Competency-Based Dynamic Curriculum for MD/ MS Unani

(PRESCRIBED BY NCISM)

Semester II

Applied Basics of Manafeul Aza

(Human Physiology)

(SUBJECT CODE : UNIPG-AB-MZ)

(Applicable from 2024-25 batch, from the academic year 2024-25 onwards until further

notification by NCISM)





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

Preface

The study of Manafeul Aza (human physiology) involves understanding the intricate mechanisms of the human body and its dynamic interaction with the environment. For centuries, Unani medicine has contributed significantly to the advancement of medical knowledge, blending traditional wisdom with empirical evidence to promote health and treat disease. In today's rapidly evolving scientific landscape, there exists an unprecedented opportunity to enrich Unani education by integrating traditional principles with contemporary medical and technological advancements. This curriculum for postgraduate Unani doctors represents a pioneering effort to bridge this gap, providing a comprehensive framework for the advanced study of human physiology. Designed with the dual objectives of preserving the integrity of traditional Unani knowledge and equipping students with cutting-edge technical expertise, the syllabus covers five carefully curated papers. This paper **Applied Basics of Manafeul Aza**: provides a deep dive into the functional anatomy and physiology of organ systems, emphasizing their relevance in Unani concepts such as Mizaj (temperament), Akhlat (humors), Aaza, Quwa and Afaal. The other four papers are:

- 1. **Applied Physiology**: It includes modules on different physiological sytem and application of physilogical processes in understanding health and disease.
- 2. **Biochemistry, Genetics and Bioinformatics**: Includes expansive modules covering topics like Biochemistry, medical genetics and bioinformatics.
- 3. **Clinical Physiology**: A focus on diagnostic and therapeutic applications, enabling students to correlate physiological mechanisms with clinical practices in both Unani and contemporary medicine.
- 4. Integrative Physiology and Recent Advances: Integrating cellular, molecular, and systemic functions with classical Unani perspectives. Also covers medical education technology and breakthroughs in physiology, ensuring Postgraduates remain at the forefront of global medical science.

The curriculum is structured into 40 modules, offering an extensive yet cohesive exploration of the subject. Each module is crafted to foster critical thinking, encourage research, and promote interdisciplinary learning, enabling postgraduate students to approach physiology from both traditional and innovative perspectives. We envision this syllabus as a milestone in the evolution of Unani medical education, aligning it with international standards while preserving its unique identity. By equipping future Unani doctors with a profound understanding of physiology, this curriculum aims to empower them to contribute meaningfully to healthcare and research, blending the wisdom of the past with the promise of the future.

INDEX

Summary & Credit Framework Semester II	1
Course Code and Name of Course	2
Table 1 : Course learning outcomes and mapped Program learning outcomes	2
Table 2 : Course contents (Modules- Credits and Notional Learning Hours)	3
Table 3 : Modules - Unit - Module Learning Objectives and Session Learning Objective- Notional Learning Hou	Irs-
Domain-Level- TL Methods	19
Table 4 : Practical Training Activity	124
Table 5 : Experiential learning Activity	126
Table 6 : Assessment Summary: Assessment is subdivided in A to H points	
6 A : Number of Papers and Marks Distribution	128
6 B : Scheme of Assessment (Formative and Summative Assessment)	128
6 C : Calculation Method for Modular Grade Points (MGP)	128
6 D : Semester Evaluation Methods for Semester Grade Point Average (SGPA)	129
6 E : Question Paper Pattern	130
6 G : Instruction for the paper setting & Blue Print for Summative assessment (University Examination)	132
6 H : Distribution of Practical Exam (University Examination)	133
Major Practical (80 Marks):	133
Minor Practical or Spotters (60 Marks)	133
Viva (40 Marks)	134
Logbook (10 Marks)	134
Practical/Clinical Record (10 Marks)	134
Reference Books/ Resources	135
Abbreviations	137

NCISM (NATIONAL COMMISSION FOR INDIAN SYSTEM OF MEDICINE)

Competency-Based Dynamic Curriculum for MD/ MS Unani Applied Basics of Manafeul Aza (UNIPG-AB-MZ)

Summary & Credit Framework Semester II

Module Number & Name	Credits	Notional Learning Hours	Maximum Marks of assessment of modules (Formative Assessment)
M 1. طبیعت اور ار کان Tabiyat and Arkan	2	60	50
Mizāj and Akhlāt مران اوراخلاط . Mizāj	2	60	50
Adhā and Quwā اعضاءاور قوى . 3 M	2	60	50
M 4. اروان اورافعال Arwāh and Af'al	2	60	50
Cytology and Histology علم الخليه اور تسجيات .5 M	2	60	50
M 6. خشاءالخلیه پرطل وحمل اور سیل سکنگ Transport across cell membrane and cell signaling.	2	60	50
Cell Electrophysiology سیل الیکٹر وفزیالو جی	2	60	50
M 8. استثباب Homeostasis	2	60	50
	16	480	400

Credit frame work

UNIPG-AB-MZ 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-MZ	Applied Basics of Manafeul Aza (Human Physiology)		

Table 1 : Course learning outcomes and mapped Program learning outcomes

CO No	A1 Course learning Outcomes (CO) UNIPG-AB-MZ At the end of the course UNIPG-AB-MZ, the students should be able to	B1 Course learning Outcomes mapped with program learning outcomes.
CO 1	Demonstrate competence in the fundamental Unani concepts especially Unani physiological concepts and their integration with other medical sciences.	PO1,PO4,PO7,PO8
CO 2	Express high level of comprehension of major physiological systems of the body and how they interact and their applied aspect.	PO3,PO5
CO 3	Employ the understanding of Genetics, Biochemistry, molecular physiology, environmental physiology, sports physiology, clinical nutrition, modern technological advances, recent advances in physiology and their application in validation of Unani theories, diagnosis, therapeutics and research.	P02,P05,P07
CO 4	Develop proficiency in measuring, assessing, interpreting and communicating clinical physiological parameters and their translational aspect. Interact with the allied departments by rendering services in advanced laboratory investigations.	P05,P06
CO 5	Apply the principals of Ethics, research methodology, medical statistics and Bioinformatics in conducting research, publish research article, prepare and present research proposals. Acquire skills in conducting collaborative research, entrepreneurship, and innovations in the field of Manafeul Aza & allied sciences.	PO4,PO5,PO8
CO 6	Apply general principles of communication and medical education technology in effective teaching of both Manafeul Aza and physiological mechanisms of the human body. Exhibit high levels of morals and professional ethics at every level.	P07,P08

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

				Notional L	earning Hours			
2A Module Number	2B Module & units	2C Number of Credits	2D Lectures	2E Practical Training	2F Experiential Learning including Modular Assessment	2G Total		
	M-1 طبيعت اوراركن Tabiyat and Arkan							
	This module combines theoretical knowledge with hands-on practice and real-world experiences, fostering a comprehensive understanding of Tabiyat and Arkan in the context of homeostasis and their implications on health and disease	2 1						
	 M1.U1 طبيعت Tabi'at 							
	(Classical concepts of tabiyat) کلاییکی نظریه طبیعت 1.1.1							
	(Tabiyat in the light of recent medical advances.) نظريه طبيعت جديد طبی تحقيقات کی روثنی ميں 1.1.2				30			
	(Role of tabiyat in immunity.) مناعت میں طبیعت کا کردار 1.1.3							
1	(Homeostatic function of tabiyat.) طبیعت کے استنہائی افعال 1.1.4		10	20		60		
	• M1.U2 الركان Arkān							
	Classical concepts of Arkān and its relevance) نظریہ ارکان اور معاصرتی طب کے ذیل میں اسکی معنویت 1.2.1 to contemporary medical science.)							
	Relationship between Arkān and physiological) ارکان اور منافع الاعضائ معمولات کے مابین تعلق 1.2.2 processes.)							
	توازن ار کان اور صحت و مرض پر اسکے اثرات 1.2.3 (Balance of Arkān and its impact on health and disease.)							
	(Elementology and its corelation with the concept of Arkān.) علم العناصر اور نظريه اركان كا ارتباط 1.2.4							

Mizāj and Akhlāt مراد الخلاط Mizāj					
This module encompasses the core concepts of unani medicine viz. Mizāj and Akhlāt, including their classification and assessment. This module highlights the importance of these concepts in Personalised medicine and provides an overview of their correlation with recent advances in science and medicine.					
 M2.U1 بران Mizāj 					
مزاج اور ارکان کے ما بین ربط و تعلق 2.1.1					
(Concept of Mizaj (temperament) and its relationship to Arkan)					
2.1.2 اقسام مزاج اور فارماکوجینو مکس سے انکا ارتباط 2.1.2 اقسام مزاج اور فارماکوجینو مکس سے انکا ارتباط 2.1.2 pharmacogenomics.)					
مزاج اور اس کی امراض و علاج کے ردعمل کے لیے حساسیت 2.1.3					
(Mizaj and its susceptibility to diseases and treatment responses.)	2	10	20	30	60
طب یونانی میں مزاج کی تشخیص کے لیے استعال ہونے والے ذرائع 2.1.4					
(Tools used in Unani medicine for determination of Mizaj.)					
تشخیص مزاج میں حالیہ ذرائع کی صحت و صداقت اورانگی معتبر یت 2.1.5					
(Validity and reliability of recent Mizaj assessment tools.)					
• M2.U2 اخلاط Akhlāt					
نامور یونانی علماء کی جانب سے اخلاط کا تصور اور تقنیم 2.2.1					
(Concept and Classification of Akhlat given by renowned Unani Scholars.)					
اخلاط اور مزاج کے درمیان تعلق 2.2.2					
				1	

2

	(Relationship between Akhlāt and Mizaj.)					
	منافع الاعضاك تناظر مين اخلاط كا تصور 2.2.3					
	(Concept of Akhlāt in context of human physiology.)					
	اخلاط کا توازن اور صحت و بیاری پر اس کے اثرات 2.2.4					
	(Balance of Akhlāt and its impact on health and disease)					
	غلبه اخلاط كالتجزير 2.2.5					
	(Assessment of Ghalbae Akhlat.)					
	M-3 اعضاءاور قوى Adhā and Quwā					
	This module aims to deepen the understanding of Aza (organs) and Quwa (forces) within the framework of Unani medicine, including their classification and correlation with contemprary research advances. Their relevance and methods for developing tools for their assessment will also be covered.					
	• M3.U1 اعضاء Adhā					
	اعضاء کا تاریخی کپس منظر اور ارتقاء 3.1.1					
3	(Historical perspectives and evolution)	2	10	20	30	60
	صحت و بیاری میں اعضاء کا کردار 3.1.2					
	(Adhā and their role in health and disease)					
	جدید بشریاتی تقشیم کی روشن میں اعضاء کی درجہ بندی 3.1.3					
	(Classification of Adhā in light of contemporary tissue classification)					
	• M3.U2 ^ت رک Quwā					

	قومیٰ، ان کی درجہ بندی اور جدید منافع الاعضاکی جسمانی نظام کی کھیم کے ساتھ اسلی ہم آہنگی 3.2.1					
	(Quw $ar{a}$, their classification and association with recent physiological system classification.)					
	قولی اور افعال کے درمیان تعلق 3.2.2					
	(The relationship between Quwā and Afaal)					
	صحت کو بر قرار رکھنے میں اعضاء اور قویٰ کا باہمی عمل 3.2.3					
	(The interplay between Adhā and Quwā in maintaining health)					
	• M3.U3 اعضاءاور توی کے اطلاق پہلو Applied aspect of Adhā and Quwā					
	عام عوارض اوراعضاء و قوی پر ان کے اثرات 3.3.1					
	(Common disorders and their impact on Adhā and Quwā)					
	طب يونانى ميں تشخيص اور جائزہ 3.3.2					
	(Diagnosis and assessment in Unani practice)					
	قویٰ کی تشخیص سے لیے ٹولز کی تیاری اور توثیق 3.3.3					
	(Development and validation of tools for assessment of $Quw\bar{a}$)					
	M-4 ارواح اورافعال Arwāh and Afal					
4	The concept of Arwah (Pnuema) and Afaal (Actions/Functions) in Unani Medicine plays a vital role in understanding human physiology and pathology. This module will delve into the metaphysical and practical aspects of these two elements, their interrelationship, and their influence on health. The course will focus on enhancing both theoretical knowledge and practical skills, equipping students to apply these concepts in clinical practice. The module will also cover the implications of movement of Arwah on emotions and Stress is also introduced.	2	10	20	30	60
	• M4.U1 البعد الطبيعيات Introduction to Unani Metaphysics					

طب یونانی کے قلیفے کا جائزہ اور انسانی فطرت سے تعلق 4.1.1			
(Overview of Unani philosophy and its relation to human nature.)			
ارواح اور افعال کا تصور 4.1.2			
(Concept of Arwah and Afaal.)			
ارواح کی اقسام 4.1.3			
(Types of Arwah.)			
فلسفيانه تصورات : 4.1.4 (Philosophical concepts):			
4.1.4.1 رول (Rooh)			
4.1.4.2 ^{نف} س (Nafs)			
(Aql) عقل 4.1.4.3 (Aql)			
4.1.4.4 تلب (Qalb)			
اقسام اور صحت پر النکے اثرات Types of Af'al and Their Impact on Health افعال کے M4.U2			
طب یونانی میں افعال کی درجہ بندی 4.2.1			
(Classification of Afaal in Unani medicine.)			
افعال کا کردار :بدن کے اخلاط)دم، بلغم، صفرا، سودا (کو متوازن رکھنے میں 4.2.2			
(The role of Afaal in balancing the body's Humors (Dam, Balgham, Safra, and Sauda).)			
ارواح اور افعال کا تعلق :ذہنی اور روحانی اعمال جسمانی صحت کو کیسے متاثر کرتے ہیں 4.2.3			

	(The connection between Arwah and Afaal: How mental and spiritual actions affect the body's physical health.)					
	جذباتی اور نفسیاتی صحت کے لئے یونانی طریقہ کار و منہج 4.2.4					
	(Unani approach to emotional and psychological health.)					
	بیرونی عوامل)طرز زندگ، غذا، ماحول (کا ارواح پر اثر 4.2.5					
	(Influence of external factors (lifestyle, food, environment) on Arwah.)					
	 M4.U3 توليد امراض مين اروان الاراعضاء كالتعامل Interaction of Arwah and Afaal in Disease Pathogenesis 					
	متاثره ارواح کا جسمانی مزاج اور اخلاط پر اثر 4.3.1					
	(Impact of disturbed Arwah on the body's temperament and humors.)					
	افعال میں عدم توازن سے بیاریاں 4.3.2					
	(Imbalances in Afaal leading to diseases.)					
	ارواح کے عوارض)مثلاً ڈپریشن، اضطراب، تناؤ (کے تشخیصی معیارات 4.3.3					
	(Diagnostic criteria for detecting disorders of Arwah (e.g., depression, anxiety, stress).)					
	مراقبه اور ذہنی تمر کز کی علاجی تکنیک 4.3.4					
	(Therapeutic Meditation and Mindfulness Techniques.)					
	M-5 علم الخليداور تسجيمات Cytology and Histology					
5	This module provides a comprehensive introduction to the study of cells (cytology) and tissues (histology) in both normal and pathological states. Students will explore the structure, function, and organization of cells and tissues, emphasizing their roles in health and disease. Through a combination of theoretical knowledge and practical laboratory skills, learners will engage with microscopy techniques, staining methods, and specimen preparation.	2	10	20	30	60

• Microscopy and staining techniques الكروسكوني اور تلوين كى تكذيك 1. مايگرداسکوني کی اقسام 5.1.1 (Types of Microscopy) مختلف خلبات اورانسجه کی تلوین کی خصوصات 5.1.2 (Staining characteristics of various cells and tissues.) تكوىن كى تكنيك، جيسے تكوين تېميو گلوين ، تېمالو كسلين اور اوسين تكوين 5.1.3 (Staining techniques, like haemoglobin staining Hematoxylin and Eosin staining) Cellular organellesعضيات خلوية M5.U2 5.2.1 خلياتى عضويات :ايندويلازىك ر شيولم، گولجى كمپليكس، مائٹو كوندريا، سينٹر وسومز ، رائبوسومز ، پير و كسيسومز ، نيو كليس) نيو كليئر اينو يلپ نيو كليئر پور ممپليكس، نيو كليوكس، نيو كليو پلازم اور كرو ميٽن(، سائٹوسول اور سائٹوا سليليٹل ڈھانچے)مائيكرو ٹيو انٹر ميڈيٹ فلامنٹس(، ايكسٹرا سيلولر ميٹر کس (Cellular organelles: Endoplasmic reticulum, golgi complex, mitochondria, centrosomes, ribosomes, lysosomes, peroxisomes, Nucleus(nuclear envelope with nuclear pore complexes, nucleolus, nucleplasm and chromatin) Cytosol and cytoskeletal structures (microtubule, microfilaments and intermediate filaments) Extracellular matrix.) خلیات کے درمیان رابط :ڈیسموزومز ، انٹر میڈیٹ جنکشن، ٹائٹ جنکشن یا زونا او کلوڈنز۔ 5.2.2 (Linkages between the cells:Desmsomes, intermediat Junction, Tight junction or zona occludentes.) (گیپ جنگشن (مَوصِلٌ فَجُويٌ 5.2.3

(Gap junction)

• M5.U3 احداث خليه Cellular Events			
دورة خلية 5.3.1			
(Cell cycle)			
انقسام خلية 5.3.2			
(Cell division)			
تفتحم، تنسج، تحول نسيحی اور سرطان 5.3.3			
(Hyperplasia, Neoplasia, Metaplasia and cancer)			
موت الخلية اوراستمانة 5.3.4			
(Cell death and apoptosis)			
شيخوخة 5.3.5			
(Ageing)			
• M5.U4 بانتک تیاری Tissue preparation			
بافت کی تیاری، حدود اور چیکنجز 5.4.1			
(Tissue preparation, limits and challenges.)			
بافت کا جمع کرنا، فکس کرنا، بلاک بنانا، سیکثن کتُنگ، مختلف ماشکروٹوم کا استعال، اور عمومی و نظامی سلائیڈز کی تیاری 5.4.2			
(Collection of tissue, fixing, block making, section cutting, use of different types of microtome and preparation of general and systemic slides.)			
 M5.U5 نجيات عموم General histology 			

	لسجيات عمومي 5.5.1					
	(General histology.)					
	جسم کے نظاموں کی مخصوص نسجیات بشمول خورد بینی ظہور 5.5.2					
	(Specific histology of the systems of the body including their microscopic appearance.)					
	M-6 غشاءالخليه پرهل دخمل اورسيل سكنك Transport across cell membrane and cell signaling.					
	This module offers an in-depth exploration of the mechanisms by which substances move across cell membranes and the intricate signaling pathways that facilitate communication within and between cells. Students will investigate the principles of membrane structure and function, including transport processes such as passive diffusion, facilitated diffusion, active transport, and endocytosis. The module will also cover the various types of cell signaling, including endocrine, paracrine, autocrine, and synaptic signaling, along with the molecular mechanisms that underlie signal transduction. Through a combination of lectures, case studies, and laboratory exercises, students will gain a comprehensive understanding of how transport and signaling processes contribute to cellular homeostasis, function, and overall physiological responses.					
6		2	10	20	30	60
	گبس ڈونن کا غشائ توازن کا تصور 6.1.1					
	(Concept of Gibbs- Donnan Membrane equilibrium)					
	عنشاء الخليه مين قنويات لحميه :قنوات أليونية اور قناة ماء 6.1.2					
	(Protein (Channel in the membrane: ion channels and water channels.)					
	قناة الجبد الكهربائي اور قناة الجبد ريطة كاطريقه كار1.3					
	(Mechanism of Voltage gated channel and Ligand gated channel.)					
L		1	L	1	1	L

ققاط رفعی 6.1.4	
(Patch clamping)	
نقل السلبی اور اس پر اثرانداز ہونے والے عوامل 6.1.5	
(Passive transport and factors affecting it.)	
فقل النشط 6.1.6	
(Active transport.)	
 M6.U2 رسیپٹرز Receptors 	
جی پروٹین جوڑے ہوئے ریسیپٹرز 6.2.1	
(G-protein coupled receptors (GPRC))	
ريسيپٹر ٹائروسين کائنيزز 6.2.2	
(Receptor tyrosine kinases (RTKs))	
قناة أيونية 6.2.3	
(Ion channel)	
نيوكليتر ريسيپٹرز 6.2.4	
(Nuclear receptors)	

ٹیومر نیکروسیس فیکٹر ریسیپٹر فیملیز 6.2.5 (Tumor necrosis factor (TNF) receptor families.)			
• M6.U3 نظام رس الثانية: Second messenger system			
سائیکلک 6.3.1			
(Cyclic (cAMP))			
سائيكلك 6.3.2			
(Cyclic GMP (cGMP))			
حيكشيم اور كيلمو دوكن نظام 6.3.3			
(Calcium and calmodulin system)			
انوسٹائل اور ڈائی اسیل گلیسرول ٹرائی فاسفیٹ نظام 6.3.4			
(Inositol triphosphate(IP3) and Diacylglycerol (DAG) system)			
نائٹرک آ کسائیڈ 6.3.5			
(Nitric oxide (NO))			
اریکائیڈو نک ایسڈ 6.3.6			
(Arachidonic acid)			
• M6.U4 مواصلات بين الخليه Intercellular communication			
عصبی مواصلات 6.4.1			

