GD,L&PPT
CO1,CO5,CO6	Demonstrate the Medical Ethics and Professional Conduct in patient care and Physical examination of patients	2	Practical1.1	AFT-VAL	Shows-how	PL,SDL
CO1,CO5,CO6	Demonstrate the Ethical consideration and Etiquettes of online or Tele-consultations and in issuing different medical certificates	2	Practical1.2	AFT-RES	Shows-how	DIS,PL
CO1,CO5,CO6	Exhibit the Medical Ethics, Empathy and Professional Conduct in patient care and Etiquettes of Physical examination of patients	2	Experiential - Learning1.1	AFT-REC	Does	ECE,SDL
CO1,CO5,CO6	Exhibit and demonstrate the Principles & Etiquettes of online or Tele-consultations and in issuing different medical certificates	2	Experiential - Learning1.2	AFT-REC	Does	RLE,SDL

Unit 2 Clinical Pharmacology سریریاتی علم الادویہ

1.2.1. Principles of Clinical Pharmacology
سریریاتی علم الادویہ کے اصول

1.2.2. Prescribing in practice
مطب و نسخہ نویسی

1.2.3. Adverse outcomes of drug therapy
علاج بالدوا کے منفی نتائج

1.2.4. Drug regulation and management
ادویات کے انضباط و انتظام

References: 1,2,3,4,5,6,7,8,9,10,11,12,13,14,15

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

CO1,CO5,CO6	Describe the Principles of Clinical Pharmacology and Prescription writing	2	Lecture	CK	Knows-how	L&GD,L&PPT
CO1,CO5,CO6	Describe the drug regulation & management and possible adverse outcomes of drug therapy	1	Lecture	CAP	Knows-how	L&GD,L&PPT
CO1,CO5,CO6	Demonstrate Prescription writing in clinical practice	6	Practical1.3	PSY-ORG	Shows-how	D,D-BED
CO1,CO5,CO6	Conduct the prescription writing by following the principles of clinical pharmacology	7	Experiential - Learning1.3	PSY-ADT	Does	CBL,PL,PER,PBL

Unit 3 Basics of Clinical Diagnosis **مبادیات سریریاتی حیصص**

1.3.1. General interrogation and History Taking
عمومی استفسارات و روداد مریض

1.3.2. General Physical Examination of Patient
امتحان مریض عمومی

1.3.3. Examination of Vital signs
حیاتی نشانیوں کا امتحان

1.3.4. Case Record and case presentation
کیس کو قلمبند اور پیش کرنا

References: 1,2,3,4,5,6,7,8,9,10,11,12,13,14,15

3A	3B	3C	3D	3E	3F	3G
CO1,CO5,CO6	Describe important aspects of interrogations and History taking	2	Lecture	CAP	Knows-how	L&GD,L&PPT
CO1,CO5,CO6	Describe the General physical examination	2	Lecture	CAP	Knows-how	L&GD,L&PPT,L_VC
CO1,CO5,CO6	Describe the importance of Vital signs and their variations	1	Lecture	CE	Knows-how	L&GD,L&PPT

CO1,CO5,CO6	Demonstrate the Process of History taking	4	Practical1.4	PSY-GUD	Shows-how	D,D-BED,SIM
CO1,CO5,CO6	Demonstrates general physical examination of the patient and record vital signs	6	Practical1.5	PSY-GUD	Shows-how	D,D-BED,SIM
CO1,CO5,CO6	Conduct History taking and General physical examination and Perform examination of Vital signs	10	Experiential - Learning1.4	PSY-ADT	Does	CD,CBL, DIS,PER
CO1,CO5,CO6	Record a case by history taking and General physical examination including vitals and Present the case	5	Experiential - Learning1.5	PSY-MEC	Does	CD,CBL, DIS,PER

Practical Training Activity

Practical 1.1 : Medical Ethics in Patient care and Physical examination

Total Learning hours (2)

Activity 1: The teacher will demonstrate the Medical Ethics throughout patient care, especially in cases involving ethical dilemmas (e.g., informed consent, handling non-compliant patients, delivering bad news etc.) and performing physical examination. (1 hour)

Activity 2: The student will exhibit etiquette and Medical Ethics in Physical examination of patient under direct observation of teacher and exhibit Ethics in adverse situations (handling non-compliant patients and delivering bad news etc.) (1 hour)

Practical 1.2 : Ethics and Etiquette of online consultations and in issuing different medical certificates

Total Learning hours (2)

Activity 1: The teacher will demonstrate how to adhere to the principles and Ethics of telemedicine and maintain professionalism throughout the consultation. (1 hour)

Activity 2: The student will exhibit etiquette of online or tele-consultancy while talking to patients online/ telephonically, under direct observation of teacher. (1 hour)

Practical 1.3 : Prescription writing in clinical practice

Total Learning hours (6)-- (5-6 cases)

Activity 1: Prescription Writing Basics and Common Mistakes (1 hour)

The teacher will initially give a brief overview of Prescription Writing and its key elements viz. Patient Information (Name, age, gender, address), Drug Information (Generic name, brand name, dosage form, strength, quantity, instructions for use), Dosage Instructions (Frequency, route of administration, duration) and finally to put Prescriber Information (Signature, date, contact details)

The teacher should also make them aware of common mistakes in prescription writing viz. incorrect drug names or abbreviations, ambiguous dosage instructions, incorrect use of units or symbols etc.

Activity 2: Demonstration of Writing Prescriptions (2 hours)

The teachers shall demonstrate prescription writing in real time in OPD or IPD, and simultaneously describe each aspect of the prescription.

Activity 3: Prescription Writing Practical (3 hours)

Students will individually write prescriptions for their assigned cases in OPD as well as in IPD. Students will record all these in the Practical Record book for evaluation.

The teacher should verify the prescription for accuracy and appropriateness and allow the student to justify.

Practical 1.4 : History taking

Total Learning hours (4)

Activity 1: Brief introduction of History taking, manners, etiquette, and basic principles (1 hour)

The teacher shall provide a theoretical overview of history taking, manner of communication, etiquette of interaction with patients, and basic principles of history taking.

Students should be allowed to ask questions, and the teacher should clarify concepts they may find challenging.

Activity 2: Demonstration of History taking (1 hour)

The teacher shall demonstrate history taking through proper history taking of a patient before the students.

Activity 3: Practical (2 hours)

The students will be divided into small groups or pairs, with each group assigned a patient or simulated patients. The students will conduct history taking by interacting with the assigned patient and record the details in their practical Notebook for evaluation.

Practical 1.5 : General Physical Examination and Vital signs

Total Learning hours (6)

Activity 1: Introduction to General Physical Examination and Vital Signs (1 hour)

The teacher shall provide a theoretical overview of the components of the general physical examination and how to accurately record vital signs.

Clarifications: Students should be allowed to ask questions, and the teacher should clarify concepts they may find challenging.

Activity 2: Hands-on Practice of General Physical Examination (2 hours)

The teacher shall provide hands-on practice for the students to conduct a thorough physical examination including General Appearance (alertness, distress, body habitus), Skin Examination (rashes, cyanosis, pallor, edema etc.) Head and Neck Examination (Jugular vien, carotid artery, and lymph nodes) on a patient, and shall demonstrate recording the vital signs.

Activity 3: Practical (3 hours in 2 sessions)

The students will be divided into small groups or pairs with each group assigned a patient or simulated patients. The students will conduct practically the General Physical Examination and record the vital signs.

The student shall record the findings of practical in their Notebook for evaluation.

Experiential learning Activity

Experiential-Learning 1.1 : Medical Ethics in Patient care and Physical examination

Total Learning hours (2)

Activity 1: Empathy and Professionalism in Patient Interaction (1 hour 30 minutes)

To practice demonstrating empathy, medical ethics, and professional conduct during patient interactions, with a focus on maintaining dignity and respect while addressing patient concerns. The student should maintain the confidentiality of the patients, and protect patient privacy.

Activity 2: Group Reflection and Feedback (30 minutes)

Each pair or the group will briefly reflect on their experience, sharing the challenges they faced and how they tried to demonstrate empathy and professionalism.

Experiential-Learning 1.2 : Principles & Etiquettes of online consultations and in issuing different medical certificates

Total Learning hours (2)

Activity 1: Tele-Consultation Role-Play and Feedback (1 hour 30 minutes)

Make teleconsultaion to practice the principles and etiquette of online/ telemedicine consultations, ensuring learners can effectively communicate, manage patient concerns, and maintain professionalism.

Activity 2: Group Debrief and Feedback (30 minutes)

After each role-play, the group will gather to discuss the experience. Each participant will provide constructive feedback on their peers' performance, focusing on the aspects of clarity, communication, professionalism, and patient engagement.

Experiential-Learning 1.3 : Clinical Pharmacology and Prescription writing

Total Learning hours (7)-- (atleast 7 cases)

Activity 1: Prescription Writing Practice with Case Scenarios (3 hours)

The students shall apply the principles of clinical pharmacology to write accurate and appropriate prescriptions for different patient scenarios. The students will get different clinical case scenarios, each scenario requiring appropriate medications, dosing, and route of administration. Below each prescription, the student should justify their choice of drugs, dose with timings and route. This activity may be done at both OPD and IPD of the hospital and recorded in their logbook for evaluation.

Activity 2: Group Review and Peer Feedback (2 hours)

Students will then exchange their prescriptions in pairs or small groups for review, and after reviewing, each student will provide constructive feedback on the prescription's accuracy, appropriateness of drug choice, and completeness.

Activity 3: Presentation (2 hours)

The student will present the recorded prescriptions of different case/ case scenarios with justification in the departmental seminar and should get their logbook checked by teacher.

Experiential-Learning 1.4 : History taking, General physical examination and Vital signs

Total Learning hours (10)-- (3-4 cases)

Activity 1: History Taking (3 hours)

The Student shall takeup a case in the hospital and take a detailed and comprehensive history, including Chief complaint, History of present illness, Past medical history, Family history, Social history, and Review of systems. Simultaneously, the information will be recorded in the logbook of the student.

Activity 2: General Examination and Vitals (3 hours)

The student shall conduct a complete general examination of the patient covering all key areas viz. General appearance, skin, head & neck, chest, abdomen, musculoskeletal, and neurological examination.

This will be followed by recording of vital signs viz. body temperature, blood pressure, heart rate, respiratory rate and oxygen saturation accurately by using appropriate instruments/ equipments.

Activity 3: Case Presentation & Discussion (4 hours)

After completing the history and physical examination, each student will present their findings in a structured format to the concerned teacher or in the departmental seminar.

Experiential-Learning 1.5 : Case recording and Presentation

Total Learning hours (5)

Activity 1: History Taking (1.5 hours)

The Student shall takeup a case in the hospital and take a detailed and comprehensive history including Chief complaint, History of present illness, Past medical history, Family history, Social history, and Review of systems. Simultaneously, the information will be recorded in the logbook of the student.

Activity 2: General Examination and Vitals (1.5 hours)

The student shall conduct a complete general examination of the patient covering all key areas viz. General appearance, skin, head & neck, chest, abdomen, musculoskeletal, and neurological examination.

This will be followed by recording of vital signs viz. body temperature, blood pressure, heart rate, respiratory rate and oxygen saturation accurately by using appropriate instruments/ equipments.

Activity 3: Case Presentation & Discussion (2 hours)

After completing the history and physical examination, each student will present their findings in a structured format to the concerned teacher or in the departmental seminar.

Modular Assessment

Assessment method	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 6. Case-based assessment: (50 marks) Each student will be given a General case for History taking and General Physical Examination and to write General guidelines of Prescription writing to note as a Case Sheet. Or Direct observation of Procedure or Observed Structured Clinical Examination (OSCE) (50 marks) Or Any practical in converted form can be taken for assessment. (25 marks) and Any experiential, such as portfolios/ reflections/ presentations can be taken as an assessment. (25 marks)	4

3A Course Outcome	3B Learning Objective (At the end of the (lecture/practical/experiential) learning session, the students should be able to)	3C Notional Learning Hours	3D Lecture/ Practical/ Experiential Learning	3E Domain/ Sub Domain	3F Level (Does/ Shows how/ Knows how/ Know)	3G Teaching Learning Methods
Module 2 : Clinical Basics of Gastrointestinal, Uro-Genital and Musculoskeletal diseases امراض معدی ومعوی، بول و تناسل اور عظام و مفاصل کی سریریاتی مبادیاتی						
Module Learning Objectives **(At the end of the module, the students should be able to)** Describe Applied anatomy and physiology of Gastrointestinal system, Uro-Genital and Musculoskeletal system. Conduct History taking and Physical examination for GI, Uro-Genital and Musculoskeletal diseases. Propose and Formulate the line of treatment and write prescription for GI, Uro-Genital and Musculoskeletal diseases.						
Unit 1 Clinical Basics of Gastrointestinal diseases امراض معدی ومعوی کے سریریاتی مبادیت 2.1.1. Applied Anatomy and Physiology of Gastrointestinal system نظام ہضم کی اطلاقی تشریح و منافع الاعضاء 2.1.2. Clinical Examination and Diagnosis of Gastrointestinal diseases امراض معدی و معوی کا سریریاتی امتحان و تشخیص 2.1.3. Investigations and Recent Advancements in Diagnosis of Gastrointestinal diseases تفتیشات و جدید اضافات برائے تشخیص امراض معدی و معوی 2.1.4. Uṣūl-i-Ilāj (Principles of treatment) اصول علاج i. Ilāj-Bil-Ghizā (Dietotherapy) علاج بالغذاء ii. Ilāj-Bit-Tadbīr (Regimenal therapy) علاج بالتدبیر iii. Ilāj-Bil-Dawā (Pharmacotherapy) علاج بالدواء **References:** 1,2,3,4,5,6,7,8,9,10,11,12,13,14,15						
3A	3B	3C	3D	3E	3F	3G

CO1,CO2,CO4,CO6,CO8	Describe the Applied Anatomy and Physiology of the Gastrointestinal system	1	Lecture	CK	Knows-how	L&GD,L&PPT ,L_VC
CO1,CO2,CO4,CO6,CO8	Describe clinical diagnosis of Gastrointestinal diseases based on History taking and Physical examination	2	Lecture	CE	Knows-how	CD,L&PPT ,L_VC
CO1,CO2,CO4,CO6,CO8	Describe the required basic and advanced investigations for the diagnosis and Explain the Principles of Treatment including Ilaj bil Ghiza, Ilaj bil Tadbeer and Ilaj bil Dawa for Gastrointestinal diseases	1	Lecture	CAP	Knows-how	L&GD,L&PPT ,PL
CO1,CO2,CO4,CO6,CO8	Demonstrate the History taking and Physical examination for the Gastrointestinal diseases	6	Practical2.1	PSY-GUD	Shows-how	CD,D-BED
CO1,CO2,CO4,CO6,CO8	Discuss the required basic and advanced investigations for the diagnosis and explain the Principles of Treatment pertaining to Gastrointestinal diseases	2	Practical2.2	PSY-ORG	Shows-how	CBL,DIS,IBL
CO1,CO2,CO4,CO6,CO8	Conduct clinical diagnosis based on History taking and Physical examination for Gastrointestinal diseases	8	Experiential-Learning2.1	PSY-ADT	Does	CD,CBL,LRI,PAL,PER,SDL
CO1,CO2,CO4,CO6,CO8	Conduct Differential Diagnosis on the basis of investigations and formulate line of treatment; write appropriate prescriptions for Gastrointestinal diseases.	4	Experiential-Learning2.2	CAP	Does	BS,CBL,DIS,LRI

Unit 2 Clinical Basics of Uro-Genital diseases امراض بول وتناسل کے سریریاتی مبادیت

2.2.1. Applied Anatomy and Physiology of Uro-Genital system
نظام بول و تناسل کی اطلاقی تشریح و منافع الاعضاء

2.2.2. Clinical Examination and Diagnosis of Uro-Genital diseases
امراض بول و تناسل کا سریریاتی امتحان و تشخیص

2.2.3. Investigations and Recent Advancements in Diagnosis of Uro-Genital diseases
تفتیشات و جدید اضافات برائے تشخیص امراض بول و تناسل

2.2.4. Uṣūl-i-Ilāj (Principles of treatment) اصول علاج
I. Ilāj-Bil-Ghizā (Dietotherapy) علاج بالغذاء

II. Ilāj-Bit-Tadbīr (Regimenal therapy) علاج بالتدبیر
III. Ilāj-Bil-Dawā (Pharmacotherapy) علاج بالدواء

References: 1,2,3,4,5,6,7,8,9,10,11,12,13,14,15

3A	3B	3C	3D	3E	3F	3G
CO1,CO2,CO4,CO6,CO8	Describe the Applied Anatomy and Physiology of the Uro-Genital system	1	Lecture	CK	Knows-how	L&GD,L&PPT ,L_VC
CO1,CO2,CO4,CO6,CO8	Describe clinical diagnosis of Uro-Genital diseases based on History taking and Physical examination	1	Lecture	CE	Knows-how	BS,L&GD,L&PPT ,L_VC
CO1,CO2,CO4,CO6,CO8	Describe the required basic and Advanced investigations for the diagnosis and explain the Principles of Treatment for Uro-Genital diseases	1	Lecture	CAP	Knows-how	L&GD,L&PPT
CO1,CO2,CO4,CO6,CO8	Demonstrate the History taking and Physical examination for the Uro-Genital diseases	4	Practical2.3	PSY-GUD	Shows-how	CD,CBL,D-BED
CO1,CO2,CO4,CO6,CO8	Discuss the required basic and advanced investigations and explain the Principles of Treatment pertaining to Uro-Genital diseases	2	Practical2.4	CAP	Shows-how	BS,CD,LRI
CO1,CO2,CO4,CO6,CO8	Conduct clinical diagnosis based on History taking and physical examination for Uro-Genital diseases.	5	Experiential-Learning2.3	PSY-ADT	Does	CD,CBL,PER
CO1,CO2,CO4,CO6,CO8	Conduct Differential Diagnosis on the basis of investigations and formulate line of treatment; write appropriate prescriptions for Uro-Genital diseases.	2	Experiential-Learning2.4	CAP	Does	BS,CBL,D,D-BED,LRI

