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

தொட்டனைத் தூறும் மணற்கேணி மாந்தர்க்குக் கற்றனைத் தூறும் அறிவு

Semester III-VI
Noi Naadal
(Pathology and Laboratory Diagnosis)
(SUBJECT CODE : SIDPG- NN)

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

ncism

।। आयुषे सर्वलोकानाम्।।

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

PREFACE

The Siddha system of medicine is renowned for its distinctive approach to diagnosing ailments, meaningfully encapsulated in the words of Sage *Theraiyar*:

"Noyarinthu noimudal nokkarinthu noyuthavu

Thayarinthu neekkum vagaiarinthu - kayanilai

Nonthazhiya vannam marunthu seivipparae

Thanthai yennum narpandithar."

Similarly, St.*Thiruvalluvar* also emphasizes:

"Noinaadi noimudhal naadi - adhuthanikum

vaainaadi vaaipach seyal."

This translates to diagnosing the disease (*Noi Naadal*), by understanding its root cause (*Noi mudhal naadal*), assessing the target of the disease, and determining the appropriate course of treatment.

The revised Siddha pathology syllabus, centered on *Noi Naadal* (disease diagnosis), offers a comprehensive and integrative approach to disease diagnosis by merging the time-tested principles of Siddha medicine with advancements in Modern medical science. It emphasizes a step-by-step methodology—understanding its root cause, identifying the disease, assessing the trihumoral vitiation in affected systems, and determining appropriate treatment. Structured into five focused papers, the syllabus provides an in-depth exploration of traditional diagnostic tools such as *Ennvagai Thervu* (Eight-fold examination) including *Naadi* (Pulse diagnosis), *Neerkuri* (Gross appearance of urine), *Neikkuri* (oil on urine sign); *Varmam* pathology, *Manikkadai Nool* (Wrist Circumference), *Panchapattchi Sasthiram* (Five Bird Theory), and *Maruthuva Jothidam* (Medical Astrology) while introducing modern disciplines like genomics,pathology, molecular biology, and clinical imaging.

The syllabus curriculum of each paper is crafted to build diagnostic proficiency and analytical skills.The first paper introduces core Siddha concepts and aligns them with Modern scientific understanding its application of Siddha core principles in day to day clinical practice. The second and third papers classify diseases based on Siddha theories, covering a wide range of affected *kutram* in organs of various systems. The fourth paper integrates conventional pathology and hematology, and the fifth paper sharpens clinical diagnostic acumen through hands-on training in physical examination techniques, interpretation of lab investigations and diagnostic imaging. This balanced structure supports both theoretical grounding and practical application.

By and large the syllabus aims to foster critical thinking, clinical diagnostic competence, and a deep appreciation for Siddha's holistic diagnosis. It seeks not to reinvent the tradition, but to reinterpret and validate its wisdom through Modern scientific parameters. By doing so, it paves the way for Global recognition of Siddha medicine, positioning it as a credible and effective codified system in contemporary healthcare for diagnosis as proper diagnosis is essential for farming appropriate line of treatment. This curriculum equips students to uphold and practice Siddha way of diagnosis bridging ancient insights with Modern innovation for the benefit of humanity in diagnosis.

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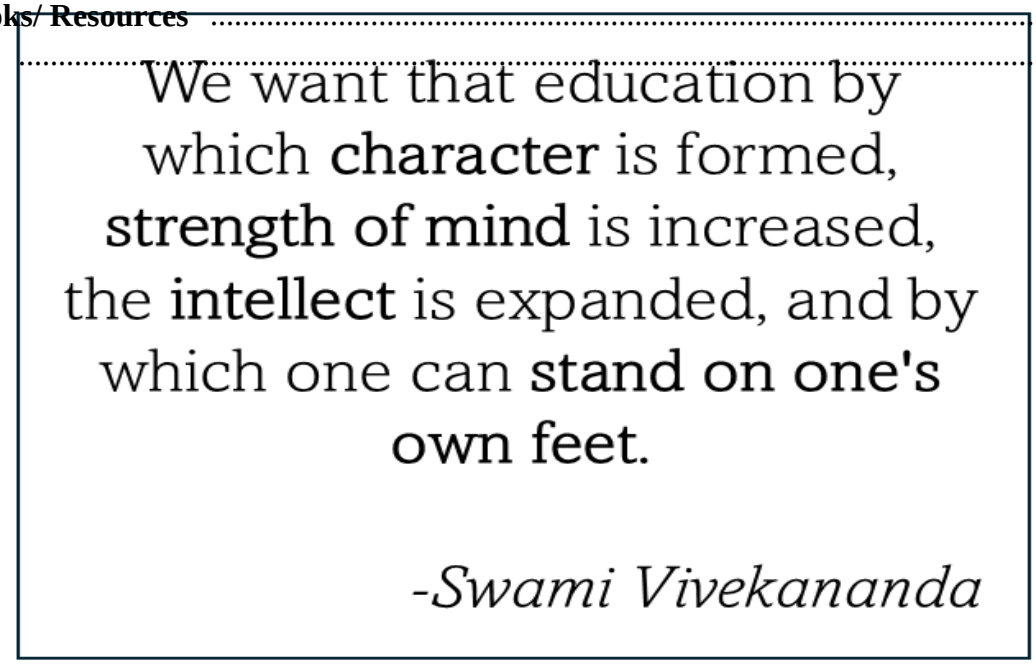

NCISM

(NATIONAL COMMISSION FOR INDIAN SYSTEM OF MEDICINE)

Competency-Based Dynamic Curriculum MD/ MS SIDDHA

Noi Naadal (SIDPG- NN)

Summary & Credit Framework

Semester III-VI

Module Number & Name	Credits	Notional Learning Hours	Maximum Marks of assessment of modules (Formative Assessment)
Semester No : 3			
Paper No : 1 (NOI NAADAL AND ITS CONTEMPORARY UNDERSTANDING IN CLINICAL APPLICATIONS I)			
M1 Siddha Febrile Illnesses and Exanthemas and Enanthemas	2	60	50
M2 Siddha Respiratory Diseases	2	60	50
Paper No : 2 (NOI NAADAL AND ITS CONTEMPORARY UNDERSTANDING IN CLINICAL APPLICATIONS- II)			
M9 Sira Noi Nithaanam (Cephalic Diseases)	2	60	50
M10 Puttru Noi Nithaanam (Neoplastic Diseases)	2	60	50
Paper No : 3 (RECENT ADVANCES AND APPLIED ASPECTS OF PATHOLOGY INCLUDING IMMUNOPATHOLOGY AND HAEMATOLOGY)			
M17 Applications Of Basic Pathology	2	60	50
M18 Respiratory, Eye and Otolaryngological Diseases	2	60	50
Paper No : 4 (FUNDAMENTALS AND APPLICATIONS OF DIAGNOSTIC MODALITIES AND THEIR INTERPRETATIONS)			
M25 Clinical and Physical Diagnosis	2	60	50
M26 Modalities of Diagnostic Imaging	2	60	50
Total	**16**	**480**	**400**
Semester No : 4			

Paper No : 1 (NOI NAADAL AND ITS CONTEMPORARY UNDERSTANDING IN CLINICAL APPLICATIONS I)			
M3 Siddha Cardiovascular Diseases and Diseases of Circulation Including Haematological Conditions	2	60	50
M4 Siddha Gastro Enterology	2	60	50
Paper No : 2 (NOI NAADAL AND ITS CONTEMPORARY UNDERSTANDING IN CLINICAL APPLICATIONS- II)			
M11 Ula Pini Nithaanam (Psychiatric Disorders)	2	60	50
M12 Mega Noi Nithaanam (Genito-Urinary Diseases)	2	60	50
Paper No : 3 (RECENT ADVANCES AND APPLIED ASPECTS OF PATHOLOGY INCLUDING IMMUNOPATHOLOGY AND HAEMATOLOGY)			
M19 Diseases Of Hematopoietic And Cardio Vascular Diseases	2	60	50
M20 Gastro Intestinal and Hepato Biliary Diseases	2	60	50
Paper No : 4 (FUNDAMENTALS AND APPLICATIONS OF DIAGNOSTIC MODALITIES AND THEIR INTERPRETATIONS)			
M27 Instrumental Diagnosis	2	60	50
M28 Lab Diagnosis of biological samples	2	60	50
Total	**16**	**480**	**400**
Semester No : 5			
Paper No : 1 (NOI NAADAL AND ITS CONTEMPORARY UNDERSTANDING IN CLINICAL APPLICATIONS I)			
M5 Siddha Splenic, Hepato-Biliary and diseases with Ascites	2	60	50
M6 Diarrhoeal Diseases and Proctology	2	60	50
Paper No : 2 (NOI NAADAL AND ITS CONTEMPORARY UNDERSTANDING IN CLINICAL APPLICATIONS- II)			
M13 Magalir and Aadavar Noi Nithaanam (Gynaecological and Andrological Diseases)	2	60	50
M14 Maladu And Karba Noi Nidhaanam (Reproductive Diseases)	2	60	50
Paper No : 3 (RECENT ADVANCES AND APPLIED ASPECTS OF PATHOLOGY INCLUDING IMMUNOPATHOLOGY AND HAEMATOLOGY)			
M21 Renal, Male and Female Genital Tract Diseases	2	60	50
M22 Diseases of Neurology and Musculo Skeletal System	2	60	50
Paper No : 4 (FUNDAMENTALS AND APPLICATIONS OF DIAGNOSTIC MODALITIES AND THEIR INTERPRETATIONS)			
M29 Laboratory Diagnosis of biological samples by advanced	2	60	50

molecular techniques			
M30 Tissue diagnosis including Immunohistochemistry	2	60	50
Total	**16**	**480**	**400**
Semester No : 6			
Paper No : 1 (NOI NAADAL AND ITS CONTEMPORARY UNDERSTANDING IN CLINICAL APPLICATIONS I)			
M7 Vatha Noikal – Siddha Ortho–Rheumatology, Neurology and Conditions of Pain	2	60	50
M8 Siddha – Pitha and Kaba Diseases	2	60	50
Paper No : 2 (NOI NAADAL AND ITS CONTEMPORARY UNDERSTANDING IN CLINICAL APPLICATIONS- II)			
M15 Baalar Roga Nithaanam (Paediatric Diseases)	2	60	50
M16 Thol Noi Nithaanam (Dermatological Diseases)	2	60	50
Paper No : 3 (RECENT ADVANCES AND APPLIED ASPECTS OF PATHOLOGY INCLUDING IMMUNOPATHOLOGY AND HAEMATOLOGY)			
M23 Metabolic and Endocrine Disorders	2	60	50
M24 Dermatological Disorders	2	60	50
Paper No : 4 (FUNDAMENTALS AND APPLICATIONS OF DIAGNOSTIC MODALITIES AND THEIR INTERPRETATIONS)			
M31 Cardinal Manifestation and presentation of diseases including approach to a Case	2	60	50
M32 Testing of Pathophysiological states & International Diagnostic Criteria of Various diseases	2	60	50
Total	**16**	**480**	**400**
Grand Total	**64**	**1920**	**1600**

Credit frame work

SIDPG- NN consists of 32 modules totaling 64 credits, which correspond to 1920 Notional Learning Hours. Each credit comprises 30 hours of learner engagement, distributed across teaching, practical, and experiential learning in the ratio of 1:2:3. Accordingly, one credit includes 5 hours of teaching, 10 hours of practical training, 13 hours of experiential learning, and 2 hours allocated for modular assessment, which carries 25 marks.

Important Note: The User Manual MD/MS Siddha is a valuable resource that provides comprehensive details about the curriculum file. It will help you understand and implement the curriculum. Please read the User Manual before reading this curriculum file. The curriculum file has been thoroughly reviewed and verified for accuracy. However, if you find any discrepancies, please note that the contents related to the MSE should be considered authentic. Each paper has 16 credits and each semester covers 16 credits across 4 papers. In case of difficulty and questions regarding the curriculum, write to syllabus24sid@ncismindia.org.