	(Neural communication)					
	اینڈوکرائن مواصلات۔ 6.4.2					
	(Endocrine communication.)					
	پير اکرائن مواصلات 6.4.3					
	(Paracrine communication)					
	آ ٹو کرائن مواصلات 6.4.4					
	(Autocrine communication)					
	جكسٹا كرائن مواصلات 6.4.5					
	(Juxtacrine communication)					
	• M6.U5 سكتل كي نقل وحمل اوراس كاطبي بيبلو Signal transduction and its clinical aspect					
	سگنل ٹرانزڈ کشن کا طریقہ کار کے طور پر پروٹین-ٹائروسین فاسفورولیشن 6.5.1					
	(Protein-Tyrosine Phosphorylation as a Mechanism for Signal Transduction)					
	جی پروٹین ریسیپٹرز سے متعلق بیاریاں 6.5.2					
	(Disorders Associated with G Protein-Coupled Receptors .)					
	Cell Electrophysiology سيل اليكثر وفزيالو چي					
7	This module focuses on the principles of cell electrophysiology, exploring how electrical signals are generated and propagated in biological cells. Students will investigate the fundamental concepts of membrane potentials, ion channels, and action potentials, along with the physiological significance	2	10	20	30	60

c r t	of electrical activity in various cell types, particularly neurons and muscle cells. The course will also cover techniques used to measure electrical activity, including patch-clamp and voltage-clamp methods. Through theoretical discussions and practical laboratory sessions, students will develop a thorough understanding of how electrical properties of cells contribute to their function and communication, as well as their implications in health and disease.			
	• M7.U1 خلية عصبية Nerve cell			
	توصيل و اثارة 7.1.1			
	(Excitation and conduction)			
	غذاء عصبی)نیورد ٹروفنر) 2.1.2			
	(Neurotrophins)			
	• Muscle cell خلية عضلية Muscle cell			
	عصلات ہیکلیۃ :جہد الفعل، عجزی حَدّنِی نظام، ڈسٹروفن- گلائکو پروٹین سکمپلیکس 7.2.1 (Skeletal muscle: Action potential, Sacrotubular system,Dystrophin- glycoprotein complex)			
	عضلة القلب :جهد غثاء ساكن وجهد فعل 7.2.2			
	(Cardiac muscle: Resting membrane and action potential.)			
	عضلات ملساء : کهر بائی ومیکانیکی سرگرمی 7.2.3			
	(muscle: Electrical and Mechanical Activity)			
	• M7.U3 نقل المشبحي والوصلي Synaptic and junctional Transmission.			
	بنية ووظيفة ما قبل اور بعد المشبك 7.3.1			

30 60

(Positive Feedback)			
عصبی اور غدود لاقناتی مشتطیم 8.2.3			
(Nervous and endocrine regulation)			
• M8.U3 درجد جرارت اور حمض قاعدی توازن Temperature and Acid-base balance			
درجه حرارت کی تنظیم 8.3.1			
(Temperature Regulation)			
قدازن الحمض-القاعدة : Acid-Base Balance). توازن الحمض-القاعدة : 8.3.2 منتظم منتقسى (Respiratory regulation) . تنظيم منتقسى 8.3.2.1 8.3.2.2) . تنظيم كلوى 2.3.8			
• M8.U4 رطوبات اورکبارل کاتوازن Fluid and electrolyte balance			
8.4.1: كليدى اصطلاحات (Key terms) 8.4.1.1 آسمولز (Osmoles) 8.4.1.2 ايكويلينتس (Equivalents) 8.4.1.3 (Osmolality) 8.4.1.4 آسموليرنى (Osmolarity) 8.4.1.5 ئوستى (Tonicity)			
طريقه کار اور تنظیم 8.4.2			
(Mechanism and regulation)			
تناؤ کے ساتھ مطابقت 8.4.3			
(Stress adaptations.)			
**جسمانی مائعات میں توازن کے یونانی تصورات)اخلاط(8.4.4			
(Unani concepts of balance in body fluids (Akhlat))			

16 80 160 240 480						
		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		
وراركان : Module 1	Tabiyat and Arkan طبيعت ا							
Module Learning (At the end of the	g Objectives e module, the students should be able to)							
 Comprehend the concept of Tabiyat and Arkan. Apply the principle of tabiyat to promote homeostasis in individuals. Comprehend the relationship between the concept of tabiyat, Arkan and physiological processes. Conduct practical experiments and case studies related toTabiyat. Engage in experiential learning to appreciate the importance of Tabiyat and Arkan in Health and Disease. 								
Tabi طبيعت Unit 1	at							
) نظريه طبيعت 1.1.1	Classical concepts of tabiyat) کالیک							
ت کی روشنی م یں 1.1.2	(Tabiyat in the light of recent medical advances.) نظریه طبیعت جدید طبی تحقیقات کی روشنی میں 1.1.2							
(Role of tabiyat in immunity.) مناعت مين طبيعت كا كردار 1.1.3								
1.1.4 طبیعت کے استتبابی افعال (Homeostatic function of tabiyat.)								
References: 1,2	,3,4,5,6,7,9,13,15,18,23,40	1	1	1		1		
3A	3B	3C	3D	3E	3F	3G		

CO 1	Expound on the classical concept of Tabiyat in Unani medicine, including its essential components also describe how these components interact to maintain health and equilibrium in the human body according to Unani principles.	1	Lecture	CE	Knows- how	BS,C_L,D IS,FC,L& GD,PAL, PL,PER,S Y,TBL,W		
CO 1	Discuss the role of Tabiyat in maintaining health and preventing disease.	1	Lecture	САР	Knows- how	BS,DIS,F C,L&PPT ,PL,PER, SDL,SY,T PW,TBL		
CO 1,CO 2	Describe the relationship between Tabiyat and homeostatic function and Immunity	1	Lecture	CS	Knows- how	DIS,FC,J C,L&PPT ,PER,SDL ,SY,W		
CO 1,CO 3,CO 5,CO 6	Measure the role of genetic and environmental factors in shaping Tabiyat in Unani medicine and analyze how these factors influence individual health and well-being,	8	Experiential - Learning1. 1	PSY-MEC	Does	C_L,JC,M nt,PER,P BL,PrBL		
CO 1	Differentiate between Tabiyate Oola and Tabiyate Thaniya, identify their unique characteristics and implications in Unani medicine.	1	Lecture	CAN	Knows- how	BL,DIS,F C,L,PAL, SDL,SY,T UT		
CO 1	Assess the clinical implications of Tabiyat in Unani Medicine- I	5	Practical1.1	САР	Shows- how	BS,CBL,C _L,DIS,LS ,Mnt,PER ,SDL		
CO 1	Measure the clinical Implications of Tabiyat in Unani Medicine- II	8	Experiential - Learning1.2	PSY-MEC	Does	CD,CBL, DIS,FV,M nt,TUT		
Unit 2 ارکان Arkān								
(Classical concepts of Arkān and its relevance to contemporary medical science.) نظريه اركان اور معاصرتی طب کے ذيل ميں اسكى معنويت 1.2.1								

(.Relationship between Arkān and physiological processes) ارکان اور منافع الاعضائی معمولات کے ما بین تعلق 1.2.2

(Balance of Arkān and its impact on health and disease.) توازن ارکان اور صحت و مرض پر اسکے اثرات 1.2.3

(Elementology and its corelation with the concept of Arkān.) علم العناصر اور نظريد اركان كا ارتباط 1.2.4

References: 1,2,3,4,5,6,7,8,9,10,11,12,13,14,15,16,18,19,22,23

3A	3В	3C	3D	3E	ЗF	3G
CO 1	Describe the concept of Arkān in Unani medicine. Discuss its historical context and relevance to contemporary medical practices, highlighting how these ancient principles can enhance modern healthcare.	2	Lecture	сс	Know	BS,DIS,J C,L&PPT ,LS,SY
CO 1,CO 2	Analyze the principles of Elementology to understand and describe human physiological processes. Correlate these principles with the concept of Arkān in Unani medicine, providing examples of how each element influences specific bodily functions and contributes to overall health.	2	Lecture	CAN	Knows- how	CBL,C_L, L&GD,LS, Mnt,PL
CO 1	Comprehend and explain the concept of "Arbaiyate Arkan" in Unani medicine, including its fundamental principles and applications.	1	Lecture	САР	Knows- how	L&GD,L& PPT ,LS,PER, SDL
CO 1,CO 2	Interpret the concept of the balance of Arkān in Unani medicine and analyze its impact on health and disease. Identify how the balance or imbalance of the Arkān influences physiological processes, contributes to health, and leads to disease when disturbed.	1	Lecture	CAN	Knows- how	CBL,L&G D,L&PPT ,LS,PL,P BL
CO 1,CO 2,CO 4	Assembles case studies to understand the impact of Ark $ar{a}$ n balance on health and disease.	5	Practical1.2	AFT-CHR	Shows- how	CBL,DIS, Mnt,PER, TUT
CO 1,CO 2,CO 4	Prepare simple Unani remedies to balance Arkan.	10	Practical1.3	PSY-SET	Does	BS,CBL,C _L,DIS,LS ,TBL

CO 1,CO 2,CO 4,CO 5	Design a patient education program to promote awareness about Arkan balance and its impact on health.	10	Experiential - Learning1.3	PSY-ORG	Does	BS,C_L,D IS,LS,Mnt ,PL,RLE, SDL,TPW			
Practical Trainin	g Activity								
Practical 1.1 : C	linical implications of Tabiyat								
Total duration: 5	Hours								
Session 1: Unde	erstanding Madarij of Tabiyat-Marz Interaction (1.5 Hours)								
Teacher will intro	oduce the concept of Tabiyat and its role in disease progression and recovery.								
Both teacher and	d student will discuss on classical Unani perspectives of Zamān-e-Tazāyud, Zamān-e-Tahal	llul, Bohran, and	d other phases						
Session 2: Char	t Preparation and Analysis (2 Hours)								
Students work in ma'an fil Bohran	dividually or in pairs to design a structured chart representing the different stages of Tabiyat published in Joural <i>Unimed-Kulliyat</i> III (2):1-6)	-Marz interactio	n (help may b	e taken from	following re	ference: Al			
Inclusion of case	e-based examples to illustrate each stage.								
Faculty provides	feedback and suggestions during chart development.								
Session 3: Prese	entation and Evaluation of Charts (1.5 Hours)								
Students will present their charts, explaining the stages of disease progression and recovery with Unani justifications.									
Comparative dis	Comparative discussion on variations in disease progression across different case studies.								
Practical 1.2 : In	Practical 1.2 : Impact of Arkān balance on health and disease.								
Total duration: 5 Hours									
Session 1: Understanding Arkān and Case Study Discussion (1.5 Hours)									
Introduc	Introduction by teacher to Arkān balance and its role in maintaining health.								

- Distribution of five case studies to student pairs.
- Initial discussion and analysis of symptoms, causes, and implications of Arkān imbalance in each case.

Session 2: Group Analysis and Report Compilation (2 Hours)

- Students work in pairs to analyze the given case studies in detail.
- Each group compiles a structured report highlighting key observations, possible causes of imbalance, and health implications.
- Reports will be structured with case summaries, Arkān involvement, and potential therapeutic considerations.

Session 3: Presentation and Comparative Analysis (1.5 Hours)

- Groups will present their findings and discuss variations in different case studies.
- Comparative discussion on common patterns and differences in Arkān imbalance across cases.
- Faculty-led discussion to refine key learning points and clarify doubts.

Practical 1.3 : Unani remedies for balancing Arkan.

Total Duration:10 Hours

Session 1: Understanding Arkan Imbalance Through Case Studies (2 Hours)

- Tutor gives introduction to case studies provided.
- Group discussion on the symptoms and pathophysiology of Arkan imbalance.

Session 2: Theoretical Framework for Remedy Selection (2 Hours)

- Review of classical Unani texts on treating Arkan imbalance.
- Note taking and Discussion on the properties of Unani drugs used for restoring Arkan balance.

Session 3: Preparation of Remedies (2 Hours)

- Students independently prepare (write) a remedy for each case study.
- Justification of chosen ingredients based on Unani principles.

Session 4: Presentation & Justification (2 Hours)

• Students present their remedies with justification.

• Peer review and expert feedback on the suitability of the formulations.

Session 5: Comparative Analysis & Refinement (2 Hours)

- Teacher presents the comparison of different approaches to remedy formulation.
- Discussion on variations in treatment based on individual Mizaj and clinical conditions.

Experiential learning Activity

Experiential-Learning 1.1 : Research Project on Tabiyat

Total Duration: 8 Hours

Session 1: Formulating Research Questions and Hypotheses (2 hours)

- Introduction to research question development by teacher(30 min)
- Group brainstorming to identify key areas of interest in genetic and environmental influences on *Tabiyat* (30 min)
- Refining research questions and developing hypotheses (60 min)

Session 2: Literature Review and Data Collection (3 hours)

- Review Classical and Modern Sources (90 min)
- Students explore classical Unani texts and recent research articles on genetics and environmental adaptations.
- Comparative analysis of traditional and modern perspectives.

Data Collection (90 min):

- Identifying relevant variables (genetic markers, environmental factors).
- Reviewing case studies and research findings from academic databases.

Session 3: Presentation of Research Findings (2 hours)

- Preparation (60 min):
- Organizing data and creating visual aids (charts, graphs, slides).

Presentation (60 min):

- Groups present findings to peers and instructors.
- Peer and instructor feedback for improvement.

Session 4: Reflection and Discussion (1 hour)

- Group discussion on research challenges and insights (30 min).
- Instructor-led debrief on integrating genetic and Unani perspectives in future research (30 min).

Experiential-Learning 1.2 : Hospital visit to assess role of Tabiyat in Disease Progression

Total Duration: 8 Hours

Session 1: Clinical Observation in a Unani Hospital (3 hours)

Orientation by faculty/hospital staff on *Madarij* (stages) of disease (30 min).

Patient Observation (120 min):

- Students observe different stages of disease progression in patients.
- Identify signs indicating when *Tabiyat* begins to overpower the disease.
- Note physiological and symptomatic changes.

Session 2: Review and Presentation of Observations (2 hours)

Student Presentations (60 min): Each student/group presents their observations on Tabiyat assessments in patients.

Peer Review (60 min): Groups critique each other's assessments, providing constructive feedback.

Session 3: Reflection and Journaling (2 hours)

Maintaining Reflective Journals (60 min): Students document their clinical experiences, patient observations, and insights into Tabiyat assessment.

Discussion on Journal Entries (60 min):

• Groups discuss key learnings from their journals.

• Instructor explains the role of *Tabiyat* in maintaining health and preventing disease.

Session 4: Report Submission and Evaluation (1 hour)

Students compile their findings and submit a structured report.

Experiential-Learning 1.3 : Patient Education Program on Arkan Balance

Total Duration: 10 Hours

Session 1: Introduction & Topic Assignment (1 Hour)

Facilitator provides an overview of Arkan Balance (30 min)

- Concept of Arkan (elements) and their role in maintaining health.
- Importance of patient education in Unani medicine.

Topic Assignment & Guidelines (30 min)

- Each student is assigned a specific Rukn (element).
- Facilitator explains project expectations and deliverables.

Session 2: Research on Assigned Rukn & Patient Needs Analysis (2 Hours)

Literature Review (1 Hour)

- Study of classical Unani texts & modern research on assigned Rukn.
- Identification of health conditions linked to Rukn imbalances.

Patient Needs Assessment (1 Hour)

- Identifying the target audience (age, literacy level, common misconceptions).
- Selecting appropriate communication strategies for patients.

Session 3: Designing Educational Materials (2 Hours)

Content Creation (90 min):

- Development of brochures, posters, handouts, or digital content.
- Ensuring clear language, engaging visuals, and patient accessibility.

Peer Review & Refinement (30 min): Students exchange materials for constructive feedback.

Session 4: Implementation Planning (2 Hours)

Developing a Delivery Plan (1.5 Hours):

- Selecting an appropriate mode of delivery (clinic-based, community outreach, social media, workshops).
- Addressing potential challenges in implementation.

Evaluation Strategy (30 min): Designing tools to measure program effectiveness (feedback forms, patient surveys,

Session 5: Student Presentations & Discussion (2 Hours)

Preparation (1 Hour): Students organize content, structure their presentations, and rehearse delivery.

Presentation & Review (1 Hour):

- Each student presents their patient education program.
- Faculty and peers provide feedback on clarity, effectiveness, and feasibility.

Session 6: Feedback, Reflection & Discussion (1 Hour)

Feedback from Faculty & Peers (30 min): Strengths and areas for improvement in educational materials and implementation plans.

Reflection & Group Discussion (30 min):

- Sharing insights, challenges, and key learning experiences.
- Instructor-led debrief on best practices in patient education.

Modular Assessment

Assessment method	Hour
Instructions - Conduct a structured Modular assessment. Assessment will be for 50 marks. Keep structured marking pattern. Use different assessment methods in each module for the semester. Keep record of the structured pattern used for assessment. Calculate the Modular grade point as per table 6 C.	
LAQ (10 Marks): On Classical Concept of Tabiyat, Relation between Tabiyat, Homeostais and Immunity.	
DOP (15 marks): Conduct interview on patients (Simulated) to assess the Tabiyat madarij and prescribe a diet based on Arkan imbalance.	
LAQ (10 Marks): On Classical Concept of Arkan, Relation between Arkan and elementology.	4
Compilation (15 marks): Design a patient education program on Arkan Balance.	
Or Any practical in converted form can be taken for assessment (25 marks).	
and Any of the experiential as portfolio/ refelections / presentations can be taken as an assessment (25 marks).	

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	
اوراخلاط : Module 2	Mizāj and Akhlāt ران						
 Module Learning Objectives (At the end of the module, the students should be able to) 1. Describe the concept of Mizāj and Akhlāt ,their classification and assessment. 2. Apply the principle of Mizāj and Akhlāt in disease prediction, diagnosis and personalised treatment. 3. Comprehend the correlation between the Mizāj and Akhlāt and physiological processes. 4. Conduct practical experiments and case studies related to Mizāj and Akhlāt. 5. Develop skills to evaluate the tools for the assessment of Mizāj and Akhlāt dominance. 							
Unit 1 ひがMizāj							
مزان اور ارکان کے مایین ربط و تعلق 2.1.1							
(Concept of Mizaj (temperament) and its relationship to Arkan)							
(Classification of Mizāj and its correlation to pharmacogenomics.) اقسام مزاج اور فارها کوجینو مکس سے انکا ارتباط 2.1.2							
مزاج اور اس کی امراض و علاج کے ردعمل کے لیے حساسیت 2.1.3							
(Mizaj and its susceptibility to diseases and treatment responses.)							
طب یونانی میں مزاج کی تشخیص کے لیے استعال ہونے والے ذرائع 2.1.4							
(Tools used in Unani medicine for determination of Mizaj.)							

سخیص مزان میں حالیہ ذرائع کی صحت و صداقت اورانگی معتبریت 2.1.5

(Validity and reliability of recent Mizaj assessment tools.)

References: 1,2,3,4,5,6,7,8,9,10,11,12,13,14,15,16,17,18,19,20,21,23,24,25,41

3A	3В	3C	3D	3E	3F	3G	
CO 1	Unravel the concept of Mizaj (temperament) and its relationship to Arkan.	2	Lecture	САР	Knows- how	C_L,FC,L	
CO 1	Analyze the classification of Mizāj and its correlation to pharmacogenomics.	3	Lecture	CAN	Knows- how	C_L,DIS, L&PPT ,LS	
CO 1	Measure the susceptibility of Mizaj to diseases.	6	Practical2.1	PSY-MEC	Shows- how	C_L,DIS,I BL,LS,PE R	
CO 1	Construct tailored/personalized treatment plan for different amzaja.	4	Experiential - Learning2.1	PSY-ORG	Does	CBL,D,DI S,FV,IBL, Mnt,SDL	
CO 1	Trace tools used in Unani medicine for determination of Mizaj.	4	Practical2.2	PSY-GUD	Shows- how	C_L,DIS, LS,Mnt	
CO 1,CO 5	Design the validity and reliability of Mizaj assessment tools.	10	Experiential - Learning2.2	PSY-ORG	Does	BS,D,DIS ,IBL,Mnt, PrBL,SDL ,TPW	
Unit 2 اطلاط Akhlāt							
نامور یونانی علماء کی جانب سے اخلاط کا تصور اور تقسیم 2.2.1 (Concept and Classification of Akhlat given by renowned Unani Scholars.)							

اخلاط اور مزاج کے درمیان تعلق 2.2.2

(Relationship between Akhlāt and Mizaj.)

منافع الاعضائ تناظر مين اخلاط كا تصور 2.2.3

(Concept of Akhlāt in context of human physiology.)

اخلاط کا توازن اور صحت و بیاری پر اس کے اثرات 2.2.4

(Balance of Akhlāt and its impact on health and disease)

غلبه اخلاط كالتجزيه 2.2.5

(Assessment of Ghalbae Akhlat.)

References: 1,2,3,4,5,6,7,8,9,10,11,12,13,14,15,16,18,19,21,23,24,41

3A	3B	3C	3D	3E	3F	3G
CO 1	Discuss Concept and Classification of Akhlat given by renowned Unani Scholars.	2	Lecture	СК	Know	L&PPT
CO 1	Identify the relationship between Akhlāt and Mizaj.	1	Lecture	сс	Knows- how	C_L,DIS, L&GD
CO 1	Analyze the concept of Akhlāt in context of human physiology.	2	Lecture	CAN	Knows- how	C_L,DIS, L&GD,TU T
CO 1	Demonstrate balance of Akhlāt and its impact on health and disease- I	5	Practical2.3	PSY-SET	Shows- how	BS,DIS,L S,Mnt,PL, SDL
CO 1	Measures balance of Akhlāt and its impact on health and disease_II	6	Experiential - Learning2.3	PSY-MEC	Does	BS,C_L,D ,DIS,IBL, LS,Mnt,S DL,TUT

CO 1	Fomulate the assessment of Ghalbae Akhlat-I	5	Practical2.4	PSY-ORG	Does	DIS,LS,P ER,PrBL, SDL,TUT		
CO 1,CO 5	Construct tools to assess Ghalbae Akhlat-II	6	Experiential - Learning2.4	PSY-ORG	Does	BS,C_L,D ,DIS,IBL, Mnt,SDL, TBL		
Practical Training	g Activity							
Practical 2.1 : Di	sease prevelance in different Amzaja.							
Total Duration: 6	Hours							
Session 1: Unde	rstanding Mizaj and Disease Susceptibility (1.5 Hours)							
 Facilitator gives Introduction to Mizaj and its influence on disease susceptibility. Discussion on different Mizaj types and their classical disease predispositions. Assigning a specific Mizaj to each student for research. 								
Session 2 : Literature Review – Classical and Scientific Perspectives (1.5 Hours)								
 Students will refer to classical Unani texts to list diseases associated with their assigned Mizaj. They will conduct a scientific literature review to validate or challenge these associations. 								
Session 3: Data Compilation and Comparative Analysis (1.5 Hours)								
Session 4: Presentation and Consolidation of Findings (1.5 Hours)								
 Each stu A final co Faculty- 	ident presents their findings, highlighting classical vs. scientific evidence. Ombined list of Mizaj-wise disease susceptibility is compiled. led discussion on clinical implications and further research directions.							
Practical 2.2 : Tools used in Unani medicine for determination of Mizaj.								
Total Duration: 4 Hours								

Session 1: Understanding Classical Mizaj Assessment Tools (1.5 Hours)

- Introduction by facilitaor to Mizaj and its significance in Unani medicine.
- Discussion on traditional tools and techniques used for Mizaj assessment (e.g., Nabz [pulse], Laun [complexion], Lams [touch], Infe'alāt-e-Nafsāniya [psychological reactions], etc.).
- Students will refer to classical Unani texts to document traditional assessment methods.