Unit 3 Clinical Basics of Musculoskeletal Diseases امراض عظام ومفاصل کے سریریاتی مبادیات

2.3.1. Applied Anatomy and Physiology of Musculoskeletal system
نظام عظام و مفاصل کی اطلاقی تشریح و منافع الاعضاء

2.3.2. Clinical Examination and Diagnosis of Musculoskeletal diseases
امراض عظام و مفاصل کا سریریاتی امتحان و تشخیص

2.3.3. Investigations and Recent Advancements in Diagnosis of Musculoskeletal diseases
تفتیشات و جدید اضافات برائے تشخیص امراض عظام و مفاصل

2.3.4. Uṣūl-i-Ilāj (Principles of treatment) اصول علاج
I. Ilāj-Bil-Ghizā (Dietotherapy) علاج بالغذاء
II. Ilāj-Bit-Tadbīr (Regimenal therapy) علاج بالتدبیر
III. Ilāj-Bil-Dawā (Pharmacotherapy) علاج بالدواء

References: 1,2,3,4,5,6,7,8,9,10,11,12,13,14,15

3A	3B	3C	3D	3E	3F	3G
CO1,CO2,CO4,CO6,CO8	Describe the Applied Anatomy and Physiology of the Musculoskeletal system	1	Lecture	CK	Knows-how	L,L&GD,L&PPT
CO1,CO2,CO4,CO6,CO8	Describe History taking and physical examination of Musculoskeletal diseases	1	Lecture	CE	Knows-how	CD,L&GD,L&PPT ,L_VC
CO1,CO2,CO4,CO6,CO8	Describe required basic and Advanced investigations for the diagnosis and Explain the Principles of Treatment for Musculoskeletal diseases.	1	Lecture	CAP	Knows-how	CD,L&GD,L&PPT ,L_VC
CO1,CO2,CO4,CO6,CO8	Demonstrate the History taking and physical examination for the Musculoskeletal diseases and discuss the required basic and advanced investigations for the diagnosis and explain the Principles of Treatment pertaining to Musculoskeletal diseases	6	Practical2.5	PSY-GUD	Shows-how	CD,CBL,D,D-BED,LRI
CO1,CO2,CO4,CO6,CO8	Conduct clinical diagnosis based on History taking and physical examination for Musculoskeletal diseases.	5	Experiential-Learning2.5	PSY-ADT	Does	CD,DIS,PER
CO1,CO2,CO4,CO6,CO8	Conduct Differential Diagnosis on the basis of investigations and formulate line of treatment for Musculoskeletal diseases; write appropriate prescriptions for Musculoskeletal diseases	2	Experiential-Learning2.6	CS	Does	CD,D,D-BED,LRI,PER

Practical Training Activity

Practical 2.1 : History taking and Physical examination of Gastrointestinal diseases

Total Learning hours (6)-- (atleast 2 cases)

Activity 1: History taking (1 hour)

The teacher will demonstrate history taking in detail, exploring all symptoms presented by the patient from the onset, progression, and current status.

Activity 2: Bedside demonstration of Clinical examination (2 hours)

The teacher will demonstrate clincal examination of patient sufferig from Gastrointestinal diseases, including Inspection, Palpation, Percussion and Auscultation in order to make a provisional diagnosis.

Activity 3: Practical (2 hours)

The students will take detailed history of the patients of Gastrointestinal diseases, and perform physical examination at bedside to make clinical diagnosis in the presence of the teacher.

Activity 4: Presentation and Discussion (1 hour)

This will be the last activity, the student will present the case to the teacher and justify the diagnosis and management of that particular patient. The teacher and peer may have positive and critical discussions on the diagnosis and management.

Practical 2.2 : Investigations and Principles of Treatment for Gastrointestinal Diseases

Total Learning hours (2)

Activity 1: Anaylsis of investigations and Formulating line of treatment for Gastrointestinal Diseases (1 hour)

Teacher will advice required basic and advanced investigations to confirm the provisional diagnosis and to rule out differential diagnosis and explain the already carried out investigations. On the basis of provisional diagnosis the teacher will describe line of treatment and propose a prescription.

Activity 2: Practical (1 hour)

The student will Analyze the already carried-out investigations and may propose further investigation and finally propose the treatment for that specific diagnosis related to Gastrointestinal Diseases and explain and justify them.

Practical 2.3 : History taking and Physical Examination for Uro-Genital diseases

Total Learning hours (4)-- (atleast 2 cases)

Activity 1: Bedside demonstration (1 hour)

The teacher will demonstrate history taking and Physical Examination, including Inspection, Palpation and Percussion of Patients of Uro-Genital diseases.

Activity 2: Practical (2 hours)

The students will take detailed history of the patients of Uro-Genital diseases, and perform physical examinations including Inspection, Palpation, and Percussion at the bedside to make clinical diagnosis in the presence of the teacher.

Activity 3: Presentation and Discussion (1 hour)

This will be the last activity, the student will present the case to the teacher and justify the diagnosis of that particular patient. The teacher and peer may have positive and critical discussions on the diagnosis made.

Practical 2.4 : Investigations and Principles of treatment for Uro-Genital diseases

Total Learning hours (2)-- (at least 2 cases)

Activity 1: Anaylsis of investigations and Formulating line of treatment for Uro-Genital diseases (1 hour)

Teacher will advice required basic and advanced investigations to confirm the provisional diagnosis and to rule out differential diagnosis and explain the already carried out investigations. On the basis of provisional diagnosis the teacher will describe line of treatment and propose a prescription.

Activity 2: Practical (1 hours)

The student will Analyze the already carried-out investigations and may propose further investigation and finally propose the treatment for that specific diagnosis related to Uro-Genital diseases and explain and justify them.

Practical 2.5 : Clinical Diagnosis and Management of Musculoskeletal diseases

Total Learning hours (6)-- (atleast 2 cases)

Activity 1: Clinical Diagnosis (2 hours)

The teacher will demonstrate history taking and Physical Examination, including Inspection and Palpation of Patients of Musculoskeletal diseases.

Activity 2: Management of Musculoskeletal diseases (1 hour)

Teacher will make a Provisional diagnosis clinically, and will advice required basic and advanced investigations to confirm the provisional diagnosis and to rule out differential diagnosis. On the basis of provisional diagnosis the teacher will describe line of treatment and propose a prescription.

Activity 3: Practical (2 hours)

The students will take detailed history of the patients of Musculoskeletal diseases, and perform physical examination on the bedside to make clinical diagnosis in the presence of the teacher. Analyze the already carried-out investigations and may propose further investigation, and finally propose the treatment for that specific diagnosis.

Activity 4: Presentation and Discussion (1 hour)

This will be the last activity, the student will present the case to the teacher and justify the diagnosis and management of that particular patient. The teacher and peer may have positive and critical discussions on the diagnosis and management.

Experiential learning Activity

Experiential-Learning 2.1 : History taking and Physical Examination for Gastrointestinal diseases

Total Learning hours(8)-- (at least 3 cases)

Activity 1: History taking (2 hours)

The students shall interact with the patients suffering from Gastrointestinal diseases, and take a detailed history from the onset, progression and current status of the disease. This activity may be done at both OPD and IPD of the hospital and recorded in their logbook for evaluation.

Activity 2: Physical Examination of patient with Gastrointestinal diseases. (4 hours)

The student will conduct physical examination on patients with Gastrointestinal diseases, covering all aspects including inspection, palpation, percussion and auscultation, and any specific test/ manoeuvre to establish a provisional diagnosis.

Activity 3: Presentation (2 hours)

The student will present the recorded history and examination of different case/ case scenarios with justification in the departmental seminar and should get their logbook checked by teacher.

Experiential-Learning 2.2 : Investigations and Principles of treatment for Gastrointestinal diseases

Investigations and Principles of treatment for Gastrointestinal diseases (atleast 2 cases) (4 hours)

Activity 1: Case-Based Differential Diagnosis (2 hour)

The student shall propose the required and advanced investigations (including blood tests like CBC, LFT and Imaging like X-ray, USG, endoscopy etc.) to confirm the provisional diagnosis and to rule out differential diagnoses for the specific case of Gastrointestinal diseases.

Activity 2: Treatment plan (1 hour)

The students will formulate a line of treatment and write a prescription with complete details (dosage form, dose, timings and duration etc.) for the specific Gastrointestinal diseases with justification and shall note all in a Logbook.

Activity 3: Presentation (1 hour)

The student may demonstrate and explain the same to UG students in the ward or later may present in the departmental seminar with justifications of investigations and proposed treatment for Gastrointestinal diseases.

Experiential-Learning 2.3 : History taking and Physical examination for Uro-Genital diseases

Total Learning (5)-- (atleast 2 cases)

Activity 1: History taking of patients of Uro-Genital diseases (2 hours)

The students shall interact with the patients suffering from anyUro-Genital diseases, and take a detailed history of onset and progression of the disease. This activity may be done at both OPD and IPD of the hospital and recorded in their logbook for evaluation.

Activity 2: Physical Examination of patient with Uro-Genital diseases. (2 hours)

The student will conduct physical examination on patients with Uro-Genital diseases, covering all aspects including inspection and palpation and any specific test/ manoeuvre

Activity 3: Presentation (1 hour)

The student will present the recorded prescriptions of different case/ case scenarios with justification in the departmental seminar and should get their logbook checked by teacher.

Experiential-Learning 2.4 : Investigations and Prinicples of treatment for Uro-Genital diseases.

Total Learning hours (2)-- (atleast for 2 cases)

Activity 1: Case-Based Differential Diagnosis (1 hour)

The student shall propose the required and advanced investigations (including blood tests like CBC, KFT, Urine tests, and Imaging like X-ray, USG etc.) to confirm the provisional diagnosis and to rule out differential diagnoses for the specific case of Uro-Genital diseases.

The students will formulate a line of treatment and write a prescription with complete details (dosage form, dose, timings and duration etc.) for the specific Uro-Genital diseases with justification and shall note all in a Logbook.

Activity 2: Presentation (1 hour)

The student may demonstrate and explain the same to UG students in the ward or later may present in the departmental seminar with justifications of investigations and proposed treatment.

Experiential-Learning 2.5 : History taking and Physical examination for Musculoskeletal diseases.

Total Learning hours (5)-- (atleast 2 cases)

Activity 1: History taking of patients of Musculoskeletal diseases (2 hours)

The students shall interact with the patients suffering from any Musculoskeletal diseases, and take a detailed history of onset and progression of the disease. This activity may be done at both OPD and IPD of the hospital and recorded in their logbook for evaluation.

Activity 2: Physical Examination of patient with Musculoskeletal diseases. (2 hours)

The student will conduct physical examination on patients with Musculoskeletal diseases, covering all aspects including inspection and palpation and any specific test/ manoeuvre

Activity 3: Presentation (1 hour)

The student will present the recorded prescriptions of different case/ case scenarios with justification in the departmental seminar and should get their logbook checked by teacher.

Experiential-Learning 2.6 : Investigations and Principles of treatment for Musculoskeletal diseases.

Total Learning hours (2)-- (atleast for 2 cases)

Activity 1: Case-Based Differential Diagnosis (1 hour)

The student shall propose the required and advanced investigations (including blood tests like CRP, ANA, RA Factor, Uric Acid, ASO Titre, and Imaging like X-ray, MRI etc.) to confirm the provisional diagnosis and to rule out differential diagnoses for the specific case of Musculoskeletal disorder.

The students will formulate a line of treatment and write a prescription for the specific Musculoskeletal disease with justification and shall note all in a Logbook.

Activity 3: Presentation (1 hour)

The student may demonstrate and explain the same to UG students in the ward or later may present in the departmental seminar with justifications of investigations and proposed treatment.

Modular Assessment

Assessment method	**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 6. Case-based assessment: (50 marks) Each student will be given a specific case of GI system or Uro-genital or Musculoskeletal system for History taking and Systemic physical examination, advise basic and advanced investigations to Confirm the Provisional diagnosis and to rule out Differential diagnosis and finally to write Principles of treatment and a specific prescription for that case. Or Direct observation of Procedure or Observed Structured Clinical Examination (OSCE) of any of the systems covered in this module. (50 marks) Or Any practical in converted form can be taken for assessment. (25 marks) and Any experiential, such as portfolios/ reflections/ presentations can be taken as an assessment. (25 marks)	4

3A Course Outcome	3B Learning Objective (At the end of the (lecture/practical/experiential) learning session, the students should be able to)	3C Notional Learning Hours	3D Lecture/ Practical/ Experiential Learning	3E Domain/ Sub Domain	3F Level (Does/ Shows how/ Knows how/ Know)	3G Teaching Learning Methods
Module 3 : Clinical Basics of Respiratory, Cardiovascular and Skin Diseases امراض تنفس، قلب و دوران خون اور جلد کی سریریاتی مبادیات						
Module Learning Objectives **(At the end of the module, the students should be able to)** Describe Applied anatomy and physiology of Respiratory, Cardiovascular and Integumentary system. Conduct History taking and Physical examination for Respiratory, Cardiovascular and Skin diseases. Propose and Formulate the line of treatment and write prescription for Respiratory, Cardiovascular and Skin diseases.						
Unit 1 Clinical Basics of Respiratory Diseases امراض تنفس کی سریراتی مبادیات 3.1.1. Applied Anatomy and Physiology of Respiratory system نظام تنفس کی اطلاقی تشریح و منافع الاعضاء 3.1.2. Clinical Examination and Diagnosis of Respiratory diseases امراض تنفس کا سریریاتی امتحان و تشخیص 3.1.3. Investigations and Recent Advancements in Diagnosis of Respiratory diseases تفتیشات و جدید اضافات برائے تشخیص امراض تنفس 3.1.4. Uṣūl-i-Ilāj (Principles of treatment) اصول علاج I. Ilāj-Bil-Ghizā (Dietotherapy) علاج بالغذاء II. Ilāj-Bit-Tadbīr (Regimenal therapy) علاج بالتدبیر III. Ilāj-Bil-Dawā (Pharmacotherapy) علاج بالدواء **References:** 1,2,3,4,5,6,7,8,9,10,11,12,13,14,15						
3A	3B	3C	3D	3E	3F	3G

CO1,CO2,CO4,CO6,CO8	Describe the Applied Anatomy and Physiology of the Respiratory system	1	Lecture	CK	Knows-how	L,L&PPT ,L_VC
CO1,CO2,CO4,CO6,CO8	Describe History taking and Physical examination for Respiratory diseases	2	Lecture	CE	Knows-how	CD,L&PPT ,L_VC
CO1,CO2,CO4,CO6,CO8	Describe the required basic and advanced investigations and explain Principles of Treatment for Respiratory diseases.	1	Lecture	CAP	Knows-how	CD,L,L&GD,L&PPT ,L_VC
CO1,CO2,CO4,CO6,CO8	Demonstrate the History taking and Physical examination for the Respiratory diseases	5	Practical3.1	PSY-GUD	Shows-how	CD,D,D-BED
CO1,CO2,CO4,CO6,CO8	Discuss the required basic and advanced investigations for the diagnosis and explain the Principles of Treatment pertaining to Respiratory diseases	3	Practical3.2	CAP	Shows-how	CD,D,D-BED,LRI
CO1,CO2,CO4,CO6,CO8	Conduct clinical diagnosis based on History taking and Physical examination for Respiratory diseases.	7	Experiential-Learning3.1	PSY-ADT	Does	CD,CBL,PER,SDL
CO1,CO2,CO4,CO6,CO8	Conduct Differential Diagnosis on the basis of investigations and formulate line of treatment; write appropriate prescriptions for Respiratory diseases.	3	Experiential-Learning3.2	CS	Does	CD,CBL,LRI,PL,PER

Unit 2 Clinical Basics of Cardiovascular Diseases امراض قلب و دوران خون کی سریریاتی مبادیات

3.2.1. Applied Anatomy and Physiology of Cardiovascular system
نظام قلب و دوران خون کی اطلاقی تشریح و منافع الاعضاء

3.2.2. Clinical Examination and Diagnosis of Cardiovascular diseases
امراض قلب و دوران خون کا سریریاتی امتحان و تشخیص

3.2.3. Investigations and Recent Advancements in Diagnosis of Cardiovascular diseases
تفتیشات و جدید اضافات برائے تشخیص امراض قلب و دوران خون

3.2.4. Uṣūl-i-Ilāj (Principles of treatment) اصول علاج
I. Ilāj-Bil-Ghizā (Dietotherapy) علاج بالغذاء
II. Ilāj-Bit-Tadbīr (Regimenal therapy) علاج بالتدبیر
III. Ilāj-Bil-Dawā (Pharmacotherapy) علاج بالدواء

References: 1,2,3,4,5,6,7,8,9,10,11,12,13,14,15

3A	3B	3C	3D	3E	3F	3G
CO1,CO2,CO4,CO6,CO8	Describe the Applied Anatomy and Physiology of the Cardiovascular system	1	Lecture	CK	Knows-how	L&GD,L&PPT ,L_VC
CO1,CO2,CO4,CO6,CO8	Describe History taking and Physical examination for Cardiovascular diseases	2	Lecture	CE	Knows-how	CD,L&GD,L&PPT ,L_VC
CO1,CO2,CO4,CO6,CO8	Describe the required basic and advanced investigations and explain Principles of Treatment for Cardiovascular diseases.	1	Lecture	CAP	Knows-how	BS,CD,LRI,L&GD,L&PPT
CO1,CO2,CO4,CO6,CO8	Demonstrate the History taking and Physical examination for the Cardiovascular diseases	5	Practical3.3	PSY-GUD	Shows-how	CD,CBL,D,D-BED
CO1,CO2,CO4,CO6,CO8	Discuss the required basic and advanced investigations for the diagnosis and explain the Principles of Treatment pertaining to Cardiovascular diseases	3	Practical3.4	CE	Shows-how	BS,CD,D,D-BED,LRI
CO1,CO2,CO4,CO6,CO8	Conduct clinical diagnosis based on History taking and Physical examination for Cardiovascular diseases.	7	Experiential-Learning3.3	PSY-ADT	Does	CD,CBL,D,D-BED,PER
CO1,CO2,CO4,CO6,CO8	Conduct Differential Diagnosis on the basis of investigations and formulate line of treatment; write appropriate prescriptions for Cardiovascular diseases.	3	Experiential-Learning3.4	CAN	Does	BS,CD,CBL,D,LRI,PER