Credit Analysis Overview					

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

<table>
<tr><td colspan="6">Semester VI University examination</td></tr>
<tr><td colspan="3">Theory</td><td colspan="3">Practical*</td></tr>
<tr><td>Paper</td><td>Marks</td><td>Total</td><td>Practical Heads</td><td>Marks</td><td>Total</td></tr>
<tr><td rowspan="2">Paper -1</td><td rowspan="2">100</td><td rowspan="9">400</td><td>Long case or procedure/Major practical as applicable</td><td>100</td><td rowspan="9">400</td></tr>
<tr><td>Short case or procedure/Minor practical</td><td>50</td></tr>
<tr><td rowspan="2">Paper -2</td><td rowspan="2">100</td><td>Spotters</td><td>50</td></tr>
<tr><td>Assessing teaching ability</td><td>25</td></tr>
<tr><td rowspan="2">Paper -3</td><td rowspan="2">100</td><td>Assessing presentation skills</td><td>25</td></tr>
<tr><td># Viva (4 examiners: 25 marks/each examiner)</td><td>100</td></tr>
<tr><td rowspan="2">Paper -4</td><td rowspan="2">100</td><td>Logbook (Activity record)</td><td>25</td></tr>
<tr><td>Practical/Clinical Record</td><td>25</td></tr>
<tr><td colspan="6">Semester VI University examination – 800 Marks</td></tr>
</table>

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

Course Code and Name of Course

Course code	Name of Course
SIDPG-NN	Noi Naadal (Pathology and Laboratory Diagnosis)

Table 1 : Course learning outcomes and mapped Program learning outcomes

CO No	A1 Course learning Outcomes (CO) SIDPG- NN At the end of the course SIDPG- NN, the students should be able to-	B1 Course learning Outcomes mapped with program learning outcomes.
CO1	Apply and associate with Siddha fundamental concepts and basic medical science principles in each step of diagnostic method.	PO1,PO2,PO8
CO2	Assess the etiology of disease in both Siddha and Modern medical systems, focusing on their approaches for practicing and teaching preventive health principles.	PO3
CO3	Evaluate the predictive changes in the *Ennvagai thervu*, Molecular and other contemporary investigatory parameters even before the overt manifestations of disease for effective prevention and useful in public health researcher and as an entrepreneur.	PO3
CO4	Demonstrate and interpret Siddha and Modern examination and laboratory techniques.	PO5
CO5	Appraise the altered appearance, findings such as gross ,microscopic, perceptory and their clinical significance during various stages of disease in the light of recent advances.	PO2,PO5
CO6	Recommend and perform appropriate investigatory methods collating the clinical history, initial observations and relevance of the investigatory methods.	PO4
CO7	Evaluate the level and extent of severity of damage in the organs due to injury and its root cause of disease.	PO1
CO8	Constitute and justify the final Siddha and Modern diagnoses by integrating the interpretations of various parameters as specialist and explore scientifically through innovation.	PO3,PO4,PO5,PO6,PO7

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

Paper No : 1 (NOI NAADAL AND ITS CONTEMPORARY UNDERSTANDING IN CLINICAL APPLICATIONS I)						
Semester No : 3						
2A Module Number	**2B Modules & units**	**2C Number of Credits**	**Notional Learning hours**			
			2D Lectures	**2E Practical Training**	**2F Experiential Learning including Modular Assessment**	**2G Total**
1	**M-1 Siddha Febrile Illnesses and Exanthemas and Enanthemas** **This module explains regarding *Suram* (Siddha Febrile illnesses), *Ammai Noi* (Exanthemas and Enanthemas), *Mukkutra Noi* and understanding of aetiology and types. Application of Siddha and relevant Modern diagnostic techniques for clinching the diagnosis.** • **M1U1 Suram (Febrile illnesses)** 1.1.1. Etiology 1.1.2. Premonitory and common signs and symptoms 1.1.3. Types - 64 types according to Sage Yugi 1.1.4. Tri humoral Variation 1.1.5. Line of treatment 1.1.6. Diagnostic techniques used in Siddha system and Modern for Suram. • **M1U2 Mukkuttra Noi/Sanni noi (Apoplexy)** 1. 2.1. Etiology 1.2.2. Premonitory and common signs and symptoms 1.2.3. Types - 13 types and 10 types according to SageTheran	2	10	20	30	60

	1.2.4. Tri humoral Variation 1.2.5. Line of treatment 1.2.6. Diagnostic techniques used in Modern and Siddha for Sanni noi. • **M1U3 Ammai Noi (Exanthemas and Enanthemas)** 1.3.1. Etiology 1.3.2. Premonitory and common signs and symptoms 1.3.3. Types -14 types according to Agathiyar vaisuri and 4 types 1.3.4. Tri humoral Variation 1.3.5. Line of treatment 1.3.6. Diagnostic techniques used in Siddha system for Ammai noi.					
2	**M-2 Siddha Respiratory Diseases** **This module explains regarding *Mookkadaippu Noi, Kural Kammal, Iraippu, Irumal, Ilaippu, Ulai Maanthai* and understanding of aetiology and classification. Application of Siddha and relevant Modern diagnostic techniques for clinching the diagnosis.** • **M2U1 Siddha Upper Respiratory Tract Diseases** 2.1.1. Etiology 2.1.2. Premonitory and common signs and symptoms 2.1.3. Types : Mookkadaippu (Sinusitis and related conditions), Kural kammal (Hoarseness of voice and related conditions. 2.1.4.Tri humoral Variation 2.1.5 .Line of treatment 2.1.6. Diagnostic techniques used in Siddha system and Modern for Upper respiratory tract diseases. • **M2U2 Siddha Lower Respiratory Tract Diseases** 2.2.1. Etiology 2.2.2. Premonitory and common signs and symptoms 2.2.3. Types (Irumal (Cough), Iraippu (Asthma and related conditions), Ilaippu	2	10	20	30	60

	(cachexia due to respiratory diseases) 2.2.4. Tri humoral Variation 2.2.5 .Line of treatment 2.2.6. Diagnostic techniques used in Siddha system and Modern for Lower respiratory tract diseases.					
		4	**20**	**40**	**60**	**120**
Semester No : 4						
2A Module Number	**2B Modules & units**	**2C Number of Credits**	**Notional Learning hours**			
			2D Lectures	**2E Practical Training**	**2F Experiential Learning including Modular Assessment**	**2G Total**
3	**M-3 Siddha Cardiovascular Diseases and Diseases of Circulation Including Haematological Conditions** **This module explains regarding *Thamaraga Noi, Athi Kuruthi Azhutham noi, Ratha Pitham noi, Paandu noi, Sobai noi* along with understanding of aetiology and classification with relevant Modern comparison. Application of Siddha and relevant Modern diagnostic techniques for clinching diagnosis** • **M3U1 Thamaraga Noi (Cardiac Diseases)** 3.1.1. Etiology 3.1.2. Premonitory and common signs and symptoms 3.1.3. Types 3.1.4. Tri humoral Variation	2	10	20	30	60

	3.1.5. Line of treatment 3.1.6. Diagnostic techniques used in Siddha system and Modern for cardiac diseases. • **M3U2 Athi Kuruthi Azhutham noi/Uratha Pitham noi (Hypertension)** 3.2.1. Etiology 3.2.2. Symptoms 3.2.3. Tri humoral Variation 3.2.4. Line of treatment 3.2.5. Diagnostic techniques used in Siddha and Modern for Hypertension. • **M3U3 Ratha Pitha noi (Haemodynamic/Purpuric conditions)** 3.3.1. Etiology 3.3.2. Premonitory and common signs and symptoms 3.3.3. Types - different school of thoughts 3.3.4. Tri humoral Variations 3.3.5. Line of treatment 3.3.6. Diagnostic techniques used in Siddha system and Modern for Ratha pitha noi. • **M3U4 Paandu noi (Anaemia and related conditions)** 3.4.1. Etiology 3.4.2. Premonitory and common signs and symptoms 3.4.3. Types - different school of thoughts 3.4.4. Tri humoral Variations 3.4.5. Line of treatment 3.4.6. Diagnostic techniques used in Siddha system and Modern for Paandu Noi. • **M3U5 Sobai noi (Plethora / Anasarca / Swelling / Oedema)** 3.5.1. Etiology 3.5.2. Premonitory and common signs and symptoms 3.5.3. Types 3.5.4. Tri humoral Variations 3.5.5. Line of treatment 3.5.6. Diagnostic techniques used in Siddha system and Modern for Sobai.					
4	**M-4 Siddha Gastro Enterology**	2	10	20	30	60

This module explains regarding *Suvaiinmai noi, Neer Vetkkai noi, Seriyamai noi, Vikkal noi, Vaanthi noi, Maantha noi, Gunmam noi, Soolai noi, Kudal Pidippu noi* along with understanding of aetiology and classification with relevant Modern comparison. Application of Siddha and relevant Modern diagnostic techniques for diagnosis arrival.

• **M4U1 Suvaiinmai and Neer Vetkai (Ageusia/Diminished appetite/Polydipsia)**

4.1.1. Etiology
4.1.2. Premonitory and common signs and symptoms
4.1.3. Types
4.1.4. Tri humoral Variation
4.1.5. Line of treatment
4.1.6. Diagnostic techniques used in siddha system and modern for *Suvai inmai* and *Neer vetkai.*

• **M4U2 Seriyamai noi (Indigestion)**

4.2.1. Etiology
4.2.2. Premonitory and common signs and symptoms
4.2.3. Types - 9 types and 4 types
4.2.4. Analysing Tri humoral Variation
4.2.5. Line of treatment
4.2.6.Diagnostic techniques used in Modern and Siddha for Seriyamai.

• **M4U3 Vikkal noi (Hiccups)**

4.3.1. Etiology
4.3.2. Premonitory and common signs and symptoms
4.3.3. Types - 6 types
4.3.4. Tri humoral Variation
4.3.5. Line of treatment
4.3.6. Diagnostic techniques used in Siddha system and modern for *Vikkal*

• **M4U4 Vaanthi noi (Emesis)**

4.4.1. Etiology
4.4.2. Premonitory and common signs and symptoms

	4.4.3. Types - 11 types and 10 types 4.4.4. Tri humoral Variation 4.4.5. Line of treatment 4.4.6. Diagnostic techniques used in Siddha system and Modern for *Vaanthi*. • **M4U5 Maantham noi (Sluggishness)** 4.5.1. Etiology 4.5.2. Premonitory and common signs and symptoms 4.5.3. Types -3 types 4.5.4. Tri humoural Variation 4.5.5. Line of treatment 4.5.6. Diagnostic techniques used in Siddha system for *Maantham* • **M4U6 Gunmam noi (Acute and Chronic Abdomen)** 4.6.1. Etiology 4.6.2. Premonitory and common signs and symptoms 4.6.3. Types - 8 types asper Sage Yugi and other school of thoughts 4.6.4. Tri humoural Variation 4.6.5. Line of treatment 4.6.6. Diagnostic techniques used in Siddha system and Modern. • **M4U7 Kudal Pidippu noi (Acute / Chronic Intestinal conditions)** 4.7.1. Etiology 4.7.2. Premonitory and common signs and symptoms 4.7.3. Types - 4 types 4.7.4. Tri humoral Variation 4.7.5. Line of treatment 4.7.6. Diagnostic techniques used in Modern and Siddha for *Kudal Pidippu noi*.					
		4	**20**	**40**	**60**	**120**
Semester No : 5						
2A Modu	**2B Modules & units**	**2C Num**	**Notional Learning hours**			

le Number		ber of Credits	2D Lectures	2E Practical Training	2F Experiential Learning including Modular Assessment	2G Total
5	**M-5 Siddha Splenic, Hepato-Biliary and diseases with Ascites** **This module explains regarding *Kalleeral noi, Manneeral noi, Kaamalai noi, Peruvayiru noi* along with understanding of aetiology and classification with relevant Modern comparison. Application of Siddha and relevant Modern diagnostic techniques for diagnosis ararival.** • **M5U1 Kalleeral Noi (Hepatic diseases)** 5.1.1. Etiology 5.1.2. Premonitory and common signs and symptoms 5.1.3.Types -3 types 5.1.4. Tri humoral Variation 5.1.5. Line of treatment 5.1.6. Diagnostic techniques used in Siddha system and modern for *Kalleeral noikal.* • **M5U2 Manneeral Noi (Splenic diseases)** 5.2.1. Etiology 5.2.2. Premonitory and common signs and symptoms 5.2.3. Types - 4 types 5.2.4. Tri humoral Variation 5.2.5. Line of treatment 5.2.6. Diagnostic techniques used in and Siddha system and modern for *Manneeral noikal*. • **M5U3 Kaamaalai noi (Apathy / Loss of libido / Lack of interest)**	2	10	20	30	60

	5.3.1. Etiology 5.3.2. Premonitory and common signs and symptoms 5.3.3. Types - 13 types 5.3.4. Tri humoral Variation 5.3.5. Line of treatment 5.3.6. Diagnostic techniques used in Siddha system and modern for *Kaamalai.* • **M5U4 Peruvayiru noi (Abdominal enlargement / Ascites)** 5.4.1. Etiology 5.4.2. Premonitory and common signs and symptoms 5.4.3. Types - 32 types 5.4.4. Tri humoral Variation 5.4.5. Line of treatment 5.4.6. Diagnostic techniques used in Siddha system and modern for *Peruvayiru*					
6	**M-6 Diarrhoeal Diseases and Proctology** **This module explains regarding *Kirumi Noikal, Perunkazhichal noi, Ninakkazhicahal noi, Kaduppu Kazhichal noi, Oozhi Noi, Eruvaai Mulai noi and Powthiram noi,* along with the understanding of aetiology and classification with relevant Modern comparisons like Giardiasis, Sprue, Amoebiasis, Inflammatory Bowel Disease, Coeliac disease, etc. Application of Siddha and relevant Modern diagnostic techniques for diagnosis arrival.** • **M6U1 Kirumi Noikal** 6.1.1. Etiology 6.1.2. Premonitory and common signs and symptoms 6.1.3. Types 6.1.4. Analysing Tri humoral Variations 6.1.5. Line of treatment 6.1.6. Evaluating Diagnostic techniques used in Siddha system • **M6U2 Perunkazhichal noi, Ninakkazhichal noi, KaduppuKazhichal noi**	2	10	20	30	60