Session 2: Exploring Recent Tools for Mizaj Assessment (1.5 Hours)

- Students will conduct a literature review on modern tools developed for Mizaj determination, including diagnostic software, AI-based tools, and clinical parameters.
- Comparative analysis of scientific validation and reliability of classical vs. modern methods.

Session 3: Compilation and Presentation of Report (1 Hour)

- Students will compile their findings into a structured report comparing classical and modern tools.
- Groups will present their key findings.
- Faculty-led discussion on applicability, reliability, and limitations of different tools.

Practical 2.3 : Balance of Akhlāt and its impact on health and disease.

Total Duration: 5 Hours

Session 1: Understanding Akhlāt and Their Role in Health & Disease (1 Hour)

- Introduction to Akhlāt and their functions in health and disease by facilitator.
- Faculty-led discussion on how imbalances in Akhlāt lead to specific pathological conditions.
- Distribution of reference materials to guide students in their compilation.

Session 2: Compilation of Disease Lists from Classical Texts (1.5 Hours)

- Students will work individually or in small groups to compile disease lists associated with each Akhlāt.
- Detailed referencing from classical Unani texts to ensure authenticity.
- Categorization of diseases based on severity, chronicity, and affected organ systems.

Session 3: Integrating Classical and Modern Perspectives (1 Hour)

• Students will compare traditional Unani descriptions with modern medical perspectives on Akhlāt imbalances.
• Identification of similarities, contradictions, and potential areas of research.

Session 4: Presentation, Submission, and Discussion (1.5 Hours)

- Students will finalize their charts, posters, or compilations and submit them.
- Selected students will present their work, explaining key findings.
- Faculty-led discussion to compare different perspectives and discuss clinical relevance.

Practical 2.4 : Ghalbae Akhlat

Total Duration: 5 Hours

Session 1: Understanding Ghalbae Akhlāt and Its Clinical Importance (1 Hour)

- Introduction to Ghalbae Akhlāt and its role in disease manifestation.
- Faculty-led discussion on methods used in classical Unani medicine to assess Ghalbae Akhlāt.
- Explanation of grading criteria (+ to ++++) for evaluating the frequency of signs in classical texts.

Session 2): Literature Review and Identification of Signs (1.5 Hours

- Students will review classical texts and extract signs (Alamat) of Ghalbae Akhlāt.
- Focus on differentiating signs for each Akhlāt imbalance (Dam, Balgham, Safra, Sauda).
- Documentation of references from different Hakeems to support their findings.

Session 3: Tabulation and Grading of Signs (1 Hour)

- Students will tabulate the extracted signs for each Akhlāt imbalance in a structured format.
- Assign grading (+ to ++++) based on frequency in classical texts.
- Justify the assigned grades using textual references from ancient Unani scholars.

Session 4: Submission, Presentation, and Faculty Feedback (1.5 Hours)

- Students will finalize and submit their compiled data.
- Selected students will present key findings, highlighting the most and least frequently mentioned signs.
- The teacher will evaluate, provide feedback, and explain significant patterns in the compiled data.

Experiential learning Activity

Experiential-Learning 2.1 : Personalized treatment plan for different Amzaja.

Total Duration: 4 Hours

Session 1: Topic Assignment & Treatment Plan Preparation (1.5 Hours)

Introduction by teacher to Treatment Planning (30 min):

- Overview of Mizaj-based diagnosis & treatment in Unani medicine.
- Discussion on factors influencing treatment selection.

Individual Disease Assignment (15 min): Each student is assigned a specific disease to prepare a treatment plan.

Development of Treatment Plan (45 min):

- Selection of appropriate regimen, Ilaj-bit-Tadbeer, Ilaj-bit-Dawa, and lifestyle modifications.
- Consideration of individual patient Mizaj for personalization.

Session 2: Clinical Observation & Expert Consultation (1.5 Hours)

- Visit to a Practicing Hakeem/Consultant (60 min):
- Observe how an Unani physician formulates treatment plans based on Mizaj in a clinical setup.
- Compare real-world practices with student-prepared plans.

Treatment Plan Cross-Check (30 min):

- Students discuss their prepared treatment plans with a Unani physician.
- Receive feedback and necessary modifications.

Session 3: Reflection & Report Submission (1 Hour)

Observations & Reflection Compilation (30 min):

• Compare personal treatment approach vs. expert approach.

• Document key clinical observations on Mizaj-based practice.

Final Report Submission (30 min)

Experiential-Learning 2.2 : Validity and reliability of Mizaj assessment tools.

Total Duration: 10 Hours

Session 1: Introduction & Task Assignment (1 Hour)

Overview of Mizaj Assessment (30 min)

- Facilitator gives introduction to Mizaj and its diagnostic importance.
- Review of existing Mizaj assessment tools.

Group/Individual Task Assignment (30 min)

- Students are assigned to work individually or in teams.
- Facilitator explains questionnaire development process.

Session 2: Designing the Mizaj Assessment Questionnaire/Scale (3 Hours)

Item Generation (1 Hour)

- Formulating relevant questions based on classical Unani concepts.
- Ensuring clarity, objectivity, and cultural relevance.

Scale Structuring & Scoring System (1 Hour)

- Defining response formats (Likert scale, binary options, etc.).
- Assigning weights to responses based on Mizaj characteristics.

Preliminary Review & Refinement (1 Hour): Peer review and faculty feedback for improvement.

Session 3: Data Collection & Preliminary Testing (2 Hours)

Pilot Testing (1 Hour)

- Administering the questionnaire to a small sample.
- Identifying potential issues in question clarity & response trends.

Initial Data Compilation (1 Hour): Organizing responses for statistical analysis.

Session 4: Statistical Analysis for Validity & Reliability (3 Hours)

Reliability Testing (1.5 Hours)

- Application of reliability test e.g. Cronbach's Alpha for internal consistency.
- Test-retest reliability if applicable.

Validity Testing (1.5 Hours)

- Face & content validity (expert review).
- Factor analysis or correlation tests for construct validity.

Session 5: Report Writing & Presentation (1 Hour)

Compilation of Results (30 min): Structuring a detailed report with findings, methodology, and analysis.

Presentation & Discussion (30 min): Students present findings for peer and faculty review.

 $\label{eq:constraint} \textbf{Experiential-Learning 2.3}: Balance of Akhl\bar{a}t and its impact on health and disease$

Total Duration: 6 Hours

Session 1: Introduction & Task Assignment (1 Hour)

Understanding the Research Process (30 min)

- Facilitator presents an overview of Akhlāt imbalance & disease association.
- Importance of evidence-based research in Unani medicine.

Guidelines for Literature Search (30 min)

- How to access research databases (PubMed, Scopus, Google Scholar).
- How to identify relevant, high-quality papers.
- Assigning individual research topics.

Session 2: Literature Search & Compilation (2 Hours)

Database Search & Selection (1 Hour)

- Students search for published research articles.
- Selection of 5-10 key research papers per student.

Reference Management (1 Hour)

- Organizing articles using reference management tools (Zotero, Mendeley, EndNote).
- Formatting references in standard citation styles (APA, Vancouver, etc.).

Session 3: Review & Summary Writing (2 Hours)

Critical Analysis of Literature (1 Hour)

- Identifying key findings, methodologies, and conclusions.
- Comparing different studies for common themes & gaps.

Summary Report Writing (1 Hour)

- Introduction (Why Akhlāt imbalance matters)
- Review Findings (Key research insights)
- Conclusion (Summary and future research directions)

Session 4: Report Submission, Evaluation & Discussion (1 Hour)

Submission & Teacher Evaluation (30 min): Reports graded based on depth, clarity, and relevance.

Discussion & Feedback (30 min)

- Teacher provides constructive feedback & improvement suggestions.
- Group discussion on research gaps & future directions.

Experiential-Learning 2.4 : Tools for assessment of Ghalbae Akhlat

Total Duration: 6 Hours

Session 1: Introduction to Assessment Tool Development (1 Hour)

Overview of Assessment Tools (30 min)

- Teacher explains various methods used in developing diagnostic and assessment tools.
- Discussion on existing tools and their limitations in assessing Ghalbae Akhlat.

Identifying Suitable Methods (30 min)

- Students explore different methodologies and evaluate their applicability.
- Teacher guides students on how to choose the best approach.

Session 2: Research & Methodology Selection (2 Hours)

Literature Review (1 Hour)

- Students individually or in teams analyze published research on Akhlat assessment.
- Identification of statistical methods used for validation (e.g., Factor Analysis, Cronbach's Alpha).

Finalizing the Tool Development Approach (1 Hour)

- Selection of parameters and classical signs for assessing Ghalbae Akhlat.
- Defining data collection methods and response format (e.g., Likert scale, symptom scoring).

Session 3: Tool Development & Validation (2 Hours)

Creating the Assessment Tool (1 Hour)

• Teams formulate questions, diagnostic criteria, and scoring systems.

Ensure integration of both classical signs and scientific methods.	
Validity & Reliability Testing (1 Hour)	
 Application of statistical tests (e.g., Cronbach's Alpha for reliability, Expert Review for content validity). Refinement based on preliminary testing results. 	
Session 4: Report Writing, Evaluation & Publication Discussion (1 Hour)	
Compilation of Findings (30 min): Students document the development process, statistical validation, and findings.	
Submission & Discussion (30 min): Teacher evaluates the tool and report, providing feedback for refinement.	
Modular Assessment	
Assessment method	Hour
Instructions - Conduct a structured Modular assessment. Assessment will be for 50 marks. Keep structured marking pattern. Use different assessment methods in each module for the semester. Keep record of the structured pattern used for assessment. Calculate the Modular grade point as per table 6 C.	
Viva (10 Marks): A viva Voce on the concept of Mizaj and its relationship with Arkan and Pharmacogenomics or on any cognitive domain of the module.	
Class Presentation (10 Marks): Students may be given the topic Relationship between Mizaj and Akhlat for class presentation. The presentation shall be graded on content, presentation skills and coherance.	
Trainers report (15 Marks): The compiled report on "Construct tailored/Personalized treatment plan for different Amzaja" may be evaluated based on the trainers report.	
Compilation (15 Marks): The compilation in the form of Poster or chart on the topic "Imbalance of different Akhlat and the corresponding diseases" shall be evaluated.	4
Or	
Any practical in converted form can be taken for assessment (25 marks).	
and	
Any of the experiential as portfolio/ refelections / presentations can be taken as an assessment (25 marks).	

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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	
اءاور قوی : Module 3	Adhā and Quwā						
Module Learning (At the end of the	g Objectives e module, the students should be able to)						
 Describe the concept of Adhā and Quwā and their classification. Identify and apply the correlation between the Adhā and organ systems, and between Quwā and functional systems. Develop skills to evaluate the tools for the assessment of Quwā. 							
Adhāاعضاء Unit 1							
ی منظر اور ارتقاء 3.1.1	اعضاء کا تاریخی پر						
(Historical persp	ectives and evolution)						
اعضاء کا کردار 3.1.2	صحت و بیاری میں						
(Adhā and their	role in health and disease)						
کی درجه بندی 3.1.3	جدید بشریاتی تقشیم کی روشنی میں اعضاء						
(Classification of	Adhā in light of contemporary tissue classification)						
References: 1,2	,3,4,5,6,7,8,9,10,11,13,14,15,16,18,23						
3A	3B	3C	3D	3E	3F	3G	
CO 1	Enumerate historical perspectives and evolution	1	Lecture	СК	Know	BL,C_L,L _VC,LS	

CO 1	Demonstrate the role of Adh $ar{a}$ in health and disease	4	Practical3.1	PSY-SET	Shows- how	BS,DIS,L S,Mnt,PE R,PBL,SD L
CO 1	Classify Adh $ar{a}$ in light of contemporary tissue classification	2	Lecture	сс	Knows- how	BL,BS,C_ L,IBL,L&P PT ,PL
CO 1,CO 3	Display primary Adhā and their anatomical relationships	6	Practical3.2	PSY-MEC	Shows- how	D,DL,D- M,DIS,SI M,TUT
Unit 2 توى Quwā					·	·
ھ اسکی ہم آہنگی 3.2.1	قوئی، ان کی درجہ بندی اور جدید منافع الاعضائ جسمانی نظام کی تقشیم کے ساتھ					
(Quwā, their clas	ssification and association with recent physiological system classification.)					
کے درمیان تعلق 3.2.2	قوی اور افعال _					
(The relationship	between Quwā and Afaal)					
ۇى كابابىمى عمل 3.2.3	صحت کو بر قرار رکھنے میں اعضاء اور ق					
(The interplay be	etween Adhā and Quwā in maintaining health)					
References: 1,2	,3,4,5,6,7,8,9,10,11,12,13,14,15,16,18,23					
3A	3В	3C	3D	3E	3F	3G
CO 1	Describe Quwā, their classification and association with recent physiological system classification.	2	Lecture	CE	Knows- how	BL,BS,C_ L,DIS,L,L &GD,PL
CO 1	Diescribe the relationship between Quwā and Afaal	2	Lecture	СК	Know	BL,DIS,L &GD,TUT

CO 1	Measure the interplay between Adhā and Quwā in maintaining health	4	Practical3.3	PSY-MEC	Shows- how	D,DIS,Mn t,PAL,RP, TUT
CO 1	Demonstrate role of Quwā in maintaining health	6	Practical3.4	PSY-SET	Shows- how	BS,D,DIS ,LS,Mnt,T UT
CO 1	Display role of Quwā in maintaining health	10	Experiential - Learning3.1	PSY-MEC	Does	CBL,C_L, DIS,FV,P AL,PL,RL E,RP
)ےاطلاقی پہلو Unit 3	Applied aspect of Adhā and Quwā اعضاءاورقوك					
ر ان کے اثرات 3.3.1	عام عوارض اوراعضاء وقولي					
(Common diagon						
(Common disord	ers and their impact on Adna and Quwa)					
تشخيص اور جائزه 3.3.2	طب يوناني ميں					
(Diagnosis and a	assessment in Unani practice)					
تیاری اور توثیق 3.3.3	قویٰ کی تشخیص نے لیے ٹولز کی					
(Development a	nd validation of tools for assessment of Quw $ar{a}$)					
References: 1,2	3,4,5,6,7,8,9,11,14,15,16,23					
3A	3B	3C	3D	3E	3F	3G
CO 1	Describe common disorders and their impact on Adhā and Quwā	3	Lecture	СК	Knows- how	DIS,L&G D,PL
CO 1	Perform diagnosis and assessment in Unani practice	6	Experiential - Learning3.2	PSY-MEC	Does	D,D- BED,DIS, KL,Mnt,R LE

CO 1,CO 5	Design and validate tools for assessment of Quwā	10	Experiential - Learning3.3	PSY-ORG	Does	BS,C_L,D IS,Mnt,M L,PrBL,S DL,TBL,T UT	
Practical Trainin	g Activity						
Practical 3.1 : He	erbal formulations targeting specific Adhā						
Total Duration: 4	Hours						
Session 1 (1 Ho	Jr): Introduction to Adh $ar{ extbf{a}}$ and Their Role in Health & Disease						
 Faculty (Discussion Faculty (Faculty gives Introduction to Adhā (organs/tissues) and their functions in Unani medicine. Discussion on common diseases affecting each Adhā. Faculty assigns each student a specific Adhā to focus on. 						
Session 2 (1.5 H	ours): Formulation of Herbal Prescriptions						
 Students Prepara Justifica 	will review classical texts to identify appropriate Unani herbal drugs targeting their assigned tion of a herbal formulation or prescription for conditions related to the Adhā. tion of each ingredient based on Unani principles.	d Adhā.					
Session 3 (1.5 H	ours): Submission, Discussion, and Evaluation						
 Students Selected Faculty 	 Students will finalize and submit their compiled formulations/prescriptions. Selected students will present their work, explaining their approach and selection of herbal ingredients. Faculty will evaluate, provide feedback, and discuss alternative formulations. 						
Practical 3.2 : Pr	imary Adhā and their anatomical relationships						
Total Duration: 6	Hours						
Session 1 (1.5 ⊦	ours): Introduction to Adh $ar{ extbf{a}}$ and Their Anatomical Relations						
TeacherFaculty e	giver Introduction to primary Adhā and their structural and functional relationships. explains the concept of interdependence between Adhā and its role in Unani physiology.						

• also presents overview of tools available for studying anatomical relationships (models, dissection, simulations).

Session 2 (1.5 Hours): Practical Identification Using Models or Digital Tools

- Hands-on session with models or digital simulations (Anatomage Table).
- Identification of primary Adhā and their anatomical positioning.
- Understanding spatial relationships between Adhā and adjacent structures (e.g., vascular supply, nervous control).

Session 3 (1.5 Hours): Analyzing the Physiological Significance of Relationships

- Discussion on how anatomical relations influence physiological processes and pathology.
- Examples of disease conditions arising from disturbed anatomical relationships.
- Documentation of key findings for chart preparation.

Session 4 (1.5 Hours): Chart Preparation, Submission, and Discussion

- Students will prepare a chart illustrating anatomical relationships and their physiological significance.
- Selected students will present their charts, explaining key findings.
- Faculty will evaluate, provide feedback, and discuss variations in anatomical relationships.

Practical 3.3 : Hands-on practice in pulse diagnosis and examination of Adh \bar{a}

Total Duration: 4 Hours

Session 1 (1 Hour): Theoretical Introduction to Adhā, Quwā, and Pulse Diagnosis interplay (by Facilitator)

- Overview of Adhā and their role in health and disease.
- Explanation of Quwā (faculties) and their connection to Adhā.
- Introduction to pulse characteristics in relation to different Adhā and Quwa conditions.

Session 2 (1.5 Hours): Hands-on Pulse Diagnosis and Examination of Adh \bar{a}

- Teacher demonstrates the pulse diagnosis technique.
- Students will practice pulse examination on each other.
- Each student will note pulse changes and correlate them with Adhā status.

Session 3 (1.5 Hours): Compilation of Findings and Discussion

- Students document their pulse findings in their record books.
- Selected students present key observations, discussing patterns related to different Adhā.
- Faculty provides feedback and insights on common diagnostic correlations.

Practical 3.4 : Practical sessions on treatment methodologies enhancing Quwa.

Total Duration: 6 Hours

Session 1 (1.5 Hours): Introduction to Quwā and Their Role in Health (Facilitator mediated)

- Overview of different types of Quwā (e.g., Quwat Tab'iyah, Quwat Nafsaniyah, Quwat Haywaniyah, etc.).
- Discussion on how Quwā contribute to health and how their deficiency leads to diseases.

Session 2 (1.5 Hours): Practical Demonstration of Treatment Methodologies

- Teacher demonstrates treatment methodologies to enhance different Quwā.
- Explans the of pharmacological (Ilaj bil Dawa) and non-pharmacological (Ilaj bil Ghiza, Ilaj bil Tadbeer) approaches.
- Hands-on demonstration of selected therapies.

Session 3 (1.5 Hours): Compilation of Treatment Methodologies

- Students will research and compile treatment methodologies corresponding to each Quwā.
- Compilation will include pharmacological, dietary, and regimental (Tadbeer) therapies.

Session 4 (1.5 Hours): Submission, Discussion, and Evaluation

- Students will finalize and submit their compiled tables.
- Selected students will present key findings.
- Faculty will evaluate, provide feedback, and discuss alternative treatment methodologies.

Experiential learning Activity

Experiential-Learning 3.1 : Role-play and interactions to explore treatment options and patient interactions

Total Duration: 10 Hours

Session 1: Introduction to Quwā & Patient-Physician Interaction (2 Hours) (Self learning by students)

Revisiting concept of Quwā & Its Role in Treatment (1 Hour)

- Revisiting the concept of Quwā (faculties) in Unani medicine.
- Importance of restoring Quwā balance in treatment.

Communication & Patient Handling Skills (1 Hour)

- Key skills for effective physician-patient interaction.
- Addressing patient concerns, ethical considerations, and empathy in treatment.

Session 2: Role-Play – Physician & Patient Simulation (4 Hours)

Pairing & Scenario Assignment (1 Hour)

- Students take turns playing the physician and patient.
- Each student is assigned a case scenario based on Quwā imbalance (e.g., Quwā-e-Mudabbira dysfunction, Quwā-e-Nafsaniya disturbances).

Role-Play & Treatment Exploration (2 Hours)

- The student-physician assesses the patient's complaints based on Quwā principles.
- Discussing and suggesting appropriate Unani treatment approaches.

Group Feedback & Reflection (1 Hour)

• Peers and instructors provide feedback on clinical reasoning, patient handling, and treatment approach.

Session 3: Practitioner Interaction & Case Discussion (3 Hours)

Observing & Engaging with Practitioners (1.5 Hours)

- Visiting a practicing Unani physician in a clinical setting.
- Observing how experts assess and treat Quwā-related disorders.

Discussion & Clarifications (1.5 Hours)

- Students ask questions about practical challenges and clinical strategies.
- Understanding how Quwā-based principles guide real-life treatment decisions.

Session 4: Reflection & Report Compilation (1 Hour)

Structuring the Reflection Report (30 min): Documenting role-play learnings, practitioner insights, and key takeaways.

Submission & Discussion (30 min): Instructor reviews the reports, gives feedback, and facilitates a discussion on clinical applications.

Experiential-Learning 3.2: Patient assessments and treatments related to Aza and Quwa.

Total Duration: 6 Hours

Session 1: Orientation & Task Briefing (1 Hour)

Introduction to Aza & Quwa by faculty (30 min)

- Overview of Aza and Quwa in Unani medicine.
- Their role in disease manifestation & treatment.

Clinical Observation Guidelines (by teacher/physician) (30 min)

- Ethical considerations in patient observation.
- Methods of patient assessment.
- Diagnosis of Aza & Quwa-related disorders.
- Treatment approaches & rationale

Session 2: Clinical Observation & Note-Taking (3 Hours)

Patient Assessment Observation (1.5 Hours)

- Watching Unani physicians assess Aza functionality and Quwa imbalances.
- Understanding diagnostic methods (physical examination, pulse analysis, Su-i-Mizaj, zoaf-i- quwa etc.).