Unit 3 Clinical Basics of Skin Diseases امراض جلد کی سریر یائی مبادیات

3.3.1. Applied Anatomy and Physiology of Integumentary system
جلد کی اطلاقی تشریح و منافع الاعضاء

3.3.2. Clinical Examination and Diagnosis of Skin diseases
امراض جلد کا سریر یائی امتحان و تشخیص

3.3.3. Investigations and Recent Advancements in Diagnosis of Skin diseases
تفتیشات و جدید اضافات برائے تشخیص امراض جلد

3.3.4. Uṣūl-i-Ilāj (Principles of treatment) اصول علاج
I. Ilāj-Bil-Ghizā (Dietotherapy) علاج بالغذاء

II. Ilāj-Bit-Tadbīr (Regimenal therapy) علاج بالتدبير
III. Ilāj-Bil-Dawā (Pharmacotherapy) علاج بالدواء

References: 1,2,3,4,5,6,7,8,9,10,11,12,13,14,15

3A	3B	3C	3D	3E	3F	3G
CO1,CO2,CO4,CO6,CO8	Describe the Applied Anatomy and Physiology of the Integumentary system and explain History taking for Skin diseases.	1	Lecture	CK	Knows-how	L&GD,L&PPT ,L_VC
CO1,CO2,CO4,CO6,CO8	Describe Physical examination, required basic and advance investigations and Principles of treatment for Skin diseases.	1	Lecture	CE	Knows-how	CD,L&GD,L&PPT ,L_VC
CO1,CO2,CO4,CO6,CO8	Demonstrate the History taking and Physical examination for the Skin diseases	3	Practical3.5	PSY-GUD	Shows-how	CD,D,D-BED
CO1,CO2,CO4,CO6,CO8	Discuss the required basic and advanced investigations for the diagnosis and explain the Principles of Treatment pertaining to Skin diseases	1	Practical3.6	CAP	Shows-how	BS,CD,D,LRI
CO1,CO2,CO4,CO6,CO8	Conduct clinical diagnosis based on History taking and Physical examination for Skin diseases.	4	Experiential-Learning3.5	PSY-ADT	Does	CD,CBL,D,DIS,PL,PER
CO1,CO2,CO4,CO6,CO8	Conduct Differential Diagnosis on the basis of investigations and formulate line of treatment; write appropriate prescriptions for Skin diseases.	2	Experiential-Learning3.6	CS	Does	BS,CD,D,LRI,PL,PER

Practical Training Activity

Practical 3.1 : History and Physical examination for Respiratory diseases

Total Learning hours (5)-- (atleast 2 cases)

Activity 1: History taking (1 hour)

The teacher will demonstrate history taking in detail, exploring all symptoms presented by the patient for Respiratory diseases from its onset, progression, and current status.

Activity 2: Bedside demonstration of Clinical examination (1 hour)

The teacher will demonstrate clinical examination covering all aspects including inspection, palpation, percussion, and auscultation to establish a provisional diagnosis of patients suffering from Respiratory diseases.

Activity 3: Practical (3 hours)

The students will take detailed history of the patients of Respiratory diseases, and perform physical examination at bedside covering all aspects including inspection, palpation, percussion, and auscultation to make clinical diagnosis in the presence of the teacher. The student will later present before the teacher and peer and note all in practical notebook.

Practical 3.2 : Investigations and Principles of treatment for Respiratory diseases

Total Learning hours (3)-- (atleast 2 cases)

Activity 1: Anaylsis of investigations and Formulating line of treatment for Respiratory diseases (1 hour)

The teacher will advice required basic and advanced investigations to confirm the provisional diagnosis and to rule out differential diagnosis. On the basis of provisional diagnosis the teacher will describe line of treatment and propose a prescription.

Activity 2: Practical (2 hours)

The student will Analyze the already carried-out investigations and may propose further investigations and finally propose the treatment for that specific diagnosis related to Respiratory diseases and explain and justify them to the teacher and peer.

Practical 3.3 : History taking and Physical examination for Cardiovascular diseases

Total Learning hours (5)-- (atleast 2 cases)

Activity 1: History taking (1 hour)

The teacher will demonstrate history taking in detail, exploring all symptoms presented by the patient for Cardiovascular diseases from its onset, progression, and current status.

Activity 2: Bedside demonstration of Clinical examination (1 hour)

The teacher will demonstrate clinical examination covering all aspects including inspection, palpation, percussion, and auscultation to establish a provisional diagnosis of patients suffering from Cardiovascular diseases.

Activity 3: Practical (3 hours)

The students will take detailed history of the patients of Cardiovascular diseases, and perform physical examination at bedside covering all aspects including inspection, palpation, percussion, and auscultation to make clinical diagnosis in the presence of the teacher. The student will later present before the teacher and peer and note all in practical notebook.

Practical 3.4 : Investigations and Principles of treatment for Cardiovascular diseases

Total Learning hours (3)-- (atleast 2 cases)

Activity 1: Anaylsis of investigations and Formulating line of treatment for Cardiovascular diseases (1 hour)

The teacher will advice required basic and advanced investigations to confirm the provisional diagnosis and to rule out differential diagnosis. On the basis of provisional diagnosis the teacher will describe line of treatment and propose a prescription.

Activity 2: Practical (2 hours)

The student will Analyze the already carried-out investigations and may propose further investigations and finally propose the treatment for that specific diagnosis related to Cardiovascular diseases and explain and justify them to the teacher and peer.

Practical 3.5 : History taking and Physical examination for Skin diseases

Total Learning hours (3)

Activity 1: History taking (30 minutes)

The teacher will demonstrate history taking in detail, exploring all symptoms presented by the patient for Skin diseases from its onset, progression, and current status.

Activity 2: Bedside demonstration of Clinical examination (30 minutes)

The teacher will demonstrate clinical examination of patient suffering from Skin diseases in order to make a provisional diagnosis.

Activity 3: Practical (2 hours)

The students will take detailed history of the patients of Skin diseases, and perform physical examination at bedside to make clinical diagnosis in the presence of the teacher.

Practical 3.6 : Investigations and Principles of treatment for Skin diseases

Total Learning hours (1)

Activity 1: Anaylsis of investigations and Formulating line of treatment for Skin diseases (30 minutes)

Teacher will advice required basic and advanced investigations to confirm the provisional diagnosis and to rule out differential diagnosis. On the basis of provisional diagnosis the teacher will describe line of treatment and propose a prescription.

Activity 2: Practical (30 minutes)

The student will Analyze the already carried-out investigations and may propose further investigation and finally propose the treatment for that specific diagnosis related to Skin diseases and explain and justify them to the teacher and peer.

Experiential learning Activity

Experiential-Learning 3.1 : History taking and Physical examination for Respiratory diseases

Total Learning hours (7)-- (2-3 cases)

Activity 1: History taking (2 hours)

The students shall interact with the patients suffering from Respiratory diseases, and take a detailed history from the onset, progression and current status of the disease. This activity may be done at both OPD and IPD of the hospital and recorded in their logbook for evaluation.

Activity 2: Physical Examination of patient with Respiratory diseases. (3 hours)

The student will conduct physical examination on patients with Respiratory diseases, covering all aspects including inspection, palpation, percussion and auscultation to establish a provisional diagnosis.

Activity 3: Presentation (2 hours)

The student will present the recorded history and examination of different case/ case scenarios with justification in the departmental seminar and should get their logbook checked by the teacher.

Experiential-Learning 3.2 : Investigations and Principles of treatment for Respiratory diseases

Total Learning hours (3)

Activity 1: Case-Based Differential Diagnosis (1.5 hours)

The student shall propose the required and advanced investigations (including blood tests like CBC, imaging like X-ray, CT etc.) to confirm the provisional diagnosis and to rule out differential diagnoses for the specific case of Respiratory diseases.

Activity 2: Treatment of Respiratory diseases (1.5 hours)

The students will formulate a line of treatment and write a prescription for the specific Cardiovascular diseases with justification and shall note all in a Logbook, and may present the details in the departmental seminar.

Experiential-Learning 3.3 : History taking and Physical examination for Cardiovascular diseases

Total Learning hours (7)-- (3-4 cases)

Activity 1: History taking (2 hours)

The students shall interact with the patients suffering from Cardiovascular diseases, and take a detailed history from the onset, progression and current status of the disease. This activity may be done at both OPD and IPD of the hospital and recorded in their logbook for evaluation.

Activity 2: Physical Examination of patient with Cardiovascular diseases. (3 hours)

The student will conduct physical examination on patients with Cardiovascular diseases, covering all aspects including inspection, palpation, percussion and auscultation to establish a provisional diagnosis.

Activity 3: Presentation (2 hours)

The student will present the recorded history and examination of different case/ case scenarios with justification in the departmental seminar and should get their logbook checked by the teacher.

Experiential-Learning 3.4 : Investigations and Principles of treatment for Cardiovascular diseases

Total Learning hours (3)-- (atleast 2 cases)

Activity 1: Case-Based Differential Diagnosis (1.5 hours)

The student shall propose the required and advanced investigations (including blood tests like CBC, Lipid profile, ECG, Echocardiography etc.) to confirm the provisional diagnosis and to rule out differential diagnoses for the specific case of Cardiovascular diseases.

Activity 2: Treatment of Cardiovascular diseases (1.5 hours)

The students will formulate a line of treatment and write a prescription for the specific Cardiovascular diseases with justification and shall note all in a Logbook, and may present the details in the departmental seminar.

Experiential-Learning 3.5 : History taking and Physical examinatin for Skin diseases

Total Learning hours (4)

Activity 1: History taking of patients of Skin diseases (2 hours)

The students shall interact with the patients suffering from any Skin diseases, and take a detailed history of the onset, progression and current status of the disease. This activity may be done at both OPD and IPD of the hospital and recorded in their logbook for evaluation.

Activity 2: Physical Examination of patient with Skin diseases (1 hour)

The student will conduct physical examination on patients with Skin diseases, focusing on inspection and keen observation, and if required palpation.

Activity 3: Presentation (1 hour)

The student will present the recorded prescriptions of different case/ case scenarios with justification in the departmental seminar and should get their logbook checked by teacher.

Experiential-Learning 3.6 : Investigations and Principles of treatment for Skin diseases

Total Learning hours (2)-- (atleast for 2 cases)

Activity 1: Case-Based Differential Diagnosis (1 hour)

The student shall propose the required and advanced investigations (including blood tests like CBC, Blood culture and other tests like Skin scraping, pus culture etc.) to confirm the provisional diagnosis and to rule out differential diagnoses for the specific case of Skin diseases.

Activity 2: Treatment of skin diseases (1 hour)

The students will formulate a line of treatment and write a prescription for the specific Skin diseases with justification and shall note all in a Logbook, and may present the details in the departmental seminar.

Modular Assessment	
Assessment method	**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 6. Case-based assessment: (50 marks) Each student will be given a specific case of Respiratory or Cardiovascular or Skin disease. History taking and Systemic physical examination, advise basic and advanced investigations to Confirm the Provisional diagnosis and to rule out Differential diagnosis and finally to write Principles of treatment and a specific prescription for that case. Or Direct observation of Procedure or Observed Structured Clinical Examination (OSCE) for Auscultation of Respiratory system and Cardiovascular system and thier explaination. (50 marks) Or Any practical in converted form can be taken for assessment. (25 marks) and Any experiential, such as portfolios/ reflections/ presentations can be taken as an assessment. (25 marks)	4

3A Course Outcome	3B Learning Objective (At the end of the (lecture/practical/experiential) learning session, the students should be able to)	3C Notional Learning Hours	3D Lecture/ Practical/ Experiential Learning	3E Domain/ Sub Domain	3F Level (Does/ Shows how/ Knows how/ Know)	3G Teaching Learning Methods
Module 4 : Clinical Basics of CNS, Psychiatry and Endocrinal diseases امرض دماغ واعصاب، نفسیات اور غدد لاقناتیہ کے سریریاتی مبادیات						
Module Learning Objectives **(At the end of the module, the students should be able to)** Describe Applied anatomy and physiology of CNS and Endocrinal system. Conduct History taking and Physical examination for CNS, Psychiatric and Endocrinal diseases. Propose and Formulate the line of treatment and write prescription for CNS, Psychiatric and Endocrinal diseases.						
Unit 1 Clinical Basics of CNS diseases امراض دماغ واعصاب کی سریریاتی مبادیات 4.1.1. Applied Anatomy and Physiology of Central Nervous system نظام دماغ و اعصاب کی اطلاقی تشریح و منافع الاعضاء 4.1.2. Clinical Examination and Diagnosis of CNS diseases امراض نظام دماغ و اعصاب کا سریریاتی امتحان و تشخیص 4.1.3. Investigations and Recent Advancements in Diagnosis of CNS diseases تفتیشات و جدید اضافات برائے تشخیص امراض دماغ و اعصاب 4.1.4. Uṣūl-i-Ilāj (Principles of treatment) اصول علاج I. Ilāj-Bil-Ghizā (Dietotherapy) علاج بالغذاء II. Ilāj-Bit-Tadbīr (Regimenal therapy) علاج بالتدبیر III. Ilāj-Bil-Dawā (Pharmacotherapy) علاج بالدواء **References:** 1,2,3,4,5,6,7,8,9,10,11,12,13,14,15						
3A	3B	3C	3D	3E	3F	3G

CO1,CO2,CO4,CO6,CO8	Describe the Applied Anatomy and Physiology of the Central Nervous system	1	Lecture	CK	Knows-how	L&GD,L&PPT ,L_VC
CO1,CO2,CO4,CO6,CO8	Describe History taking and Physical examination of CNS diseases.	2	Lecture	CE	Knows-how	CBL,L,L&GD,L&PPT ,L_VC
CO1,CO2,CO4,CO6,CO8	Describe the required basic and advanced investigations and Principles of Treatment for the diagnosis of CNS diseases.	1	Lecture	CE	Knows-how	BS,CD,L&GD,L&PPT
CO1,CO2,CO4,CO6,CO8	Demonstrate the Clinical Diagnosis by History taking and Physical examination for the CNS diseases	6	Practical4.1	PSY-GUD	Shows-how	CD,D,D-BED
CO1,CO2,CO4,CO6,CO8	Discuss the required basic and advanced investigations and Principles of Treatment pertaining to CNS diseases.	2	Practical4.2	CAP	Shows-how	BS,CD,D,LRI
CO1,CO2,CO4,CO6,CO8	Conduct clinical diagnosis based on History taking and physical examination for CNS diseases	8	Experiential-Learning4.1	PSY-ADT	Does	CD,D,D-BED,PER
CO1,CO2,CO4,CO6,CO8	Conduct Differential Diagnosis on the basis of investigations and formulate line of treatment; write appropriate prescriptions for CNS diseases.	4	Experiential-Learning4.2	CS	Does	BS,CD,D,DIS,LRI,PER
CO1,CO2,CO4,CO6,CO8	Describe the required basic and advanced investigations and Principles of Treatment for the diagnosis of Psychiatric diseases.	1	Lecture	CE	Knows-how	BS,CD

Unit 2 Clinical Basics of Psychiatric disorders امراض نفسیات کی سریریائی مبادیات

4.2.1. Clinical Examination and Diagnosis of Psychiatric diseases
امراض نفسیات کا سریریاتی امتحان و تشخیص

4.2.2. Investigations and Recent Advancements in Diagnosis of Psychiatric diseases
تفتیشات و جدید اضافات برائے تشخیص امراض نفسیات

4.2.3. Uṣūl-i-Ilāj (Principles of treatment) اصول علاج
I. Ilāj-Bil-Ghizā (Dietotherapy) علاج بالغذاء
II. Ilāj-Bit-Tadbīr (Regimenal therapy) علاج بالتدبیر
III. Ilāj-Bil-Dawā (Pharmacotherapy) علاج بالدواء

References: 1,2,3,4,5,6,7,8,9,10,11,12,13,14,15

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

CO1,CO2,CO4,CO6,CO8	Describe History taking and Physical examination for Psychiatric diseases.	2	Lecture	CE	Knows-how	CD,L&GD,L&PPT ,L_VC
CO1,CO2,CO4,CO6,CO8	Demonstrate the Clinical Diagnosis for the Psychiatric diseases	4	Practical4.3	PSY-GUD	Shows-how	CD,CBL,D,KL
CO1,CO2,CO4,CO6,CO8	Discuss the required basic and advanced investigations and Principles of Treatment pertaining to Psychiatric diseases.	2	Practical4.4	CAP	Shows-how	CD,D,DIS,LRI,PT
CO1,CO2,CO4,CO6,CO8	Conduct clinical diagnosis based on History taking and physical examination for Psychiatric diseases.	5	Experiential-Learning4.3	PSY-ADT	Does	CD,CBL,D,D-BED,PER
CO1,CO2,CO4,CO6,CO8	Conduct Differential Diagnosis on the basis of investigations and formulate line of treatment; write appropriate prescriptions for Psychiatric diseases.	2	Experiential-Learning4.4	CS	Does	BS,CD,D,LRI,PER

Unit 3 Clinical Basics of Endocrinal diseases امراض غدد لاقناتیہ کی سریریاتی مبادیات