	6.2.1. Etiology 6.2.2. Premonitory and common signs and symptoms 6.2.3. Types of *perunkazhichal*,*Ninakazhichal* and *kaduppukazhichal* 6.2.4. Analysing Tri humoral Variations 6.2.5. Line of treatment 6.2.6. Evaluating Diagnostic techniques used in Siddha system • **M6U3 Oozhi Noi** 6.3.1. Etiology 6.3.2. Premonitory and common signs and symptoms 6.3.3. Types 6.3.4. Analysing Tri humoral Variations 6.3.5. Line of treatment 6.3.6. Evaluating Diagnostic techniques used in Siddha system • **M6U4 Eruvaai mulai Noi** 6.4.1. Etiology 6.4.2. Premonitory and common signs and symptoms 6.4.3. Types 6.4.4. Analysing Tri humoral Variations 6.4.5. Line of treatment 6.4.6. Evaluating Diagnostic techniques used in Siddha system • **M6U5 Powthiram noi** 6.5.1. Etiology 6.5.2. Premonitory and common signs and symptoms 6.5.3. Types 6.5.4. Analysing Tri humoral Variations 6.5.5. Line of treatment 6.5.6. Evaluating Diagnostic techniques used in Siddha system					
		4	**20**	**40**	**60**	**120**
Semester No : 6						
2A	**2B**	**2C**	**Notional Learning hours**			

Module Number	Modules & units	Number of Credits	2D Lectures	2E Practical Training	2F Experiential Learning including Modular Assessment	2G Total
7	**M-7 Vatha Noikal – Siddha Ortho–Rheumatology, Neurology and Conditions of Pain** **This module enumerates regarding *Vatha Noikal, Keel Vaayu noi, Soolai noi* along with understanding of aetiology and classification with relevant Modern comparison.This includes *Vatham* affecting the nervous system, genito urinary tract, haematological system, coagulative diseases, chronic systemic inflammation, circulatory diseases etc. Application of Siddha and relevant Modern diagnostic techniques for the arrival of diagnosis.** • **M7U1 Vaatha Noikal** 7.1.1. Etiology 7.1.2. Premonitory and common signs and symptoms 7.1.3. Types - 80 types (84) according to *Sage Yugi* and 80 types depends upon organs affected 7.1.4. Analysing Tri humoral Variation 7.1.5. Line of treatment 7.1.6. Evaluating Diagnostic techniques used in Siddha system • **M7U2 Keelvaayu Noi (Rheumatological conditions)** 7.2.1. Etiology 7.2.2. Premonitory and common signs and symptoms 7.2.3. Types -10 types 7.2.4. Tri humoral Variation	2	10	20	30	60

	7.2.5. Line of treatment 7.2.6. Diagnostic techniques used Siddha system and Modern for *Keel Vaayu*. • **M7U3 Soolai Noi (Lancinating Pain)** 7.3.1. Etiology 7.3.2. Premonitory and common signs and symptoms 7.3.3. Types - 15 types 7.3.4. Tri humoral Variation 7.3.5. Line of treatment 7.3.6. Diagnostic techniques used in Siddha system and Modern for *Soolai Noi.*					
8	**M-8 Siddha – Pitha and Kaba Diseases** **This module enumerates regarding *Pitha Noikal, Kaba Noikal* along with understanding of aetiology and classification with relevant Modern comparison which includes hyper metabolic states, haematological disorders, psychiatric conditions etc. Application of Siddha and relevant Modern diagnostic techniques for arrival of diagnosis .** • **M8U1 Pitha Noikal** 8.1.1. Etiology 8.1.2. Premonitory and common signs and symptoms 8.1.3. Types - 42 types according to *Sage Yugi* 8.1.4. *Tri humoral Variation* 8.1.5. Line of treatment 8.1.6. Diagnostic techniques used in Siddha system and Modern for *Pitha Noikal*. • **M8U2 Kaba Noikal** 8.2.1. Etiology 8.2.2. Premonitory and common signs and symptoms 8.2.3. Types - 20 types according to *Sage Yugi* 8.2.4. Analysing *Tri humoral* Variation 8.2.5. Line of treatment	2	10	20	30	60

	8.2.6. Evaluating Diagnostic techniques used in Siddha system for arrival of diagnosis					
		4	**20**	**40**	**60**	**120**
		16	**80**	**160**	**240**	**480**

Paper No : 2 (NOI NAADAL AND ITS CONTEMPORARY UNDERSTANDING IN CLINICAL APPLICATIONS- II)

Semester No : 3

2A Module Number	2B Modules & units	2C Number of Credits	Notional Learning hours			
			2D Lectures	2E Practical Training	2F Experiential Learning including Modular Assessment	2G Total
9	**M-9 Sira Noi Nithaanam (Cephalic Diseases)** **This *Sira Noi Nithaanam* module encompasses the Etiology, Classification with relevant Modern comparison, *Mukkutra verupaadu* , *Naadi nadai* and curable and incurable conditions of *Utchi Noi* , *Moolai Noi* , *Kannoigal* , *Sevi Noi* , *Mookku Noi* , *Vaai Noi - Uthadu Noi* , *Nakku Noi* and *Pal Noi.* It bounds a comprehensive analysis based on variations in principles of *Trihumour by ev*aluating diagnostic procedures through the lens of Siddha fundamental principles and modern methodologies. It enables prescription of the possible line of treatment grounded in the system's underlying principles.** • **M9U1 Utchi/Mandai Noi-46 types (Diseases of the Head)** 9.1.1. *Vali muthaliya kutrathaal varum noigal* (10)	2	10	20	30	60

9.1.2. *Mandai Therai* (1)
9.1.3. *Mandai Karappan* (6)
9.1.4. *Mandai Kuttam* (5)
9.1.5. *Mandai Pilavai* (10)
9.1.6. *Mandai Thimirppu* (2)
9.1.7. *Mandai Kirumi* (2)
9.1.8. *Mandai Kanappu* (3)
9.1.9. *Mandai Vali*
9.1.10. *Mandai Kuthu*
9.1.11. *Mandai Varatchi*
9.1.12. *Mandai Soolai* (3)
9.1.13. *Mandai Thodam*

• **M9U2 Moolai Noi-16 types (Diseases of Brain)**

9.2.1. *Moolai Vali*
9.2.2. *Moolai azhal*
9.2.3. *Moolai Iyam*
9.2.4. *Moolai Vali Iyam*
9.2.5. *Moolai Vali Azhal*
9.2.6. *Moolai Azhal Iyam*
9.2.7. *Moolai Azhal Vali*
9.2.8. *Moolai Iya Vali*
9.2.9. *Moolai Iya Azhal*
9.2.10. *Moolai Varatchi*
9.2.11. *Moolai Thodam*
9.2.12. *Moolai Neer*
9.2.13. *Moolai Kuruthi*
9.2.14. *Moolai Neer Soolai*
9.2.15. *Moolai Kuruthi Soolai*
9.2.16. *Moolai Vali Soolai*

• **M9U3 Kan Noigal-96 types (Diseases of Eye)**

9.3.1. Karuvizhi Noigal (45 Types)

9.3.2. Velvizhi Noigal (20 Types)
9.3.3. Imai Noigal (16 Types)
9.3.4. Kadaikkan Noigal (15 Types)

- **M9U4 Sevi Noi, Mookku Noi (Diseases of Ear and Nose)**

9.4.1. Sevi Noi: (Diseases of Ear)
9.4.1.1. Sevi Vali Noi (4 Types)
9.4.1.2. Sevi Soolai (6 Types)
9.4.1.3. Sevi Sanni (4Types)
9.4.1.4. Sevi Vippuruthi (6 Types)
9.4.1.5. Sevi ezhuchi (6 Types)
9.4.1.6 Sevi Karappan, Sevi Kuttam, Sevi Paru
9.4.2. Mookku Noi: (Diseases of Nose)
9.4.2.1. Neer Paaichal
9.4.2.2. Peenisam
9.4.2.3. Naasiga Peedam
9.4.2.4. Mookku Karappan
9.4.2.5. Kazhalai
9.4.2.6. Mookku Paru
9.4.2.7. Mookku Pilavai

- **M9U5 Vaai Noi - Uthadu Noi ,Naakku Noi, Pal Noi. (Oral Pathology)**

9.5.1. Uthadu Noi:(Diseases of conditions affecting Lips)
9.5.1.1. Vali Uthadu
9.5.1.2. Azhal Uthadu
9.5.1.3. Iya Uthadu
9.5.1.4. Mukkutra Uthadu
9.5.1.5. Sathai Uthadu
9.5.1.6. Neer Uthadu
9.5.1.7. Minuminuppu Uthadu
9.5.1.8. Kuruthi Uthadu
9.5.1.9. Kutta Uthadu
9.5.1.10. Vedippu Uthadu
9.5.1.11. Uthattil adipatta veekam

	9.5.2. Naakku Noi:(Diseases of Tongue) *9.5.2.1. Naakkaranai* *9.5.2.2. Naakku Puttru* *9.5.2.3. Naakku Pilavai* *9.5.2.4. Naakku Kirandhi* *9.5.2.5. Naakku Pun* *9.5.2.6. Naakku Silandhi* *9.5.2.7. Ul naakku Valarchi* *9.5.3. Pal Noi:(Diseases of Dental conditions)* *9.5.3.1. Pal Koocham* *9.5.3.2. Pal Kuththal* *9.5.3.3. Pal Aattam* *9.5.3.4. Pal Saaithal* *9.5.3.5. Kutty Pal* *9.5.3.6. Pal Siraai* *9.5.3.7. Pal Uthiral* *9.5.3.8. Pal Karuththal* *9.5.3.9. Pal Pilaththal* *9.5.3.10. Pal Puzhu*					
10	**M-10 Puttru Noi Nithaanam (Neoplastic Diseases)** **This *Puttru Noi Nithaanam* module provides the Etiology, Classification with relevant Modern comparison, *Mukkutra verupaadu* , *Naadi nadai* and curable and incurable conditions of *Vippuruthi Noi* , *Puttru noi* and its Sub types *Puttru Noi Nithaanam can be acquired.* It includes a comprehensive analysis based on variations in principles of *Trihumour by ev*aluating diagnostic procedures through the lens of Siddha fundamental principles and modern methodologies. It Supports Prescription of the potential line of treatment grounded in the system's underlying principles.**	2	10	20	30	60

	• **M10U1 Vippuruthi Noi (7 types) (Pathological Masses)** 10.1.1. *Vatha Vippuruthi* 10.1.2. *Pitha Vippuruthi* 10.1.3. *Setma Vippuruthi* 10.1.4. *Sandhu Vippuruthi* 10.1.5. *Oodu Vippuruthi* 10.1.6. *Karba Vippuruthi* 10.1.7. *Kuvalai Vippuruthi* • **M10U2 Puttru and its sub types (Diseases of Tumourous Conditions)** 10.2.1. *Mandai Puttru* 10.2.2. *Anda Puttru* 10.2.3. *Kanna Puttru* 10.2.4. *Kudal Puttru* 10.2.5. *Yoni Puttru* 10.2.6. *Kann Puttru* 10.2.7. T*hondai Puttru* 10.2.8. *Naasi Puttru* 10.2.9. *Linga Puttru* 10.2.10. *Karuppai Puttru* 10.2.11. *Thol Puttru* 10.2.12. *Kalleeral Puttru* 10.2.13. *Marbaha Puttru* 10.2.14. *Purasthakola Puttru*					
		4	**20**	**40**	**60**	**120**
Semester No : 4						
2A Module Number	**2B Modules & units**	**2C Number of Credits**	**Notional Learning hours**			
			2D Lectures	**2E Practical Training**	**2F Experiential Learning**	**2G Total**

					including Modular Assessment	
11	**M-11 Ula Pini Nithaanam (Psychiatric Disorders)** **This *Ula Pini* nithaanam module details about the Etiology, Classification with relevant Modern comparison, *Mukkutra verupaadu* , *Naadi nadai* and curable and incurable conditions of Siddha psychiatric pathology concepts of *Kirigai, Valippu Noi, Kudiveri Noi, Mayakka Noi, Biramai Noi, Unmaatham, Matha azhivu, Matha Noi, Moorchai noi, Abasmaaram noi, Soothiga vatham noi and Vaayu Roga nithaanam.* It bounds a comprehensive analysis based on variations in principles of *Trihumour by ev*aluating diagnostic procedures through the lens of Siddha fundamental principles and modern methodologies. It facilitates prescription of the potential line of treatment grounded in the system's underlying principles.** **• M11U1 Kirigai noi (18 types) (Psychiatric conditions with Insane Activities)** *11.1.1. Vatha Kirigai* *11.1.2. Pitha Kirigai* *11.1.3. Silerpana Kirigai* *11.1.4. Anar kirigai* *11.1.5. Echil Kirigai* *11.1.6. Natha Vindhu Kirigai* *11.1.7. Bootha Kirigai* *11.1.8. Jala Kirigai* *11.1.9. Mohini Kirigai* *11.1.10. Kal eri Kirigai* *11.1.11. Kumbidu Kirigai* *11.1.12. Munangal Kirigai*	2	10	20	30	60