Treatment Procedures Observation (1.5 Hours)

- Noting treatment plans tailored to Aza & Quwa conditions.
- Observing the therapeutic impact of Unani interventions.
- Engaging with physicians for clarifications on treatment rationale

Session 3: Reflection & Report Compilation (2 Hours)

Structuring the Reflective Report (1 Hour)

- Patient assessment process
- Treatment strategies observed
- Key takeaways & personal insights

Submission & Trainer Discussion (1 Hour)

- Teacher review & feedback on reflections.
- Discussion on clinical challenges, best practices, and areas of improvement.

Experiential-Learning 3.3 : Tools for assessment of quwa

Total Duration: 10 Hours

Session 1: Introduction to Questionnaire Development by teacher (2 Hours)

Understanding Quwā & Assessment Methods (1 Hour)

- Overview of Quwā (faculties) in Unani medicine.
- Classical and modern approaches to evaluating functional strength.

Principles of Questionnaire Design (1 Hour)

- Types of questions (Likert scale, dichotomous, open-ended, etc.).
- Ensuring clarity, relevance, and objectivity in questionnaire items.

Session 2: Drafting the Questionnaire (3 Hours)

Formulating Initial Questions (1.5 Hours)

- Brainstorming key parameters to assess Quwā.
- Designing 20-30 preliminary questions covering different Quwā aspects.

Refinement & Expert Review (1.5 Hours)

- Faculty members and peers review & refine questionnaire items.
- Ensuring questions align with classical principles and modern assessment needs.

Session 3: Pilot Testing & Data Collection (3 Hours)

Administering the Questionnaire (1.5 Hours)

- Selecting a sufficient number of subjects for pilot testing.
- Collecting responses systematically.

Recording & Organizing Data (1.5 Hours)

- Inputting responses into a spreadsheet or statistical software.
- Preparing data for analysis and validation.

Session 4: Statistical Analysis & Report Writing (2 Hours)

Reliability & Validity Testing (1 Hour)

- Applying statistical tests (e.g., Cronbach's Alpha for reliability, Factor Analysis for validity).
- Identifying questionnaire strengths and areas for improvement.

Final Report Compilation & Submission (1 Hour)

Modular Assessment

Assessment method

Hour

Instructions - Conduct a structured Modular assessment. Assessment will be for 50 marks. Keep structured marking pattern. Use different assessment methods in each module for the semester. Keep record of the structured pattern used for assessment. Calculate the Modular grade point as per table 6 C.	
 Quizzes (10 Marks): Short quizzes on each theory/Lecture session. Practical Skills Assessment (15 Marks): DOPS on assessment of pulse and its changes in relation to strength of of different Aza. Project (25 marks): A comprehensive project on development of questionnaire based tool for asessemnt of Quwa. 	
Or	4
Any practical in converted form can be taken for assessment (25 marks).	
and	
Any of the experiential as portfolio/ refelections / presentations can be taken as an assessment (25 Marks).	

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	
اورافعال : Module 4	Arwāh and Afal اردار						
 Module Learning Objectives (At the end of the module, the students should be able to) 1. Discuss the concept of Arwāh and Af'al and their classification. 2. Discern the correlation between the Arwāh and Af'al with functional systems. 3. Distinguish between the Nafs and Rooh. 4. Assess the influence of different types of Afaal (actions) on the body's humors, temperament, and health. 5. Apply practical methods for diagnosing and treating disorders based on the understanding of Arwah and Afaal. 6. Demonstrate techniques to observe and influence the Arwah and Afaal in a clinical setting. 7. Assess the impact of Arwah on emotions and Stress. 							
مابعدالطييعيات Unit 1	Introduction to Unani Metaphysics						
طرت سے تعلق 4.1.1	طب یونانی کے فلسفے کا جائزہ اور انسانی ف						
(Overview of Una	ani philosophy and its relation to human nature.)						
ر افعال کا تصور 4.1.2	ارداح اد						
(Concept of Arwa	ah and Afaal.)						
ارواح کی اقسام 4.1.3							
(Types of Arwah	.)						

4.1.4 :	تصورات	فلسفيانه
(

(Philosophical concepts):

(Rooh) روټ 4.1.4.1

4.1.4.2 ^{نف}س (Nafs) 4.1.4.3 ^{عق}ل (Aql)

(Qalb) قلب 4.1.4.4

References: 1,2,3,4,5,6,7,8,9,11,12,13,14,15,16,18,19,23

3A	3B	3C	3D	3E	3F	3G
CO 1	 Discuss Unani philosophy and its relation to human nature. Definine Arwah and Afaal in philosophical and scientific context. Explain types of Arwah. Explore the Philosophical concepts: Rooh Nafs Aql Qalb 	5	Lecture	сс	Knows- how	C_L,L,LS, Mnt,PL
Typافعال کے Unit 2	اقسام اور صحت پرانگے اثرات es of Af al and Their Impact on Health					
ی کی درجہ بندی 4.2.1	طب يونانى ميں افعال					
(Classification of	Afaal in Unani medicine.)					
توازن رکھنے میں 4.2.2	افعال کا کردار :بدن کے اخلاط)دم، بلغم، صفرا، سودا (کو					
(The role of Afaa	in balancing the body's Humors (Dam, Balgham, Safra, and Sauda).)					
متاثر کرتے ہیں 4.2.3	ارواح اور افعال کا تعلق :ذہنی اور روحانی اعمال جسمانی صحت کو کیسے					

(The connection between Arwah and Afaal: How mental and spiritual actions affect the body's physical health.)

(Unani approach to emotional and psychological health.)

بیرونی عوامل)طرز زندگی، غذا، ماحول (کا ارواح پر انژ 4.2.5

(Influence of external factors (lifestyle, food, environment) on Arwah.)

References: 1,2,3,4,5,6,7,8,9,10,11,12,13,14,15,16,18,23,42,43

3A	3B	3C	3D	3E	3F	3G		
CO 1	 Describe classification of Afaal in Unani medicine. Enumerate the role of Afaal in balancing the body's Humors (Dam, Balgham, Safra, and Sauda). 	4	Lecture	сс	Knows- how	C_L,DIS, L&PPT ,LS,Mnt,P L,PER		
CO 1,CO 2	Display the connection between Arwah and Afaal: How mental and spiritual actions affect the body's physical health	5	Experiential - Learning4.1	PSY-MEC	Does	BS,CBL,D IS,LS,Mnt ,PER		
CO 1,CO 2	Demonstrate Unani approach to emotional and psychological health	4	Practical4.1	PSY-SET	Shows- how	DIS,FV,IB L,RLE,SD L,TUT		
CO 1,CO 2,CO 3	Estimate influence of external factors (lifestyle, food, environment) on Arwah.	6	Practical4.2	PSY-MEC	Shows- how	CBL,C_L, DIS,Mnt, PER,SDL, TBL		
Unit 3 توليدامراض مين اردار العضاءكاتعال Interaction of Arwah and Afaal in Disease Pathogenesis								
متاثره ارواح کا جسمانی مزاج اور اخلاط پر اثر 4.3.1 (Impact of disturbed Arwah on the body's temperament and humors.)								

(Imbalances in Afaal leading to diseases.)

(Diagnostic criteria for detecting disorders of Arwah (e.g., depression, anxiety, stress).)

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مراقبه اور ذہنی تمر کز کی علاجی تکنیک 4.3.4
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(Therapeutic Meditation and Mindfulness Techniques.)

References: 1,2,3,4,5,6,7,8,9,10,11,12,13,14,15,16,18,23

3A	3В	3C	3D	3E	3F	3G
CO 1	Explain the impact of disturbed Arwah on the body's temperament and humors.	1	Lecture	CAN	Knows- how	BL,C_L,D IS,L&GD
CO 1	Identify imbalances in Afaal leading to diseases.	4	Practical4.3	PSY-ADT	Shows- how	CD,CBL, C_L,DIS, PER,RP, SIM,TUT
CO 1,CO 4	Follow diagnostic criteria for detecting disorders of Arwah (e.g., depression, anxiety, stress)- I	3	Practical4.4	PSY-GUD	Shows- how	CBL,C_L, D,DL,Mnt, TUT
CO 1,CO 4	Prepare diagnostic criteria for detecting disorders of Arwah (e.g., depression, anxiety, stress)- II	3	Practical4.5	PSY-SET	Shows- how	BS,CBL,D IS,IBL,TU T
CO 1,CO 4	Apply diagnostic criteria for detecting disorders of Arwah (e.g., depression, anxiety, stress)- III	6	Experiential - Learning4.2	PSY-ADT	Does	CD,CBL, DIS,FV,M nt,RP,SI M,TUT

CO 1	Display application of therapeutic Meditation and Mindfulness Techniques- I	8	Experiential - Learning4.3	PSY-MEC	Does	BL,BS,DI S,GBL,M nt,PL,RP, SIM
CO 1	Display application of therapeutic Meditation and Mindfulness Techniques- II	4	Experiential - Learning4.4	PSY-MEC	Does	CBL,D,DL ,DIS,LS,T UT
CO 1	Display application of therapeutic Meditation and Mindfulness Techniques- III	3	Experiential - Learning4.5	PSY-MEC	Does	D,D- BED,DL,L RI,PER
Practical Training	g Activity					
Practical 4.1 : Ap	oplication of dietary, hydrotherapy, and exercise routines to balance Afaal and Arwah					
Total Duration: 4	Hours					
Session 1 (1 Hor Overview Explana Discussi	ur): Orientation by facilitator on Unani Approach to Emotional and Psychological Health w of Afaal and Arwah in emotional and psychological well-being. tion of dietary therapy, hydrotherapy, and exercise routines in balancing Afaal and Arwah. ion on the scientific validation of Unani psychological therapies.					
Session 2 (1.5 H	lours): Research and Hospital Visit for Observing Regimenal Therapy					
Students Students O O O O	s will search and review research papers on Unani approaches to mental health. s will visit a hospital to observe: Dietary therapy in mental health management Hydrotherapy techniques for emotional balance Exercise routines for psychological well-being Interaction with Unani practitioners to discuss case-based applications.					
Session 3 (1.5 H	lours): Compilation and Discussion of Findings					
 Students Selected Faculty 	s will compile their research and hospital visit findings. I students will present key observations. will provide feedback and discuss the integration of Unani approaches in medical practice.					

Practical 4.2 : Lifestyle adjustments and their effect on mental and emotional wellbeing

Total Duration: 6 Hours

Session 1 (1.5 Hours): Orientation by faculty on External Factors Affecting Arwah

- Explanation of Arwah and its susceptibility to lifestyle, dietary habits, and environmental changes.
- Discussion on the role of external factors in mental and emotional well-being.
- Overview of assigned case studies and methodology for analysis.

Session 2 (1.5 Hours): Case Study Analysis - Lifestyle Adjustments & Well-being

- Students will analyze assigned case studies or observe case-based demonstrations.
- Documentation of before and after effects of lifestyle, food, and environmental modifications.
- Group discussion on patterns observed in case studies.

Session 3 (1.5 Hours): Comparative Analysis and Discussion

- Students will compare case study findings and identify common patterns of lifestyle impact on Arwah.
- Discussion on variations in individual responses to external factors.
- Correlating findings with classical Unani literature and modern scientific understanding.

Session 4 (1.5 Hours): Compilation, Presentation, and Submission of Findings

- Students will compile key observations into a portfolio.
- Selected students will present insights on how external factors influence Arwah and mental health.
- Faculty will provide feedback and guide discussions on practical applications.

Practical 4.3 : Imbalances in Afaal leading to diseases.

Total Duration: 4 Hours

Session 1 (1 Hour): Teacher will provide orientation on Afaal, Arwah, and Disease Manifestation

- Introduction to Afaal (functions) and Arwah (pneuma/energy) in Unani medicine.
- Discussion on how imbalances in Arwah lead to disease.

• Explanation of case study methodology.

Session 2 (1.5 Hours): Case Study Analysis

- Students will analyze real or simulated patient cases with Arwah and Afaal disturbances.
- Identification of specific disease patterns and symptoms linked to imbalances.
- Discussion on classical Unani literature supporting these findings.

Session 3 (1.5 Hours): Compilation and Report Submission

- Students will compile their findings into a structured report.
- Selected students will present key observations on Arwah imbalances and disease correlation.
- Faculty will provide feedback and discuss the clinical implications of findings.

Practical 4.4 : Examination of pulse, temperament, and behavior to identify the impact of disturbed Afaal.

Total Duration: 3 hours

Session 1 (1.5 Hours): Orientation and Practical Demonstration by facilitator

- Introduction to Afaal disturbances and their connection to mental health disorders.
- Review of Unani diagnostic methods for detecting Arwah-related disorders.
- Demonstration of pulse, temperament, and behavioral examination techniques on a patient or simulated case.

Session 2 (1.5 Hours): Hands-on Practice and Report Compilation

- Students individually examine a patient/simulated case, documenting variations in pulse, temperament, and behavior.
- Comparative analysis of findings with classical Unani descriptions.
- Discussion on discrepancies and possible explanations.
- Submission of conclusions in a structured report.

Practical 4.5 : Signs of disturbed Rooh through physical symptoms and mental states.

Total Duration: 3 Hours

Session 1 (1.5 Hours): Understanding and Identifying Signs of Disturbed Rooh (Teacher mediated)

- Introduction to Rooh, its role in mental and emotional health, and its disturbances.
- Discussion on common physical and mental symptoms of Rooh disturbances.
- Group brainstorming on symptoms observed in clinical practice or literature. (May involve an Clinical expert)

Session 2 (1.5 Hours): Comparative Analysis and Report Submission

- Students will correlate the identified symptoms with classical Unani descriptions.
- Discussion on variations and similarities in symptom presentation.
- Compilation of a structured report summarizing the findings and comparisons.
- Submission of the final list for faculty evaluation.

Experiential learning Activity

Experiential-Learning 4.1 : Interrelation between mental state and physical symptoms

Total Duration: 5 Hours

Session 1: Introduction to Psychosomatic Interrelations (45 minutes)

Instructor-Led Discussion (30 min):

- Overview of Unani concepts of Nafs (psyche) and its influence on Tabiyat.
- Common psychosomatic conditions (e.g., stress-induced digestive issues, anxiety-related cardiovascular symptoms).

Brainstorming (15 min): Students discuss personal observations or experiences with mind-body interactions.

Session 2: Case Study Analysis in Groups (2 hours)

Case Study Distribution (15 min): Groups receive real or hypothetical patient cases illustrating mental state influences on physical symptoms.

Case Analysis (60 min):

- Identify key symptoms, mental health factors, and disease progression.
- Correlate with Unani principles (Mizaj, Akhlat, Asbab-e-Sitta Zarooriya).

Findings Compilation (45 min): Groups summarize observations, linking mental and physical health indicators.

Session 3: Presentation and Peer Review (1 hour 30 minutes)

Group Presentations (60 min): Each group presents their case study analysis, discussing mental-physical interactions and proposed interventions.

Peer Review & Discussion (30 min): Other groups provide feedback and alternative interpretations.

Session 4: Reflection and Report Writing (45 minutes)

Individual Reflection (15 min): Students document key learnings in their journals.

Report Writing (30 min): Groups compile their findings into a structured report for submission.

Experiential-Learning 4.2 : Patient Interviews on the mental and emotional background of the patient's illness.

Total Duration: 6 Hours

Session 1: Introduction to Mental & Emotional Health in Unani Medicine (by facilitator) (1 Hour)

Understanding the Connection Between Nafsiyat & Disease (30 min)

- Overview of mental and emotional influences on health in Unani medicine.
- The role of Quwā-e-Nafsaniya and emotional imbalances in disease progression.

Interview Techniques & Ethics (30 min)

- How to conduct a patient interview focusing on psychological aspects.
- Building rapport, maintaining confidentiality, and asking open-ended questions.

Session 2: Patient Interview & Data Collection (3 Hours)

Conducting Patient Interviews (2 Hours): Students individually or in pairs interview patients, focusing on:

- Mental and emotional health history
- Stressors, trauma, and lifestyle factors

• Impact of emotions on disease symptoms

Recording & Organizing Data (1 Hour)

- Structuring key observations and patient responses.
- Identifying patterns in emotional influences on health.

Session 3: Analysis & Reflection (2 Hours)

Group Discussion on Findings (1 Hour)

- Students share their experiences, challenges, and insights from interviews.
- Faculty guides a discussion on psychosomatic connections in disease progression.

Compilation & Submission of Reflection Report (1 Hour)

- Summarizing case insights, emotional triggers, and treatment implications.
- Submitting a structured reflective report for evaluation.

Experiential-Learning 4.3: Patient-Doctor Interactions: Role-playing exercises to develop a therapeutic relationship based on the Unani understanding of mental, emotional, and physical health.

Total Duration: 8 Hours

Session 1: Foundations of Therapeutic Relationships in Unani Medicine (by Faculty) (2 Hours)

Understanding the Holistic Approach (1 Hour)

- Overview of mental, emotional, and physical health balance in Unani medicine.
- Role of Tabiyat, Mizaj, and Quwā-e-Nafsaniya in patient well-being.

Key Skills for Effective Doctor-Patient Interaction (1 Hour)

- Building rapport and active listening techniques.
- Communicating diagnosis and treatment plans with empathy.

• Ethical considerations and respect for patient autonomy.

Session 2: Role-Playing Exercises – Patient & Physician Simulation (4 Hours)

Scenario Assignment & Preparation (1 Hour)

- Students are paired, with one acting as a physician and the other as a patient.
- Each pair is assigned a case scenario focusing on mental, emotional, and physical health concerns (e.g., stress-induced digestive issues, anxiety-related sleep disorders).

Role-Playing & Patient Assessment (2 Hours)

- Student-physicians practice history-taking, diagnosis, and treatment discussion.
- Student-patients respond with appropriate symptoms and concerns.

Feedback & Reflection (1 Hour)

- Peers and faculty provide feedback on communication skills, empathy, and clinical reasoning.
- Group discussion on challenges and best practices in patient interactions.

Session 3: Reflection & Report Compilation (2 Hours)

Analyzing Role-Play Insights (1 Hour)

- Discussing how mental and emotional factors influence patient behavior and treatment compliance.
- Identifying improvements in doctor-patient communication.

Compiling & Submitting Reflection Report (1 Hour)

- Summarizing role-play experiences, feedback, and key takeaways.
- Submitting a structured report for faculty evaluation.

Experiential-Learning 4.4 : Mental Afaal like meditation to restore balance to the Nafs.

Total Duration: 4 Hours

Session 1: Introduction to Meditation & Health Parameters- by facilitator (1 Hour)

Understanding Meditation in Unani Medicine (30 min)

- Overview of meditative practices and their impact on mental and physical health.
- The connection between Nafsiyat (psychological balance) and physiological functions.

Physiological Markers & Data Collection Methods (30 min)

- Introduction to BP, HRV, pulse rate and their significance in stress & relaxation response.
- Methods for measuring these parameters accurately.

Session 2: Data Collection (2 Hours)

Option 1: Direct Patient/Subject Examination

Pre-Meditation Measurement (30 min): Students record baseline BP, HRV, and pulse rate of a subject.

Guided Meditation Session (30 min): The subject engages in a structured meditation practice.

Post-Meditation Measurement (30 min): Students re-record physiological parameters to assess changes.

Data Comparison & Analysis (30 min): Compare pre- and post-meditation values to evaluate effects.

Option 2: Literature Review-Based Analysis

Research Paper Compilation (1 Hour): Students collect journal articles from PubMed, Scopus, and Unani literature on meditation's effects.

Data Extraction & Summary (1 Hour): Key findings on meditation's impact on psychological and physiological health are summarized.

Session 3: Reflection & Report Compilation (1 Hour)

Group Discussion & Interpretation (30 min)

• Sharing findings on meditation-induced changes in physiological markers.

Report Writing & Submission (30 min): Structuring observations, results, and interpretations into a formal report for evaluation.

Experiential-Learning 4.5 : Breathing exercises and their influence on mental health and balance of humors.

Total Duration: 3 Hours

Session 1: Introduction to Breathing Exercises & Physiological Impact- by teacher (30 min)

Understanding Breathing Exercises in Unani Medicine & Modern Science (15 min)

- Overview of breath control in Unani concepts related to mental health and humoral balance.
- Scientific perspective on how breathing affects the nervous system, HRV, BP, and mental well-being.

Methodologies for Data Collection (15 min): Measuring physiological parameters before and after breathing exercises.

Session 2: Data Compilation & Analysis (1.5 Hours)

Pre-Exercise Measurement (30 min): Recording baseline BP, HRV, pulse rate.

Guided Breathing Exercise (30 min): Performing a controlled breathing technique.

Post-Exercise Measurement & Comparison (30 min): Assessing changes in physiological parameters.

Session 3: Conclusion & Report Submission (1 Hour)

Discussion on Findings (30 min): Sharing key observations on breathing's role in mental health & physiological balance.

Report Writing & Submission (30 min): Structuring findings into a concise scientific report for evaluation.

Modular Assessment	
Assessment method	Hour
Instructions - Conduct a structured Modular assessment. Assessment will be for 50 marks. Keep structured marking pattern. Use different assessment methods in each module for the semester. Keep record of the structured pattern used for assessment. Calculate the Modular grade point as per table 6 C.	4

Open Book Test (10 marks): The students may be given an open book test on Unani Philosophy, Definition of Arwah and Afaal in philosophical and scientific context, Types of Arwah.

Practical (10 Marks): on Breathing exercises and their influence on mental health and balance of humors.

Case Based Assessment (15 Marks): Case presentations and role-playing evaluations on Lifestyle adjustments and their effect on mental and emotional wellbeing.

Portfolio (15 Marks): Breathing exercise and their influence on mental health and balance of Akhlat.