4.3.1. Applied Anatomy and Physiology of Endocrine system
نظام غدد لاقناتی کی اطلاقی تشریح و منافع الاعضاء

4.3.2. Clinical Examination and Diagnosis of Endocrinal diseases
امراض غدد لاقناتیہ کا سریریاتی امتحان و تشخیص

4.3.3. Investigations and Recent Advancements in Diagnosis of Endocrinal diseases
تفتیشات و جدید اضافات برائے تشخیص امراض غدد لاقناتیہ

4.3.4. Uṣūl-i-Ilāj (Principles of treatment) اصول علاج
I. Ilāj-Bil-Ghizā (Dietotherapy) علاج بالغذاء
II. Ilāj-Bit-Tadbīr (Regimenal therapy) علاج بالتدبیر
III. Ilāj-Bil-Dawā (Pharmacotherapy) علاج بالدواء

References: 1,2,3,4,5,6,7,8,9,10,11,12,13,14,15

3A	3B	3C	3D	3E	3F	3G
CO1,CO2,CO4,CO6,CO8	Describe the Applied Anatomy and Physiology of the Endocrine system	1	Lecture	CK	Knows-how	L&GD,L&PPT ,L_VC

CO1,CO2,CO4,CO6,CO8	Describe History taking and Physical examination for Endocrinal diseases.	1	Lecture	CE	Knows-how	CD,L&GD,L&PPT ,L_VC
CO1,CO2,CO4,CO6,CO8	Describe the required basic and advanced investigations and Principles of Treatment for the diagnosis of Endocrinal diseases.	1	Lecture	CAP	Knows-how	BS,CD,LRI,L&PPT ,L_VC
CO1,CO2,CO4,CO6,CO8	Demonstrate the Clinical Diagnosis based on History taking and physical examination for the Endocrinal diseases	4	Practical4.5	PSY-GUD	Shows-how	CD,CBL,D,D-BED
CO1,CO2,CO4,CO6,CO8	Discuss the required basic and advanced investigations and Principles of Treatment pertaining to Endocrinal diseases.	2	Practical4.6	CAP	Shows-how	BS,CD,LRI
CO1,CO2,CO4,CO6,CO8	Conduct clinical diagnosis based on History taking and physical examination for Endocrinal diseases.	5	Experiential-Learning4.5	PSY-ADT	Does	CD,D,D-BED,PER
CO1,CO2,CO4,CO6,CO8	Conduct Differential Diagnosis on the basis of investigations and formulate line of treatment; write appropriate prescriptions for Endocrinal diseases.	2	Experiential-Learning4.6	CAN	Does	BS,CD,D,D-BED,LRI,PER

Practical Training Activity

Practical 4.1 : History taking and Physical examination for CNS diseases

Total Learning hours (6)-- (atleast 2 cases)

Activity 1: History taking (1 hour)

The teacher will demonstrate history taking in detail, exploring all symptoms presented by the patient for CNS diseases from its onset, progression, and current status.

Activity 2: Bedside demonstration of Clinical examination (2 hour)

The teacher will demonstrate clinical examination covering all aspects to establish a provisional diagnosis of patients suffering from CNS diseases.

Activity 3: Practical (3 hours)

The students will take detailed history of the patients of CNS diseases, and perform physical examination at bedside covering all aspects to make clinical diagnosis in the presence of the teacher. The student will later present before the teacher and peer and note all in practical notebook.

Practical 4.2 : Investigations and Principles of treatment for CNS diseases

Total Learning hours (2)-- (atleast 2 cases)

Activity 1: Anaylsis of investigations and Formulating line of treatment for CNS diseases (1 hour)

The teacher will advice required basic and advanced investigations to confirm the provisional diagnosis and to rule out differential diagnosis. On the basis of provisional diagnosis the teacher will describe line of treatment and propose a prescription.

Activity 2: Practical (1 hour)

The student will Analyze the already carried-out investigations and may propose further investigations and finally propose the treatment for that specific diagnosis related to CNS diseases and explain and justify them to the teacher and peer.

Practical 4.3 : History taking and Examination for Psychiatric diseases

Total Learning hours (4)

Activity 1: History taking (1 hour)

The teacher will demonstrate history taking in detail, exploring all symptoms presented by the patient for Psychiatric diseases from its onset, progression, and current status.

Activity 2: Bedside demonstration of Clinical examination (1 hour)

The teacher will demonstrate clinical examination covering all aspects to establish a provisional diagnosis of patients suffering from Psychiatric diseases.

Activity 3: Practical (2 hours)

The students will take detailed history of the patients of Psychiatric diseases, and perform physical examination at bedside covering all aspects to make clinical diagnosis in the presence of the teacher. The student will later present before the teacher and peer and note all in practical notebook.

Practical 4.4 : Investigations and Principles of treatment for Psychiatric diseases

Total Learning hours (2)

Activity 1: Anaylsis of investigations and Formulating line of treatment for Psychiatric diseases (1 hour)

The teacher will advice required basic and advanced investigations to confirm the provisional diagnosis and to rule out differential diagnosis. On the basis of provisional diagnosis the teacher will describe line of treatment and propose a prescription.

Activity 2: Practical (1 hour)

The student will Analyze the already carried-out investigations and may propose further investigations and finally propose the treatment for that specific diagnosis related to Psychiatric diseases and explain and justify them to the teacher and peer.

Practical 4.5 : History taking and Physical examination for Endocrinal diseases

Total Learning hours (4)-- (atleast 2 cases)

Activity 1: History taking (1 hour)

The teacher will demonstrate history taking in detail, exploring all symptoms presented by the patient for Endocrinal diseases from its onset, progression, and current status.

Activity 2: Bedside demonstration of Clinical examination (1 hour)

The teacher will demonstrate clinical examination covering all aspects to establish a provisional diagnosis of patients suffering from Endocrinal diseases.

Activity 3: Practical (2 hours)

The students will take detailed history of the patients of Endocrinal diseases, and perform physical examination at bedside covering all aspects to make clinical diagnosis in the presence of the teacher. The student will later present before the teacher and peer and note all in practical notebook.

Practical 4.6 : Investigations and Principles of treatment for Endocrinal diseases

Total Learning hours (2)

Activity 1: Anaylsis of investigations and Formulating line of treatment for Endocrinal diseases (1 hour)

The teacher will advice required basic and advanced investigations to confirm the provisional diagnosis and to rule out differential diagnosis. On the basis of provisional diagnosis the teacher will describe line of treatment and propose a prescription.

Activity 2: Practical (1 hour)

The student will Analyze the already carried-out investigations and may propose further investigations and finally propose the treatment for that specific diagnosis related to Endocrinal diseases and explain and justify them to the teacher and peer.

Experiential learning Activity

Experiential-Learning 4.1 : History taking and Physical Examination for CNS diseases

Total Learning hours (8)-- (3-4 cases)

Activity 1: History taking (2 hours)

The students shall interact with the patients suffering from CNS diseases, and take a detailed history from the onset, progression and current status of the disease. This activity may be done at both OPD and IPD of the hospital and recorded in their logbook for evaluation.

Activity 2: Physical Examination of patient with CNS diseases. (4 hours)

The student will conduct physical examination or specific test/ manoeuvre on patients of CNS diseases, to establish a provisional diagnosis.

Activity 3: Presentation (2 hours)

The student will present the recorded history and examination of different case/ case scenarios with justification in the departmental seminar and should get their logbook checked by teacher.

Experiential-Learning 4.2 : Investigations and Principles of treatment for CNS diseases

Total Learning hours (4)-- (atleast 2 cases)

Activity 1: Case-Based Differential Diagnosis (2 hours)

The student shall propose the required and advanced investigations to confirm the provisional diagnosis and to rule out differential diagnoses for the specific case of CNS diseases.

Activity 2: Treatment of CNS diseases (2 hours)

The students will formulate a line of treatment and write a prescription for the specific Psychiatric diseases with justification and shall note all in a Logbook, and may present the details in the departmental seminar.

Experiential-Learning 4.3 : History taking and Physical examination for Psychiatric diseases

Total Learning hours (5)

Activity 1: History taking (2 hours)

The students shall interact with the patients suffering from Psychiatric diseases, and take a detailed history from the onset, progression and current status of the disease. This activity may be done at both OPD and IPD of the hospital and recorded in their logbook for evaluation.

Activity 2: Physical Examination of patient with Psychiatric diseases. (2 hours)

The student will conduct physical examination or specific test/ manoeuvre on patients of Psychiatric diseases, to establish a provisional diagnosis.

Activity 3: Presentation (1 hour)

The student will present the recorded history and examination of different case/ case scenarios with justification in the departmental seminar and should get their logbook checked by teacher.

Experiential-Learning 4.4 : Investigations and Principles of treatment for Psychiatric diseases

Total Learning hours (2)

Activity 1: Case-Based Differential Diagnosis (1 hour)

The student shall propose the required and advanced investigations to confirm the provisional diagnosis and to rule out differential diagnoses for the specific case of Psychiatric diseases.

Activity 2: Treatment of Psychiatric diseases (1 hour)

The students will formulate a line of treatment and write a prescription for the specific Psychiatric diseases with justification and shall note all in a Logbook, and may present the details in the departmental seminar.

Experiential-Learning 4.5 : History taking and physical examination for Endocrinal diseases

Total Learning hours (5)-- (atleast 2 cases)

Activity 1: History taking (2 hours)

The students shall interact with the patients suffering from Endocrinal diseases, and take a detailed history from the onset, progression and current status of the disease. This activity may be done at both OPD and IPD of the hospital and recorded in their logbook for evaluation.

Activity 2: Physical Examination of patient with Endocrinal diseases. (2 hours)

The student will conduct physical examination or specific test/ manoeuvre on patients of Endocrinal diseases, to establish a provisional diagnosis.

Activity 3: Presentation (1 hour)

The student will present the recorded history and examination of different case/ case scenarios with justification in the departmental seminar and should get their logbook checked by teacher.

Experiential-Learning 4.6 : Investigations and Principles of treatment for Endocrinal diseases

Total Learning hours (2)-- (atleast 2 cases)

Activity 1: Case-Based Differential Diagnosis (1 hour)

The student shall propose the required and advanced investigations (including blood tests like CBC, Lipid profile, Blood Suger, Thyroid profile etc.) to confirm the provisional diagnosis and to rule out differential diagnoses for the specific case of Endocrinal diseases.

Activity 2: Treatment of Endocrinal diseases (1 hour)

The students will formulate a line of treatment and write a prescription for the specific Endocrinal diseases with justification and shall note all in a Logbook, and may present the details in the departmental seminar.

Modular Assessment

Assessment method	**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 6. Case-based assessment: (50 marks) Each student will be given a specific case of CNS, Psychiatry or Endocrinal disease. History taking and Systemic physical examination, advise basic and advanced investigations to Confirm the Provisional diagnosis and to rule out Differential diagnosis and finally to write Principles of treatment and a specific prescription for that case.	4

Or Direct observation of Procedure or Observed Structured Clinical Examination (OSCE) for Motor or Sensory functions. (50 marks) Or Direct observation of Procedure or Observed Structured Clinical Examination (OSCE) for any 2 Cranial nerves examination. (50 marks) Or Any practical in converted form can be taken for assessment. (25 marks) and Any experiential, such as portfolios/ reflections/ presentations can be taken as an assessment. (25 marks)	

3A Course Outcome	3B Learning Objective (At the end of the (lecture/practical/experiential) learning session, the students should be able to)	3C Notional Learning Hours	3D Lecture/ Practical/ Experiential Learning	3E Domain/ Sub Domain	3F Level (Does/ Shows how/ Knows how/ Know)	3G Teaching Learning Methods
Module 5 : Clinical Biochemistry سریریائی حیائی کیمیا						
Module Learning Objectives **(At the end of the module, the students should be able to)** Describe the structure, classification, metabolism and biochemical roles of carbohydrates, proteins, lipids, haemoglobin, enzymes, vitamins and biochemical correlation of body fluids. Interpret the pH levels, bicarbonate, and carbon dioxide in body fluids, to diagnose the condition. Perform real-life case studies, identifying deficiencies in biomolecule metabolism, and applying biochemical knowledge to recommend appropriate clinical interventions and treatments. Participate in simulated scenarios of drug development, gaining hands-on experience with drug discovery, and preclinical and clinical trials.						
Unit 1 Basic biochemistry and Clinical Considerations of Biomolecules مبادیات حیائی کیمیااور جزئیات حیوی کے سریریائی اعتبارات 5.1.1 Basic biochemistry of Carbohydrates,lipids, amino acids and Proteins کاربو ہائڈریٹ، لیپیڈس، امینو ایسڈ اور پروٹین کی بنیادی حیاتی کیمیا 5.1.2 Enzymes خامرات 5.1.2.1 General characteristics of enzymes خامرات کی عمومی خصوصیات 5.1.2.2 Classifications of enzymes خامرات کی تقسیم 5.1.2.3 Assay methods and Kinetics assay جانچ کے طریقے اور حرکی جانچ **References:** 16,17,18,19,20						
3A	**3B**	**3C**	**3D**	**3E**	**3F**	**3G**

CO1,CO2,CO3,CO7	Define the structure and classification of carbohydrates, lipids, amino acids, and proteins and describe its chemical properties and functions.	2	Lecture	CK	Know	L&PPT ,L_VC
CO1,CO2,CO3,CO7	Define the general characteristics of enzymes, including their catalytic nature and specificity; describe the classifications of enzymes based on their functions and mechanisms and various assay methods used to measure enzyme activity.	2	Lecture	CK	Knows-how	L&PPT ,L_VC
CO1,CO2,CO3,CO7	Observe the Conduction of assays to measure enzyme activity and analyze the effects of varying conditions on enzyme performance, and demonstrate the classification of enzymes based on their functions and mechanisms through practical applications.	8	Practical5.1	PSY-ADT	Shows-how	D,D-M,DIS
CO1,CO2,CO3,CO7	Conduct hands-on experiments to explore enzyme activity in real-time reactions and collaborate in group discussions and case studies to evaluate the role of enzymes in metabolic pathways, fostering a deeper understanding of their significance in health and disease.	8	Experiential-Learning5.1	PSY-ADT	Shows-how	DIS,PER,SIM,W

Unit 2 Vitamins and Minerals حیاتین‌ومعدنیات

5.2.1 Clinical Biochemistry and Applications of Vitamins and Minerals
سریریاتی حیاتی کیمیا اور حیاتین و معدنیات کے موافع استعمال

5.2.2 IUBMB nomenclature ofEnzymes, Vitamins and other Bio-chemicals
خامرات، حیاتین و دیگر حیاتی کیمیائیہ کی آئی یو بی ایم بی نام بندی

References: 16,17,18,19,20

3A	3B	3C	3D	3E	3F	3G
CO1,CO2,CO3,CO7	Discuss the role of vitamins and minerals in clinical biochemistry; explain IUBMB nomenclature for naming enzymes and biochemicals and describe the biochemical pathways that involve vitamins and minerals.	2	Lecture	CK	Knows-how	L&PPT ,L_VC
CO1,CO2,CO3,CO7	Analyze the effects of vitamins and minerals on human health through practical experiments that demonstrate their roles in biochemical processes and evaluate biochemical pathways involving vitamins and minerals through practical assessments, highlighting their significance in metabolism and disease prevention.	4	Practical5.2	CAN	Shows-how	CBL,DL,D-M

CO1,CO2,CO3,CO7	Conduct hands-on activities to explore the impact of vitamins and minerals on health, allowing students to connect theoretical knowledge with real-world applications in clinical biochemistry and collaborate in group projects to classify enzymes and biochemicals using IUBMB nomenclature, fostering teamwork and enhancing understanding of their significance in health and disease.	6	Experiential-Learning5.2	PSY-ADT	Does	PER,PrBL,RP,TBL

Unit 3 Metabolic Pathways میٹابولک پاتھوے

5.3.1. Metabolic pathways of Carbohydrates, Proteins, Lipids, and Haemoglobin
کاربو ہاے ڈریٹس، پروٹینس اور ہیمو گلوبن کے میٹابولک پاتھ وے

References: 16,17,18,19,20

3A	3B	3C	3D	3E	3F	3G
CO1,CO2,CO3,CO7	Describe the metabolic pathways of carbohydrates, proteins, lipids, and hemoglobin, focusing on their biochemical processes.	2	Lecture	CK	Knows-how	L&PPT ,L_VC
CO1,CO2,CO3,CO7	Demonstrate the steps involved in the metabolic pathways of carbohydrates, proteins, lipids, and hemoglobin through laboratory experiments.	4	Practical5.3	CC	Shows-how	CBL,DL,D-M,PER,SIM
CO1,CO2,CO3,CO7	Analyze case studies to assess the effects of metabolic pathway disruptions in health and disease, linking theoretical knowledge to practical scenarios.	6	Experiential-Learning5.3	PSY-ADT	Does	DIS,PL,PER,TPW

Unit 4 Body Fluids and Acid-Base Balance جسمانی سیالات اور توازن حمضی والکی

5.4.1. Classification of body fluids and their biochemical co-relation
جسمانی سیالات کی تقسیم اور انکا حیاتی کیمیائی ارتباط

5.4.2. Body fluids and Biochemical considerations of humours
جسمانی سیالات اور اخلاط کا حیاتی کیمیاوی اعتبارات

5.4.3. Acid base balance, imbalance and its clinical significance
ایسڈ اور بیس کا توازن و عدم توازن اور انکی سریریانی اہمیت

References: 16,17,18,19,20

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

CO1,CO2,CO3,CO7	Analyze and classify the various body fluids and describe their biochemical correlation with health and disease.	2	Lecture	CK	Knows-how	BL,L&PPT
CO1,CO2,CO3,CO7	Demonstrate and Analyze the biochemical composition of body fluids and humours to understand their significance in Unani medicine.	4	Practical5.4	CAN	Shows-how	CBL,D,D-BED,PER
CO1,CO2,CO3,CO7	Evaluate clinical scenarios involving acid-base balance and its implications for patient care, linking theoretical concepts to real-Patients	6	Experiential-Learning5.4	PSY-ADT	Does	PER,RLE,SIM,W

Practical Training Activity

Practical 5.1 : Classification and activities of Enzyme

Total Learning hours (8)

Activity 1: Enzyme Assay Demonstration (1 hour)

The teacher will demonstrate a basic enzyme assay using catalase or amylase to measure reaction rate.