11.1.13. Anal Kirigai
11.1.14. Maruttu Kirigai
11.1.15. Moodu Kirigai
11.1.16. Valippu Kirigai
11.1.17. Peipidi Kirigai
11.1.18. Neerkudi Kirigai

• **M11U2 Valippu noi, Kudiveri noi (Seizural Disorders and Alcoholism)**

11.2.1. Valippu Noi (5 Types)
11.2.1.1. Kaakkai Valippu
11.2.1.2. Kumara kanda valippu
11.2.1.3. Amara kanda valippu
11.2.1.4. Kurangu valippu
11.2.1.5. Muyal Valippu
11.2.2. Kudiveri Noi

• **M11U3 Mayakka Noi, Bramai Noi, Unmaatham (Loss of Consciouness,Guidiness,Psycosis)**

11.3.1. Mayakka Noi (6 Types)
11.3.1.1. Vali Mayakka Noi
11.3.1.2. Azhal Mayakka Noi
11.3.1.3. Iya Mayakka Noi
11.3.1.4. Mukkutra Mayakka Noi
11.3.1.5. Kuruthi Mayakka Noi
11.3.1.6. Nanju Mayakka Noi
11.3.2. Bramai (3 Types)
11.3.2.1. Vatha Bramai
11.3.2.2. Pitha Bramai
11.3.2.3. Kaba Bramai
11.3.3. Unmattham (6 Types)

• **M11U4 Matha azhivu noi, Matha noi, Moorchai noi, Abasmaaram, Soothiga Vaatham noi (Dementia,Comatose condition,Hysteria Diseases)**

11.4.1. *Matha azhivu noi* (7 Types)

	11.4.2. *Matha Noi* (7 Types) 11.4.3. *Moorchai* noi (6 Types) 11.4.4. *Abasmaaram noi* 11.4.5. *Soothiga Vaatham noi* • **M11U5 Vaayu Roga Nithaanam** *11.5.1. Pararaasasegaram types:* *11.5.1.1. Biramai Vaayu* *11.5.1.2. Kirandhi Vaayu* *11.5.1.3. Uttina Kirandhi Vaayu* *11.5.1.4. Aanandha Vaayu* *11.5.1.5. Pitha Vaayu* *11.5.1.6. Agora Vaayu* *11.5.1.7. Andhara Vaayu* *11.5.1.8. Anda Vaayu* *11.5.1.9. Pakka Vaayu* *11.5.1.10.Boodha Vaayu* *11.5.1.11.Vedhaana Vaayu* *11.5.2. Other Siddha Text Types* *11.5.2.1. Kundala Vaayu* *11.5.2.2. Moola Vaayu* *11.5.2.3. Kudal Vaayu* *11.5.2.4. Aththira Vaayu* *11.5.2.5. Aatraamai Vaayu* *11.5.2.6. Mandhaakini Vaayu* *11.5.2.7. Uratha Vaayu* *11.5.2.8. Kendai Vaayu*					
12	**M-12 Mega Noi Nithaanam (Genito-Urinary Diseases)** **The module enumerates about the Etiology, Classification with relevant Modern comparison, *Mukkutra verupaadu* , *Naadi nadai* and curable and**	2	10	20	30	60

incurable conditions *Kalladaippu noi, Neeradaippu noi,Sathaiyadaippu noi Neerkattu noi, Chottu Neer noi, Neerchurukku noi, Vellai noi (Biramiyam), Mega Neer noi (20 Types), Neerizhivu noi, Theli Neer noi, Venneer noi ,Mega noi Kattigal* of *Mega Noi Nithaanam can be acquired.* It bounds a comprehensive analysis based on variations in principles of *Trihumour by ev*aluating diagnostic procedures through the lens of Siddha fundamental principles and modern methodologies. It aids in Prescription of the potential line of treatment grounded in the system's underlying principles.

• **M12U1 Kalladaippu noi, Neeradaippu noi, Sathaiadaippu noi, Neerkattu noi (Nephro calcinosis,Prostatomegaly,Obstructive urinary diseases)**

12.1.1. Kalladaippu Noi - 4 types
12.1.1.1.Vali kalladaippu
12.1.1.2.Azhal kalladaippu
12.1.1.3.Iya kalladaippu
12.1.1.4.Mukkutra kalladaippu
12.1.2. Neeradaippu Noi

12.1.3. Sathaiyadaippu Noi
12.1.4. Neerkattu Noi
12.1.5. Kaamiya Noi

• **M12U2 Chottuneer noi, Neerchurukku noi, Vellai noi (Biramiyam) (Neurogenic bladder, Urethral pain syndrome, Urogenital conditions causing gleet)**

12.2.1 Chottu Neer-2 types
12.2.1.1 Siriyavarkaluku kaanum chottu neer kuridgunangal
12.2.1.2. Periyavarkalukku kaanum chottuneer kurigunangal
12.2.2.Neerchurukku noi – 4types
12.2.2.1. Vali neerchurukku
12.2.2.2. Azhal neerchurukku
12.2.2.3. Iya neerchurukku
12.2.2.4. Mega neerchurukku

12.2.3. Vellai noi (Bramiyam)-21 types
12.2.3.1. Vali vellai noi
12.2.3.2. Azhal vellai noi
12.2.3.3. Iya vellai noi
12.2.3.4. Vali azhal vellai noi
12.2.3.5. Azhal iya vellai noi
12.2.3.6. Mukkutra vellai noi
12.2.3.7. Katti vellai noi
12.2.3.8. Neer vellai noi
12.2.3.9. Thandhi vellai noi
12.2.3.10. Seezh vellai noi
12.2.3.11. Ozhukku vellai noi
12.2.3.12. Manjal vellai noi
12.2.3.13. Neerkattu vellai
12.2.3.14. Karappan vellai
12.2.3.15. Kal vellai
12.2.3.16. Thandhu vellai
12.2.3.17. Neechu vellai
12.2.3.18. Vali vellai
12.2.3.19. Thaen vellai
12.2.3.20. Pun vellai
12.2.3.21 kuruthi vellai

- **M12U3 Meganeer noi(20 types), Neerizhivu noi (Diabetes)**

Meganeer noi - 20 types
12.3.1. Vali kuttram Meganeer noi – 4 types
12.3.1.1. Nei mana neer
12.3.1.2. Pasu mana neer
12.3.1.3. Seezh neer
12.3.1.4. Sadhai neer

12.3.2. Azhal kuttra Meganeer noi -6 types
12.3.2.1. Yaanai kozhuppu mana neer

12.3.2.2. Kattrazhai mana neer
12.3.2.3. Chunna mana neer
12.3.2.4. Inippu megam
12.3.2.5. Palingu neer
12.3.2.6. Muyal kuruthi neer

12.3.3. Iya kuttra Meganeer noi – 10 types
12.3.3.1. Iya neer
12.3.3.2. Thooimai neer\ Thelineer
12.3.3.3. Mulai neer
12.3.3.4. Ila neer
12.3.3.5. Kal neer
12.3.3.6. Venneer
12.3.3.7. Kazhu neer
12.3.3.8. Thaen neer
12.3.3.9. Uppu neer
12.3.3.10. Kavichi neer
12.3.4.Neerizhivu Noi \ Madhumeham Noi

• **M12U4 Meganoi Kattigal (10 types) (Carbuncles/Lumps,Urine admixed urogenital discharge, Low specific gravity Urine)**

12.4 .1 Mega kattigal 10 types
12.4.1.1 Kadugu pilavai
12.4.1.2 Kadalai pilavai
12.4.1.3 Nilapoosani pilavai
12.4.1.4 Katti pilavai
12.4.1.5 Madakku pilavai
12.4.1.6 Aamaiyottu pilavai
12.4.1.7 Peichurai pilavai
12.4.1.8 Koon pilavai
12.4.1.9 Valaikkan katti
12.4.1.10 Koottu pilavai
12.4.2 48 types of pilavai according to Agastheesar pilavai noi nithanam

	12.4.3 Venneer *12.4.3 Theli neer*					
		4	**20**	**40**	**60**	**120**
Semester No : 5						
2A Module Number	**2B Modules & units**	**2C Number of Credits**	**Notional Learning hours**			
			2D Lectures	**2E Practical Training**	**2F Experiential Learning including Modular Assessment**	**2G Total**
13	**M-13 Magalir and Aadavar Noi Nithaanam (Gynaecological and Andrological Diseases)** **The module illustrates about the Etiology, Classifications, *Mukkutra verupadu, Naadi Nadai* and curable and incurable conditions of *Aann kuri Noigal, Penkuri Noigal, Pooputhadai, Soothagavali, Kongai Noigal,Yonikkasivu : Vellai paduthal,Perumbadu, Pirappu Uruppugalil Thabitham, Punarchi Noigal, Yoni Rogangal, Van kazhalaigal, Maravai kattigal and Neerkumizh kazhalaigal.* It furnishes extensive knowledge on *Magalir* and *Aadavar Noi Nithaanam can be acquired.* It offers a comprehensive analysis based on variations in principles of *Trihumour by ev*aluating diagnostic procedures through the lens of Siddha fundamental principles and modern methodologies. It provides prescription of the potential line of treatment grounded in the system's underlying principles.** **• M13U1 Aann Kuri noigal (23 types) and Penkuri Noigal (21 types) (Penile Diseases,Diseases of Vulva)**	2	10	20	30	60

13.1.1. Aann Kuri Noigal
13.1.1.1. Korukku Noi
13.1.1.2. Siru Mulai
13.1.1.3. Kadugu Koppulam
13.1.1.4. Veeral Koppulam
13.1.1.5. Ilandhai kaai katti
13.1.1.6. Venmega Pun
13.1.1.7. Eri pun
13.1.1.8. Siru koppula pun
13.1.1.9. Thamaraikkai thadippu
13.1.1.10. Varisai pun
13.1.1.11. Kari Pun
13.1.1.12. Karpun
13.1.1.13. Pilappu pun
13.1.1.14. Thol Thadai pun
13.1.1.15. Nerukku Kirandhi
13.1.1.16. Thimirkuri Noi
13.1.1.17. Thulai Pun
13.1.1.18. Thol Azhi Pun
13.1.1.19. Oon azhi Pun
13.1.1.20. Sennira Koppulam
13.1.1.21. Oon Nira katti
13.1.1.22. Paravu Katti Pun
13.1.1.23. Karumarul thiratchi Pun
13.1.2. Penkuri Noigal
13.1.2.1. Vali Kuyya Noi
13.1.2.2. Azhal Kuyya Noi
13.1.2.3. Iya Kuyya Noi
13.1.2.4. Mukkutra Kuyya Noi
13.1.2.5. Nurai Kuruthi Kuyya Noi
13.1.2.6. Thunpuruthum Kuyya Noi
13.1.2.7. Kuruthi ozhukku Kuyya Noi

13.1.2.8. Vethuppu Kuyya Noi
13.1.2.9. Soolai Kuyya Noi
13.1.2.10. Soombal Kuyya Noi
13.1.2.11. Kozhai Kuyya Noi
13.1.2.12. Erichal Kuyya Noi
13.1.2.13. Vadithal Kuyya Noi
13.1.2.14. Parukkum Kuyya Noi
13.1.2.15. Ali Kuyya Noi
13.1.2.16. Perkuri Punarchi Kuyya Noi
13.1.2.17. Ilai Surukkum Kuyya Noi
13.1.2.18. Porundha Punarchi Kuyya Noi
13.1.2.19. Nun Puzhu Kuyya Noi
13.1.2.20. Maraikkai Kuyya Noi
13.1.2.21. Panmurai punarchi Kuyya Noi

• **M13U2 Pooputhadai,Soothagavali, Kongai Noigal (Ammenorrhea,Dysmenorrhea,Diseases of Breast)**

13.2.1. Pooputhadai (2 Types)
13.2.1.1. Sugarana soothaga thadai
13.2.1.2. Kugarana Soothaga thadai
13.2.2. Soothagavali (2 Types)
13.2.1.1. Aga Soothaga vali
13.2.1.2. Pura Soothaga vali
13.2.3. Kongai Noigal

• **M13U3 Yonikkasivu noigal :1.Vellai paduthal, Perumbadu (Leucorrhoea, Abnormal uterine bleeding)**

13.3.1. Yonikkasivu Noigal
13.3.1.1 Vellai paduthal (5 Types)
13.3.2. Perumpadu (4 Types)
13.3.2.1. Vatha Perumbadu
13.3.2.2. Pitha Perumbadu
13.3.2.3. Sethuma Perumbadu
13.3.2.4. Thondha Perumbadu

	• **M13U4 Pirappu Uruppugalil Thabitham, Punarchi noigal, Yoni Rogangal - magalir korrukku noi,magalir vellai noi (Pelvic Inflammatory disease,Dyspareunia,Syphilitic Chancre,Leucorrhoea,Diseases of Female genital tract)** *13.4.1. Pirappu uruppugalil Thabitham* *13.4.1.1. Agal Thabitham* *13.4.1.2. Yoni Thabitham* *13.4.1.3. Yoni Agal Thabitham* *13.4.1.4. Yoni Vandhai Thabitham* *13.4.2. Punarchi noigal* *13.4.3. Magalir Korukku Noi* *13.4.4. Magalir Vellai Noi* *13.4.4.1 Yoni Rogangal - 20 Types* • **M13U5 Van kazhalaigal, Maravai kattigal, Neerkumizh kazhalaigal (Benign and Malignant Tumours and cyst)** *13.5.1. Van kazhalaigal* *13.5.1.1. Thasai Vankazhalai* *13.5.1.2. Kaambu Kazhalai* *13.5.1.3. Karuppai Putru* *13.5.2. Maravai kattigal* *13.5.2.1. Nan Maravai Kattigal* *13.5.2.2. Nanju Maravai Kattigal* *13.5.3. Neerkumizh kazhalaigal*					
14	**M-14 Maladu And Karba Noi Nidhaanam (Reproductive Diseases)** **The module explains about the Etiology, Classifications, *Mukkutra verupadu, Naadi Nadai* and curable and incurable conditions of *Aann Maladu, Pen Maladu, Sool vaanthi, Sool vali, Sool valippu, Karuchchithaivu, Pura Karuppai Sool, Pirasava pinkala noigal and Karba Rogangal* of *Maladu and Karba Noi Nithaanam can be acquired.* It imparts a comprehensive analysis based on**	2	10	20	30	60

variations in principles of *Trihumour by ev*aluating diagnostic procedures through the lens of Siddha fundamental principles and modern methodologies. It enables Prescription of the potential line of treatment grounded in the system's underlying principles.