Or

Any practical in converted form can be taken for assessment (25 marks).

and

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

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
سجيات : Module 5	Cytology and Histology علم الخليه اور					
Module Learning Objectives (At the end of the module, the students should be able to)						
 Identify and differentiate between the four primary tissue types—epithelial, connective, muscle, and nervous—based on histological characteristics. Demonstrate proficiency in using light microscopy to observe and analyze cellular and tissue structures. Apply various staining methods to enhance visualization of cells and tissues, understanding the principles behind each technique. Interpret histological images to identify normal and pathological changes in cells and tissues. Illustrate how the structure of specific cells and tissues correlates with their physiological functions and roles in health and disease. Demonstrate proficiency in fundamental laboratory techniques for preparing and analyzing histological samples, including sectioning, mounting, and staining. Connect the knowledge of cytology and histology to clinical scenarios, emphasizing the relevance of cellular and tissue analysis in diagnosing diseases. 						
Unit 1 ما تکروسکونی کارتکوین کی تکنیک Microscopy and staining techniques						
مایگرواسکوپی کی اقسام 5.1.1						
(Types of Microscopy)						
مختلف خلیات اورانسجه کی تکوین کی خصوصیات 1.2						
(Staining characteristics of various cells and tissues.)						
تلوین کی تکنیک، جیسے تکوین ، ہیماٹو سلین اور اوسین تکوین ڈوین ، ہیماٹو سلین اور اوسین تکوین 5.1.3						
(Staining techniques, like haemoglobin staining Hematoxylin and Eosin staining)						

References: 30,36,37,38,39

3A	3B	3C	3D	3E	3F	3G		
CO 3,CO 4	Contrast various types of Microscopy.	2	Lecture	сс	Knows- how	IBL,L_VC		
CO 3,CO 4	Demonstrate the use of light microscope.	2	Practical5.1	PSY-SET	Shows- how	D,DL,PT		
CO 3,CO 4	Performe staining of various cells and tissues.	4	Experiential - Learning5.1	PSY-MEC	Does	D,DL,DIS, KL,SDL		
CO 3,CO 4	Demonstrate the Staining techniques, like Hematoxylin and Eosin staining to enhance cellular visualization.	4	Practical5.2	PSY-SET	Shows- how	D,DL,DIS		
Unit 2 عنیات علی و المحکوم معنی محکوم محک								
3A	3B	3C	3D	3E	3F	3G		

3A	3B	3C	3D	3E	3F	3G
References: 31,33,34,35						
(Ageing)						
شيخوخة 5.3.5						
(Cell death and a	apoptosis)					
موت الخلية اوراستمانة 5.3.4						
(Hyperplasia, Neoplasia, Metaplasia and cancer)						
لسيحى اورسرطان 5.3.3	لصحم، تنسخ، تتحول					
(Cell division)	······································					
انقسام خلية 5.3.2						
(Cell cycle)						
دورة خلية 5.3.1						
Ceاحداث خلیہ Unit 3	Ilular Events					
4		5	Learning5.3		how	PL,SDL
CO 2,CO 3,CO	Trace dysfunctions in gap junctions can lead to cardiac and neurological disorders	2	Experiential	PSY-GUD	Shows-	BL,BS,C_
CO 2,CO 3	Express the importance of linkages between the cells .	1	Lecture	CAN	Knows- how	BL,FC,L& PPT ,TUT
CO 3	Discuss, how organelles work together to maintain cellular homeostasis and support overall cell function.	1	Lecture	сс	Knows- how	C_L,L&G D
CO 3,CO 6	the cell.	2	- Learning5.2	PSY-SET	how	L,RP
	Show the role of each organelles and how its design relate to its specific functions within		Experiential		Shows-	BS DIS P
CO 3	Elucidate telomeres during cell division, and its relation to aging.	1	Lecture	сс	Knows- how	BS,C_L,D IS,L&PPT
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CO 3	Discuss the relationship between the cell cycle and hyperplasia, metaplasia and explain how dysregulation of cell cycle control can lead to cancer.	2	Lecture	сс	Knows- how	BS,C_L,D IS,FC,L& GD
CO 3	Discuss the differences between apoptosis and necrosis as forms of cell death and describe the key characteristics, underlying mechanisms, and physiological roles of apoptosis.	1	Lecture	сс	Knows- how	CBL,C_L, DIS,L&PP T ,TUT

Tissue preparationبانتک تیاری Unit 4

(Tissue preparation, limits and challenges.)

بافت کا جمع کرنا، فنس کرنا، بلاک بنانا، سیشن کننگ، مختلف مائیکروٹوم کا استعال، اور عمومی و نظامی سلائیڈز کی تیاری 5.4.2

(Collection of tissue, fixing, block making, section cutting, use of different types of microtome and preparation of general and systemic slides.)

References: 30,36,37,38,39

3A	3В	3C	3D	3E	3F	3G		
CO 3	Describe Tissue preparation, its limits and challenges.	2	Lecture	САР	Knows- how	BL,FC,L& GD		
CO 3	Demonstrate technique to prepare histology slides.	8	Practical5.3	PSY-SET	Shows- how	D,DL,PT		
CO 3	Display slide preparation technique	3	Experiential - Learning5.4	PSY-MEC	Does	BL,DL,FV ,RLE		
Unit 5 سجيات عوى General histology								
نسجيات عمومي 5.5.1								

(General histology.)

جسم کے نظاموں کی مخصوص نسجیات بشمول خورد بینی ظہور 5.5.2

(Specific histology of the systems of the body including their microscopic appearance.)

References: 30,36,37,38,39

3A	3B	3C	3D	3E	3F	3G	
CO 3	Set General histology slides and evaluate its microscopic appearance.	6	Practical5.4	PSY-SET	Shows- how	C_L,D,DL ,IBL,Mnt	
CO 3	Assemble systemic histology slides and evaluate their specific microscopic appearance.	10	Experiential - Learning5.5	PSY-MEC	Does	BL,D,DL, DIS	
CO 4	Trace normal versus pathological tissue histology.	4	Experiential - Learning5.6	PSY-GUD	Shows- how	C_L,D,DL ,DIS,PT	
Practical Trainin	g Activity						
Practical 5.1 : Us	se of light Microscope						
Total Duration: 2 hours							
Session 1 (45 Minutes): Theoretical Introduction & Advanced Demonstration (by facilitator)							

- Explanation of principles of light microscopy, Köhler illumination, and resolving power.
- Demonstration of staining techniques and oil immersion methods for high-resolution imaging.
- Overview of microscopic structures relevant to Unani physiology (e.g., cellular integrity, humoral changes, blood composition, tissue morphology).

Session 2 (1 Hour 15 Minutes): Hands-on Practice, Observation, and Research Discussion

- Individual microscopy practice with slide examination and staining application.
- Comparative analysis of cellular structures in different physiological and pathological conditions.
- Documentation and research correlation with contemporary scientific studies.

Practical 5.2 : Staining techniques.

Total Duration: 4 hours

Session 1 (1 Hour): Introduction and Demonstration by facilitator

- Theory session on staining principles, color contrast, and cellular visualization.
- Teacher demonstrates the step-by-step staining process.

Session 2 (1.5 Hours): Hands-on Practice

- Students perform H&E staining independently.
- Emphasis on precision, timing, and proper slide handling.

Session 3 (1 Hour): Microscopic Analysis & Documentation

- Examination of stained slides under the microscope.
- Documentation of findings, challenges, and interpretations in record books.

Session 4 (30 Minutes): Group Discussion & Conclusion

- Group comparison of stained slides and discussion on observed differences.
- Faculty-led session on staining limitations and best practices.

Practical 5.3 : Preparation of histology slides.

Total Duration: 8 Hours

Session 1 (1.5 Hours): Introduction and Teacher Demonstration

- Lecture on importance, principles, and applications of histological slide preparation.
- Demonstration of tissue collection, fixation, and dehydration steps.

Session 2 (1.5 Hours): Tissue Processing & Embedding

• Students perform tissue fixation and dehydration independently.

• Embedding of tissues in paraffin blocks for sectioning.

Session 3 (2 Hours): Section Cutting Using Different Microtomes

- Hands-on practice with rotary, freezing, and sledge microtomes.
- Proper handling of microtomes for obtaining thin sections.

Session 4 (1.5 Hours): Staining and Mounting

- Students perform H&E and other stains on prepared sections.
- Mounting the stained slides with cover slips.

Session 5 (1.5 Hours): Microscopic Examination & Documentation

- Examination of prepared slides under a microscope.
- Compilation of observations and challenges faced during preparation.

Practical 5.4 : General histology slides and its microscopic evaluation.

Total Duration: 6 Hours

Session 1 (2 Hours): Microscopic Observation of General Histology Slides

Teacher Demonstration:

- The teacher will guide students on how to properly use the microscope to observe histological slides.
- Orientation to different staining techniques and tissue structures.

Hands-on Individual Practice:

- Each student will examine assigned slides under low and high magnification.
- Identification of cell shape, structure, and organization.
- Recognizing key features of epithelial, connective, muscle, and nervous tissues.

Note-taking & Diagram Sketching:

- Students will sketch microscopic structures in their record books.
- Noting any visible structural modifications in different tissue types.

Session 2 (2Hours): Comparative Analysis of Tissue Types

Group Work:

- Students will work in pairs or small groups, comparing histological variations.
- Discussion on specialized features of each tissue type.

Identification of Variations in Histological Appearance:

- Students will compare their observations across different tissue samples.
- Identifying differences in arrangement, density, and function.

Presentation:

- Groups will present their observations and interpretations to the class.
- Discussion on structural-functional relationships in tissue physiology.

Session 3 (2 Hours): Clinical Pathology & Report Compilation

Observation of Abnormal Histology Slides:

- Students will examine pathological tissue samples showing structural alterations.
- Identification of inflammatory changes, degeneration, and tissue damage.

Discussion on Disease Correlation:

- Connecting microscopic abnormalities with clinical symptoms and disease progression.
- Discussion on how histopathology aligns with Unani disease concepts.

Final Report Compilation:

- Each student will submit a detailed report documenting their findings.
- Inclusion of microscopic sketches, Unani correlations, and clinical insights.

Experiential learning Activity

Experiential-Learning 5.1 : Staining of various cells and tissues

Total Duration: 4 Hours

Session 1: Introduction to Staining Techniques & Their Applications- by facilitator (1 Hour)

Overview of Staining in Histology & Pathology (30 min)

- Importance of staining in tissue identification.
- Common staining techniques (Hematoxylin & Eosin, Gram Stain, Giemsa, etc.).

Assignment of Staining Techniques (30 min): Each student is assigned a specific staining technique based on the type of tissue/cell to be studied.

Session 2: Hands-on Staining & Slide Preparation (2 Hours)

Preparation of Slides (1 Hour)

- Handling tissue sections/cell samples.
- Applying assigned staining technique as per standard protocol.

Observation Under Microscope & Recording Results (1 Hour)

- Examining stained slides for color, structure, and cellular details.
- Documenting findings with drawings or images.

Session 3: Slide Submission & Evaluation (1 Hour)

Final Touches & Slide Submission (30 min)

- Ensuring proper labeling and documentation of slides.
- Submitting stained slides for faculty review.

Discussion & Feedback (30 min)

• Instructor provides feedback on staining quality, technique execution, and observations.

• Students discuss challenges faced and best practices learned.

Experiential-Learning 5.2 : Role of each Organelles and its specific function within the cell.

Total Duration: 2 Hours

Session 1: Preparation & Role Assignment (30 min)

Introduction to the Debate- by facilitator (10 min)

- Overview of cellular functions and organelle interdependence.
- Explanation of debate format and evaluation criteria.

Role Assignment (10 min): Each student is assigned a specific organelle (e.g., nucleus, mitochondria, ribosome, Golgi apparatus, etc.).

Research & Argument Preparation (10 min): Students prepare key points, arguments, and counterarguments to defend their organelle's significance.

Session 2: Organelles Debate (1 Hour)

Opening Statements (20 min)

- Each student presents their organelle's role and importance.
- Arguments must include real-life cellular functions and consequences of dysfunction.

Rebuttal & Counterarguments (20 min): Students challenge each other by highlighting dependencies, limitations, or advantages of their organelle over others.

Final Defense & Closing Arguments (20 min): Each student summarizes their stance and why their organelle is the most crucial.

Session 3: Reflection & Conclusion (30 min)

Faculty & Peer Evaluation (15 min): Instructor provides feedback on argument quality, clarity, and scientific accuracy.

Group Discussion on Cellular Interdependence (15 min): Emphasizing how no single organelle functions in isolation.

Experiential-Learning 5.3 : Dysfunction in gap junctions and various disorders.

Total Duration: 3 Hours

Session 1: Introduction & Research Paper Review (1 Hour)

Introduction to Gap Junctions & Their Role- by teacher (20 min)

- Overview of gap junctions, their function in cell communication, and their role in cardiac and neurological health.
- Explanation of how dysfunction can contribute to disorders (e.g., arrhythmias, epilepsy).

Guided Literature Search (40 min)

- Students access research papers from databases like PubMed, Scopus, and Unani sources.
- Identify key findings on gap junction dysfunction and disease correlations.

Session 2: Data Compilation & Analysis (1 Hour)

Summarizing Key Findings (30 min)

- Students extract and organize relevant data from research articles.
- Categorizing information under cardiac and neurological disorders.

Analysis & Interpretation (30 min)

- Evaluating how gap junction dysfunction leads to specific pathological conditions.
- Comparing findings from different research papers.

Session 3: Presentation & Discussion (1 Hour)

Student Presentations (40 min)

- Each student (or team) presents their findings with key highlights from research.
- Emphasis on scientific evidence, case studies, and possible treatments.

Faculty Feedback & Discussion (20 min)

• Instructor provides feedback on content accuracy and presentation quality.

• Open discussion on future research possibilities and clinical implications.

Experiential-Learning 5.4 : Laboratory Visits: Identify the processes involved in slide preparation and examination.

Total Duration: 3 Hours

Session 1: Introduction to Slide Preparation Techniques- by facilitator (30 min)

- Overview of histopathology workflow from sample collection to microscopic examination.
- Discussion on lab ethics and protocol.

Session 2: Histopathology Lab Visit & Observation (1.5 Hours)

• Guided visit to a histopathology laboratory.

Observing real-time slide preparation, including:

- Tissue fixation & processing
- Microtome sectioning
- Staining and mounting
- Microscopic examination by pathologists
- Interaction with lab technicians and pathologists for insights into clinical applications.

Session 3: Reflection & Portfolio Submission (1 Hour)

Compile reflections on:

- Techniques observed and their significance.
- Challenges in slide preparation and how to overcome them.
- Insights from histopathologists and lab professionals.
- Submit reflections as a portfolio for faculty review.

Experiential-Learning 5.5 : Systemic histology slides

Total Duration: 10 Hours

Session 1: Introduction to Systemic Histology & Slide Preparation Techniques- by facilitator (2 Hours)

Overview of Histological Techniques (1 Hour)

- Introduction to fixation, sectioning, staining, and mounting.
- Importance of systemic histology in diagnosis and research.

Selection of Tissues for Slide Preparation (1 Hour)

- Discussion on different organs and tissue types (epithelial, connective, muscle, nervous).
- Assigning specific tissues to each student.

Session 2: Practical Session – Slide Preparation (5 Hours)

Tissue Processing & Sectioning (2 Hours)

- Embedding, cutting, and sectioning using a microtome.
- Ensuring proper tissue thickness for clarity under a microscope.

Staining & Mounting (2 Hours)

- Application of Hematoxylin & Eosin (H&E) or other stains.
- Mounting slides for permanent record.

Initial Microscopic Examination & Quality Check (1 Hour): Verifying clarity, contrast, and staining uniformity.

Session 3: Evaluation & Documentation (2 Hours)

Final Microscopic Evaluation (1 Hour)

- Identifying key microscopic features of tissues.
- Noting any artefacts or staining inconsistencies.

Slide Submission & Record-Keeping (1 Hour)

• Labeling slides properly.

• Submitting at least 10 prepared slides for faculty review.

Session 4: Presentation & Feedback Discussion (1 Hour)

Student Reflections & Learning Takeaways (30 min)

- Discuss challenges faced during slide preparation.
- Share observations on different tissue structures.

Faculty Feedback & Improvement Suggestions (30 min)

- Evaluation of slide accuracy, staining quality, and labeling.
- Guidance on correcting errors for future preparations.

Experiential-Learning 5.6 : Histological slides- normal versus pathological tissue structure.

Total Duration: 4 Hours

Session 1: Demonstration & Introduction to Histopathology- by faculty (1 Hour)

Overview of Normal vs. Pathological Tissues (30 min)

- Explanation of histological differences in tissues under disease conditions.
- Key pathological changes like inflammation, degeneration, necrosis, fibrosis, and malignancy.

Microscopic Demonstration (30 min)

- Faculty-led examination of selected slides under the microscope.
- Identifying specific pathological features compared to normal tissue.

Session 2: Slide Analysis & Identification (2 Hours)

Hands-on Examination (90 min)

• Students individually analyze 10-15 histology slides (both normal and pathological).

Identifying tissue architecture, cellular abnormalities, and pathological markers.	
Comparative Discussion (30 min)	
 Peer discussion on observed changes. Guidance from the instructor on correct identification. 	
Session 3: Documentation & Log Book Submission (1 Hour)	
Note-Taking & Observation Compilation (40 min)	
 Recording key histological features of each slide. Documenting disease-specific alterations. 	
Submission & Review (20 min)	
 Students submit their log books with detailed observations. Faculty reviews and provides feedback on accuracy. 	
Modular Assessment	
Assessment method	Hour
Instructions - Conduct a structured Modular assessment. Assessment will be for 50 marks. Keep structured marking pattern. Use different assessment methods in each module for the semester. Keep record of the structured pattern used for assessment. Calculate the Modular grade point as per table 6 C.	
Viva (20 marks): shall be conducted on topics like various types of Microscopy, how organelles work together to maintain cellular homeostasis, Cell linkages, Telomers in cell division and aging or any other topic from cognitive domain.	
Practicals (DOPS) (15 marks): Practicals on Staining techniques and General Histology slides may be conducted.	4
Debate (15 marks): Organise a debate on the Topic Role of Organelles or Staining characteristics or Dysfunction in Gap junctions. The performance in the	
Debate shall be evaluated and graded.	

Any practical in converted form can be taken for assessment (25 marks).

and

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

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 : عثناءالخليه يرض وتمل اورسيل سكنانگ Transport across cell membrane and cell signaling.								

Module Learning Objectives

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

- 1. Elucidate the composition and organization of cell membranes, including the roles of phospholipids, proteins, and carbohydrates.
- 2. Identify and compare different mechanisms of transport across cell membranes, including passive and active transport, and the factors influencing each process.
- 3. Discuss the functions of various transport proteins, including channels, carriers, and pumps, and their roles in cellular function.
- 4. Illustrate the principles of osmosis and the importance of osmoregulation in maintaining cellular integrity and function.
- 5. Describe the various types of cell signaling (endocrine, paracrine, autocrine, synaptic) and their significance in physiological processes.
- 6. Describe the key steps in signal transduction pathways, including receptor activation, second messengers, and cellular responses.
- 7. Examine how transport mechanisms are linked to signaling processes and how they affect cellular responses to external stimuli.
- 8. Analyze case studies that illustrate the importance of membrane transport and cell signaling in health and disease, including examples from pharmacology and disease pathology.

Cell membrane transport غشاءالخليه پرهل وحمل Unit 1

گبس ڈونن کا غشائ توازن کا تصور 6.1.1

(Concept of Gibbs- Donnan Membrane equilibrium)

غثاء الخليه مين قنويات لحميه :قنوات ألونية اور قناة ماء 6.1.2

(Protein (Channel in the membrane: ion channels and water channels.)

قناة الجهد اللهربائي اور قناة الجهد ريبطة كاطريقه كار6.1.3

(Mechanism of Voltage gated channel and Ligand gated channel.)

(Patch clamping)

نقل السلبی اور اس پر اثرانداز ہونے والے عوامل 6.1.5

(Passive transport and factors affecting it.)

نقل النشط 6.1.6

(Active transport.)

References: 26,29,31,32,33,34,35

3A	3B	3C	3D	3E	3F	3G
CO 3,CO 4	Demonstrate the importance of Donnan equilibrium in physiology and its implications for cellular function.	2	Practical6.1	PSY-SET	Shows- how	D,DL,D-M
CO 4	Display the technique of patch clamping to study the electrical properties of ion channels in cells.	4	Practical6.2	PSY-SET	Shows- how	BL,C_L,D ,DL,DIS,P T,SIM
CO 3	Analyze how active transport interact with other cellular processes such as endocytosis and exocytosis?	2	Lecture	CAN	Knows- how	C_L,DIS, EDU,IBL, L&GD,TU T
CO 3	Describe the main types of passive transport: simple diffusion, facilitated diffusion, and osmosis.	1	Lecture	САР	Knows- how	BL,C_L,F C,IBL,L,S DL
CO 4,CO 6	Revise mechanism of Voltage gated channel and Ligand gated channel.	4	Experiential - Learning6.1	PSY-ADT	Does	BL,BS,C_ L,LS,PL

CO 3,CO 6	Document current research being conducted on ion channels and aquaporins.	6	Experiential - Learning6.2	PSY-MEC	Does	BS,CBL,C _L,DIS,S DL
Recرسیپٹرز Unit 2	eptors					
ہوئے ریسیپٹرز 6.2.1	جی پروٹین جوڑے					
(G-protein coupl	ed receptors (GPRC))					
ٹائروسین کائنیزز 6.2.2	ريسيپڅر					
(Receptor tyrosi	ne kinases (RTKs))					
قناة أيونية 6.2.3						
(Ion channel)						
نيوكليئر ريسيپٹرز 6.2.4						
(Nuclear recepto	ors)					
ريسيپٹر فيمليز 6.2.5 ح	ليوم نيكروسيس فيكثر (مدانا: معدم معدم معدم (مدانا: معدم معدم معدم معدم معدم معدم معدم معد					
(Tumor necrosis	factor (INF) receptor families.)					
References: 26,	29,31,32,33,34,35			[[1
3A	3В	3C	3D	3E	3F	3G
	Explain role of following receptors in different signal transduction pathway:					
CO 3,CO 4	 G-protein coupled receptors (GPRC) Receptor tyrosine kinases (RTKs) Calcium sensing receptor (CaSR) 	5	Lecture	САР	Knows- how	L,DIS,L_V C,TUT
				1	1	1

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	 Ion channel Nuclear receptors Tumor necrosis factor (TNF) receptor families. 					
انظام رسل الثانية Unit 3	Second messenger system		1			
سائيكلك 6.3.1						
(Cyclic (cAMP))						
سائىكلك 6.3.2						
(Cyclic GMP (cG	SMP))					
ر ڪيلموڏوڪن نظام 6.3.3	کیکیم او					
(Calcium and ca	Imodulin system)					
ئى فاسفيٹ نظام 6.3.4	انوستائل اور ڈائی اسیل گلیسرول ٹرا					
(Inositol triphosp	phate(IP3) and Diacylglycerol (DAG) system)					
ائٹرک آ کسائیڈ 6.3.5						
(Nitric oxide (NC)))					
ريكائيرُونك اييدُ 6.3.6	1					
(Arachidonic aci	d)					
References: 26,3	29,31,32,33,34,35					
3A	3В	3C	3D	3E	3F	3G
CO 3,CO 4	State the role of second messenger in cellular signalling	10	Practical6.3	PSY-SET	Shows- how	BL,C_L,D ,SDL,SIM

ملات بين الخليه Unit 4	Intercellular communication					
عصبی مواصلات 6.4.1						
(Neural commu	nication)					
ائن مواصلات۔ 6.4.2	ايتذوكر					
(Endocrine com	munication.)					
لرائن مواصلات 6.4.3						
(Paracrine com	nunication)					
لرائن مواصلات 6.4.4	م. الو					
(Autocrine comr	nunication)					
رائن مواصلات 6.4.5	جكستا					
(Juxtacrine com	munication)					
References: 26,	29,31,32,33,34,35					
3A	3В	3C	3D	3E	3F	3G
CO 3,CO 4	Describe various intercellular communications.	2	Lecture	сс	Knows- how	BS,C_L,D IS,FC,GB L,IBL,L&P PT ,PBL
راس کابن پېلو Unit 5	Signal transduction and its clinical aspect سنن کی تقل دخمل او		- ·	1	•	
ين فاسفوروليش 6.5.1	سگنل ٹرانزڈ کشن کا طریقہ کار کے طور پر پرو ٹین۔ٹائرو					
(Protein-Tyrosin	e Phosphorylation as a Mechanism for Signal Transduction)					

جی پروتین ریسیپٹرز سے متعلق بیاریاں 6.5.2

(Disorders Associated with G Protein-Coupled Receptors .)