Activity 2: Effect of Temperature and pH on Enzyme Activity (2 hours)

The teacher will show how varying temperatures influence enzyme reaction speed and stability and changes in enzyme activity across different pH levels, and later students will follow the same.

Activity 3: Substrate Concentration Impact (2 hours)

The teacher will demonstrate how varying substrate concentrations affect the rate of enzyme-catalyzed reactions, and later students will follow the same.

Activity 4: Classification of Enzymes by Reaction Type (1 hour)

The teacher will demonstrate practical examples of oxidoreductases, transferases, hydrolases, etc.

Activity 5: Case-Based Interpretation of Enzyme Function in Clinical Biochemistry (2 hours)

The teacher will present clinical cases (e.g., liver or cardiac enzyme tests) to discuss diagnostic relevance.

Practical 5.2 : Analytical and Demonstative practical learning

Total Learning hours (4)

Activity 1: Clinical Case Study on Micronutrient Deficiency Disorders (1 hour)

Students will evaluate case scenarios of patients with vitamin and mineral deficiencies (e.g., scurvy, rickets, anemia), identifying clinical symptoms and biochemical basis.

Activity 2: Nutrient Analysis Workshop with Food Samples (1 hour)

Students will perform qualitative tests on food samples to detect the presence of essential vitamins and minerals and discuss their role in metabolic pathways.

Activity 3: Enzyme Classification Group Challenge (1 hour)

Students will be divided into groups and given a list of enzymes; they must classify them according to IUBMB nomenclature and present their clinical relevance.

Activity 4: Simulation of Clinical Biochemistry Lab Interpretation (1 hour)

Students will interpret lab reports showing vitamin/mineral levels (e.g., serum calcium, folate, vitamin D) and recommend further diagnostic and therapeutic steps.

Activity 5: Role-Play: Counseling Patients on Micronutrient Importance (1 hour)

Students will simulate patient counseling sessions, educating about the dietary and therapeutic roles of vitamins and minerals in disease prevention and treatment.

Activity 6: Biochemical Pathway Mapping Project (1 hour)

Students will collaboratively map biochemical pathways involving coenzymes and classify related enzymes, linking their dysfunctions with specific diseases.

Practical 5.3 : Metabolic pathways of carbohydrates, proteins, lipids, and hemoglobin

Total Learning hours (4)

Activity 1: Carbohydrate Metabolism Demonstration (1 hour)

The teacher will demonstrate glucose oxidation and tests for intermediate products like pyruvate and lactate.

Activity 2: Protein Catabolism Experiment (1 hour)

The teacher will show protein digestion using enzymes (e.g., pepsin, trypsin) and detect amino acid end products.

Activity 3: Lipid Breakdown and Ketone Detection (1 hour)

The teacher will perform lipid digestion and demonstrates detection of ketone bodies in metabolic samples.

Activity 4: Hemoglobin Metabolism and Bilirubin Estimation (1 hour)

The teacher will explain hemoglobin breakdown and demonstrates bilirubin estimation in serum.

Practical 5.4 : Biochemical composition of body fluids and humours

Total Learning hours (4)

Activity 1: Biochemical Analysis of Blood and Urine (1 hour)

The teacher will demonstrate the estimation of glucose, urea, creatinine, and proteins in blood and urine samples to assess internal biochemical balance.

Activity 2: Interpretation of Humoural Imbalance through Body Fluids (1 hour)

The teacher will explain how biochemical parameters relate to the dominance or imbalance of Akhlaat (Dam, Balgham, Safra, Sauda) in Unani medicine.

Activity 3: Microscopic Examination of Body Fluids (1 hour)

The teacher will guide microscopic analysis of samples like urine and sputum to detect abnormal cells, crystals, or infections.

Activity 4: Case-Based Correlation of Biochemistry and Mizaj (1 hour)

The teacher will present clinical cases where students analyze lab reports and correlate findings with Su-e-Mizaj and Unani diagnosis.

Experiential learning Activity

Experiential-Learning 5.1 : Enzyme activity and the role of enzymes in metabolic pathways

Total Learning hour (8)

Activity 1: Enzyme Kinetics Lab: Effect of Substrate Concentration (1 hour)

Students will perform an experiment measuring enzyme activity at different substrate concentrations, plotting Michaelis-Menten curves to understand enzyme efficiency.

Activity 2: Temperature and pH Impact on Enzyme Function (1 hour)

Through hands-on lab work, students will explore how environmental factors like temperature and pH affect enzyme activity using standard reactions (e.g., catalase or amylase).

Activity 3: Case Study Discussion: Enzyme Deficiency Disorders (1 hour)

Students will analyze cases such as lactose intolerance, Tay-Sachs disease, or G6PD deficiency, linking clinical features to underlying enzymatic dysfunctions.

Activity 4: Inhibition Experiment: Competitive vs Non-Competitive (1 hour)

Students will conduct an experiment to observe the effects of enzyme inhibitors and differentiate between types of inhibition through graphical analysis.

Activity 5: Simulation-Based Learning: Enzymes in Metabolic Pathways (1 hour)

Using digital or board simulations, students will trace enzyme-catalyzed steps in key pathways (e.g., glycolysis or Krebs cycle) and analyze the impact of enzyme dysfunction.

Activity 6: Group Presentation on Clinical Enzymology (1 hour)

Each group will research and present on enzymes used as biomarkers (e.g., ALT, AST, CK-MB), emphasizing their diagnostic relevance in specific diseases.

Activity 7: Peer Teaching Workshop on Enzyme Classification (1 hour)

Students will teach each other enzyme classes based on IUBMB nomenclature, with examples from digestion, metabolism, and clinical biochemistry.

Activity 8: Reflective Discussion: Enzymes in Health and Disease (1 hour)

In small groups, students will reflect on the significance of enzymes in maintaining health and how their imbalance contributes to disease, supported by clinical examples.

Experiential-Learning 5.2 : Impact of vitamins and minerals on health, and IUBMB nomenclature

Total Learning hours (6)

Activity 1: Clinical Case Study on Micronutrient Deficiency Disorders (1 hour)

Students will evaluate case scenarios of patients with vitamin and mineral deficiencies (e.g., scurvy, rickets, anemia), identifying clinical symptoms and biochemical basis.

Activity 2: Nutrient Analysis Workshop with Food Samples (1 hour)

Students will perform qualitative tests on food samples to detect the presence of essential vitamins and minerals and discuss their role in metabolic pathways.

Activity 3: Enzyme Classification Group Challenge (1 hour)

Students will be divided into groups and given a list of enzymes; they must classify them according to IUBMB nomenclature and present their clinical relevance.

Activity 4: Simulation of Clinical Biochemistry Lab Interpretation (1 hour)

Students will interpret lab reports showing vitamin/mineral levels (e.g., serum calcium, folate, vitamin D) and recommend further diagnostic and therapeutic steps.

Activity 5: Role-Play: Counseling Patients on Micronutrient Importance (1 hour)

Students will simulate patient counseling sessions, educating about the dietary and therapeutic roles of vitamins and minerals in disease prevention and treatment.

Activity 6: Biochemical Pathway Mapping Project (1 hour)

Students will collaboratively map biochemical pathways involving coenzymes and classify related enzymes, linking their dysfunctions with specific diseases.

Experiential-Learning 5.3 : Metabolic pathway disruptions in health and disease

Total Learning hours (6)

Activity 1: Case-Based Analysis of Carbohydrate Metabolism Disorders (1 hour)

Students will examine patient cases of diabetes mellitus or glycogen storage diseases, identifying disrupted glycolytic or gluconeogenic pathways and discussing implications for treatment.

Activity 2: Lipid Metabolism Disruption Case Discussion (1 hour)

Students will analyze scenarios involving disorders such as hyperlipidemia or fatty liver disease, linking symptoms to altered β-oxidation or lipogenesis pathways.

Activity 3: Protein and Amino Acid Metabolism Disorder Review (1 hour)

Students will study cases of urea cycle disorders or phenylketonuria (PKU), interpret lab results, and connect findings with the underlying metabolic blockages.

Activity 4: Group Presentation on Enzyme Deficiency Disorders (1 hour)

Each group will present a case of a metabolic disorder caused by a specific enzyme deficiency (e.g., G6PD deficiency), including pathophysiology, diagnosis, and management strategies.

Activity 5: Practical Interpretation of Metabolic Profiles (1 hour)

Students will interpret biochemical reports (e.g., serum ketones, ammonia, lactate) to identify metabolic pathway disruptions in critically ill patients.

Activity 6: Integration of Unani and Modern Concepts in Metabolic Disorders (1 hour)

Students will discuss how disruptions in metabolic pathways may align with Unani concepts of humoral imbalance and suggest complementary management strategies.

Experiential-Learning 5.4 : Acid base balance and its corelation with deseases and condition

Total Learning hours (6)

Activity 1: Case-Based Discussion on Acid-Base Imbalances (1 hour)

Students will analyze clinical cases of acidosis and alkalosis, interpret arterial blood gas (ABG) reports, and identify underlying causes and compensatory mechanisms.

Activity 2: Simulation Activity: ABG Interpretation in Emergency Settings (1 hour)

Students will participate in a simulated emergency scenario (e.g., diabetic ketoacidosis, respiratory failure) requiring immediate evaluation of ABG and acid-base correction.

Activity 3: Interactive Workshop on Buffer Systems in Human Body (1 hour)

Students will revisit the theoretical framework of bicarbonate, phosphate, and protein buffer systems, then apply this understanding to clinical contexts.

Activity 4: Role-Play: Patient Education on Acid-Base Imbalance Management (1 hour)

Students will practice educating a simulated patient with renal tubular acidosis or chronic obstructive pulmonary disease (COPD) about their condition and lifestyle modifications.

Activity 5: Multidisciplinary Case Review Meeting (1 hour)

Students will engage in a collaborative review of real patient cases with acid-base imbalances, alongside physicians, biochemists, and nurses, to understand clinical decision-making and management.

Activity 6: Comparative Analysis of Unani and Modern Views on Fluid and pH Imbalance (1 hour)

Students will discuss and evaluate how Unani concepts of Akhlat (humors) and imbalance relate to modern interpretations of acid-base physiology and patient care strategies.

Modular Assessment

Assessment method	**Hour**
Instructions--Conduct a structured Modular assessment. and Assessment will be for 50. 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. Case-based assessment: (50 marks) Each student will be given a clinical case for recommendation, evaluation and interpretation of Biochemical markers. Or Case Study Analysis Direct observation of Procedure or Observed Structured Clinical Examination (OSCE) (50 marks) Or Any practical in converted form can be taken for assessment. (25 marks) and Any experiential, such as portfolios/ reflections/ presentations can be taken as an assessment. (25 marks)	4

3A Course Outcome	3B Learning Objective (At the end of the (lecture/practical/experiential) learning session, the students should be able to)	3C Notional Learning Hours	3D Lecture/ Practical/ Experiential Learning	3E Domain/ Sub Domain	3F Level (Does/ Shows how/ Knows how/ Know)	3G Teaching Learning Methods
Module 6 : Clinical Genetics سریریاتی جینیات						
Module Learning Objectives **(At the end of the module, the students should be able to)** Describe the fundamental principles of genomics and how genetic variations contribute to human health and disease. Analyze the role of genetic disorders, their mechanisms, and how modern genetic testing is transforming healthcare. Utilise the latest advances in genetic therapies and their applications in treating genetic diseases. Explore the concept of *Unanigenomics*, an integration of Mizaj (temperament-based classification) with genomics, and its implications for personalized medicine.						
Unit 1 Genetic Material and Mechanisms جینیاتی مواد اور میکانیہ 6.1.1. Genetic Materials جینیاتی مادے 6.1.1.1. Structure of DNA ڈی این اے کی ساخت 6.1.1.2. Structure of RNA آر این اے کی ساخت 6.1.1.3. Molecular Processes مالیکیولر عملیات 6.1.1.3.1. DNA Replication ڈی این اے ریپلی کیشن 6.1.1.3.2. Transcription ٹرانس کرپشن 6.1.1.3.3. Translation ٹرانس لیشن **References:** 21,22,23,24						
3A	3B	3C	3D	3E	3F	3G

CO1,CO2,CO3,CO7	Describe the fundamental components of genetic material, including DNA and RNA, along with their respective structures	2	Lecture	CK	Knows-how	L&PPT
CO1,CO2,CO3,CO7	Describe and illustrate the steps involved in molecular processes like DNA replication, transcription, and translation	2	Lecture	CK	Knows-how	L&PPT
CO1,CO2,CO3,CO7	Analyze, recognize and label the key components and enzymes involved in DNA replication, transcription, and translation, describe the roles of enzymes such as helicase, DNA polymerase, and RNA polymerase, and demonstrate laboratory techniques to visualize DNA and RNA.	6	Practical6.1	AFT-REC	Shows-how	D
CO1,CO2,CO3,CO7	Conduct discussions on clinical examples of genetic disorders due to DNA mutations, summarize genetic mechanisms in hereditary conditions and Unani management approaches, apply knowledge of genetic processes.	5	Experiential-Learning6.1	PSY-ADT	Does	DIS,PER,RP,TPW
CO1,CO2,CO3,CO7	Conduct the evaluation of symptoms and identify probable genetic disorders, assess the effectiveness of Unani treatments for these disorders, and design patient education plans on genetics and inheritance with Unani health perspectives.	6	Experiential-Learning6.2	PSY-ADT	Does	DIS,PER,TPW,W

Unit 2 Advances in Genetic Testing and Therapies جینیاتی جانچ اور علاج میں پیش رفت

6.2.1. DNA based Diagnosis ڈی این اے کی بنیاد پر تشخیص
6.2.2. Population based DNA testing آبادی کی بنیاد پر ڈی این اے ٹیسٹنگ
6.2.3. Mutation detection میوٹیشن کا اکتشاف
6.2.4. Gene therapy جین تھیراپی
6.2.5. Genomic Variations جینومک تغیرات
6.2.6. Application of Genomics in Diagnosis and Treatment تشخیص و علاج میں جینومکس کا اطلاق و استعمال

References: 21,22,23,24

3A	3B	3C	3D	3E	3F	3G
CO1,CO2,CO3,CO7	Describe the basic concepts of mutations and chromosomal changes and how they can lead to diseases.	1	Lecture	CK	Knows-how	L&PPT

CO1,CO2,CO3,CO7	Analyze basic genetic mutations and chromosomal abnormalities using case studies in Unani medicine, connect the identified genetic conditions to their symptoms and management strategies in both Unani and modern medicine.	8	Practical6.2	AFT-REC	Shows-how	CBL,D
CO1,CO2,CO3,CO4,CO7	Conduct real patient case studies to explore the effects of genetic disorders and in-born errors of metabolism and discuss the clinical manifestations and management and effectiveness in both Unani and modern medicine.	9	Experiential-Learning6.3	PSY-ADT	Does	DIS,PER,PrBL,RP,SIM,SY
CO1,CO2,CO3,CO7	Describe the role of population-based DNA testing in public health, discussing its applications in identifying genetic risks and informing treatment strategies.	1	Lecture	CK	Knows-how	BL,L&PPT
CO1,CO2,CO3,CO7	Discuss the potential of gene therapy and the application of genomics in diagnosis and treatment, exploring how these advancements can improve patient outcomes in a Unani system of medicine.	1	Lecture	CK	Knows-how	DIS,L&PPT ,L_VC

Unit 3 Genetic Alterations and Disorders جینیاتی تبدیلیاں اور عوارضات/امراض

6.3.1. Basic concepts of mutations and Chromosomal abrasions
میوٹیشن اور کروموسومل ایبریزنس کا بنیادی تصور

6.3.2. Genetic Disorders: Autosomal and sex chromosomal abnormalities
جینیاتی عوارضات: آوٹوسومل اور سیکس کروموسومل تغیرات

6.3.3. In-born errors of carbohydrate, protein, and lipid metabolism (general considerations)
کاربوہائڈریٹس، پروٹین اور لپڈس کی خلقی خرابیاں)عمومی تصور(

References: 21,22,23,24

3A	3B	3C	3D	3E	3F	3G
CO1,CO2,CO3,CO7	Describe the differences between autosomal and sex chromosomal genetic disorders and their importance in patient care.	1	Lecture	CK	Knows-how	L&PPT

CO1,CO2,CO3,CO7	Analyze common in-born errors in carbohydrate, protein, and lipid metabolism, and relate them to possible symptoms and treatment options.	1	Lecture	CK	Knows-how	L&PPT
CO1,CO2,CO3,CO7	Describe Pharmacogenomics, Unanigenomics (an integration of the principles of Mizaj with genomics) and Gene therapy and Stem cell therapy	1	Lecture	CK	Knows-how	BL,L&PPT ,L_VC
CO1,CO2,CO3,CO7	Analyze genomic variations by observing the experiments to perform DNA-based diagnostic techniques, and applying these skills to develop diagnosis and managment strategies in Unani medicine.	6	Practical6.3	AFT-REC	Shows-how	DL,D-M,SIM
CO1,CO2,CO3,CO7	Conduct community health initiatives that utilize population-based DNA testing, assessing its impact on public health and the identification of genetic disorders within diverse populations; collaborate with healthcare professionals to evaluate patient cases involving genomic variations and in-born errors of metabolism, proposing Unani treatment plans that incorporate genomic insights.	6	Experiential-Learning6.4	PSY-ADT	Does	PER,PrBL,RLE,SIM,W

Practical Training Activity

Practical 6.1 : DNA replication, transcription, and translation

Total Learning hours (6)

Activity 1: Labeling and Role Identification of Enzymes in Genetic Processes (2 hours)

The teacher uses diagrams and molecular models to help students recognize and label key enzymes like helicase, DNA polymerase, RNA polymerase, and ribosomes involved in DNA replication, transcription, and translation.