• **M14U1 Maladu noi**

14.1.1. Aann Maladu
14.1.2. Pen Maladu
14.1.2.1. Sutha Maladu
14.1.2.2. Kathali Maladu
14.1.2.3. Kaaka Maladu
14.1.2.4. Kanma Maladu

• **M14U2 Sool vanthi,Sool vali,Sool valippu(Hyper emisis gravidarum,Pre Eclampsia,Eclampsia)**

14.2.1. *Sool vanthi*
14.2.2. *Sool vali*
14.2.3. *Sool valippu*

• **M14U3 Karuchchithaivu,Pura karuppai sool,Pirasava pinkaala noigal,Karba Rogangal(Abortions,Ectopic pregnancy,Post natal diseases,uterine Disorders)**

14.3.1. Karuchchithaivu
14.3.2. Pura karuppai sool
14.3.3. Pirasava pinkaala noigal
14.3.4. Karba Rogangal
14.3.4.1. Akkrama Soothagam
14.3.4.2. Karba Soolai
14.3.4.3. Thoora Soolai
14.3.4.4. Raththa Soolai
14.3.4.5. Karai soolai
14.3.4.6. Karba Kirani
14.3.4.7. Karba Puzhu
14.3.4.8. Karba Vippuruthi

	14.3.4.9. Karba Vayu *14.3.4.10. Karba Suram* *14.3.4.11. Anda soolai* *14.3.4.12. Karba suronitham* *14.3.4.13. Karba Kirumi* *14.3.4.14 Nithamba soolai*					
		4	**20**	**40**	**60**	**120**

Semester No : 6

2A Module Number	**2B Modules & units**	**2C Number of Credits**	**Notional Learning hours**			
			2D Lectures	**2E Practical Training**	**2F Experiential Learning including Modular Assessment**	**2G Total**
15	**M-15 Baalar Roga Nithaanam (Paediatric Diseases)** **The module encompasses the Etiology, Classifications, *Mukkutra verupadu, Naadi Nadai* and curable and incurable conditions of Siddha paediatric diseases such as *Karuvil thondrum noigal, Balavaatham, Thasai vaatham(mel mutchu vaatham), Sirakkamba vaatham, Ilam Pillai vaatham, Thodam, Maantham, Kanam, Kakkuvaan, Kaasam, Thondai adaippan, Karappan, Akkaram, Suram noi, Sanni noi, Oothal noi, Kaamalai noi,Kudal kirumigal noi, Kazhichal,kudal yetram, Kutham Adithalal. noi* of *Baalar Roga Nithaanam* can be accomplished. It delivers a comprehensive analysis based on variations in principles of *Trihumour by ev*aluating diagnostic procedures through the lens of Siddha fundamental principles and modern methodologies. It facilitates Prescription**	2	10	20	30	60

of the potential line of treatment grounded in the system's underlying principles.

• **M15U1 Karuvil thondrum noigal, Balavaatham, Thasaivaatham, Sirakkamba vaatham, Ilam Pillai vaatham, Thodam, Maantham noigal (Congenital Diseases,Myopathy,Autism Spectrum Disorders,Polio myelitis)**

15.1.1 Karuvil thondrum noigal
15.1.2 Balavaatham
15.1.3 Thasai vaatham/ Mel moochchu vatham
15.1.4 Sirakkamba vaatham
15.1.5 Ilam Pillai vaatham
15.1.6 Thodam (25 Types)
15.1.6.1. Aann Patchi Thodam
15.1.6.2. Pen Patchi Thodam
15.1.6.3. Malattu Patchi Thodam
15.1.6.4. Ali Patchi Thodam
15.1.6.5. Paravai Thodam
15.1.6.6. Veengu Pul Thodam
15.1.6.7. Thoongu Pul thodam
15.1.6.8. Vilaakoli Kan Pul Thodam
15.1.6.9. Vengan Pul Thodam
15.1.6.10. Karudakan Pul Thodam
15.1.6.11. Sengan Pul Thodam
15.1.6.12. Varatpul Thodam
15.1.6.13. Pei kan Thodam
15.1.6.14. Andhai Pul Thodam
15.1.6.15. Neerpul Thodam
15.1.6.16. Etchi Thodam
15.1.6.17. Echil Thodam
15.1.6.18. Pen Thodam
15.1.6.19. Muttu thodam
15.1.6.20. Kulisa Thodam
15.1.6.21. Kulitha pen Kanda Thodam

15.1.6.22. Kulithaval edutha Thodam
15.1.6.23. Karbam Azhintha Thodam
15.1.6.24. Aan Thodam
15.1.6.25. Therai Thodam
15.1.7 Maantham (21 Types)
15.1.7.1. Vali Maantham
15.1.7.2. Azhal Maantham
15.1.7.3. Iya Maantham
15.1.7.4. Vida Maantham
15.1.7.5. Por Maantham
15.1.7.6. Vaalai Maantham
15.1.7.7. Sura Maantham
15.1.7.8. Neer Maantham
15.1.7.9. Seriyaa Maantham
15.1.7.10. Kattu Maantham
15.1.7.11. Paal Maantham
15.1.7.12. Eri Maantham
15.1.7.13. Thulai Maantham
15.1.7.14. Thalai Maantham
15.1.7.15. Kana Maantham
15.1.7.16. Vali Maantham
15.1.7.17. Suzhi Maantham
15.1.7.18. Mukku Maantham
15.1.7.19. Sanni Maantham
15.1.7.20. Oothu Maantham
15.1.7.21. Veeka Maantham

• **M15U2 Kanam, Kakkuvan, Kaasam, Thondai adaippan, Lasuna Thaabidham (Primary complex,Whooping cough,Diphtheria/Croup, Tonsilitis)**

15.2.1. Kanam (24 Types)
15.2.1.1. Vali Kanam
15.2.1.2. Azhal Kanam
15.2.1.3. Iya Kanam

15.2.1.4. Maandha Kanam
15.2.1.5. Neer Kanam
15.2.1.6. Pirali Kanam
15.2.1.7. Sooli Kanam
15.2.1.8. Suzhi Kanam
15.2.1.9. Maha Kanam
15.2.1.10. Oothu Kanam
15.2.1.11. Varal Kanam
15.2.1.12. Kothippu Kanam
15.2.1.13. Veeka Kanam
15.2.1.14. Pira Kanam
15.2.1.15. Andhaga Kanam
15.2.1.16. Mandhaara Kanam
15.2.1.17. Eri kanam
15.2.1.18. Neeraama Kanam
15.2.1.19. Aama Kanam
15.2.1.20. Mukku Kanam
15.2.1.21. Moola Kanam
15.2.1.22. Peraama Kanam
15.2.1.23. Raththa Kanam
15.2.1.24. Singi Maantha Kanam
15.2.2. Kakkuvaan
15.2.3. Kaasam
15.2.4. Thondai Adaippan
15.2.5. Lasuna Thaabidham

• **M15U3 Karappan noi, Akkaram, Suram Noi, Sanni Noi (Eczematous dermatological conditions,Apthous ulcers,Oral ulcers,Febrile illness,Apoplexy conditions)**

15.3.1. *Karappan Noi* (18 Types)
15.3.1.1. *Vali Karappan*
15.3.1.2. *Azhal Karappan*
15.3.1.3. *Iya Karappan*

15.3.1.4. *Ari Karappan*
15.3.1.5. *Oothu Karappan*
15.3.1.6. *Soolai Karappan*
15.3.1.7. *Vedi Karappan*
15.3.1.8. *Mandai karappan*
15.3.1.9. *Pori Karappan*
15.3.1.10.*Sattai Karappan*
15.3.1.11.*Oodu Karappan*
15.3.1.12. *Karungarappan*
*1*5.3.1.13. *Sengarappan*
15.3.1.14. *Kolli Karappan*
15.3.1.15. *Thoda Karappan*
15.3.1.16. *Vali Karappan*
15.3.1.17. *Varal Karappan*
15.3.1.18. *Veengu Karappan*
15.3.2. *Akkaram* (8 Types)
15.3.2.1. *Sooli Akkaram*
15.3.2.2. *Neethi Akkaram*
15.3.2.3. *Sothi Akkaram*
15.3.2.4. *Veezhi Akkaram*
15.3.2.5. *Kundi Akkaram*
15.3.2.6. *Kabaali Akkaram*
15.3.2.7. *Kumari Akkaram*
15.3.2.8. *Ul Akkaram*
15.3.3. *Suram Noi* (20 Types)
15.3.4. *Sanni Noi* (9 Types)

• **M15U4 Oothal Noi, Kaamalai Noi,Kudal kirumi Noigal, Kazhichal Noi, Kudal Yetram,Kutham Adithalal Noi (Oedema/Plethora/Anasarca): (Apathy/Jaundice/Reduced libido):(Worm infestations):(Diarrhral conditions):(Instenal Herniation/Obstruction/Volvulus conditions)**
15.4.1. Oothal Noi

	15.4.2. Kaamalai Noi *15.4.3. Kudal kirumi Noigal* *15.4.3.1. MasaraiPuzhuNoi* *15.4.3.2. KeeriPoochi* *15.4.3.3. Naaga poochi* *15.4.4. Kazhichal Noi* *15.4.5. Kudalyetram* *15.4.6. Kutham adithalal Noi*					
16	**M-16 Thol Noi Nithaanam (Dermatological Diseases)** **The module enumerates about clear understanding of Etiology, Classifications, *Mukkutra verupadu, Naadi Nadai* and curable and incurable conditions *Kutta Noi, Kalanjagapadai / Sethil uthir Noi, Karappan, Venkuttam, Kirandhi, Kaduvan, Katti/Kazhalai and Naga chuttru.* of *Thol Noi Nithaanam*can be accomplished. It provide a comprehensive analysis based on variations in principles of *Trihumour by ev*aluating diagnostic procedures through the lens of Siddha fundamental principles and modern methodologies. It enables Prescription of the potential line of treatment grounded in the system's underlying principles.** • **M16U1 Kutta Noi, Kalanjagapadai / Sethil uthir Noi (Dermatological conditions/Leprosy:Psoriasis)** *16.1.1. Kuttam Noi (18 types)* *16.1.1.1. Kabala kuttam* *16.1.1.2. Atthikai kuttam* *16.1.1.3 Mandala kuttam* *16.1.1.4. Sori kuttam* *16.1.1.5 Nakku kuttam* *16.1.1.6. Vedippu kuttam* *16.1.1.7. Thimir kuttam*	2	10	20	30	60