References: 26,29,31,32,33,34,35

3A	3B	3C	3D	3E	3F	3G		
CO 3,CO 4	Investigate disorders associated with G Protein-Coupled Receptors .	10	Experiential - Learning6.3	PSY-MEC	Does	CD,CBL, C_L,DIS,I BL,LS		
CO 3,CO 4	Trace different signalling pathways.	6	Experiential - Learning6.4	PSY-MEC	Does	BS,C_L,I BL,LS		
CO 3,CO 4	Demonstrate Protein Tyrosine Phosphorylation as a Mechanism for Signal Transduction	4	Practical6.4	PSY-SET	Shows- how	BL,BS,C_ L,D,DIS		
Practical Training	Practical Training Activity							
Practical 6.1 : E>	xperiment on Donnan equilibrium.							
Total Duration: 2	Hours							
Session 1 (1 Ho	ur): Theoretical Explanation & Experiment Setup by the facilitator							
IntroducExplanaDiscussi	 Introduction to Donnan Equilibrium Explanation of the principle and its importance in cellular function. Discussion on real-life physiological applications (e.g., nerve function, capillary exchange). 							
Experimental Se	tup:							
Step 1: Prepare the compartments—Set up two compartments (I & II) separated by a semi-permeable membrane.								

Step 2: Add solutions—Introduce an aqueous salt solution like NaCl in compartment I and a different salt (e.g., R+CI-) in compartment II.

Session 2 (1 Hour): Observation & Analysis

Monitoring Ion Movement:

Step 3: Observe the concentration gradient-driven ion exchange and the formation of electrical potential.

Step 4: Allow the system to reach equilibrium, noting how ion movement stabilizes.

Discussion & Documentation:

Step 5: Discuss implications in membrane transport, and disease states.

Step 6: Students record the experiment, findings, and physiological relevance in their logbooks.

Practical 6.2 : Patch clamping.

Total Duration: 4 Hours

Materials Required:

- Laboratory Setup (if available): Patch-clamp apparatus, micropipettes, electrodes, amplifier system.
- Computers/Tablets with Internet Access (for virtual simulations and research).
- Online Platforms (e.g., PhET, LabXchange, research papers, video tutorials on patch-clamp technique).

Session 1 (2 Hours): Understanding Patch-Clamp Technique

- Introduction & Theoretical Overview- by faculty
- Explanation of patch-clamping and its role in electrophysiology.
- Understanding ion channel kinetics and electrical properties of excitable cells.

Group Assignment: Students will be divided into small groups (2 per group) for collaborative learning.

Virtual Exploration (If Physical Setup is Unavailable)

• Using online resources and media to study the patch-clamp technique.

• Watching high-quality demonstrations from scientific repositories (e.g., JoVE, YouTube, PhET simulations).

Session 2 (2 Hours): Hands-on or Analytical Activity

Hands-on Patch Clamping (If Available)

- Performing patch-clamp technique under faculty supervision.
- Recording and analyzing current-voltage relationships of ion channels.

Analytical Approach (If No Physical Lab)

- Groups analyze case studies or simulated patch-clamp data.
- Comparing different patch-clamp configurations (whole-cell, inside-out, outside-out).
- Discussion on real-life applications in Unani medicine and modern physiology.
- Compilation of findings in a structured report.

Practical 6.3 : Second messengers.

Total Duration: 10 Hours

Materials Required:

- Computers/Tablets with Internet Access (for simulation tools like PhET, LabXchange).
- Simulation Software: PhET (University of Colorado), LabXchange (Harvard).
- Worksheets for recording observations.

Session 1 : Introduction to Second Messenger Systems (2 Hours)

- Brief orientation on cAMP, Ca²⁺, and inositol triphosphate (IP₃) signaling.
- Overview of PhET & LabXchange platforms for digital simulations.
- Discussion on the significance of second messengers in physiological functions.

Session 2 : Digital Simulation of Second Messenger Pathways (2 Hours)

- Hands-on exploration of PhET or LabXchange.
- Simulating second messenger activation through GPCR signaling.

• Observing the effects of different stimuli on intracellular signaling.

Session 3 : Analyzing and Recording Observations (2 Hours)

- Each student will modify signaling parameters and document responses.
- Compare normal vs. dysregulated signaling in the simulation.
- Identify how second messengers amplify signals and regulate cellular functions.

Session 4 : Interpretation and Discussion (2 Hours)

- Group discussion on the physiological impact of second messengers.
- Comparative analysis of different second messenger pathways in PhET & LabXchange.
- Presentation of key findings in tabulated form.

Session 5 : Compilation and Submission of Reports (2 Hours)

- Students will compile a summary of their observations.
- Submission of a structured report based on the simulation results.
- Teacher feedback and discussion on clinical relevance of second messengers.

Practical 6.4 : Protein-Tyrosine Phosphorylation as a Mechanism for Signal Transduction

Total Duration: 4 Hours

Session 1 : Understanding & Designing the Poster (2 Hours)

- Introduction to Poster Design: Importance of visual representation in scientific learning.
- Providing students with templates or examples of well-structured posters.
- Hands-on drafting of poster layouts using Canva, Adobe Spark, or traditional methods.
- Selection of key points, diagrams, and flowcharts to explain Protein Tyrosine Phosphorylation.

Session 2 : Finalization & Presentation (2 Hours)

- Refinement of poster designs with peer and faculty feedback.
- Finalizing content with clear visual representation of signal transduction pathways.
- Presentation of posters to the class, followed by discussion.

• Submission of posters for evaluation.

Experiential learning Activity

Experiential-Learning 6.1 : Mechanism of Voltage gated channel and Ligand gated channel.

Total Duration: 4 Hours

Session 1: Introduction to Ion Channel Mechanisms (1 Hour)

Revisiting concept of Voltage-Gated & Ligand-Gated Channels - self learning (30 min)

- Structure & function of voltage-gated Na+, K+, and Ca2+ channels.
- Structure & function of ligand-gated channels (e.g., Acetylcholine, GABA, NMDA receptors).
- Role in neural transmission, muscle contraction, and synaptic communication.

Comparative Discussion (30 min)

- Differences between voltage- and ligand-gated channels.
- Factors influencing activation, inactivation, and modulation.

Session 2: Group Research & Analysis (1.5 Hours)

Formation of Groups & Research (1 Hour)

Each group explores a specific aspect:

- Relationship between applied voltage & voltage-gated channels.
- Effect of ligand concentration on ligand-gated channels.
- Clinical significance (e.g., channelopathies, pharmacological modulation).

Data Compilation & Discussion (30 min): Groups organize findings into key points, graphs, and case studies for presentation.

Session 3: Group Presentation & Peer Discussion (1.5 Hours)

Group Presentations (1 Hour)

- Each group presents their findings, covering:
- Mechanisms of voltage- & ligand-gated channels.
- Relationship between stimulus intensity & channel activity.
- Physiological & pathological implications.

Peer Discussion & Faculty Feedback (30 min)

- Q&A session with cross-questioning among groups.
- Faculty provides feedback on clarity, depth, and scientific accuracy.

Experiential-Learning 6.2 : Ion channels and aquaporins.

Total Duration: 6 Hours

Session 1: Faculty led- Introduction & Article Distribution(1 Hour)

Overview of Ion Channels & Aquaporins (30 min)

- Function, structure, and physiological importance.
- Clinical significance in neurological, renal, and cardiovascular diseases.

Article Distribution & Review Guidelines (30 min)

- The teacher provides 2-3 recent research articles (selected in advance).
- Explanation of key points to focus on while reading (e.g., objectives, methodology, findings, and implications).

Session 2: Article Review & Discussion (2 Hours)

Independent Analysis (1 Hour)

- Students review their assigned article and extract key findings.
- Identify knowledge gaps, potential applications, and research limitations.

Group Discussion & Teacher-Led Analysis (1 Hour)

• Students present summaries and raise questions based on their readings.

• The teacher facilitates discussion, addressing challenges, advancements, and future research directions.

Session 3: Report Compilation & Submission (3 Hours)

Structuring the Report (1 Hour): Students compile findings into a structured report.

Finalizing & Submitting Report (2 Hours)

- Proofreading and formatting.
- Submission for faculty evaluation and feedback.

Experiential-Learning 6.3 : Disorders Associated with G Protein-Coupled Receptors .

Total Duration: 10 Hours

Session 1: Faculty led Introduction to GPCR Disorders (2 Hours)

Overview of GPCRs & Their Role in Physiology (1 Hour)

- Structure & function of GPCRs.
- Their role in neurology, endocrinology, and immune responses.

Common Disorders Associated with GPCR Dysfunction (1 Hour)

- Examples: Hypertension, asthma, Parkinson's disease, diabetes, certain cancers.
- Mechanisms of GPCR-related disease pathophysiology.

Session 2: Research & Case Study Selection (3 Hours)

Literature Review (1.5 Hours)

- Students explore research papers on GPCR dysfunction and associated disorders.
- Identify real-world case studies (from clinical reports or published literature).

Group Discussion & Selection of Case Studies (1.5 Hours)

- Students discuss findings and select specific case studies for presentation.
- Outline key symptoms, mechanisms, and treatment approaches.

Session 3: Case Study Analysis & Presentation Preparation (3 Hours)

Case Study Breakdown (1.5 Hours)

- Each group summarizes their selected case study, including:
- Patient history & symptoms
- GPCR dysfunction involved
- Diagnosis & treatment strategies

Presentation Development (1.5 Hours)

- Groups create structured slides/posters for their case study.
- Emphasize key takeaways & clinical implications.

Session 4: Case Study Presentations & Feedback (2 Hours)

Group Presentations (1.5 Hours)

- Each group presents their case study findings.
- Explains disease mechanisms, patient symptoms, and clinical interventions.

Peer & Faculty Discussion (30 min)

- Q&A session to clarify concepts and evaluate disease mechanisms.
- Faculty provides feedback on research depth & presentation clarity.

Experiential-Learning 6.4 : Cell signal transduction.

Total Duration: 6 Hours

Session 1: Introduction to Signaling Pathways (by facilitator) (1 Hour)

Overview of Major Signaling Pathways (30 min)

- GPCR signaling
- Receptor Tyrosine Kinase (RTK) signaling
- JAK-STAT pathway
- MAPK and PI3K-AKT pathways

Group Assignment & Pathway Selection (30 min)

- Each group is assigned a specific signaling pathway.
- Discussion on key molecules (receptors, messengers, and effectors) involved in each pathway.

Session 2: Pathway Mapping & Research (2 Hours)

Pathway Analysis (1 Hour): Groups conduct research on their assigned signaling pathway, focusing on:

- Molecular interactions
- Activation and regulation mechanisms
- Physiological effects

Pathway Visualization (1 Hour): Groups create detailed pathway maps, showing key components like:

- Receptors (e.g., GPCR, RTK)
- Secondary messengers (e.g., cAMP, Ca²⁺)
- Effectors (e.g., kinases, transcription factors)

Session 3: Creative Presentation & Discussion (2 Hours)

Group Presentations: Each group presents their pathway using:

- Posters, slides, or digital models
- Diagrams explaining key signaling steps
- Examples of diseases linked to pathway dysfunction

Session 4: Reflection & Summary (1 Hour)

Class Discussion on Pathway Integration (30 min)

- Understanding how pathways interact in cellular processes.
- Discussing clinical implications of pathway dysfunction.

Submission of Final Pathway Maps & Reports (30 min): Each group submits a finalized pathway diagram and summary.

Modular Assessment	
Assessment method	Hour
Instructions - Conduct a structured Modular assessment. Assessment will be for 50 marks. Keep structured marking pattern. Use different assessment methods in each module for the semester. Keep record of the structured pattern used for assessment. Calculate the Modular grade point as per table 6 C.	
App Based Question (20 Marks): An App Based Question shall be prepared on any of the Topics covered through lectures (Cognitive domain).	
Practical Viva (15 Marks): for the practicals like Donnan Equilibrium, Patch Clamping, LabXchange etc.	4
Group Presentation (15 Marks): on the topic Mechanism of Voltage Gated Channel shall taken as assessment.	
Or Any practical in converted form can be taken for assessment (25 marks).	
and Any of the experiential as portfolio/ refelections / presentations can be taken as an assessment (25 marks).	

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	
فزيالو جي : Module 7	Cell Electrophysiology سيل اليكثر						
Module Learning (At the end of the	Objectives module, the students should be able to)						
 Analyze the concept of resting membrane potential and the factors that contribute to its establishment, including ion distribution and permeability. Identify different types of ion channels (voltage-gated, ligand-gated, and mechanosensitive) and discuss their roles in generating electrical signals in cells. Analyze the distinct phases of action potentials, including depolarization, repolarization, and hyperpolarization, and elucidate the specific ionic movements responsible for each phase. Examine the processes of synaptic transmission, including neurotransmitter release, receptor activation, and the generation of postsynaptic potentials. Demonstrate proficiency in laboratory techniques used to measure electrical activity in cells, such as patch-clamp and voltage-clamp techniques. Analyze the implications of altered electrophysiological properties in various diseases, including neurological disorders, cardiac arrhythmias, and muscle pathologies. 							
Unit 1 خلية عصبية Ne	erve cell						
توصيل و اثارة 7.1.1							
(Excitation and c	onduction)						
مبی)نیوروٹرو ف نر) 7.1.2	غذاء عصبی)نیوروٹروفنز) 2.1.7						
(Neurotrophins)	(Neurotrophins)						
References: 26,2	27,28,29,32						
3A	3B	3C	3D	3E	3F	3G	

CO 3,CO 4	Calibrate excitation and conduction of nerve cell .	4	Practical7.1	PSY-MEC	Shows- how	BS,C_L,D ,SIM	
CO 3,CO 4	Describe the major neurotrophins and their specific functions. Explain How does each neurotrophin affect neuronal survival and differentiation?	2	Lecture	СС	Knows- how	BS,FC,G BL,L&PP T ,SDL,TUT	
CO 3,CO 4,CO 6	Teach excitation and conduction of nerve cell	6	Experiential - Learning7.1	PSY-MEC	Does	BL,C_L,S DL	
Muخلية عضلية Unit 2	Iscle cell						
عضلات ہیکایۃ :جہد الفعل، عجزی خطام، ڈسٹروفن-گلائکو پروٹین کمپلیک 7.2.1 (Skeletal muscle: Action potential, Sacrotubular system,Dystrophin- glycoprotein complex)							
عضلة القلب :جهد غشاء ساكن وجهد فعل 7.2.2							
(Cardiac muscle: Resting membrane and action potential.)							
عضلات ملساء : کهر بائی و میکانیکی سرگر می 7.2.3							
(muscle: Electrical and Mechanical Activity)							
References: 26,27,28,29,32							
3A	3B	3C	3D	3E	3F	3G	
CO 3,CO 4	Revise recent research articles on the Dystrophin-Glycoprotein Complex (DGC) and its role in muscular dystrophies.	10	Experiential - Learning7.2	PSY-ADT	Does	BS,CBL,C _L,DIS,T BL	
CO 3,CO 4	Discuss the significance of calcium ions in the electrophysiology of skeletal muscle, process of calcium released from the sarcoplasmic reticulum, and its effect on muscle contraction.	2	Lecture	сс	Knows- how	DIS,L,TU T	

CO 3,CO 4	Demonstrate conditions like Myasthenia gravis (affecting muscle function) and multiple sclerosis (affecting nerve conduction) as case studies to illustrate the importance of electrical physiology- I	10	Practical7.2	PSY-SET	Shows- how	BL,BS,CB L,C_L,LS, PAL,PBL, TPW,TBL			
CO 3,CO 4	Demonstrate conditions like Myasthenia gravis (affecting muscle function) and multiple sclerosis (affecting nerve conduction) as case studies to illustrate the importance of electrical physiology- II	10	Experiential - Learning7.3	PSY-SET	Does	CBL,FV,I BL			
ب المسبقي والوصلي Unit 3	Unit 3 عل المسبكي والوصلي Synaptic and junctional Transmission.								
اور بعد المشبك 7.3.1	بنية ووظيفة ما قبل								
(Pre- & Postsyna	ptic structure and function)								
ماث کهربائی 7.3.2	عصبی خلایا میں بعد المشبک ا								
(Electrical events in postsynaptic neurons)									
میں تثبیط وشہیل 7.3.3	مثابک								
(Inhibition & facil	iation at synapses)								
ابهم عصبی ناقلیاتی)نیوروٹرانسمیٹر (نظام 7.3.4									
(Principal neurotransmitter systems)									
References: 26,27,28,29,32									
3A	3B	3C	3D	3E	3F	3G			
CO 3,CO 4	Articulate Pre- & Postsynaptic structure and function.	2	Lecture	сс	Knows- how	L&PPT ,L_VC,TU T			
CO 2,CO 3	Categorize electrical events in postsynaptic neurons.	2	Lecture	СС	Knows- how	BL,C_L,D IS,EDU,G BL,L_VC, PER,SDL			

CO 2,CO 3	Illustrate the principles of inhibition and facilitation at synapses with specific examples	2	Lecture	сс	Knows- how	DIS,L&PP T ,ML,PL,Pr BL,TUT		
CO 3,CO 4	State Pre- & Postsynaptic structure and function	6	Practical7.3	PSY-SET	Shows- how	C_L,DIS,J C,LS,PL		
Practical Training Activity								
Practical 7.1 : E>	citation and conduction of nerve cell.							
Total Duration: 4	Hours							
Materials & Resources:								
 Digital simulation platforms: LabXchange, PhET, Neuroanatomy apps. Computers, tablets, or smart devices with access to the platforms. Guided worksheet for students to document their observations. 								
Session 1 : Intro	duction & Hands-On Digital Simulation (2 Hours)							
Introduction (30 minutes): Faculty led demonstration of digital platform								
Hands-On Simulation Activity (1.5 Hours)								
 Step 1: Students access LabXchange, PhET, or Neuroanatomy apps. Step 2: Adjust parameters such as ion concentrations, channel permeability, or myelination levels. Step 3: Observe action potential propagation under different conditions. 								
Session 2 : Analysis, Interpretation & Discussion (2 Hours)								
Data Collection 8	k Interpretation (1 Hours)							
 Step 4: 5 Step 5: 0 	Students record observations of how changes in variables affect nerve conduction. Compare results to classical literature and discuss physiological significance.							
Discussion & Correlation to Unani Concepts (30 minutes)								
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- Link findings to Unani physiology—how Ruh and Asab relate to nerve function.
- Discuss clinical implications (e.g., how demyelination in diseases like Multiple Sclerosis affects nerve conduction).

Submission of Report (30 minutes)

• Students compile a short report summarizing their findings and submit for evaluation

Practical 7.2 : Case studies on Electro-Physiology

Total Duration: 10 Hours

Session 1: Role Assignment- by facilitator (1 Hour)

Role allocation: Learners may be allocated following roles:

- Researcher 1 Studies Myasthenia Gravis (MG).
- Researcher 2 Studies Multiple Sclerosis (MS).
- Data Analyst Prepares graphs, diagrams, and visual aids.
- Presenter(s) Develops and delivers the final presentation.

Session 2: Research Phase (3 Hours)

Data Collection on MG & MS:

- Pathophysiology Mechanisms affecting muscle function and nerve conduction.
- Symptoms & Progression Clinical manifestations, early vs. late-stage.
- Diagnosis & Treatment Investigations and therapeutic interventions.

Data Compilation & Analysis:

- Use published research papers, case studies, and medical sources.
- Identify key visual aids (e.g., MRI scans, electromyography results).

Session 3: Structuring & Creating Presentation (4 Hours)

Organizing Key Findings:

- Compare MG and MS in terms of causes, symptoms, and diagnosis.
- Highlight role of electrical physiology in both conditions.

Slide Development & Visuals:

- Integrate graphs, flowcharts, and patient case studies.
- Include short videos or diagrams explaining nerve conduction defects.

Session 4: Rehearsal & Presentation Delivery (2 Hours)

Practice Sessions:

- Groups rehearse their presentations.
- Receive peer feedback on clarity and delivery.

Final Presentation & Q&A:

- Groups present their findings.
- Audience and instructor ask questions for deeper discussion.

Practical 7.3 : Pre & Post Synaptic Structure and function.

Total Duration: 6 Hours

Session 1 (2 Hours): Independent Literature Review & Research

- Each student is assigned a specific aspect of synaptic structure and function (e.g., neurotransmitter release, synaptic plasticity, receptor dynamics).
- Students search for recent developments, advanced imaging techniques, and molecular tools used in synaptic research.

Session 2 (2 Hours): Compilation & Comparative Analysis

- Compilation of findings on pre- & postsynaptic mechanisms.
- Identification of research tools (e.g., electrophysiology, optogenetics, imaging techniques).

• Comparison of pros and cons of different methodologies.