Activity 2: Demonstration of DNA and RNA Visualization Techniques (2 hours)

The teacher performs DNA and RNA extraction followed by gel electrophoresis to demonstrate visualization of nucleic acids and band analysis.

Activity 3: Case-Based Analysis of Structural Abnormalities in DNA Samples (2 hours)

The teacher provides DNA sequences with known mutations (e.g., insertions, deletions) for students to analyze and link to potential genetic disorders.

Practical 6.2 : Chromosomal abnormalities and Management strategies

Total Learning hours (8)

Activity 1: Case-Based Identification of Common Genetic Mutations (2 hours)

The teacher presents clinical case studies involving disorders like Thalassemia or Sickle Cell Anemia to help students recognize specific genetic mutations.

Activity 2: Analysis of Chromosomal Abnormalities Using Karyotype Charts (2 hours):

The teacher demonstrates how to interpret karyotypes and identify chromosomal disorders such as Down syndrome or Turner syndrome and later the student will follow the same.

Activity 3: Comparative Management Strategies in Unani and Modern Systems (2 hours)

The teacher presents integrated management approaches, comparing Unani Ilaj bil Ghiza, Ilaj bil Dawa, and modern pharmacological treatments.

Activity 4: Impact of Genetic Disorders on Long-term Patient Care in Unani Medicine (2 hours)

The teacher leads a discussion on how chronic genetic conditions affect temperament, nutrition, immunity, and quality of life from a Unani perspective.

Practical 6.3 : DNA-based diagnostic techniques and genomic variations

Total Learning hour (6)

Activity 1: Observation of DNA Extraction Techniques (1 hour): The teacher demonstrates the step-by-step process of DNA extraction from biological samples and explains its diagnostic significance.

Activity 2: Polymerase Chain Reaction (PCR) Demonstration (1 hour): The teacher demonstrates PCR technique to amplify target DNA sequences and explains its role in detecting genetic mutations and infections.

Activity 3: Gel Electrophoresis for DNA Fragment Analysis, DNA Sequencing and Genomic Variation Analysis (2 hours)

The teacher performs agarose gel electrophoresis to separate DNA fragments and helps students interpret band patterns for diagnostic insights, and demonstrates DNA sequencing results and guides students in identifying single nucleotide polymorphisms (SNPs) and other genetic variations.

Activity 4: Correlation of Genomic Findings, Disease Patterns and Management in Unani Medicine (2 hours)

The teacher discusses how specific genomic variations may align with concepts of Mizaj (temperament) and Su-e-Mizaj in Unani diagnosis and what could be management strateties in Unani medicine, and later the students will follow the same.

Experiential learning Activity

Experiential-Learning 6.1 : DNA mutations and Unani management approaches

Total Learning hours (5)

Activity 1: Clinical Case Recall and Presentation Session (1 hour)

Students will present real or simulated cases of genetic disorders caused by DNA mutations (e.g., Sickle Cell Anemia, Duchenne Muscular Dystrophy) and discuss clinical features and inheritance patterns.

Activity 2: Interactive Lecture on Genetic Mechanisms (2 hours)

An engaging review session where students recall genetic principles (mutations, inheritance, gene expression) through group quizzes and discussion of how these relate to hereditary diseases.

Activity 3: Problem-Based Learning and Unani treatment approaches (2 hours)

Students will work in small groups to solve problem cases where symptoms are linked to DNA-level mutations, then propose diagnostic approaches and Unani supportive therapies.

Experiential-Learning 6.2 : Genetic disorder and Unani treatment

Total Learning hours (6)

Activity 1: Symptom-Based Diagnostic Exercise on Genetic Disorders (1 hour)

Students will review clinical vignettes to identify signs and symptoms pointing toward specific genetic disorders and formulate differential diagnoses.

Activity 2: Patient Education Role-Play Session (1 hour)

Students will role-play educating a simulated patient or family member about a genetic disorder, using simple language and incorporating Unani perspectives on prevention and management.

Activity 3: Case Study Evaluation of Unani Interventions (2 hours)

Students will analyze cases managed with Unani treatments (Ilaj bil Ghiza, Ilaj bil Dawa, and Tadabeer) and assess their clinical effectiveness in managing hereditary conditions.

Activity 4: Interactive Workshop on Genetics and Inheritance (2 hours)

Students will participate in a workshop explaining basic genetics and inheritance patterns, followed by group work to create educational analogies rooted in Unani principles.

Experiential-Learning 6.3 : Genetic disorders and in-born errors of metabolism

Total Learning hours (9)

Activity 1: Clinical Case Presentation on Genetic Disorders (2 hours)

Students will present detailed case histories of patients with genetic disorders (e.g., Thalassemia, Cystic Fibrosis), including symptoms, diagnosis, and treatment challenges.

Activity 2: Case-Based Discussion: In-Born Errors of Metabolism (2 hours)

Students will analyze cases of metabolic conditions like PKU, Maple Syrup Urine Disease, or Galactosemia, correlating symptoms with underlying enzyme deficiencies.

Activity 3: Comparative Treatment Workshop: Unani vs Modern Approaches (2 hours)

Students will compare Unani management strategies with modern therapies for selected genetic/metabolic disorders, discussing benefits, limitations, and integration.

Activity 4: Interactive Seminar on Mizaj and Genetic Disorders (2 hours)

Students will evaluate how Mizaj (temperament) influences the presentation and management of genetic disorders in Unani practice.

Activity 5: Simulation Activity on Diagnosis and Counseling (1 hour)

Students will engage in a simulated clinical setting to diagnose a genetic disorder and counsel patients and families regarding prognosis and management.

Experiential-Learning 6.4 : Population-based DNA testing

Total Learning Hours (6)

Activity 1: Community DNA Screening Awareness Session (1 hour)

Students will participate in or observe a community outreach program promoting DNA testing for early detection of genetic disorders, followed by reflection on public health outcomes.

Activity 2: Case Study Analysis of Genetic Screening Outcomes (1 hour)

Students will analyze real or simulated data from population-based genetic testing initiatives to identify prevalent genetic disorders in specific communities.

Activity 3: Genomic Case Conference with Interdisciplinary Teams and Unani perspective (2 hours)

Students will collaborate with clinical geneticists and healthcare professionals to discuss patient cases and integrate Unani concepts for supportive treatment.

Activity 4: Public Health Policy Review and Advocacy Activity (2 hours)

Students will evaluate the role of population genetics in shaping public health policies and draft brief recommendations on incorporating genomics in preventive Unani healthcare strategies.

Modular Assessment

Assessment method	**Hour**
Instructions-- Conduct a structured Modular 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. Case-based assessment: (50 marks) This assessment method ensures that students demonstrate both theoretical knowledge and applied skills in clinical genetics and temperament-based (Mizaj) personalised care. Assess the ability to take a detailed genetic history and identify inheritance patterns Assessment Criteria: Communication skills (empathy, clarity), accurate pedigree construction and understanding of hereditary risk. Or Case-Based Problem Solving: (50 marks)	4

Students are given clinical and lab data of a patient suspected of having any genetic disorder and students can diagnose the condition and justify based on genetic principles. OR To evaluate the ability to explain genetic risks and testing options to the patients. For example, A couple with a high risk for sickle cell disease seeks counselling before conception. The student explains carrier screening and inheritance risk, consideration of cultural & ethical concerns and discusses reproductive options (e.g., prenatal diagnosis, IVF with PGD). (50 marks) OR Mizaj-Based Personalized Care Plan: Integrate Mizaj classification into a patient's genetic diagnosis and treatment plan. For Example, A patient with hypertension has a strong family history and a Bilious Mizaj (Safrawi). The student explains the genetic predisposition and develops a Mizaj-based personalized treatment plan. Recommends lifestyle, dietary, and genetic-based interventions. Justifies how personalized treatment enhances patient care. (50 marks) OR Assess the ability to counsel expectant parents on prenatal testing. For Example, A pregnant woman is concerned about Down syndrome. The student can explain the difference between NIPT, CVS, and amniocentesis, and counsel her on risks and benefits. Assessment Criteria: Knowledge of prenatal testing options, Risk-benefit analysis of invasive vs. non-invasive tests and Patient-centered counseling. Or Any practical in converted form can be taken for assessment. (25 marks) and Any experiential, such as portfolios/ reflections/ presentations can be taken as an assessment. (25 marks)	

3A Course Outcome	3B Learning Objective (At the end of the (lecture/practical/experiential) learning session, the students should be able to)	3C Notional Learning Hours	3D Lecture/ Practical/ Experiential Learning	3E Domain/ Sub Domain	3F Level (Does/ Shows how/ Knows how/ Know)	3G Teaching Learning Methods
Module 7 : Clinical Immunology and Oncology سریریاتی امیونولوجی اور اونکولوجی						
Module Learning Objectives **(At the end of the module, the students should be able to)** Describe the structure and functions of the immune system, including antigen recognition, immune tolerance, and mechanisms of immune responses, while prescribing Unani Mamoolat Matab and dietary recommendations to enhance immunity. Describe the principles of oncology, including cancer aetiology, progression, and tumour metastasis, and differentiate between benign and malignant growths through diagnostic observations, documentation, and management strategies. Apply modern diagnostic techniques and treatment strategies, including immunotherapy, to manage immune-related conditions and cancers effectively while integrating the foundational principles of Unani medicine. Demonstrate effective communication skills by sensitively conveying cancer diagnoses and prognoses, ensuring empathy and compassion in patient care.						
Unit 1 Clinical Immunology (General Understanding and Brief Description) سریریاتی امیونولوجی (عمومی تفہیم اور مختصر بیان) 7.1.1 General understanding عام تفہیم 7.1.2. Fundamental concepts of the immune system امیون سسٹم کا بنیادی تصور 7.1.3. Mechanisms of immune response امیون رِسپونس کا میکانیہ 7.1.4. Common immunological disorders and their clinical implications عمومی امیونولوجیکل عوارضات اور انکے طبی مضمرات **References:** 3,4,7,8,9,13,14,15,25,26,27						
3A	3B	3C	3D	3E	3F	3G

CO1,CO2,CO3,CO7,CO8	Describe key terms and concepts related to Clinical Immunology, including the immune system's structure, cells, and molecules involved in immune responses	1	Lecture	CK	Know	L&PPT
CO1,CO2,CO3,CO7,CO8	Describe key immune system components, including cells, tissues, and molecules involved in immune responses.	1	Lecture	CK	Knows-how	L&PPT
CO1,CO2,CO3,CO7,CO8	Describe the mechanisms of antigen recognition, immune tolerance, and immunological memory and Identify common immunological disorders, including autoimmune diseases, hypersensitivity, and immunodeficiency.	1	Lecture	CK	Knows-how	L&PPT
CO1,CO2,CO3,CO7,CO8	Demonstrate specimen handling, perform immunological assays (e.g., ELISA, flow cytometry, immunofluorescence), interpret lab results to identify normal vs. abnormal immune responses, and document findings accurately.	6	Practical7.1	CAN	Shows-how	D-BED,DL,D-M
CO1,CO2,CO4,CO7,CO8	Analyze case studies to correlate clinical findings with immune mechanisms, reflect on immunology's role in diagnosis and treatment, engage in simulations to apply immunological knowledge in clinical decisions, and collaborate with peers to enhance understanding in patient care.	9	Experiential-Learning7.1	PSY-ADT	Does	DIS,PER,RLE,SIM,TBL,W

Unit 2 Clinical Oncology (General Understanding and Brief Description) کلینیکل اونکولوجی (عمومی تفہیم اور مختصر بیان)

7.2.1. General understanding عام تفہیم
7.2.2. Principles of cancer biology سرطانی حیاتیات کے اصول
7.2.3. Tumor development and progression سلعات کی تولید و ترقی
7.2.4. Diagnostic methods, treatment modalities تشخیصی ذرائع اور علاج کے طریقہ کار

References: 3,4,7,8,9,13,14,15,25,26,27

3A	3B	3C	3D	3E	3F	3G
CO1,CO2,CO3,CO7,CO8	Describe fundamental concepts of oncology, including cancer etiology, types, and progression	1	Lecture	CK	Knows-how	BL,L&PPT ,L_VC
CO1,CO2,CO3,CO7,CO8	Describe the mechanisms of carcinogenesis, tumor growth, and metastasis.	1	Lecture	CK	Knows-how	L&PPT ,L_VC

CO1,CO2,CO3,CO7,CO8	Describe and identify common cancer types, their signs, symptoms, and risk factors and discuss basic principles of cancer screening, diagnosis	1	Lecture	CK	Knows-how	L,L&GD,L&PPT
CO1,CO2,CO3,CO7,CO8	Demonstrate techniques for handling and examining oncological specimens, perform diagnostic procedures (e.g., imaging, biopsies) with guidance, interpret lab and imaging results to identify malignant vs. benign growths, and document patient data accurately in oncology cases	6	Practical7.2	AFT-REC	Shows-how	D,D-BED,D-M,RLE
CO1,CO2,CO3,CO7,CO8	Analyze clinical cases to identify cancer stages and intervention strategies, reflect on ethical and emotional aspects of terminal oncology care, engage in simulations to practice patient communication, and collaborate in multidisciplinary discussions to design patient-centered oncology care plans.	9	Experiential-Learning7.2	PSY-ADT	Does	PER,PrBL,TBL

Unit 3 Palliative Care (پیلیےٹو کیر)

7.3.1. Introduction to palliative care پیلیےٹو کیر کا تعارت
7.3.2. Pain Management معالجاتِ وجع
7.3.3. Psychological, Social, and Spiritual care نفسیاتی، سماجی اور روحانی دیکھ بھال

References: 3,4,7,8,9,13,14,15,25,26,27

3A	3B	3C	3D	3E	3F	3G
CO1,CO7,CO8	Describe the principles of cancer treatment modalities, including surgery, chemotherapy, radiation, immunotherapy, and targeted therapies.	2	Lecture	CK	Knows-how	BL,L&PPT ,L_VC
CO1,CO2,CO3,CO7,CO8	Describe the role of palliative care in cancer treatment, focusing on symptom management and quality of life.	2	Lecture	CK	Knows-how	BL,L&PPT ,L_VC
CO1,CO2,CO3,CO7,CO8	Demonstrate techniques for assessing pain and symptoms in cancer and palliative patients, perform palliative care interventions (e.g., pain management, wound care, medication administration), interpret treatment plans to determine when to prioritize palliative care, and document patient assessments focusing on symptom progression and treatment efficacy.	8	Practical7.3	AFT-REC	Shows-how	D,D-BED,D-M

CO1,CO2,CO3,CO7,CO8	Analyze case studies to select suitable treatment and palliative interventions for different cancer stages, engage in role-play to practice delivering sensitive information about prognosis and care options, and collaborate in multidisciplinary teams to create care plans that prioritize patient comfort and family support in advanced cancer stages.	8	Experiential-Learning7.3	PSY-ADT	Does	D-BED,DIS,PrBL,RLE,SIM

Practical Training Activity

Practical 7.1 : Specimen handling

Total Learning hours (6)

Activity 1: Specimen Collection and Handling (1 hour)

The teacher demonstrates correct techniques for collecting, labeling, transporting, and storing blood and body fluid samples for immunological assays.

Activity 2: ELISA (Enzyme-Linked Immunosorbent Assay), Flow Cytometry and Sample Preparation (2hours)

The teacher demonstrates the step-by-step procedure of an ELISA test to detect specific antibodies or antigens and guides students in performing the assay, and explains the principles of flow cytometry and demonstrates cell labeling, gating, and analysis using flow cytometry data.

Activity 3: Interpreting Immunological Lab Results (2 hours)

The teacher guides students in interpreting normal vs. abnormal results of ELISA, flow cytometry, and immunofluorescence with clinical case correlations.

Activity 4: Accurate Documentation and Reporting of Immunological Findings (1 hour)

The teacher demonstrates structured and accurate documentation of immunology reports, including reference ranges, interpretations, and clinical impressions.

Practical 7.2 : Handling and examining of oncological specimens

Total Learning hours (6)

Activity 1: Handling and Gross Examination of Oncological Specimens (1 hour)

The teacher demonstrates safe handling, labeling, and gross examination of tissue specimens, highlighting key features suggestive of malignancy.

Activity 2: Microscopic Examination and Identification of Tumor Cells (1 hour)

The teacher uses prepared slides to demonstrate histopathological features distinguishing benign from malignant tumors under the microscope.

Activity 3: Guided Imaging Interpretation in Oncology (2 hours)

The teacher presents and interprets X-rays, CT scans, and MRIs of oncological cases, guiding students to identify abnormal growths and staging markers.

Activity 4: Demonstration of Biopsy Techniques and Sample Collection (1 hour)

The teacher demonstrates procedures like fine-needle aspiration (FNA), core needle biopsy, and excisional biopsy using mannequins or models.

Activity 5: Lab Report Analysis for Tumor Markers and Blood Tests (1 hour)

The teacher explains and guides students through interpreting lab results such as CBC, LDH, PSA, CEA, and other tumor markers in cancer diagnosis.

Practical 7.3 : Palliative care interventions

Total Learning hours (8)

Activity 1: Pain Symptom Assessment in Palliative Care (2 hours): The teacher demonstrates pain assessment using tools like the Numeric Rating Scale (NRS), Visual Analogue Scale (VAS), and systematic evaluation of symptoms such as dyspnea, fatigue, nausea, constipation, and anxiety using validated scales.