	16.1.1.8. Yaanai Thol kuttam *16.1.1.9. Pandri Thol kuttam* *16.1.1.10. Pudai kuttam* *16.1.1.11. Thadippu kuttam* *16.1.1.12. Koozhangar kuttam* *16.1.1.13. Poorai kuttam* *16.1.1.14. Padar Thamarai kuttam* *16.1.1.15. Eri Koppala kuttam* *16.1.1.16. Sirangu kuttam* *16.1.1.17. Pilappu kuttam* *16.1.1.18. Kaaga kuttam.* *16.1.2. Kuttam (kuttra alavaga - 7 types)* *16.1.3 Kaalanjaga padai/Sedhil uthir Noi* • **M16U2 Karappan Noi, Venkuttam Noi, Kirandhi Noi (Eczema ,Leucoderma,Nodular lesions)** *16.2.1. Karappan Noi (7 Types)* *16.2.1.1. Vatha Karappan* *16.2.1.2. Pitha Karappan* *16.2.1.3. Kaba Karappan* *16.2.1.4. Kanda Karappan* *16.2.1.5. Varatchi Karappan* *16.2.1.6. Thimirvatha Karappan* *16.2.1.7. Kabala Karappan* *16.2.2. Venkuttam Noi (4 types)* *16.2.2.1. Vatha Venkuttam* *16.2.2.2. Pitha Venkuttam* *16.2.2.3. Kaba Venkuttam* *16.2.2.4. Mega Venkuttam* *16.2.3. Kirandhi Noi* • **M16U3 Kaduvan Noi, Katti/Kazhalai, Naga chuttru, Puzhuvettu (Lichen planus/Impetigo,Boils/Lumps,Felon,Alopecia areata)** *16.3.1. Kaduvan*					

	16.3.2. Katti/Kazhalai *16.3.2.1. Vali Katti* *16.3.2.2. Azhal Katti* *16.3.2.3. Iya Katti* *16.3.2.4. Irukutra Mukkutra Kalappu Katti* *16.3.2.5. Kuruthi Katti* *16.3.2.6. Adipaduthalal erpadum Katti* *16.3.3. Naga chuttru* *16.3.4. Puzhuvettu*					
		4	**20**	**40**	**60**	**120**
		16	**80**	**160**	**240**	**480**

Paper No : 3 (RECENT ADVANCES AND APPLIED ASPECTS OF PATHOLOGY INCLUDING IMMUNOPATHOLOGY AND HAEMATOLOGY)

Semester No : 3

2A Module Number	2B Modules & units	2C Number of Credits	Notional Learning hours			
			2D Lectures	2E Practical Training	2F Experiential Learning including Modular Assessment	2G Total
17	**M-17 Applications Of Basic Pathology** **This module emphasize the knowledge of mechanisms in cell injury, inflammation, hemodynamics, genetics, neoplasia , nutritional and environmental disorders for the educational, clinical and research purpose.**	2	10	20	30	60

	• **M17U1 Cell Injury** 17.1.1. Reversible cell injury 17.1,2. Irreversible cell injury 17.1.3. Various forms of cell death 17.1.4. Pathological calcification and gangrene 17.1.5. Cellular adaptations 17.1.6. Intracellular accumulations 17.1.7. Cellular ageing • **M17U2 Inflammation** 17.2.1. Events of inflammation 17.2.2. Chemical mediators of inflammation 17.2.3. Granulomatous inflammation 17.2.4. Repair and regeneration 17.2.5. Wound healing and Healing in bone and specialized tissue • **M17U3 Hemodynamics** 17.3.1. Hyperemia, congestion 17.3.2. Thrombosis 17.3.3. Embolism 17.3.4. Infarction 17.3.5. Oedema 17.3.6. Shock • **M17U4 Environmental Disorders** 17.4.1. Effects of Tobacco and Alcohol 17.4.2. Effects of environmental pollution-Air, Industrial and Agricultural exposures 17.4.3. Radiation and thermal injuries • **M17U5 Nutritional Disorders** 17.5.1. Severe and moderate acute malnutrition 17.5.2. Vitamin deficiencies 17.5.3. Obesity					

	• **M17U6 Genetic and Immunological Disorders** 17.6.1. Chromosomal abnormalities 17.6.2. Single gene mutations-pattern of inheritance 17.6.3. Epigenetic alterations 17.6.4. Mitochondrial abnormalities 17.6.5. Hypersensitivity reactions 17.6.6. Immuno deficiency syndrome 17.6.7. Autoimmune disorders 17.6.8. Amyloidosis 17.6.9. Transplant rejection 17.6.10 Graft versus Host disease • **M17U7 Neoplasia** 17.7.1. Definition, Classification, nomenclature 17.7.2. Microscopical, biological characteristic of neoplasia 17.7.3. Difference between benign and malignant 17.7.4. Molecular basis of cancer 17.7.5. Carcinogens and Mechanism of Carcinogenesis 17.7.6. Tumour immunology 17.7.7. Effects of tumour on the host and paraneoplastic syndromes 17.7.8. Mechanism of invasion and metastasis 17.7.9. Grading and staging of cancer 17.7.10. Lab diagnosis of cancer 17.7.12. Tumour immunology 17.7.13. Paraneoplastic syndromes					
18	**M-18 Respiratory, Eye and Otolaryngological Diseases** **This module emphasize knowledge of various pathological processes in respiratory system ,ophthalmic and otolaryngological diseases and pathological diagnosis for the purpose of clinical ,research and therapeutic interventions.**	2	10	20	30	60

	• **M18U1 Respiratory Diseases** 18.1.1. Chronic bronchitis 18.1.2. Emphysema 18.1.3. Bronchiectasis 18.1.4. Bronchial Asthma 18.1.5. Fibrosing lung diseases 18.1.6. Granulomatous lung diseases 18.1.7. Pulmonary embolism and hypertension 18.1.8. Pulmonary infections 18.1.9. Tumours of lung and pleura • **M18U2 Ophthalmic Diseases** 18.2.1. Refractive errors 18.2.2. Conjunctivitis 18.2.3. Corneal ulceration 18.2.4. Infectious keratitis 18.2.5. Iridocyclitis 18.2.6. Glaucoma 18.2.7. Disorders of uvea 18.2.8. Cataract 18.2.9. Disorders of retina 18.2.10.Diseases of optic nerve • **M18U3 Diseases of Ear, Nose, Throat** 18.3.1. Tinnitus 18.3.2. Chronic and non-suppurative otitis media 18.3.3. Epistaxis 18.3.4. Nasal Polyp 18.3.5. Deviated Nasal Septum 18.3.6. Acute and chronic sinusitis 18.3.7. Tonsillitis 18.3.8. Rhinitis					
		4	**20**	**40**	**60**	**120**

Semester No : 4						
2A Module Number	**2B Modules & units**	**2C Number of Credits**	**Notional Learning hours**			
			2D Lectures	**2E Practical Training**	**2F Experiential Learning including Modular Assessment**	**2G Total**
19	**M-19 Diseases Of Hematopoietic And Cardio Vascular Diseases** **This module emphasize the knowledge of pathophysiological mechanisms in cardio vascular and hematological diseases and to perform lab diagnostic methods for the diagnosis, research and therapeutic interventions** • **M19U1 Haematopoeitic Disorders** 19.1.1. Microcytic anaemias 19.1.2. Macrocytic anaemias 19.1.3. Hemolytic anaemias 19.1.4. Polycythemia 19.1.5. Leucocytosis,leucopenia 19.1.6. Leukemia 19.1.7. Lymphadenopathy 19.1.8. Lymphoma- Hodgkin's Lymphoma and Non Hodgkin's Lymphoma 19.1.9. Spleenomegaly 19.1.10.Bleeding disorders 19.1.11.Thrombocytopenia 19.1.12.Disseminated Intravascular Coagulation 19.1.13.Hematological manifestations of systemic diseases	2	10	20	30	60

	• **M19U2 Cardio Vascular System** 19.2.1. Heart failure 19.2.2. Congenital heart disease 19.2.3. Ischaemic heart disease 19.2.4. Hypertensive heart disease 19.2.5. Valvular heart disease 19.2.6. Cardiomyopathies					
20	**M-20 Gastro Intestinal and Hepato Biliary Diseases** **This module emphasize the knowledge of pathophysiological processes in gastro intestinal and hepatobiliary diseases, their clinical impact and to perform pathological diagnostic methods for the diagnosis , research ideas evaluation and therapeutic interventions** • **M20U1 Diseases of Upper Gastro Intestinal Tract** 20.1.1. Oral ulcers 20.1.2. Oral cancer 20.1.3. Gastritis 20.1.4. Oesophagitis 20.1.5. Peptic ulcer disease 20.1.6. Carcinoma of stomach • **M20U2 Diseases of Lower Gastro Intestinal Tract** 20.2.1. Ischaemic Bowel Disease 20.2.2. Inflammatory bowel disease 20.2.3. Infective enterocolitis 20.2.4. Causes of Gastro Intestinal bleeding • **M20U3 Tumours of Gastro Intestinal Tract** 20.3.1. Carcinoma oesophagus 20.3.2. Carcinoma stomach 20.3.3. Colorectal cancer • **M20U4 Hepato Biliary Diseases**	2	10	20	30	60

	20.4.1. Jaundice 20.4.2. Hepatitis 20.4.3. Alcoholic and non alcoholic fatty liver disease 20.4.4. Cirrhosis and portal hypertension 20.4.5. Hepatocellular carcinoma 20.4.6. Cholecystitis 20.4.7. Cholelithiasis 20.4.8. Pancreatitis 20.4.9. Tumours of gall bladder and pancreas					
		4	**20**	**40**	**60**	**120**
Semester No : 5						
2A Module Number	**2B Modules & units**	**2C Number of Credits**	**Notional Learning hours**			
			2D Lectures	**2E Practical Training**	**2F Experiential Learning including Modular Assessment**	**2G Total**
21	**M-21 Renal, Male and Female Genital Tract Diseases** **This module emphasize the understanding of pathophysiological processes in renal disorders, male and female genital tract diseases and to demonstrate lab diagnostic methods for appropriate diagnosis, evaluating research ideas and efficient therapeutic interventions** • **M21U1 Nephrology** 21.1.1. Glomerulonephritis-primary and secondary	2	10	20	30	60

	21.1.2. Nephritic and nephrotic syndromes 21.1.3. Pyelonephritis-acute and chronic 21.1.4. Urolithiasis 21.1.5. Urinary tract infections 21.1.6. Acute tubular necrosis 21.1.7. Nephrosclerosis 21.1.8. Renal tumours 21.1.9. Urothelial tumours • **M21U2 Male Genital Diseases** 21.2.1. Acute and chronic cystitis 21.2.2. Prostatitis 21.2.3. Phimosis and Paraphimosis 21.2.4. Orchitis 21.2.5. Erectile Dysfunction 21.2.6. Benign prostate hyperplasia 21.2.7. Carcinoma prostate 21.2.8. Penis and testicular tumours • **M21U3 Female Genital Diseases** 21.3.1. Chronic Cervicitis 21.3.2. Endometriosis 21.3.3. Endometrial hyperplasia 21.3.4. Adenomyosis 21.3.5. Carcinima of cervix 21.3.6. Leiomyoma 21.3.7. Endometrial Carcinoma 21.3.8. Infections of female genital tract 21.3.9. Non neoplastic and functional ovarian cysts 21.3.10. Ovarian tumours 21.3.11. Benign tumours of the breast 21.3.12. Carcinoma of breast					
22	**M-22 Diseases of Neurology and Musculo Skeletal System**	2	10	20	30	60

This Module adapt and apply the knowledge of pathological mechanisms and their impact in Neurological,and Musculo skeletal disorders and interpret clinicopathological findings to calibrate appropriate diagnosis, research process and therapeutic interventions

- **M22U1 Neurological Diseases**

22.1.1. Seizure and epilepsy
22.1.2. Cerebro vascular diseases
22.1.3. Intracranial hemorrhage
22.1.4. Migraine and primary headache disorders
22.1.5. Dementia
22.1.6. Tremors,chorea and movement disorders
22.1.7. Motor Neuron Diseases
22.1.8. Peripheral nerve injuries
22.1.9. Central Nervous System Infections
22.1.10.Central Nervous System Tumours
22.1.11.Alzheimer's and Parkinson's disease
22.1.12.Peripheral neuropathy
22.1.13.Ataxic disorders
22.1.14.Multiple Sclerosis
22.1.15.Immune mediated neuropathies
22.1.16.Myasthenia Gravis
22.1.17 Neuro Psychiatric disorders
22.1.18 Neuro Pediatric diseases

- **M22U2 Musculo Skeletal Diseases**

22.2.1. Soft tissue injuries
22.2.2. Spinal injuries
22.2.3. Spondyloarthropathies
22.2.4. Bone and joint infections
22.2.5. Inflammatory joint diseases-Systemic Lupus Erythematosus,Rheumatoid

	Arthritis 22.2.6. Systemic diseases with rheumatic manifestations-metabolic,endocrine 22.2.7. Degenerative joint disease- osteo arthrosis,lumbar spondylois,cervical spondylosis 22.2.8. Bone tumours					
		4	**20**	**40**	**60**	**120**

Semester No : 6

2A Module Number	**2B Modules & units**	**2C Number of Credits**	**Notional Learning hours**			
			2D Lectures	**2E Practical Training**	**2F Experiential Learning including Modular Assessment**	**2G Total**
23	**M-23 Metabolic and Endocrine Disorders** **This module adapt and optimize the knowledge of pathophysiological mechanisms and lifestyle influences in endocrine and metabolic diseases and to compose the diagnostic methods for appropriate diagnosis, research and therapeutic interventions** • **M23U1 Metabolic Diseases** 23.1.1. Diabetes Mellitus 23.1.2. Osteopenia and Osteoporosis 23.1.3. Gout • **M23U2 Diseases of the Pituitary Gland** 23.2.1. Genetic and acquired pituitary dysfunction	2	10	20	30	60