Session 3 (2 Hours): Report Submission & Discussion

- Students present their findings in small discussion groups.
- Mentor-led analysis on how modern techniques improve our understanding of synaptic function.
- Submission of a structured comparative report for evaluation.

Experiential learning Activity

Experiential-Learning 7.1 : Excitation and conduction of nerve cell

Total Duration: 6 Hours

Session 1: Topic Assignment & Independent Research (2 Hours)

Each student is assigned a specific subtopic on nerve excitation and conduction (e.g., resting membrane potential, action potential, saltatory conduction).

Students explore online learning resources:

- Videos (animations, expert lectures)
- Graphics & Infographics (membrane potential diagrams, neuron conduction pathways)
- Interactive Simulations (nerve impulse conduction models)
- Identify the most effective formats for learning and conceptual clarity.

Session 2: Presentation Preparation (2 Hours)

Students develop individual presentations incorporating:

- Videos, animations, or self-made diagrams to illustrate nerve conduction.
- Explanatory slides summarizing key concepts.
- Case studies or real-world applications (e.g., nerve conduction disorders like Multiple Sclerosis).
- Ensure clarity and engagement through effective visual aids.

Session 3: Seminar & Peer Review (2 Hours)

• Each student delivers a presentation on their assigned topic.

• Peer Review Activity.

Teacher Evaluation:

Assessment Criteria for teachers:

Depth & Accuracy of Content – Understanding of nerve conduction mechanisms.

Presentation Quality – Effective use of videos, graphics, and explanations.

Engagement & Clarity – Ability to communicate complex topics effectively.

Experiential-Learning 7.2 : DGC and its role in muscular dystrophies.

Total Duration: 10 Hours

Session 1: Introduction to DGC and Muscular Dystrophies (by facilitator) (2 Hours)

Overview of the Dystrophin-Glycoprotein Complex (DGC) (1 Hour)

- Structure and function of DGC.
- Its role in muscle integrity and signal transduction.

Muscular Dystrophies and DGC Dysfunction (1 Hour)

- Discussion on Duchenne Muscular Dystrophy (DMD), Becker Muscular Dystrophy (BMD), and other related disorders.
- Genetic mutations and their effects on DGC structure and function.

Session 2: Research Article Exploration (3 Hours)

Article Distribution & Review (1.5 Hours)

- The teacher assigns 2–3 recent research articles on DGC and muscular dystrophies to each student.
- Students read and analyze key findings, experimental methods, and clinical significance.

Group Discussion & Key Takeaways (1.5 Hours)
- Each student summarizes their article in small groups.
- Groups discuss trends, gaps, and advancements in DGC-related research.

Session 3: Presentation Preparation (3 Hours)

Structuring the Presentation (1.5 Hours): Students prepare slides/posters summarizing:

- Research objective, methodology, findings, and significance.
- Possible future directions in DGC-related research.

Faculty Feedback & Refinement (1.5 Hours)

- Instructor reviews student presentations.
- Suggestions for improving clarity and scientific depth.

Session 4: Research Presentation & Discussion (2 Hours)

Student Presentations (1.5 Hours)

- Each student presents their findings to the class.
- Emphasis on new insights, clinical implications, and unanswered questions.

Peer & Faculty Feedback (30 min)

- Q&A session for deeper analysis of the findings.
- Faculty and peers provide constructive feedback.

Experiential-Learning 7.3 : Hospital visit Case Study of Myasthenia gravis and multiple sclerosis.

Total Duration: 10 Hours

Session 1: Introduction to Neuromuscular Disorders (2 Hours)

Overview of Electrical Physiology (1 Hour)

• Understanding nerve conduction, synaptic transmission, and neuromuscular junction (NMJ).

• Role of acetylcholine, ion channels, and demyelination in MG and MS.

Pathophysiology of Myasthenia Gravis & Multiple Sclerosis (1 Hour)

- Autoimmune mechanisms affecting NMJ (MG) vs. CNS demyelination (MS).
- Common clinical presentations, diagnostic tests, and treatment approaches.

Session 2: Clinical Observation & Data Collection (4 Hours)

Hospital/Clinic Visit & Patient Interaction (3 Hours)

Observe MG and MS patients under the guidance of a consultant.

Enquire about:

- Symptoms (e.g., muscle fatigue, diplopia, limb weakness, gait disturbances).
- Investigations (e.g., Electromyography [EMG], MRI, Anti-AChR antibodies).
- Treatment (e.g., Acetylcholinesterase inhibitors, Immunosuppressants, Physiotherapy).

Clinical Notes & Initial Analysis (1 Hour): Students document key observations and compare clinical findings with theoretical concepts.

Session 3: Pathophysiology Correlation & Report Compilation (3 Hours)

Correlating Symptoms, Investigations & Pathophysiology (1.5 Hours)

Group discussion on:

- How nerve conduction defects in MG/MS impact muscle function?
- Why specific tests (EMG, MRI, antibodies) are used for diagnosis?

Report Preparation (1.5 Hours): Students compile a structured report.

Session 4: Presentation & Discussion (1 Hour)

Report Submission & Peer Review (30 min)

• Students submit their compiled reports.

Selected students present key findings to the class.	
Instructor-Led Debrief (30 min)	
Faculty provides feedback and discusses advancements in MG & MS research.	
Modular Assessment	
Assessment method	Hour
Instructions - Conduct a structured Modular assessment. Assessment will be for 50 marks. Keep structured marking pattern. Use different assessment methods in each module for the semester. Keep record of the structured pattern used for assessment. Calculate the Modular grade point as per table 6 C.	
SAQ (5 Marks each)- 03 SAQs: Three SAQs on any topics from cognitive domain of this module shall be given for assessment-	
Case Studies (15 Marks): Case studies on electrophysiology submitted during the semester shall be taken for assessment.	
Teaching Test (20 Marks): Topic Excitation and Conduction of Nerve cell should be given to the student 02 days prior to the assessment. The student shall prepare the topic for presentaion. The Content, use of media, communication skills shall be taken as assessment.	4
Or	
Any practical in converted form can be taken for assessment (25 marks).	
and	
Any of the experiential as portfolio/ refelections / presentations can be taken as an assessment (25 Marks).	

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		
ستتباب : Module 8	Homeostasis							
Module Learning (At the end of the	g Objectives e module, the students should be able to)							
 Describe Apply tra Conduct Engage 	 Describe the concept and mechanisms of homeostasis. Apply traditional UNANI practices to promote homeostasis in individuals. Conduct practical experiments and case studies related to homeostatic regulation. Engage in experiential learning to appreciate the importance of homeostasis in holistic health. 							
Bas مباديات Unit 1	sic Concepts							
کلیدی تصورات 8.1.1	استنباب کے							
(Key concepts in	homeostasis)							
تاریخی پس منظر 8.1.2 Historical persp)	طب يوناني مين استتباب)،وميوسليسيس (كا تاريخي پس منظر 8.1.2 (Historical perspectives on homeostasis in Unani medicine)							
References: 1,1	References: 1,13,18,19,20,26,29,32							
3A	3B	3C	3D	3E	3F	3G		
CO 1,CO 2,CO 3	Elucidate key concepts in homeostasis and interpret historical perspectives on similar principles in traditional Unani medicine	3	Lecture	сс	Know	C_L,DIS, L,PL,TUT		
يكاني _د ردودالفعل Unit 2	-Feedback mechanism							

منفی فیڈ بیک 8.2.1

(Negative Feedback)

مثبت فیڈ بیک 8.2.2

(Positive Feedback)

(Nervous and endocrine regulation)

References: 26,29,32,34,35

3A	3В	3C	3D	3E	3F	3G
CO 2,CO 3,CO 4	Recognize Negative feedback and Positive Feedback Mechanism	2	Lecture	ск	Know	BL,DIS,F C,L&GD, Mnt,PER, PBL,SDL, TUT
CO 2,CO 3,CO 4	Express role of the nervous and endocrine systems in homeostasis	1	Lecture	САР	Knows- how	DIS,L&G D,SDL,TU T
CO 2,CO 3,CO 4	Simulate feedback mechanisms using computer software	4	Practical8.1	PSY-GUD	Shows- how	BL,C_L,D ,DIS,SIM
CO 2,CO 3,CO 4	Measure physiological parameters (heart rate, blood pressure, temperature) before and after stress exposure		Practical8.2	PSY-MEC	Does	D,DL,DIS, PT,PER
ی قاعدی توازن Unit 3	Temperature and Acid-base balance درجة رادت اور محق					
زارت کی تنظیم 8.3.1	נובי א					
(Temperature Re	egulation)					

(Acid-Base Balance) يوازن المحصّ -القائدة : 8.3.2 تنظيم منسى 8.3.2.1 (Respiratory regulation 8.3.2.2 . تنظيم كلوى 2.2.8 (Renal regulation)

References: 26,29,32

3A	3B	3C	3D	3E	3F	3G	
CO 2,CO 3,CO 4	Describe mechanism of Temperature Regulation	1	Lecture	сс	Know	CBL,C_L, DIS,L&PP T ,PER,PBL	
CO 2,CO 3,CO 4	Explain Acid-Base Balance and its Respiratory and Renal regulation	1	Lecture	сс	Knows- how	BL,CBL,C _L,L&PPT ,PBL,SDL ,TUT	
CO 2,CO 3,CO 4	Measure the effect of commonly consumed food items on blood glucose, blood pH, and urine pH, correlating findings with homeostatic mechanisms in Unani medicine.	6	Practical8.3	PSY-MEC	Does	D,DL,DIS, PT,PER	
ر کہارل کا توازن Unit 4	Fluid and electrolyte balance, رطوبات						
ى اصطلاحات 8.4.1: 8.4.1.1 8.4.1.2 8.4.1.3 8.4.1.4 8.4.1.5	(Key terms) کلید (Osmoles) آسمولز (Equivalents) ایکوسلیننس (Osmolality) آسموللرئی (Osmolarity) توکی						
قِته كار اور تنظيم 8.4.2	طر						
(Mechanism and	regulation)						
لے ساتھ مطابقت 8.4.3	تناؤ _						
(Stress adaptatio	ons.)						

**جسمانی مائعات میں توازن کے یونانی تصورات)اخلاط(8.4.4

(Unani concepts of balance in body fluids (Akhlat))

References: 1,2,4,6,12,13,18,19,20,23,24,26,29,32,34,35

3A	3B	3C	3D	3E	3F	3G
CO 2,CO 3,CO 4	Enumerate following Key terms 1. Osmoles 2. Equivalents 3. Osmolality 4. Osmolarity 5. Tonicity	1	Lecture	ск	Know	L&PPT ,PER,SDL
CO 2,CO 3,CO 4	Explain Mechanism and regulation of Water and Electrolyte balance	1	Lecture	сс	Knows- how	BL,C_L,D IS,IBL,L& PPT ,PBL,TUT
CO 2,CO 3,CO 4	Demonstrate Stress adaptations	4	Practical8.4	PSY-SET	Shows- how	BL,CBL,L S,Mnt,SD L
CO 1,CO 3	Design treatment plan based on Unani concepts of balance in body fluids (Akhlat)	10	Experiential - Learning8.1	PSY-ORG	Does	CD,CBL, DIS,FV,R LE,SDL
CO 1,CO 3	Formulate diet plan based on Unani concepts of balance in body fluids (Akhlat)	6	Experiential - Learning8.2	PSY-ORG	Does	BS,CBL,D IS,LS,RL E,SDL,TU T
CO 1,CO 3	Build awareness campaigns on Unani concepts of balance in body fluids (Akhlat)	5	Experiential - Learning8.3	PSY-ORG	Does	BL,BS,DI S,FV,PrB L,RLE,SD L,TPW

CO 1,CC	3 Practice Unani concepts of balance in body fluids (Akhlat).	5	Experiential - Learning8.4	AFT-RES	Does	BS,C_L,D ,DIS,GBL, RP
Practical Tr	aining Activity					
Practical 8.	: Simulation of feedback mechanisms using computer software					
Total Durat	on: 4 Hours					
Materials & • On • Jus • Ph • Bic • or a • Lap Session 1 (• Intr • Exp	Resources: ne Simulation Platforms: Physiology.com T Simulations Digital Human ny other available platform tops/Tablets with Internet Access. P Hours): Introduction & Simulation Setup (by facilitator) poduction to Feedback Mechanisms: lanation of negative feedback (e.g., thermoregulation, blood glucose regulation).					
• = = = = = = = = = = = = = = = = = = =						
Hands-On	imulation Activity:					
StuAdj	 Students explore feedback loops on JustPhysiology.com or other platforms. Adjust parameters (e.g., hormone levels, temperature, glucose concentration) to observe system responses. 					
Session 2 (Hours): Analysis & Interpretation					
Data Recor	ling & Pattern Recognition:					
• Stu • Ide	dents record changes observed in simulations. htify thresholds & setpoints in feedback loops.					

Presentation & Discussion:

- Compare different physiological systems & feedback types.
- Discuss clinical relevance in Unani & modern medicine.

Practical 8.2 : Physiological parameters (heart rate, blood pressure, temperature) before and after stress exposure

Total Duration: 6 Hours

Materials & Resources:

- Digital Blood Pressure Monitor.
- Heart Rate Monitor (Pulse Oximeter or ECG device).
- Thermometer for body temperature measurement. (preferebly Infrared Thermometer)
- HRV and GSR Sensors (if available).
- Treadmill or Stationary Bicycle for physical stress.
- Ice-Cold Water Basin for cold stress.
- Data Recording Sheets.

Session 1 : Baseline Physiological Measurements (2 Hours)

Preliminary Readings: (1.5 Hours)

- Each student measures and records their heart rate, blood pressure, body temperature, HRV, and GSR at rest.
- Interpretation of values based on normal physiological ranges.

Discussion on Homeostasis & Stress Response: (0.5 Hours)

- Introduction to how stress affects cardiovascular & thermoregulatory functions.
- Unani concept of Tabiyat and its role in stress adaptation.

Session 2 : Stress Exposure & Physiological Response (2 Hours)

Stress Test 1 – Physical Stress:

• Students perform moderate exercise (walking on a treadmill or cycling on a stationary bicycle for 5 minutes).

• Re-measure physiological parameters immediately and 5 minutes post-exercise.

Stress Test 2 – Cold Stress:

- Students immerse one hand in ice-cold water (1-2 minutes).
- Measure changes in heart rate, blood pressure, and body temperature.

Data Compilation & Observations:

- Compare pre- and post-stress values.
- Identify patterns in sympathetic vs. parasympathetic responses.

Session 3 : Data Analysis & Interpretation (2 Hours)

Comparison & Trend Analysis:

- Students compile and analyze recorded data.
- Compare physical stress vs. cold stress responses.

Presentation & Discussion:

- Each student presents their findings, correlating physiological responses with Unani stress adaptation concepts.
- Faculty provides feedback on observations and their clinical implications.

Practical 8.3 : pH level testing in various food items and its impact on body homeostasis.

Total Duration: 6 Hours

Materials & Resources:

- pH Testing Strips/Digital pH Meter for food, blood, and urine samples.
- Samples of Common Food Items (acidic, neutral, and alkaline foods).
- Glucose Monitor to assess blood glucose levels.
- Urine pH Testing Kits.
- Reference Materials (Classical Unani Texts & Modern Research on Acid-Base Balance).

Session 1 : pH Testing of Food Items (2 Hours)

Hands-on Experimentation: (1.5 Hour)

- Students will test the pH of various food items (e.g., citrus fruits, dairy, meats, grains, and alkaline foods).
- Record the pH values and classify them as acidic, neutral, or alkaline.

Discussion on Food & Acid-Base Balance: (0.5 Hour)

- Correlate food pH levels with Unani concepts of digestion (Hazm) & temperament (Mizaj).
- Understand the impact of dietary intake on systemic pH regulation.

Session 2 (2 Hours): Measuring Blood Glucose, Blood pH & Urine pH

Experimental Analysis: (1.5 Hour)

- Students measure their fasting blood glucose, blood pH, and urine pH before and after consuming selected food items.
- Compare how different food groups influence metabolic markers and homeostasis.

Homeostatic Mechanisms Discussion: (0.5 Hour)

- Understanding how the body buffers pH changes (respiratory, renal, and metabolic compensation).
- Discussion on the role of kidneys, lungs, and buffer systems in maintaining pH balance.

Session 3 : Data Interpretation & Comparative Analysis (2 Hours)

Compilation & Analysis: (1 Hour)

- Students compile their recorded values and compare results.
- Identify patterns in dietary pH influence on homeostasis.
- Discuss clinical implications of acid-base imbalance (e.g., metabolic acidosis, alkalosis).

Presentation & Reflection: (1 Hour)

- Each student presents their findings and correlates them with Unani principles of dietary balance.
- Faculty provides feedback on experimental methods & interpretation.

Practical 8.4 : Case Study: Identify stress adaptations

Total Duration: 4 Hours

Session 1 (2 Hours): Literature Search & Case Study Analysis (Independently by students)

- Students review published case studies & research articles on stress adaptation mechanisms.
- Identify physiological, psychological, and behavioral responses to stress.
- Document key adaptation strategies and coping mechanisms.

Session 2 (2 Hours): Self-Assessment & Discussion

Application of the Perceived Stress Scale (PSS):

- Teacher introduces the PSS tool and its significance.
- Each student completes the PSS for self-assessment and interprets their scores.
- Compilation of case study summaries & PSS scores for discussion.
- Mentor-led discussion on findings, interpretation of scores, and stress management strategies.

Experiential learning Activity

Experiential-Learning 8.1: Hospital Visit: Unani clinics or hospitals to observe treatment approaches focusing on homeostasis /Tabiyat Case Study: Designing a treatment plan based on homeostasis principles in Unani Tibb

Total Duration: 10 Hours

Session 1: Orientation & Background Study (by facilitator) (2 Hours)

- Review of Unani concepts of Akhlāt balance and its role in health & disease.
- Discussion on homeostasis principles in Unani medicine.
- Overview of clinical approaches for assessing and restoring Akhlāt balance.

Session 2: Hospital/Clinic Visit (4 Hours):

Visit Unani hospitals/clinics to observe:

- Diagnosis methods used to assess Akhlāt imbalance.
- Treatment strategies (Ilāj-bit-Tadbeer, Ilāj-bit-Dawa, Ilāj-bit-Ghiza).

- Patient interaction & physician decision-making.
- Take structured notes on different cases.
- Discuss observations with Unani practitioners.

Session 3: Case Study & Treatment Plan Development (3 Hours)

Individually or in teams, students will:

- Select a case study from their hospital visit.
- Analyze the patient's Mizāj & Akhlāt imbalance.
- Design a Unani treatment plan based on homeostasis principles.

Treatment plan should include:

- Ilāj-bit-Ghiza (Dietary modification)
- Ilāj-bit-Dawa (Medicinal therapy)
- Ilāj-bit-Tadbeer (Regimental therapy)

Session 4: Reflection & Submission (1 Hour)

Students will compile their observations & reflections into a structured report.

Reflection points:

- How do Unani physicians assess Akhlāt balance?
- What challenges did they observe in diagnosis & treatment?
- How does Unani homeostasis differ from modern concepts?

Submission for evaluation and discussion.

Experiential-Learning 8.2 : Healthy meals that promote homeostasis, focusing on balance of Akhlat

Total Duration: 6 Hours

Session 1: Understanding Akhlāt and Diet (1 Hour)

Brief tutorial/discussion by facilitator on:

- Role of diet in Akhlāt balance and maintaining homeostasis.
- Unani principles of food classification based on Mizāj (hot, cold, moist, dry).
- How different foods influence body fluids and health.
- Discussion on classical Unani dietary recommendations for balancing Akhlāt.

Session 2: Recipe Development & Ingredient Selection (2 Hours)

Students (individually or in teams) will:

- Select a healthy meal recipe promoting Akhlāt balance.
- Justify each ingredient based on its Mizāj and effect on Akhlāt.
- Reference classical Unani texts like Al-Qānūn fi'l Tibb, Kitab al-Hawi, or Mufradat al-Adwiya.

Session 3: Presentation & Peer Review (2 Hours)

Each student/team will present their meal plan:

- Explain the choice of ingredients and their effect on Akhlāt.
- Justify the balance of hot/cold, moist/dry elements in the meal.
- Other students will critically evaluate the meal's effectiveness.
- Teacher will provide feedback on accuracy and classical references.

Session 4: Report Submission & Discussion (1 Hour)

Students will compile a structured report including:

- Recipe with ingredient list.
- Justification for each ingredient's effect on Akhlāt balance.
- References from Unani literature.

Submission for grading/evaluation and discussion on improvements.

Experiential-Learning 8.3 : Develop Awareness campaign on the importance of homeostasis in daily life

Total Duration: 5 Hours

Session 1: Understanding Homeostasis & Public Awareness (1 Hour)

Brief discussion by teacher on:

- The role of Akhlāt balance in maintaining health.
- Common disorders due to imbalance of Akhlāt.
- Effective health awareness strategies (posters, videos, social media, brochures).

Brainstorming session: Students list key messages for their campaign.

Session 2: Campaign Material Development (2 Hours)

Students (individually or in teams) will design their awareness campaign, choosing:

- Target audience (general public, students, specific groups).
- Format (poster, brochure, infographic, video, social media posts).
- Key health messages on maintaining Akhlāt balance.

The material should be visually appealing, scientifically accurate, and reference Unani principles.

Session 3: Presentation & Peer Review (1 Hour)

- Each student/team will present their campaign to the class.
- Peer feedback & teacher evaluation on clarity, scientific accuracy, and effectiveness.
- Discussion on how to implement the campaign in real-world settings (clinics, schools, social media).

Session 4: Submission & Reflection (1 Hour)

- Students will submit their campaign material as a portfolio or record.
- Short reflective writing on what they learned about homeostasis and public awareness.

Experiential-Learning 8.4 : Role-Playing Sessions: Simulated patient interactions to practice holistic health assessments.

Total Duration: 5 Hours

Session 1: Introduction to Holistic Health Assessment (1 Hour)

Teacher gives brief lecture/discussion on:

- Unani principles of Akhlāt balance in diagnosing health conditions.
- Patient evaluation methods (Pulse diagnosis, Mizāj assessment, lifestyle inquiry).
- Effective communication skills for patient interaction.

Demonstration: Instructor demonstrates a holistic patient assessment using Unani methods.

Session 2: Role-Playing Exercise (2 Hours)

Students are divided into pairs or small groups, alternating between:

- Physician: Conducts a holistic assessment (history-taking, symptom analysis, Akhlāt evaluation).
- Patient: Simulates symptoms of an Akhlāt imbalance.
- Observer: Takes notes and provides feedback.