Activity 2: Pharmacologic and Non-Pharmacologic Pain Management (2 hours)

The teacher explains the WHO pain ladder and demonstrates safe opioid and adjuvant analgesic use, including breakthrough dose calculation and demonstrate supportive techniques like repositioning, breathing exercises, and complementary therapies for symptom relief..

Activity 3: Wound and Pressure Ulcer Care in Palliative Settings (2 hours)

The teacher demonstrates proper wound cleaning, dressing, infection control, and pressure sore management on simulation models or patients.

Activity 4: Case-Based Treatment Plans and Prioritizing Palliative Care (2 hours)

The teacher presents clinical scenarios to help students identify when to shift from curative to palliative goals based on disease progression and patient needs.

Experiential learning Activity
Experiential-Learning 7.1 : Immune mechanisms
Total Learning hours (9) Activity 1: Case-Based Discussion on Autoimmune Diseases (2 hours) Students will evaluate patient histories, lab findings (e.g., ANA, RF), and symptoms to understand underlying immune pathophysiology and select appropriate treatments. Activity 2: Clinical Immunology and Immuno-Diagnostic Simulation (1 hour) Students will match various immune-mediated diseases with corresponding immunological defects (e.g., hypersensitivities, deficiencies, cytokine imbalances) and in lab-based or virtual simulation, students will interpret immunological tests such as ELISA, flow cytometry, and CRP/ESR for clinical diagnosis. Activity 3: Immunology in Therapy--Case Reflection and Group Discussion (2 hours) Students will reflect on real or simulated cases where immunomodulators, monoclonal antibodies, or vaccines were used, analyzing their mechanism and outcome. Activity 4: Immunocompromised Patient Management and Immune Checkpoint Inhibitor Case Studies (2 hours) Students will manage a simulated case of HIV/AIDS, transplant recipient, or immunodeficiency, focusing on infection risk and immune-based therapy. Activity 5: Allergy and Immunotherapy an interdisciplinary Peer Teaching (2 hours) Students will analyze a case of allergic rhinitis or asthma, identify the type of immune response involved, and formulate a treatment plan including immunotherapy in small groups explaining key immunology concepts in the context of clinical cases, promoting collaborative learning.
Experiential-Learning 7.2 : Cancer staging and intervention strategies
Total Learning hours (9) Activity 1: Clinical Case Analysis of Cancer Staging (2 hours) Students will assess patient case files, diagnostic reports, and imaging to accurately stage different cancers and suggest corresponding treatment options. Activity 2: Intervention Strategy Mapping Workshop (2 hours)

Students will develop and justify intervention plans (surgical, medical, radiological, or palliative) based on tumor stage, performance status, and patient goals.

Activity 3: Ethical Dilemma and Emotional Reflection Discussion Circle (2 hours)

Students will discuss real-life-inspired cases dealing with treatment refusal, DNR orders, or conflict between patient autonomy and family wishes in terminal care, and will reflect and share their personal emotional responses to managing terminal cancer cases through guided journaling and peer discussion

Activity 4: SPIKES Protocol Simulation for Prognosis and Planning (2 hours)

Students will practice breaking bad news and discussing prognosis using the SPIKES protocol with simulated patients or actors, followed by feedback sessions. Students will also collaborate with peers, nurses, palliative experts, and counselors to create a comprehensive care plan.

Activity 5: Patient-Centered Care Plan Design Exercise (1 hour)

Students will design holistic care plans focusing on symptom management, psychosocial support, patient values, and family involvement for a terminally ill cancer patient.

Experiential-Learning 7.3 : Palliative care and interventions for Cancer patients

Total Learning hours (8)

Activity 1: Case-Based Discussion on Cancer Stage Management (2 hours)

Students will analyze multiple case studies of patients at various cancer stages and justify appropriate curative, supportive, or palliative treatment plans.

Activity 2: Palliative Care Pathway Planning (2 hours)

Students will design a patient-centered palliative care plan including pain management, nutrition, symptom control, and psychosocial support for a terminally ill cancer patient.

Activity 3: Breaking Bad News Role-Play (2 hours)

Through structured role-play with peers or standardized patients, students will practice delivering difficult diagnoses, prognosis, or end-of-life updates using the SPIKES protocol, addressing concerns and emotional responses empathetically.

Activity 4: Quality of Life Assessment Workshop (2 hours)

Students will apply validated tools (e.g., WHOQOL, ESAS) in simulated cancer cases to assess patient well-being and adjust interventions accordingly.

Modular Assessment	
Assessment method	**Hour**
Instructions-- Conduct a structured Modular 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. Case-based assessment: (50 marks) Each student will be given a clinical case to focus on integrating scientific understanding with clinical judgment and patient-centred care, in clinical oncology and immunology and for the approach to managing chemo/immune-related adverse effects in patients undergoing chemotherapy and immunotherapy. Or Case Study Discussions: Application of immunology and oncology principles, incorporating Unani treatment perspectives. (50 marks) Or Any practical in converted form can be taken for assessment. (25 marks) and Any experiential, such as portfolios/ reflections/ presentations can be taken as an assessment. (25 marks)	4

3A Course Outcome	3B Learning Objective (At the end of the (lecture/practical/experiential) learning session, the students should be able to)	3C Notional Learning Hours	3D Lecture/ Practical/ Experiential Learning	3E Domain/ Sub Domain	3F Level (Does/ Shows how/ Knows how/ Know)	3G Teaching Learning Methods
Module 8 : Emergency Medicine امر بیسی میڈیسن						
Module Learning Objectives **(At the end of the module, the students should be able to)** Demonstrate an understanding of common medical emergencies, apply the principles of triage and prioritize patient care in an emergency setting. Utilize the basic life support (BLS) and advanced cardiac life support (ACLS) protocols and how they are applied in real-world emergency scenarios. Identify the roles of healthcare professionals in managing medical emergencies and the importance of effective communication in urgent care settings. Integrate Unani concepts of balance and holistic care in emergency management, considering patient temperament and individual responses to stress and trauma.						
Unit 1 Clinical approach in critical care نازک احوال کی نگہداشت میں سریرپائی اسلوب 8.1.1. Clinical approach to critical care شدید حالت کی دیکھ بھال کا طبی نقطہ نظر 8.1.2. Assessment and Management of critically ill patients شدید بیمار مریض کا تجزیہ اور علاج 8.1.3. Implemenation of basic and advanced life support techniques بنیادی اور اعلیٰ لائف سپورٹ تکنیک کا نفاذ **References:** 3,4,7,8,9,13,14,15,25,26,27						
3A	**3B**	**3C**	**3D**	**3E**	**3F**	**3G**
CO1,CO5,CO6	Illustrate the scope and primary goals of critical care.	2	Lecture	CK	Knows-how	L&PPT

CO1,CO5,CO6	Describe the principles of hemodynamic monitoring, including central venous pressure, pulmonary artery pressure, and arterial line monitoring.	1	Lecture	CK	Knows-how	L&PPT ,L_VC
CO1,CO5,CO6	Demonstrate skills in the systematic assessment of critically ill patients, including the ABCDE approach (Airway, Breathing, Circulation, Disability, and Exposure).	7	Practical8.1	AFT-RES	Shows-how	D,D-BED,PT
CO1,CO5,CO6	Perform case discussions and simulations to analyze and apply knowledge to complex critical care scenarios.	9	Experiential-Learning8.1	PSY-GUD	Does	DIS,PER,SDL,SIM,W

Unit 2 Identification and assessment of deteriorating patient بگڑتے ہوئے مریضوں کی شناخت اور تجزیہ

8.2.1. Identification and assessment of deteriorating patients
بگڑتے ہوئے مریضوں کی شناخت اور تجزیہ

8.2.2. Assessment of Unconscious patients
بے ہوش مریض کا تجزیہ

References: 13,14,15,25,26,27

3A	3B	3C	3D	3E	3F	3G
CO1,CO5,CO6	Discuss the causes of unconsciousness using the AEIOU-TIPS mnemonic (Alcohol, Epilepsy, Insulin, Overdose, Uremia, Trauma, Infection, Poisoning, Stroke).	2	Lecture	CK	Knows-how	L&PPT ,L_VC
CO1,CO5,CO6	Describe the Glasgow Coma Scale (GCS) and its application in assessing levels of consciousness.	1	Lecture	CK	Knows-how	L&PPT ,L_VC
CO1,CO5,CO6	Demonstrate and Practice Glasgow Coma Scale (GCS) scoring and ABCDE assessment on simulated patients.	6	Practical8.2	AFT-RES	Shows-how	D,D-M,SIM
CO1,CO5,CO6	Discuss unconscious patients and analyze the clinical approach based on the Glasgow Coma Scale (GCS) and ABCDE assessment.	9	Experiential-Learning8.2	PSY-MEC	Does	BS,CBL,D-M,DIS,SIM

Unit 3 Basic and advanced life support بنیادی واعلیٰ قلبی لائف سپورٹ

8.3.1. Cardiopulmonary resuscitation (CPR) کارڈیو پلمونری ریسسّی عیشن یا قلبی و ریوی افعال کی بحالی
8.3.2. Airway management سّفس کے مجاری کی دیکھ بھال
8.3.3. Advanced cardiac life support (ACLS) protocols اعلیٰ قلبی لائف سپورٹ پروٹوکالس

References: 13,14,15,25,26,27

3A	3B	3C	3D	3E	3F	3G
CO1,CO5,CO6	Describe the principles of Basic Life Support (BLS) and Advanced Life Support (ALS) protocols, including CPR guidelines.	2	Lecture	CK	Knows-how	L&PPT ,L_VC
CO1,CO5,CO6	Describe the indications and techniques for defibrillation and airway management.	2	Lecture	CK	Knows-how	L&PPT ,L_VC
CO1,CO5,CO6	Demonstrate and practrice BLS techniques, including CPR and use of an (AED) Automated external defibrillator, on mannequins and develop skills in ALS protocols, including intubation, defibrillation, Tracheostomy, central venous catheter insertion, arterial line placement, and chest tube insertion.	7	Practical8.3	AFT-REC	Shows-how	D,D-M,PER,RLE,RP
CO1,CO5,CO6	Participate in Basic Life Support (BLS) and Advance Life Support (ALS) simulations to reinforce skills in real-time crisis scenarios. Engage in team-based exercises to practice roles in resuscitation events and effective communication.	8	Experiential-Learning8.3	PSY-ADT	Does	CBL,D-M,DIS,RLE,RP,TPW,TBL,W

Practical Training Activity

Practical 8.1 : Systematic assessment of critically ill patients

Total Learning hours (7)

Activity 1: Demonstration of the ABCDE Framework and Simulated Case-Based Assessment (2 hours)

The teacher introduces the ABCDE approach and demonstrates a complete assessment on a critically ill simulated patient and facilitates student-led ABCDE assessments on various critical scenarios with real-time feedback and corrections.

Activity 2: Airway and Breathing Assessment and Oxygen Therapy (2 hours) The teacher demonstrates airway inspection, identification of obstructions, and use of airway adjuncts like oropharyngeal and nasopharyngeal airways, and also demonstrates starus of breating, use of pulse oximetry, and administration of oxygen. Activity 3: Circulation Assessment and IV Access (2 hours) The teacher guides students in checking pulse, blood pressure, skin perfusion, and establishing intravenous access for fluid resuscitation. Activity 4: Disability Assessment and GCS Scoring (1 hour) The teacher demonstrates neurological evaluation using AVPU and GCS, including checking pupils and blood glucose level.
Practical 8.2 : Glasgow Coma Scale (GCS) scoring and ABCDE assessment
Total Learning hours (6) Activity 1: Introduction and Demonstration of ABCDE Approach (2 hours) The teacher explains the principles of the ABCDE assessment and demonstrates it step-by-step on a simulated patient. Activity 2: Airway and Breathing Assessment Practice (1 hour) The teacher guides students in evaluating airway patency and assessing respiratory rate, effort, and oxygen saturation using simulation tools. Activity 3: Circulation and Disability Evaluation (2 hours) The teacher demonstrates checking pulse, blood pressure, capillary refill, and GCS scoring to assess neurological status. Activity 4: Integrated ABCDE and GCS Case Simulation Practice (1 hour) The teacher facilitates student practice of complete ABCDE assessment and GCS scoring on simulated emergency cases with feedback.
Practical 8.3 : Emergency life saving procedures demonstration
Total Learning hours (7)

Activity 1: CPR Demonstration and Practice (2 hours)

The teacher demonstrates high-quality chest compressions and rescue breaths on adult and pediatric mannequins, followed by student hands-on practice, and later students will follow that.

Activity 2: Endotracheal Intubation Skill Session (1 hour)

The teacher demonstrates endotracheal intubation using an airway trainer, guiding students in laryngoscope handling and tube placement.

Activity 3: Manual Defibrillation and Cardioversion (1 hour)

The teacher demonstrates the use of a manual defibrillator, including synchronized cardioversion and defibrillation, with students performing simulated procedures.

Activity 4: Tracheostomy Procedure Workshop (1 hours)

The teacher performs a step-by-step demonstration of tracheostomy on a trainer, followed by guided student practice.

Activity 5: Central Venous Catheterization, Arterial Line and Chest Tube Insertion Practice (2 hours)

The teacher explains and demonstrates sterile technique and central line insertion using a mannequin or simulator and sequentially demonstrates arterial cannulation and chest tube insertion, allowing students to practice on simulation models.

Experiential learning Activity

Experiential-Learning 8.1 : Analysis of complex critical care scenarios.

Total Learning hours (9)

Activity 1: Multidisciplinary ICU Case Discussion (1 hour)
Students will analyze a real complex ICU case involving multi-organ failure and contribute to management planning with a multidisciplinary team.

Activity 2: Critical Care Simulation- Septic Shock and Cardiopulmonary Crisis Drill (2 hours)
Through a high-fidelity simulation, students will manage a patient in septic shock, applying sepsis bundles, fluid resuscitation, and vasopressors and will perform in a simulated scenario involving acute myocardial infarction with cardiogenic shock, applying critical care protocols.

Activity 3: Neurological Emergency, ARDS and Interactive Renal Failure Case Analysis and Review (3 hours)
Students will discuss and manage a case involving raised intracranial pressure or status epilepticus, a simulated case of ARDS (Acute Respiratory Distress Syndrome) and acute kidney injury, focusing on supportive care and plan fluid-electrolyte management and renal replacement therapy.

Activity 4: Trauma and Polytrauma Resuscitation Drill (2 hours)
Students will perform ABCDE assessment and critical interventions in a simulated polytrauma case requiring rapid decision-making and team coordination.

Activity 5: Toxicology in Critical Care Simulation (1 hour)
Students will manage a simulated case of poisoning or overdose, including airway protection, antidote use, and hemodynamic support.

Experiential-Learning 8.2 : Glasgow Coma Sclae (GCS) scoring and ABCDE assessment

Total Learning hours (9)

Activity 1: Altered Consciousness and Glasgow Coma Scale (GCS) Scoring Workshop (2 hours)
Students will analyze real or simulated cases of unconscious patients, identify possible causes, and determine appropriate diagnostic steps. Students will assess GCS using video vignettes or standardized patients to improve accuracy in scoring eye, verbal, and motor responses.

Activity 2: ABCDE Assessment Simulation and Clinical Reasoning (2 hours)
Students will perform a structured ABCDE assessment on a simulated unconscious patient to prioritize immediate life-saving interventions. In a step-wise unfolding case, students will make diagnostic and therapeutic decisions at each stage based on updated GCS and ABCDE findings.

Activity 3: Differential Diagnosis Drill for Unconsciousness (2 hours)
Students will engage in small group discussions to generate and justify differentials for unconscious patients using systematic approaches (AEIOU TIPS).

Activity 4: Neuroimaging Interpretation Session (1 hour)
Students will review CT/MRI scans of unconscious patients and link findings to clinical signs, GCS scores, and ABCDE priorities.

Activity 5: Simulation of Emergency Response for Comatose Patient (2 hours)
Students will participate in a high-fidelity simulation involving resuscitation and stabilization of a comatose patient following ABCDE steps

Experiential-Learning 8.3 : Basic Life Support (BLS) and Advance Life Support (ALS) simulations

Total Learning hours (8)

Activity 1: High-Fidelity BLS Simulation and ALS Mega Code Scenario (2 hours)
Students will perform high-quality chest compressions, rescue breaths, and AED use on advanced manikins with real-time feedback to reinforce BLS skills. Students will also participate in a full cardiac arrest simulation requiring ECG analysis, drug administration, and airway management as per ALS protocols.

Activity 2: Code Blue Mock Drill and Crisis Resource Management Workshop (2 hours)
An unannounced in-hospital "Code Blue" drill will be conducted where students respond as a team to manage a simulated cardiac arrest scenario. Students will engage in a simulated emergency focusing on communication, decision-making, and teamwork under pressure.

Activity 3: Role-Based Resuscitation Exercise and Airway Management (2 hours)
Students will rotate through roles like team leader, compressor, and airway manager in a simulated resuscitation to enhance team dynamics and leadership. Students will practice essential airway techniques on manikins, including bag-valve-mask ventilation, intubation, and use of supraglottic devices.

Activiy 4: Simulation Debriefing and Video Analysis (2 hours)
Students will review recordings of their simulations to reflect on performance and receive structured peer and faculty feedback.