	23.2.2. Functional pituitary tumours 23.2.3. Pituitary adenomas , pituitary sellar ,suprasellar and para sellar masses 23.2.4. Posterior pituitary dysfunction • **M23U3 Diseases of the Thyroid Gland** 23.3.1.Hyper and Hypothyroidism 23.3.2.Thyroiditis 23.3.3.Grave's disease 23.3.4.Diffusea and Multi nodular goitre 23.3.5.Neoplasms of the thyroid gland • **M23U4 Diseases of the Adrenal Gland** 23.4.1. Hyperadrenalism 23.4.2. Adreno cortical insufficiency 23.4.3. Adrenal neoplasms 23.4.4. Pheochromocytoma • **M23U5 Diseases of the Parathyroid Gland** 23.5.1.Hyperparathyroidism 23.5.2. Hypo parathyroidism					
24	**M-24 Dermatological Disorders** **This module covers the essential knowledge and competencies in describing the various dermatological conditions and indepth knowledge of their etiopathogenesis, risk factors, clinical manifestations, histopathological diagnosis and possible preventions** • **M24U1 Disorders of Hair, Nail and Subcutaneous Tissues** 24.1.1.Disorders of hair 24.1.2.Disorders of nail 24.1.3.Disorders of sweat and sebaceous glands 24.1.4.Disorders of melanocytes	2	10	20	30	60

	• **M24U2 Infectious Skin Diseases** 24.2.1.Bacterial diseases 24.2.2.Viral diseases 24.2.3.Fungal diseases • **M24U3 Psycho, Neuro, Vascular and Genetic Skin Diseases** 24.3.1.Psychologicaldisorders 24.3.2.Neurologicaldisorders 24.3.3.Atherosclerosis,Deep Vein Thrombosis and Stasis dermatitis 24.3.4.Genodermatoses • **M24U4 Inflammatory Skin Disorders** 24.4.1.Pemphigus 24.4.2.Bullouspemphigoid 24.4.3.Chronic Bullous Disease of Childhood 24.4.4.Dermatitisherpetiformis 24.4.5.Psoriasis 24.4.6.Lichen planus 24.4.7.Pitryiasis 24.4.8.Dermatitis 24.4.9.Erythema 24.4.10.Urticaria 24.4.11.Vasculitis • **M24U5 Cutaneous Manifestations in Systemic and Nutritional Diseases** 24.5.1.Cutaneous manifestations in Endocrine disorders 24.5.2.Cutaneous manifestations in Renal disorders 24.5.3.Cutaneous manifestations in Liver disorders 24.5.4.Cutaneous manifestations in Metabolic disorders 24.5.5.Cutaneous manifestations in Malignancies. 24.5.6.Cutaneous manifestations in Malnutrition and malabsorption. • **M24U6 Tumours of the Skin** 24.6.1 Benign, pre malignant and malignant tumours of the epidermis 24.6.1.1.Seborrheic keratosis 24.6.1.2.Skin tags						

	24.6.1.3.Melanocytic naevi 24.6.1.4.Kerato acanthoma 24.6.1.5.Basal Cell Carcinoma 24.6.1.6.Squamous Cell Carcinoma 24.6.1.7.Malignant Melanoma 24.6.2.Benign and malignant tumours of the skin appendages 24.6.3.Benign and malignant tumours of the dermis 24.6.3.1.Haemangioma 24.6.3.2.Keloid 24.6.3.3.Leiomyoma 24.6.3.4.Lipoma 24.6.3.5.Mycosis fungoides 24.6.3.6.Cutaneous B cell Lymphoma					
		4	**20**	**40**	**60**	**120**
		16	**80**	**160**	**240**	**480**

Paper No : 4 (FUNDAMENTALS AND APPLICATIONS OF DIAGNOSTIC MODALITIES AND THEIR INTERPRETATIONS)

Semester No : 3

2A Module Number	**2B Modules & units**	**2C Number of Credits**	**Notional Learning hours**			
			2D Lectures	**2E Practical Training**	**2F Experiential Learning including Modular Assessment**	**2G Total**
25	**M-25 Clinical and Physical Diagnosis**	2	10	20	30	60

Classify the various types of diagnoses.
Differentiate between the diagnostic impressions made through various modalities of diagnostic approaches including the final composite diagnosis.

- **M25U1 Types of Diagnosis and Classification of Diseases**

25.1.1.Clinical diagnosis
25.1.2.Lab diagnosis
25.1.3.Molecular diagnosis
25.1.4.Radio diagnosis
25.1.5.Electrography diagnosis
25.1.6.Endoscopy diagnosis
25.1.7.Tissue diagnosis
25.1.8.Admission (Provisional) diagnosis
25.1.9.Discharge (Final) diagnosis
25.1.10.Prenatal diagnosis
25.1.11.Exclusion diagnosis
25.1.12.Remote diagnosis (Telemedicine)
25.1.13.International Classification of Diseases (ICD 11)

- **M25U2 General Examination and Elicitation of case history**

25.2.1. Posture and gait
25.2.2. Speech and interaction
25.2.3. Physique and nutrition
25.2.4. Temperature
25.2.5. Hands
25.2.6. Odour
25.2.7. Lymph glands and lymphadenopathy
25.2.8. Pulses
25.2.9. History taking
25.2.10.Indirect and direct questions
25.2.11.Disease-centred versus Patient centered questions
25.2.12.Judging the severity of symptoms
25.2.13. Schematic history – demography, main presenting complaints, past medical

history, specific past medical history, history of main presenting complaints, family history, occupational history, drug and other treatment history, retaking the history and note-taking history

• **M25U3 Examination of Skin, Hair and Nails**

25.3.1. Examination of color and pigmentation
25.3.2. Lesions and eruptions
25.3.3. Configuration of skin lesion
25.3.4. Hair – growth, fall,grey hair,split hair, ralopecia
25.3.5. Nails – Nail matrix abnormalities, nail bed abnormalities, nail in systemic disease
25.3.6. Cutaneous manifestation of internal disease

• **M25U4 Examination of Respiratory system**

25.4.1. Inspection
25.4.2. Palpation
25.4.3. Percussion
25.4.4. Auscultation - Vesicular breath sound, bronchial breath sound, vocal fremitus.

• **M25U5 Examination of Cardiovascular System**

25.5.1. Presenting complaints
25.5.2. Risk Factors of Cardio Vascular Disease
25.5.3. Past medical history
25.5.4. Drug history
25.5.5. Major symptoms and Major signs
25.5.6.Inspection : Anaemia, cyanosis, clubbing, other cutaneous and ocular signs of infective endocarditis and oedema,
25.5.7. Arterial pulse
25.5.8. Measurement of BP
25.5.9. JVP
25.5.10.Palpation of the chest wall
25.5.11. Auscultation of heart

• **M25U6 Examination of Gastro Intestinal Tract and abdomen**

25.6.1. Common signs and symptoms of Gastro Intestinal Tract diseases

25.6.2. Nutritional assessment
25.6.3. Physical examination of Gastro Intestinal Tract and Abdomen: General signs, inspections – shape of umbilicus, Movements of abdominal wall and skin and surface
25.6.4. Palpation of specific organs
25.6.5. Percussion
26.6.6. Auscultation

• **M25U7 Examination of Uro-genital system and Gynaecological Examinations, Partogram**

25.7.1. Examination of groins, genitalia
25.7.2..Symptoms of renal urological diseases
25.7.3. General features of the Uro-genital system

• **M25U8 Ano - rectal examination**

25.8.1. Inspection
25.8.2. Palpation
25.8.3. Rectal Examination

• **M25U9 Musculoskeletal Examination and Nervous system**

25.9.1. General assessment of Gait Arms Legs and Spine – Screening history and examination
25.9.2. Examinations of bones – inspections, palpation. Inspection of suspected fracture
25.9.3. Examination of joints– inspection, palpation, tendon sheath crepitus, joint crepitus, Range Of Movements
25.9.4. Examination of individual joints
25.9.5. General examination of vertebral column
25.9.6. Hyper mobility
25.9.7. Drawers test, Schobers test, Femoral Nerve Stretch Test, Straight Leg Raising, Lassegue test, Fabers test, Bragard test, Lachmann test, spurling test, Lhermittes test, chin test, coin test, shoulder abduction test, Valgus Stress Test, Varus Stress Test, McMurray test, Thessaly test, Cervical compression test, Cervical distraction test, Hoffmann sign, Vertebral artery test, Beighton score, Gaenslen Test, Leg Lowering Test, McKenzie Side Glide Test, Posterior Pelvic Pain Provocation Test, Slump Test, Waddell Sign, The lumbar extension-loading test, Bicycle Stress

	Test, Two-Stage Treadmill Test, Exercise stress testing on a treadmill, Trendelenburg test, Romberg test, Achilles tendon reflexes 25.9.8. General examination of the nervous system 25.9.9. Cranial examination 25.9.10. Motor system examination 25.9.11. Cerebral system examination 25.9.12. Examination of limb coordination 25.9.13. Reflexes 25.9.14. Movement disorder 25.9.15. Cutaneous sensory examinations 25.9.16. Patterns of motor and sensory signs 25.9.17. Examination of cognitive function • **M25U10 Examination of Breast** 25.10.1. Inspection 25.10.2. Palpation 25.10.3 Documentation Common terminology found in the documentation of a breast exam includes the following: Symmetrical or asymmetrical, Shape (ptotic, pendulous, any scars or deformities with descriptions), Texture (soft, nodular, fibrocystic, dense, presence of inframammary ridge in large breasts), Masses (described as indicated above versus no masses evident) Nipple-areolar complex (pink, brown, everted, inverted, discharge present/absent with description, presence of dry, scaly texture concerning for Paget's disease), Skin (warm, dry, presence/absence of erythema, edema, peau d'orange appearance, open sores, draining fluid collection.					
26	**M-26 Modalities of Diagnostic Imaging** **The Imaging Diagnosis module provides a comprehensive study of principles and practices of diagnostic imaging in the medical field. Students will explore various imaging modalities, including X-ray, Computed Tomography (CT), Magnetic Resonance Imaging (MRI), and Ultrasonography (USG), Nuclear**	2	10	20	30	60

Imaging. This module emphasizes the role of imaging in the diagnosis and management of diseases, integrating theoretical knowledge with practical applications.

- **M26U1 Introduction to Imaging Diagnosis**

26.1.1. Principles of X-ray diagnosis
26.1.2. Computed Tomography (CT),
26.1.3. Magnetic Resonance Imaging (MRI).
26.1.4. Clinical importance

- **M26U2 X-Ray**

26.2.1. X ray
26.2.2 Digital X ray

- **M26U3 Ultrasonography**

26.3.1. Ultrasonography (USG)
26.3.2. Doppler Ultrasonography
26.3.3. Echocardiogram
26.3.4. Intravenous Ultrasound (IVUS)
26.3.5. Endoanal Ultrasound
26.3.6. Liver Elastography (FibroScan)
26.3.7. Trans Vaginal Sonography for ovulation studies

- **M26U4 Computed Tomography (CT)scan**

26.4.1. Computed Tomography (CT) scan

- **M26U5 Magnetic Resonance Imaging (MRI), Fistulogram and Sinogram**

26.5.1. Magnetic Resonance Imaging MRI
26.5.2. Fistulogram
26.5.3. Sinogram

- **M26U6 Nuclear Imaging**

26.6.1.Nuclear Imaging
26.6.1.1.Positron Emission Tomography

	26.6.1.2. Single-Photon Emission Computed Tomography 26.6.1.3.Radionuclide Scanning : Myocardial perfusion studies • **M26U7 Arteriograms, Lymphangiography and Venography** 26.7.1. Arteriograms 26.7.2. Lymphangiography 26.7.3. Venography					
		4	**20**	**40**	**60**	**120**
Semester No : 4						
2A Module Number	**2B Modules & units**	**2C Number of Credits**	**Notional Learning hours**			
			2D Lectures	**2E Practical Training**	**2F Experiential Learning including Modular Assessment**	**2G Total**
27	**M-27 Instrumental Diagnosis** **The Instrumental Diagnosis module offers an in-depth exploration of diagnostic techniques and tools used in clinical practice. focusing on the integration of technology in patient assessment, this module covers a range of instrumental methods. Students will learn to interpret results, understand the principles behind various diagnostic instruments, and apply this knowledge to real-world clinical scenarios.** • **M27U1 Electrocardiogram, Holter monitoring, Coronary Angiogram, Central Venous Pressure and Arterial Pressure measurements** 27.1.1.Electrocardiogram	2	10	20	30	60

27.1.2. Holter monitor
27.1.3. Coronary Angiogram
27.1.4. Central Venous Pressure
27.1.5. Arterial Pressure measurements

• **M27U2 Spirometry – Pulmonary Function Test (PFT), Nitric Oxide breath test, Urea Breath Test, Bronchoscopy**