Scenarios include:

- Imbalance of Dam Hypertension, inflammation.
- Imbalance of Balgham Respiratory issues, indigestion.
- Imbalance of Safra Liver disorders, acidity.
- Imbalance of Sauda Mental health concerns, dry skin issues.

Session 3: Reflection & Group Discussion (1 Hour)

Students share their experiences, challenges, and insights from the role-playing session.

Discussion on:

- Key learnings from patient interactions.
- Challenges in diagnosing Akhlāt imbalance.
- How Unani assessment differs from modern diagnostic approaches.

Session 4: Submission & Feedback (1 Hour)

Each student writes a short reflective report on:

 Their role-playing experience. Challenges faced & solutions in holistic health assessment. Practical applications of Akhlāt balance in patient care. 	
Instructor provides constructive feedback on student performance.	
Modular Assessment	
Assessment method	Hour
Instructions - Conduct a structured Modular assessment. Assessment will be for 50 marks. Keep structured marking pattern. Use different assessment methods in each module for the semester. Keep record of the structured pattern used for assessment. Calculate the Modular grade point as per table 6 C.	
Peer asessment (10 Marks): A debate on the topic Historical perspective of homeostasis in Unani Medicine (or any other topic except listed in self assessment) shall be conducted. The performance shall be assessed by peers.	
Self assessment (10 marks): From the start of the module the student will prepare a self assessment record on the comprehension of the following topics. The candidate may grade his comprehension on the scale of 0 to 10.	
-Key concepts of homeostasis	
-Negative and positive feedback mechanism	4
- Role of nervous and endocrine system in homeostasis	
- Mechanism of temperature regulation	
DOPS (15 Marks): Measuring Physiological parameters Heart Rate, Blood Pressure, Temperature before and after Stress.	
Relections/Portfolio (15 Marks): A reflection on developing an awareness campaign on the importance of homeostasis in daily life may be taken as assessment.	
Or Any practical in converted form can be taken for assessment (25 marks).	
and Any of the experiential as portfolio/ refelections / presentations can be taken as an assessment (25 marks).	

 $\ensuremath{\textcircled{O}}$ NCISM - UNIPG-AB-MZ - Sem 2 - 123 of 141

Table 4 : Practical Training Activity

(*Refer table 3 of similar activity number)

Practical No*	Practical name	Hours
1.1	Clinical implications of Tabiyat	5
1.2	Impact of Arkān balance on health and disease.	5
1.3	Unani remedies for balancing Arkan.	10
2.1	Disease prevelance in different Amzaja.	6
2.2	Tools used in Unani medicine for determination of Mizaj.	4
2.3	Balance of Akhlāt and its impact on health and disease.	5
2.4	Ghalbae Akhlat	5
3.1	Herbal formulations targeting specific Adhā	4
3.2	Primary Adhā and their anatomical relationships	6
3.3	Hands-on practice in pulse diagnosis and examination of Adh $ar{ ext{a}}$	4
3.4	Practical sessions on treatment methodologies enhancing Quwa.	6
4.1	Application of dietary, hydrotherapy, and exercise routines to balance Afaal and Arwah	4
4.2	Lifestyle adjustments and their effect on mental and emotional wellbeing	6
4.3	Imbalances in Afaal leading to diseases.	4
4.4	Examination of pulse, temperament, and behavior to identify the impact of disturbed Afaal.	3
4.5	Signs of disturbed Rooh through physical symptoms and mental states.	3
5.1	Use of light Microscope	2
5.2	Staining techniques.	4
5.3	Preparation of histology slides.	8
5.4	General histology slides and its microscopic evaluation.	6

6.1	Experiment on Donnan equilibrium.	2
6.2	Patch clamping.	4
6.3	Second messengers.	10
6.4	Protein-Tyrosine Phosphorylation as a Mechanism for Signal Transduction	4
7.1	Excitation and conduction of nerve cell .	4
7.2	Case studies on Electro-Physiology	10
7.3	Pre & Post Synaptic Structure and function.	6
8.1	Simulation of feedback mechanisms using computer software	4
8.2	Physiological parameters (heart rate, blood pressure, temperature) before and after stress exposure	6
8.3	pH level testing in various food items and its impact on body homeostasis.	6
8.4	Case Study: Identify stress adaptations	4

Table 5 : Experiential learning Activity

(*Refer table 3 of similar activity number)

Experiential learning No*	Experiential name	Hours
1.1	Research Project on Tabiyat	8
1.2	Hospital visit to assess role of Tabiyat in Disease Progression	8
1.3	Patient Education Program on Arkan Balance	10
2.1	Personalized treatment plan for different Amzaja.	4
2.2	Validity and reliability of Mizaj assessment tools.	10
2.3	Balance of Akhlāt and its impact on health and disease	6
2.4	Tools for assessment of Ghalbae Akhlat	6
3.1	Role-play and interactions to explore treatment options and patient interactions	10
3.2	Patient assessments and treatments related to Aza and Quwa.	6
3.3	Tools for assessment of quwa	10
4.1	Interrelation between mental state and physical symptoms	5
4.2	Patient Interviews on the mental and emotional background of the patient's illness.	6
4.3	Patient-Doctor Interactions: Role-playing exercises to develop a therapeutic relationship based on the Unani understanding of mental, emotional, and physical health.	8
4.4	Mental Afaal like meditation to restore balance to the Nafs.	4
4.5	Breathing exercises and their influence on mental health and balance of humors.	3
5.1	Staining of various cells and tissues	4
5.2	Role of each Organelles and its specific function within the cell.	2
5.3	Dysfunction in gap junctions and various disorders.	3
5.4	Laboratory Visits: Identify the processes involved in slide preparation and examination.	3

5.5	Systemic histology slides	10
5.6	Histological slides- normal versus pathological tissue structure.	4
6.1	Mechanism of Voltage gated channel and Ligand gated channel.	4
6.2	Ion channels and aquaporins.	6
6.3	Disorders Associated with G Protein-Coupled Receptors .	10
6.4	Cell signal transduction.	6
7.1	Excitation and conduction of nerve cell	6
7.2	DGC and its role in muscular dystrophies.	10
7.3	Hospital visit Case Study of Myasthenia gravis and multiple sclerosis.	10
8.1	Hospital Visit: Unani clinics or hospitals to observe treatment approaches focusing on homeostasis /Tabiyat Case Study: Designing a treatment plan based on homeostasis principles in Unani Tibb	10
8.2	Healthy meals that promote homeostasis, focusing on balance of Akhlat	6
8.3	Develop Awareness campaign on the importance of homeostasis in daily life	5
8.4	Role-Playing Sessions: Simulated patient interactions to practice holistic health assessments.	5

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-MZ	1	100	200	300

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

Credit frame work

UNIPG-AB-MZ 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. طبيت اوراركان Tabiyat and Arkan	2	60		50			
Mizāj and Akhlāt مر الحاور اخلاط .Mizāj	2	60		50			
M3. اعضاءاور توىAdhā and Quwā	2	60		50			
M4. اروان اورافعال Arwāh and Afal	2	60		50			
M5. علم الخليه اور تسجيات Cytology and Histology	2	60		50			
M6. غثاءالخليه پُفَل وحمل اور سِل سَكْنلَك Transport across cell membrane and cell signaling.	2	60		50			
Cell Electrophysiology سیل الیکٹر وفزیالو بی M7.	2	60		50			
M8. استتبابHomeostasis	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. طبيعت اورار كان Tabiyat and Arkan	C 1
2	Mizāj and Akhlāt مراج اوراخلاط .Mizāj	C 2
3	Adhā and Quwā اعضاءاور قوی.M3	C 3
4	M4. ارواح العال Arwāh and Af'al	C 4
5	Cytology and Histology علم الخليه اور تسجيات.M5	C 5
6	M6.غشاءالخليه پرهل وحمل اورسيل سکنگنگ.M6 cell signaling.	C 6
7	Cell Electrophysiology سیل الیکٹر وفزیالوجی .M7	C 7
8	Homeostasis استتباب.M8	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.

MD/MS Unani Examination UNIPG-AB-MZ 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		
ار کان (M- 1)	(M- 1) طبيعت اورار كان (Tabiyat and Arkan (Marks: Range 5-15)					
1	(U-1)طبيت Tabi'at	No	Yes	Yes		
2	(U-2) ارکان (Arkān	No	Yes	Yes		
راخلاط (M- 2)	Mizāj and Akhlāt (Marks: Range 5-20)					
1	(U-1) المران (U-1)	Yes	Yes	Yes		
2	(U-2) اخلاط (khlāt	Yes	Yes	Yes		
ور قوی (M- 3)	اعضاءاAdhā and Quwā (Marks: Range 5-20)					
1	(U-1) اعضاء (Adhā	No	Yes	Yes		
2	(U-2) ٽوي (Quwā	No	Yes	Yes		
3	(U-3) اعضاءاور قوی کے اطلاقی پہلو (Applied aspect of Adhā and Quwā	No	Yes	Yes		
رافعال (M- 4)	(M- 4) اروان العال (Marks: Range 5-15)					
1	Introduction to Unani Metaphysics، العدالطبيعيات (U-1)	No	Yes	No		
2	اقسام اور صحت پرائلے Types of Af al and Their Impact on Health افعال کے (U-2) اثرات	No	Yes	Yes		
3	(U-3) توليدامراض مين ارواح اوراعضاء كاتعال (U-3) توليدامراض مين ارواح اوراعضاء كاتعال (U-3) Disease Pathogenesis	No	Yes	Yes		
جيا ت (M- 5)	(M- 5) علم الخليه اور تسجيبات (Cytology and Histology (Marks: Range 5-20)					
1	Microscopy and staining techniques انگروسکو ییاور تکوین کی تکنیک (U-1)	No	Yes	No		
2	Cellular organellesعضيات خلوية (U-2)	No	Yes	Yes		
3	Cellular Events احداث خليه (U-3)	Yes	Yes	Yes		
4	(U-4) بانت کی تیاری (Iissue preparation	No	Yes	No		

5	(U-5) لسجيات عمومي (U-5) General histology	No	Yes	Yes		
(M- 6) عنشاءالخليه پرکل وحمل اورسیل سکنلنگ (Transport across cell membrane and cell signaling. (Marks: Range 5-20)						
1	Cell membrane transportعشاءالخلیه پرهل دسمها (U-1)	Yes	Yes	Yes		
2	(U-2) رسیپرز Receptors	Yes	Yes	No		
3	Second messenger system نظام رسل الثانية (U-3)	Yes	Yes	Yes		
4	Intercellular communication مواصلات بين الخليه (U-4)	Yes	Yes	Yes		
5	Signal transduction and its clinical aspect سلنل کی تکل وحمل اوراس کاطبن پیلو (U-5)	Yes	Yes	Yes		
زیالوجی (M- 7)	(M- 7) سیل الیکٹر وفزیالو بی Cell Electrophysiology (Marks: Range 5-20)					
1	Nerve cell خلية عصبية (U-1)	No	Yes	Yes		
2	Muscle cell خلية عضلية (U-2) خلية	Yes	Yes	Yes		
3	. لعل المسبقي والوصلي (U-3 عل Synaptic and junctional Transmission .	Yes	Yes	Yes		
تتباب (M- 8)	Homeostasis (Marks: Range 5-20)					
1	Basic Concepts مباديات (U-1	No	Yes	No		
2	Feedback mechanism میکانیه ردودانعتل (U-2 میکانیه ردودانعتل	No	Yes	Yes		
3	Temperature and Acid-base balance درجه حرارت اور حمضی قاعدی توازن (U-3)	Yes	Yes	Yes		
4	Fluid and electrolyte balance رطوبات (U-4)	No	Yes	Yes		

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	M2.U1 Or M2.U2 Or M5.U3 Or M6.U1 Or M6.U2 Or M6.U3 Or M6.U4 Or M6.U5 Or M7.U2 Or M7.U3 Or M8.U3 Or		
Q2	Short answer Questions Eight Questions 5 Marks Each All compulsory	1. M1.U1 Or . M1.U2 2. M2.U1 Or . M2.U2 3. M3.U1 Or . M1.U2 Or . M3.U3 4. M4.U1 Or . M4.U2 Or . M4.U3 5. M5.U1 Or . M5.U2 Or . M5.U3 Or . M5.U4 Or . M5.U5 6. M6.U1 Or . M6.U2 Or . M6.U3 Or . M6.U4 Or . M6.U5 7. M7.U1 Or . M7.U2 Or . M7.U3 8. M8.U1 Or . M8.U2 Or . M8.U3 Or . M8.U4		
Q3	Analytical Based Structured Long answer Questions Four Questions 10 marks each All compulsory	1. M1.U1 Or . M1.U2 Or . M2.U1 Or . M2.U2 2. M3.U1 Or . M3.U2 Or . M3.U3 Or . M4.U2 Or . M4.U3 3. M5.U2 Or . M5.U3 Or . M5.U5 Or . M6.U1 Or . M6.U3 Or . M6.U4 Or . M6.U5 4. M7.U1 Or . M7.U2 Or . M7.U3 Or . M8.U2 Or . M8.U3 Or . M8.U4		

6 H : Distribution of Practical Exam (University Examination)

S.No	Heads	Marks
	Major Practical (80 Marks):	
	 Will be divided into two subcomponents of 40 Marks each. Duration: 45 minutes for each component. Criteria: Includes practical with ≥6 credit hours for 40 Marks. List of Practical with ≥6 credit hours: S.No. 1.3, 2.1, 3.2, 3.4, 4.2, 5.3, 5.4, 6.3, 7.2, 7.3, 8.2, 8.3 Any two practical from the above list may be given for assessment. Example for long case practical: 1. Disease Prevalence in Different Amzaja: The student will examine a volunteer for assessment of Mizaj. Further they will also describe the 	
	method used by them for mizaj assessment and will also list the disease preponderance in that mizaj. (40 Marks)	
1	and	00
1	 Histology Slide Preparation and Microscopic Evaluation: The student will prepare and evaluate general histology slides such as epithelial, connective, or nervous tissue. (40 Marks) 	80
	Assessment Criteria (40 Marks): The examiner shall assess each practical separately for the following:	
	 Knowledge of Procedure/Principle (5 marks): Understanding of the objective, rationale, and principle of the procedure. Performance of Technique/Skill (25 marks): Proper execution of steps, use of instruments, adherence to protocols. Observation and Interpretation (10 marks): Accuracy and completeness of observations/data during the procedure and Correct interpretation of results and ability to analyse findings logically. 	
	The marks of both the components shall then be added.	
	Minor Practical or Spotters (60 Marks)	
	Divided into 3 subcomponents of 20 marks each.	
	1. Case Analysis: 20 marks	
	Example: The student will analyse cases of Arkan imbalance and propose remedies. or Practical S.No. 1.1, 2.3, 4.1, 4.3, 4.5, 8.4	
2	2. Spotters: 20 Marks	60
	Spot and describe Histological slides (5 Spots- 4 marks each)	
	3. Short Practical: 20 marks	
	Digital Simulations: The student will demonstrate the use platforms like LabXchange, PhET, or Neuroanatomy apps to simulate nerve conduction and action potential propagation. Activity: Have students manipulate parameters such as ion concentrations or myelination to observe how these changes affect.	

Reference Books/ Resources

S.No	References
1	Bin Sina. AL QANUN FI'L-TIBB [English translation]. New Delhi: Jamia Hamdard; 1993.
2	Rushd I. KITAB AL KULLIYAT [Urdu translation]. New Delhi: CCRUM
3	Chandpuri K. MOOJIZAL QANOON. 3rd ed. New Delhi: NCPUL New Delhi; 1984.
4	Kabiruddin M. KULLIYAT E QANOON. New Delhi: Daftar Al Masih; 1930.
5	Chughmani S. QANOOCHAH. Deoband: Faisal Publications Deoband U.P
6	Abu Sahal Masihi E Ibn Yahya bin I. KITAB-UL-MAIT FI-AL-TIB. Hyderabad: Islamic Publication Society; 1963.
7	Ibn AI Quf Masihi Aminuddaula Abu Faraj. KITAB AL UMDA FIL JARAHAT VOL.1 Urdu translation. New Delhi: CCRUM, AYUSH Ministry of Health and Family Welfare Government of India New Delhi
8	Razi Mohammad Bin. KITAB UL MURSHID Urdu translation. Nadvi M, Raziu, editor. Islam. New Delhi: Tarqqi Urdu Beuro New Delhi
9	Al-Majoosi AIEA. KAMIL AL-SANA'AH AL-TIBB New Delhi: CCRUM, AYUSH Ministry of Health and Family Welfare Government of India New Delhi
10	Abu-Asab M, Amri H, Micozzi MD MS. Avicenna's medicine a new translation of 11th centuary canon with practical application for integrative health care [Internet]. Toronto Canada: Healing Art Press; 2013, Available from: WWW.HEALINGARTSPRESS.COM
11	Baghdadi IH. KITAB AL-MUKHTARAT FIT-TIBB Urdu translation. New Delhi: CCRUM, AYUSH Ministry of Health and Family Welfare Government of India New Delhi; 2005.
12	Azmi HAA. MUBADIYAAT-E- TIB PAR AEK TAHQIQI NAZAR. 2nd ed. New Delhi: NCPUL New Delhi; 1991.
13	Ahmed SI. Introduction to al-Umur-al-Tabi'yah. 1st ed. Delhi: Saini Printers; 1980.
14	Arzani Muhammad Akbar. IKSEERUL QULOOB Urdu translation MUFARRIHULQULOOB. Lucknow: Mutba Munshi Naval Kishore; 1939.
15	Hakeem, Kabiruddin M. KULLIYAT-E-NAFISI.New Delhi: Idara Kitab-ul-Shifa; 1954.
16	Qarshi Allama Alauddin, Hakeem Mohammad Kabiruddin. Afada e Kabir (Mujmal). June 2010.
17	Zaidi IH, editor. Temperamentology. 2nd ed. Aligarh: Brown Books Publication; 2023.
18	Gruner OC. A treatise on the canon of medicine of Avicenna. London: Luzac & Co; 1930.
19	Theories and philosophies of medicine. 2nd ed. New Delhi: IHMMR; 1973.
20	Yavari M, editor. Hot and cold theory: the path towards personalized medicine. Switzerland: Springer; 2021. Available from: https://doi.org/10.1007/978-3-030-80983-6
21	Khan AA, Javed G, Ahmad NA, editors. Research on fundamentals of Unani medicine. New Delhi: CCRUM; 2021.
22	Vohora SB, editor. Medical elementology. New Delhi: Jamia Hamdard; 1987.
23	Zaidi IH, editor. A text book on kulliyate umoore tabiyah. Aligarh: Litho Offset Printers; 2011.
24	Dolatshahi P, Moeini R, Mokabberinejad R, Dar FA, Alizadeh M, et al. A review of cold-wet mizaj and phlegm dominance indices in Persian medicine. Shiraz E-Med J. 2024. Available from: https://doi.org/10.5812/semj-138252.
25	Dar FA, Zaidi IH, Sherani FS. Physiological variation of serum alkaline phosphatase level in damawi and balghami males in a sample population. Indian Journal of Traditional Knowledge. 2011;10(4):741-4.

26	Vaz M, Kurpad A, Raj T, editors. Guyton & Hall textbook of medical physiology. 2nd South Asia ed. New Delhi: Elsevier; 2016.
27	Robinson AJ, Snyder-Mackler L. Clinical electrophysiology- electrotherapy and electrophysiologic testing. Philadelphia: Wolters Kluwer Health/Lippincott Williams & Wilkins; 2008.
28	Pease WS, Lew HL, Johnson EW. Johnson's practical electromyography. Philadelphia: Lippincott Williams & Wilkins; 2015.
29	John NA. CC Chatterjee's human physiology. New Delhi: CBS Publishers & Distributors; 2018.
30	Singh I. Textbook of human. New Delhi: Jaypee Brothers; 2011.
31	Lodish H, Berk A, Zipursky SL, Matsudaira P, Baltimore D, Darnell J. Molecular cell biology. 4th ed. New York: Freeman; 2002.
32	Best CH, Taylor NB, Tandon OP, Tripathi YB, editors. Best and Taylor's physiological basis of medical practice. India: Wolters Kluwer; 2012.
33	Alberts B, Johnson A, Lewis J, Raff M, Roberts K, Walter P. Molecular biology of the cell. 7th ed. New York: Garland Science Taylor & Francis; 2002.
34	Blaustein MP, Kao JPY, Matteson DR. Cellular physiology and neurophysiology. 2nd ed. Elsevier Health Sciences; 2011.
35	Abbas AK, Lichtman AH, Shiv Pillai. Cellular and molecular immunology. Philadelphia: Saunders/Elsevier; 2012.
36	Mondal SK. Manual of histological techniques. 2nd ed. New Delhi: Jaypee Brothers; 2019.
37	Madan J. Techniques in histopathology. New Delhi: CBS Publishers & Distributors; 2023.
38	Singh DR. Principles and techniques in histology, microscopy and photomicrography. 2nd ed. New Delhi: CBS Publishers & Distributors; 2018.
39	Suvarna SK, Layton C, Bancroft JD. Bancroft's theory and practice of histological techniques. 8th ed. Elsevier – Saunders, Mosby, Churchill; 2018.
40	Sherani FS, Qasmi IA, Dar FA. Alma'an fil Bohran[Urdu]. Unimed-Kulliyat. 2008;III(2):1-6.
41	Ahmer SM, Ali F, Jamil A, Ahmad H, Javed S. Mizaj: Theory of Greko-Arabic Medicine for Health and Disease. 2015. p. 3-4.
42	Ahmad S, Ahmad H, Khan F, Ali F. A STUDY OF EFFECTS OF IZTERAB-E-NAFSANI (ANXIETY) AND ITS MANAGEMENT WITH REFERENCE TO UNANI SYSTEM OF MEDICINE: A REVIEW. International Journal of Development Research. 1 2020;4:1773-8.
43	Mujeeb K, Ahmad H, Ali F, Khan K. A Comparative Study of Memory (Quwat-e- Hafizah) In Individuals of Bilious and Phlegmatic Temperament. International Journal of Medical and Health Research. 2019;10.

Abbreviations

Domain		T L Method		Level		
СК	Cognitive/Knowledge	L	Lecture	К	Know	
сс	Cognitive/Comprehension	L&PPT	Lecture with PowerPoint presentation	кн	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	