Modular Assessment

Assessment method	Hour
Instructions-- Conduct a structured Modular 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. Case-based assessment: (50 marks) Each student will be given an Emergency case for History taking and General Physical Examination and to write General guidelines of Prescription writing to note as Case Sheet. Or Practical Simulations: Emergency medicine scenario-based assessments (e.g., CPR, trauma response). (50 marks) Or Clinical Skills Assessment: Practical exam to assess emergency medicine skills, including triage, BLS/ACLS protocols, and team collaboration in high-pressure scenarios. (50 marks) Or Any practical in converted form can be taken for assessment. (25 marks) and	4

Any experiential, such as portfolios/ reflections/ 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	Medical Ethics in Patient care and Physical examination	2
1.2	Ethics and Etiquette of online consultations and in issuing different medical certificates	2
1.3	Prescription writing in clinical practice	6
1.4	History taking	4
1.5	General Physical Examination and Vital signs	6
2.1	History taking and Physical examination of Gastrointestinal diseases	6
2.2	Investigations and Principles of Treatment for Gastrointestinal Diseases	2
2.3	History taking and Physical Examination for Uro-Genital diseases	4
2.4	Investigations and Principles of treatment for Uro-Genital diseases	2
2.5	Clinical Diagnosis and Management of Musculoskeletal diseases	6
3.1	History and Physical examination for Respiratory diseases	5
3.2	Investigations and Principles of treatment for Respiratory diseases	3
3.3	History taking and Physical examination for Cardiovascular diseases	5
3.4	Investigations and Principles of treatment for Cardiovascular diseases	3
3.5	History taking and Physical examination for Skin diseases	3
3.6	Investigations and Principles of treatment for Skin diseases	1
4.1	History taking and Physical examination for CNS diseases	6
4.2	Investigations and Principles of treatment for CNS diseases	2
4.3	History taking and Examination for Psychiatric diseases	4
4.4	Investigations and Principles of treatment for Psychiatric diseases	2

4.5	History taking and Physical examination for Endocrinal diseases	4
4.6	Investigations and Principles of treatment for Endocrinal diseases	2
5.1	Classification and activities of Enzyme	8
5.2	Analytical and Demonstative practical learning	4
5.3	Metabolic pathways of carbohydrates, proteins, lipids, and hemoglobin	4
5.4	Biochemical composition of body fluids and humours	4
6.1	DNA replication, transcription, and translation	6
6.2	Chromosomal abnormalities and Management strategies	8
6.3	DNA-based diagnostic techniques and genomic variations	6
7.1	Specimen handling	6
7.2	Handling and examining of oncological specimens	6
7.3	Palliative care interventions	8
8.1	Systematic assessment of critically ill patients	7
8.2	Glasgow Coma Scale (GCS) scoring and ABCDE assessment	6
8.3	Emergency life saving procedures demonstration	7

Table 5 : Experiential learning Activity

(*Refer table 3 of similar activity number)

Experiential learning No*	Experiential name	Hours
1.1	Medical Ethics in Patient care and Physical examination	2
1.2	Principles & Etiquettes of online consultations and in issuing different medical certificates	2
1.3	Clinical Pharmacology and Prescription writing	7
1.4	History taking, General physical examination and Vital signs	10
1.5	Case recording and Presentation	5
2.1	History taking and Physical Examination for Gastrointestinal diseases	8
2.2	Investigations and Principles of treatment for Gastrointestinal diseases	4
2.3	History taking and Physical examination for Uro-Genital diseases	5
2.4	Investigations and Prinicples of treatment for Uro-Genital diseases.	2
2.5	History taking and Physical examination for Musculoskeletal diseases.	5
2.6	Investigations and Principles of treatment for Musculoskeletal diseases.	2
3.1	History taking and Physical examination for Respiratory diseases	7
3.2	Investigations and Principles of treatment for Respiratory diseases	3
3.3	History taking and Physical examination for Cardiovascular diseases	7
3.4	Investigations and Principles of treatment for Cardiovascular diseases	3
3.5	History taking and Physical examinatin for Skin diseases	4
3.6	Investigations and Principles of treatment for Skin diseases	2
4.1	History taking and Physical Examination for CNS diseases	8
4.2	Investigations and Principles of treatment for CNS diseases	4

4.3	History taking and Physical examination for Psychiatric diseases	5
4.4	Investigations and Principles of treatment for Psychiatric diseases	2
4.5	History taking and physical examination for Endocrinal diseases	5
4.6	Investigations and Principles of treatment for Endocrinal diseases	2
5.1	Enzyme activity and the role of enzymes in metabolic pathways	8
5.2	Impact of vitamins and minerals on health, and IUBMB nomenclature	6
5.3	Metabolic pathway disruptions in health and disease	6
5.4	Acid base balance and its corelation with deseases and condition	6
6.1	DNA mutations and Unani management approaches	5
6.2	Genetic disorder and Unani treatment	6
6.3	Genetic disorders and in-born errors of metabolism	9
6.4	Population-based DNA testing	6
7.1	Immune mechanisms	9
7.2	Cancer staging and intervention strategies	9
7.3	Palliative care and interventions for Cancer patients	8
8.1	Analysis of complex critical care scenarios.	9
8.2	Glasgow Coma Sclae (GCS) scoring and ABCDE assessment	9
8.3	Basic Life Support (BLS) and Advance Life Support (ALS) simulations	8

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-AB-MOA	1	100	200	300

6 B : Scheme of Assessment (Formative and Summative Assessment)

Credit frame work

UNIPG-AB-MOA consists of 8 modules totaling 16 credits, which correspond to 480 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 II.

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
M1. Medical Ethics, Clinical Pharmacology and Basics of Clinical Diagnosis طبی اخلاقیات، سریریات علم الادویہ ومبادیات سریریاتی تشخیص	2	60		50		
M2. Clinical Basics of Gastrointestinal, Uro-Genital and Musculoskeletal diseases امراض معدی ومعوی، بول وتناسل اور عظام ومفاصل کی سریریاتی مبادیاتی	2	60		50		
M3. Clinical Basics of Respiratory, Cardiovascular and Skin Diseases امراض تنفس، قلب ودوران خون اور جلد کی سریریاتی مبادیات	2	60		50		
M4. Clinical Basics of CNS, Psychiatry and Endocrinal diseases امرض دماغ واعصاب، نفسیات اور غدد لاقناتیہ کے سریریاتی مبادیات	2	60		50		
M5. Clinical Biochemistry سریریاتی حیاتی کیمیا	2	60		50		
M6. Clinical Genetics سریریاتی جینیات	2	60		50		
M7. Clinical Immunology and Oncology سریریاتی امیونولوجی اور اونکولوجی	2	60		50		
M8. Emergency Medicine امرجینسی میڈیسن	2	60		50		
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

A S.No	B Module number and Name	C MGP
1	M1.Medical Ethics, Clinical Pharmacology and Basics of Clinical Diagnosis طبی اخلاقیات، سریریات علم الادویہ ومبادیات سریریاتی تشخیص	C 1
2	M2.Clinical Basics of Gastrointestinal, Uro-Genital and Musculoskeletal diseases امراض معدی ومعوی، بول وتناسل اور عظام ومفاصل کی سریریاتی مبادیاتی	C 2
3	M3.Clinical Basics of Respiratory, Cardiovascular and Skin Diseases امراض تنفس قلب ودوران خون اور جلد کی سریریاتی مبادیات	C 3
4	M4.Clinical Basics of CNS, Psychiatry and Endocrinal diseases امرض دماغ واعصاب، نفسیات اور غدد لاقناتیہ کے سریریاتی مبادیات	C 4
5	M5.Clinical Biochemistry سریریاتی حیاتی کیمیا	C 5
6	M6.Clinical Genetics سریریاتی جینیات	C 6
7	M7.Clinical Immunology and Oncology سریریاتی امیونولوجی اور اونکولوجی	C 7
8	M8.Emergency Medicine امر بیسی میڈیسن	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-AB-MOA
Sem II
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
(M-1) Medical Ethics, Clinical Pharmacology and Basics of Clinical Diagnosis طبی اخلاقیات، سریریات علم الادویہ ومبادیات سریریاتی تشخیص (Marks: Range 5-20)				

1	**(U-1)** Medical Ethics طبی اخلاقیات	No	Yes	No
2	**(U-2)** Clinical Pharmacology سریریاتی علم الادویہ	No	Yes	No
3	**(U-3)** Basics of Clinical Diagnosis مبادیات سریریاتی تشخیص	No	Yes	Yes
(M- 2) Clinical Basics of Gastrointestinal, Uro-Genital and Musculoskeletal diseases امراض معدی ومعوی، بول وتناسل اور عظام ومفاصل کی سریریاتی مبادیاتی (Marks: Range 5-20)				
1	**(U-1)** Clinical Basics of Gastrointestinal diseases امراض معدی ومعوی کے سریریاتی مبادیت	No	Yes	Yes
2	**(U-2)** Clinical Basics of Uro-Genital diseases امراض بول وتناسل کے سریریاتی مبادیت	No	Yes	Yes
3	**(U-3)** Clinical Basics of Musculoskeletal Diseases امراض عظام ومفاصل کے سریریاتی مبادیات	No	Yes	Yes
(M- 3) Clinical Basics of Respiratory, Cardiovascular and Skin Diseases امراض تنفس، قلب ودوران خون اور جلد کی سریریاتی مبادیات (Marks: Range 5-20)				
1	**(U-1)** Clinical Basics of Respiratory Diseases امراض تنفس کی سریراتی مبادیات	Yes	Yes	Yes
2	**(U-2)** Clinical Basics of Cardiovascular Diseases امراض قلب ودوران خون کی سریریاتی مبادیات	Yes	Yes	Yes
3	**(U-3)** Clinical Basics of Skin Diseases امراض جلد کی سریریاتی مبادیات	Yes	Yes	Yes
(M- 4) Clinical Basics of CNS, Psychiatry and Endocrinal diseases امرض دماغ واعصاب، نفسیات اور غدد لاقناتیہ کے سریریاتی مبادیات (Marks: Range 5-20)				
1	**(U-1)** Clinical Basics of CNS diseases امراض دماغ واعصاب کی سریریاتی مبادیات	Yes	Yes	Yes
2	**(U-2)** Clinical Basics of Psychiatric disorders امراض نفسیات کی سریریاتی مبادیات	Yes	Yes	No
3	**(U-3)** Clinical Basics of Endocrinal diseases امراض غدد لاقناتیہ کی سریریاتی مبادیات	Yes	Yes	Yes
(M- 5) Clinical Biochemistry سریریاتی حیاتی کیمیا (Marks: Range 5-20)				
1	**(U-1)** Basic biochemistry and Clinical Considerations of Biomolecules مبادیات حیاتی کیمیا اور جزئیات حیوی کے سریریاتی اعتبارات	No	Yes	No
2	**(U-2)** Vitamins and Minerals حیاتین ومعدنیات	No	Yes	Yes
3	**(U-3)** Metabolic Pathways میٹابولک یا تھوے	No	Yes	No
4	**(U-4)** Body Fluids and Acid-Base Balance جسمانی سیالات اور توازن حمضی والمی	No	Yes	No
(M- 6) Clinical Genetics سریریاتی جینیات (Marks: Range 5-15)				
1	**(U-1)** Genetic Material and Mechanisms جینیاتی مواد اور میکانیہ	No	Yes	No
2	**(U-2)** Advances in Genetic Testing and Therapies جینیاتی جانچ اور علاج میں پیش رفت	No	Yes	No
3	**(U-3)** Genetic Alterations and Disorders جینیاتی تبدیلیاں اور عوارضات/امراض	No	Yes	No
(M- 7) Clinical Immunology and Oncology سریریاتی امیونولوجی اور اونکولوجی (Marks: Range 5-15)				
1	**(U-1)** Clinical Immunology (General Understanding and Brief Description) سریریاتی امیونولوجی (عمومی تفہیم اور مختصر بیان)	No	Yes	No
2	**(U-2)** Clinical Oncology (General Understanding and Brief Description) کلنیکل اونکولوجی (عمومی تفہیم اور مختصر بیان)	No	Yes	No
3	**(U-3)** Palliative Care (پیلیے ٹو کیر)	No	Yes	No
(M- 8) Emergency Medicine امر بیسی میڈیسن (Marks: Range 5-20)				

1	**(U-1)** Clinical approach in critical care نازک احوال کی نگہداشت میں سریریائی اسلوب	No	Yes	Yes
2	**(U-2)** Identification and assessment of deteriorating patient بگڑتے ہوئے مریضوں کی شناخت اور تجزیہ	No	Yes	Yes
3	**(U-3)** Basic and advanced life support بنیادی و اعلیٰ قلبی لائف سپورٹ	No	Yes	No

6 G : Instruction for the paper setting & Blue Print for Summative assessment (University Examination)

Instructions for the paper setting.

1. 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. Use the Blueprint provided in 6G or similar Blueprint created based on instructions 1 to 7

Blueprint		
Question No	**Type of Question**	**Question Paper Format**
Q1	**Application based Questions** 1 Question 20 marks All compulsory	M3.U1 **Or** M3.U2 **Or** M3.U3 **Or** M4.U1 **Or** M4.U2 **Or** M4.U3 **Or**
Q2	**Short answer Questions** Eight Questions 5 Marks Each All compulsory	1. M1.U1 **Or** . M1.U2 **Or** . M1.U3 **Or** . M2.U1 2. M2.U2 **Or** . M2.U3 **Or** . M3.U1 3. M3.U2 **Or** . M3.U3 **Or** . M4.U1 4. M4.U2 **Or** . M4.U3 **Or** . M5.U1 5. M5.U2 **Or** . M5.U3 **Or** . M5.U4 6. M6.U1 **Or** . M6.U2 **Or** . M6.U3 7. M7.U1 **Or** . M7.U2 **Or** . M6.U3 8. M8.U1 **Or** . M8.U2 **Or** . M8.U3
Q3	**Analytical Based Structured Long answer Questions** Four Questions 10 marks each All compulsory	1. M1.U3 **Or** . M2.U1 **Or** . M2.U2 2. M2.U2 **Or** . M3.U1 **Or** . M3.U2 3. M3.U3 **Or** . M4.U1 **Or** . M4.U3 4. M8.U1 **Or** . M8.U2

6 H : Distribution of Practical Exam (University Examination)

S.No	**Heads**	**Marks**
1	**Long Case**: A complete case comprising Detailed History (15 Marks), Examination (30 Marks), Investigations (15 Marks) and Line of Treatment and Treatment (20 Marks)	80

2	**Short Case**: Directly Observed Clinical Examination--any one of the following: 1. Palpation of Abdomen 2. Auscultation of Chest and explanation of findings 3. Auscultation of Heart sounds and explanation of findings 4. Clinical Assessment of Patient of Sciatica 5. Clinical Assessment of Patient of Facial Palsy 6. Assessment of Unconscious patient 7. … Any similar condition	30
3	**Spotting**: 6 Spotters (each of 5 marks) among following 1. X-rays to interpret 2. ECG to interpret the findings 3. Biochemical and Other Lab Reports to interpret a. LFT b. KFT c. TFT d. Arthritis Profile etc. 4. … Any similar report/ condition/ situation etc..	30
4	Viva (2 examiners: 20 marks/each examiner)	40
5	Logbook (Activity record)	10
6	Practical/ Clinical Record	10
Total Marks		**200**

Reference Books/ Resources

S.No	References
1	Gruner O C. A Treatise on the Canon of Medicine of Avicenna. New York, AMS Press; 1973.
2	Ibn Rushd. Kitāb al-Kulliyāt (Urdu translation). New Delhi, Central Council for Research in Unani Medicine; 1980.
3	Ibn Sina. Al-Qānūnfi'l Ṭibb, New Delhi, Jamia Hamdard; 1411 AH
4	Kabiruddin M. Al-Iksīr, New Delhi, Ejaz Publishing House; 2003.
5	Kabiruddin M. Ifāda-i-Kabīr Mufaṣṣal. New Delhi, National Council for Promotion of Urdu Language; 2001
6	Kabiruddin M. Tarjama-i-Kabīr, 10 th ed. Hyderabad, Hikmat Book Depot; 1980
7	Kabiruddin M. Tarjama-o-Sharḥ-i-Kulliyāt-i-Qānūn, Faislabad, Malik Sons Publishers; New Delhi
8	Khan MA. Iksīr-i-A'ẓam, Lucknow, Matba Munshi Naval Kishor; New Delhi
9	Kirmani N. Sharḥ al-Asbābwa'l 'Alāmāt, Lucknow, Matba Munshi Naval Kishor; 1326 AH
10	Qamari H. Ghinā Munā. New Delhi, Central Council for Research in Unani Medicine; 2008.
11	Macleod's Clinical Examination. Graham Douglas, Fiona Nicol, Colin Robertson, Churchill Livingstone, Elsevier
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13	Longo DL, Kasper DL, Jameson JL, Fauci AS, Hauser SL, Loscalzo J. Harrison's Principles of Internal Medicine. 18th ed. New York: McGraw-Hill
14	Colledge R. Micky, Walker Brian R, Ralstan Stuart H, Davidson's Principles & Practice of Medicine. 21st edition, Churchill Livingstone, Elsevier
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17	Thomas M. Devlin, Textbook of Biochemistry with Clinical Correlations, 6th Edition, John Wiley & Sons
18	Peter J. Kennelly et al., Harper's Illustrated Biochemistry, 32 Edition, McGraw Hill
19	David L. Nelson and Michael M. Cox, Lehninger Principles of Biochemistry: 6th Edition, MacMillan Higher Education
20	U. Satyanarayana, U. Chakrapani, Essentials of Biochemistry 3rd Edition, Elsevier
21	SD Gangane, Human Genetics, 6th Edition, Elsevier
22	Versha Katira, Basics of Human Genetics 2ed, CBS Publishers and Distributors
23	Trivedi DJ, Shrimankar PS, Kapur & Suri's Basic Human Genetics 3rd Edition, Jaypee Brothers
24	Bhatnagar SM, Kothari ML and Mehta LA. Essentials of Human Genetics, Sangam Books Ltd
25	O'Connor RE, Alagappan K, Lemaire J, et al. Emergency medical services: principles and practice. 4th ed. Burlington: Jones & Bartlett Learning; 2021
26	Chugh SN. Emergency medicine for students and practitioners. 5th ed. New Delhi: CBS
27	Weingart SD, Brown SP. The Critical Care Manual: A Guide to the management of Critically ill patients. 2nd ed. New York: McGraw-Hill

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		