27.2.1. Spirometry – Pulmonary Function Test (PFT)
27.2.2. Nitric Oxide breath test
27.2.3. Urea Breath Test
27.2.4. Bronchoscopy

• **M27U3 Scopies and its types**

27.3.1. Endoscopy
27.3.2. Rapid Urease Test
27.3.3. Gastroscopy; Colonoscopy
27.3.4. Endoscopic Retrograde cholangiopancreatography (ERCP)
27.3.5. Hysteroscopy Proctoscopy
27.3.6. Cystoscopy
27.3.7. Laparoscopy
27.3.8. Colposcopy
27.3.9. Arthroscopy

• **M27U4 Electroencephalogram(EEG),Polysomnogram, Electromyogram (EMG),and Transcranial magnetic stimulation(TMS)**

27.4.1. Electroencephalogram (EEG)
27.4.2. Polysomnogram
27.4.3. Electromyogram (EMG)
27.4.4. Transcranial magnetic stimulation (TMS)

• **M27U5 Slit lamp, Ophthalmoscope,Tonometry,Electroretinogram (ERG), Optometer and Refractometer**

27.5.1. Slit lamp
27.5.2. Ophthalmoscope
27.5.3. Tonometry
27.5.4. Electroretinogram (ERG),

	27.5.5. Optometer and Refractometer • **M27U6 Anal Manometry** 27.6. Anal Manometry • **M27U7 Nerve conduction study, Biothesiometry** 27.7. Nerve conduction study : Biothesiometry • **M27U8 Cystometrogram** 27.8. Cystometrogram • **M27U9 Audiometry** 27.9. Audiometry					
28	**M-28 Lab Diagnosis of biological samples** **The module focuses on techniques and procedures for analyzing biological specimens to detect diseases, monitor health, and guide treatment decisions.** • **M28U1 Instrumentation and Diagnostic Techniques** 28.1.1. Laboratory safety Protocols 28.1.2. Devices used to measure, test and evaluate infectious disease 28.1.3. Coomon devices determining the presence of pathogen in the specimen 28.1.4. Helps to manage and treat the patients by detecting, quantifying specific pathogens • **M28U2 Clinical Chemistry** 28.2.1. Analytes 28.2.2. Amino Acids, Peptides, and Proteins 28.2.3. Serum Enzymes, Enzymes of the Red Blood Cell 28.2.4. Carbohydrates 28.2.5. Lipids, Lipoproteins, Apolipoproteins, and Other Cardiovascular Risk Factors 28.2.6. Electrolytes and Blood Gases 28.2.7. Vitamins and Trace Elements 28.2.8. Porphyrins and the Porphyrias 28.2.9. Liver Function Tests	2	10	20	30	60

28.2.10. Renal Function Tests
28.2.11. Serum ferritin
28.2.12. Serum Transferrin
28.2.13. Total iron -binding capacity (TIBC)
28.2.14. Vitamin B12
28.2.15. Vitamin D
28.2.16. Serum Homocysteine
28.2.17. Protein Electrophoresis
28.2.18. Hormonal Assays
28.2.19. Cardiac enzymes
28.2.20. Metabolic Panel

- **M28U3 Urine Analysis**

28.3.1. Urine routine
28.3.2. Urine cast, crystals, Parasite and deposits
28.3.3. Urine microalbumin / Proteins
28.3.4. Vanillylmandelic acid; Metanephrine
28.3.5. Urine for Chyle

- **M28U4 Stool Analysis**

28.4.1. Ova
28.4.2. Cysts
28.4.3. Occult blood
28.4.4. Bacteria

- **M28U5 Blood Coagulation Assays**

28.5.1. Disorders monitored with coagulation tests
28.5.2. Disseminated Intravascular coagulation
28.5.3. Fibrinogen test
28.5.4. Platelet count and Function
28.5.5. D-dimer test

- **M28U6 Microbiological Diagnosis**

28.6.1. Differential staining methods to diagnose the growing organisms
28.6.2. Culture of Organism growth
28.6.3. Microscopy - Hanging drop / Parasites

	• **M28U7 Immuno Diagnosis** 28.7.1. Applications of serological tests 28.7.2. Types of immunodiagnostic tests					
		4	**20**	**40**	**60**	**120**

Semester No : 5

2A Module Number	**2B Modules & units**	**2C Number of Credits**	**Notional Learning hours**			
			2D Lectures	**2E Practical Training**	**2F Experiential Learning including Modular Assessment**	**2G Total**
29	**M-29 Laboratory Diagnosis of biological samples by advanced molecular techniques** **This module covers the laboratory diagnosis of biological samples using advanced molecular techniques for accurate detection and analysis of diseases.** • **M29U1 Principles of Genetics and Molecular Biology** 29.1.1. Principles of Molecular Biology 29.1.2. Gene expression and Epigenetics 29.1.3. Nucleic acid extraction, characterization 29.1.4. Chromosomal mutations 29.1.5. Gene mutations 29.1.6. Deoxyribonucleic acid / Ribonucleic acid sequencing • **M29U2 Genetic Diagnostics** 29.2.1. Deoxyribonucleic acid Polymorphisms	2	10	20	30	60

	29.2.2. Nucleic Acid Detection and Amplification 29.2.3. Target Amplification 29.2.4. Molecular Oncology 29.2.5. Chromosome and Gene mutations • **M29U3 Molecular Diagnostics** 29.3.1. Deoxyribonucleic acid Polymorphisms 29.3.2. Molecular detection of inherited diseases 29.3.3. Molecular Oncology 29.3.4. Molecular Tissue typing • **M29U4 Biomarker assays** 29.4.1. Susceptibility/Risk Biomarkers 29.4.2. Diagnostic Biomarkers 29.4.3. Prognostic Biomarkers 29.4.4. Monitoring Biomarkers 29.4.5. Predictive Biomarkers 29.4.6. Pharmacodynamic/Response Biomarkers 29.4.7. Safety Biomarkers • **M29U5 Point-of-Care Testing** 29.5.1. Introduction to rapid, bedside diagnostics 29.5.2. Glucose Monitoring 29.5.3. Ovulation and Pregnancy Testing 29.5.4. Rapid Infectious Disease Tests					
30	**M-30 Tissue diagnosis including Immunohistochemistry** **The module focuses on techniques used to identify and analyze tissue abnormalities, with an emphasis on immunohistochemical methods for detecting specific cellular markers.** • **M30U1 Tissue processing and Immunohisto/cyto staining** 30.1.1. Tissue processing for Histochemistry	2	10	20	30	60

	30.1.2. Principles of antibody interactions 30.1.3. Staining protocols • **M30U2 Tumour Diagnosis** 30.2.1. Histopathology and immunohistochemistry in tumor diagnosis 30.2.2. Identifying genes, proteins and other tumour markers • **M30U3 Infectious Disease Diagnosis** 30.3.1. Histopathology and immunohistochemistry in infectious disease diagnosis 30.3.2. Identifying genes, proteins and markers involved in detecting bacterial, viral, fungal, parasitic and other emerging infectious diseases • **M30U4 Autoimmune Disorder Diagnosis** 30.4.1. Immunohistochemistry in detecting autoimmune disorders 30.4.2. Staining patterns to identify specific immune cells and proteins • **M30U5 Neurological Disorder Diagnosis** 30.5.1. Applications of immunohistochemistry in the diagnosis of neurological disorders 30.5.2. Interpret immunohistochemical staining results to identify key pathological features in neurological disease diagnosis					
		4	**20**	**40**	**60**	**120**

Semester No : 6

2A Module Number	**2B Modules & units**	**2C Number of Credits**	**Notional Learning hours**			
			2D Lectures	**2E Practical Training**	**2F Experiential Learning including Modular Assessment**	**2G Total**
31	**M-31 Cardinal Manifestation and presentation of diseases including approach to a Case**	2	10	20	30	60

This module focuses on the diagnostic algorithm of different disease manifestations and presentations, emphasizing cardinal symptoms and signs. Understanding these aspects is crucial for accurate diagnosis and effective management of diseases. The module will guide students through various diseases' clinical features, the significance of cardinal manifestations, and systematic approaches to case evaluation

- **M31U1 Brief Introduction to Clinical Reasoning**

31.1.Brief Introduction to Clinical Reasoning

- **M31U2 How to approach a Case**

31.2. History, Physical examination, Algorithm for the diagnosis
31.2.1. Pain
31.2.2. Chest discomfort
31.2.3. Abdominal pain
31.2.4. Head ache
31.2.5. Back and Neck Pain
31.2.6. Alteration in body temperature
31.2.7. Fever with rash
31.2.8. Nervous system dysfunction: Syncope, Fatigue, Neurologic causes of Weakness and Paralysis, Gait disorders, imbalances and falls, Confusion & Delirium
31.2.9. Sleep disorders
31.2.10. Disorders of Eye and Ear Nose Throat
31.2.11. Oral Manifestation of disease
31.2.12. Upper Respiratory Tract and Lower Respiratory Tract (Cough, Dyspnoea)
31.2.13. Alteration in Respiration & Circulatory function
31.2.14. Edema
31.2.15 Nausea, Vomiting, Indigestion
31.2.16. Constipation, Diarrhoea
31.2.17. Unintentional weight loss
31.2.18. Jaundice

	31.2.19. Abdominal swelling and ascites 31.2.20. Dysuria 31.2.21. Fluid and electrolyte disturbances 31.2.22. Approach to the patient with a skin disorder including skin manifestations of internal disease and immunologically mediated skin diseases. 31.2.23. Cutaneous drug reactions 31.2.23. Enlargement of lymph nodes					
32	**M-32 Testing of Pathophysiological states & International Diagnostic Criteria of Various diseases** **This module explores the testing methodologies used to evaluate pathophysiological states and the international diagnostic criteria for various diseases. It aims to provide students with an understanding of how laboratory and clinical tests inform the diagnosis and management of diseases, integrating concepts from pathophysiology, diagnostic standards, and clinical practice.** **• M32U1 International Diagnostic Criteria of Musculoskeletal , Dermatology and Nutritional diseases** 32.1.International Diagnostic / prognostic Criteria and assessment scales of Musculoskeletal , Dermatology and Nutritional diseases 32.1.1. The Assessment of SpondyloArthritis International Society Criteria for Axial Spondyloarthritis (SpA) 32.1.2. The Assessment of SpondyloArthritis International Society Criteria for Peripheral Spondyloarthritis (SpA) 32.1.3. Leiden Clinical Prediction Rule for Undifferentiated Arthritis 32.1.4.American College of Rheumatology (ACR) and the European League Against Rheumatism (EULAR) Gout Classification Criteria 32.1.5. 2021 American College of Rheumatology (ACR) / the European League Against Rheumatism (EULAR) Classification Criteria for Polymyalgia Rheumatica 32.1.6. Ankylosing Spondylitis Disease Activity Score with CRP (ASDAS-CRP)	2	10	20	30	60

32.1.7. Ankylosing Spondylitis Disease Activity Score with ESR (ASDAS-ESR)
32.1.8. American College of Rheumatology (ACR) and the European League Against Rheumatism (EULAR) 2010 Rheumatoid Arthritis Classification Criteria
32.1.9. Psoriasis Area and Severity Index (PASI)
32.1.10. Urticaria Activity Score (UAS)
32.1.11. Eczema Area and Severity Index (EASI)
32.1.12. Wound Closure Classification
32.1.13. Malnutrition Universal Screening Tool (MUST)
32.1.14. Nutritional Risk Index (NRI)
32.1.15. Fatty Liver Index

• **M32U2 International Diagnostic Criteria of Respiratory and infectious diseases**

32.2.1 International Diagnostic / prognostic Criteria and assessment scalesof Respiratory and Infectious diseases

• **M32U3 International Diagnostic Criteria of Gasstro instentinal and Cardiovascular diseases**

32.3.1 International Diagnostic / prognostic Criteria and assessment scales Criteria of Gasstroinstentinal and Cardiovascular diseases

• **M32U4 International Diagnostic Criteria of Neurological and Mental health**

32.4.1 International Diagnostic / prognostic Criteria and assessment scales of Neurological and Mental health

• **M32U5 Endocrinology and Related Disorders including Disorders in pregnancy**

32.5.1 International Diagnostic / prognostic Criteria and assessment scales of Endocrinology and Related Disorders including Disorders in pregnancy

• **M32U6 Monoamine-Producing Tumors and Bone and Mineral Metabolism**

32.6.1 International Diagnostic / prognostic Criteria and assessment scales of Monoamine - Producing Tumors and Bone and Mineral Metabolism

• **M32U7 Liver Disease including Gastric, Pancreatic, and Intestinal**

	Function 32.7.1 International Diagnostic / prognostic Criteria and assessment scales of Liver Disease including Gastric, Pancreatic, and Intestinal Function • **M32U8 Kidney Disease and Disorders of Water, Electrolytes, and Acid–Base Metabolism** 32.8.1 International Diagnostic / prognostic Criteria and assessment scales of Kidney Disease and Disorders of Water, Electrolytes, and Acid–Base Metabolism • **M32U9 Diabetes Mellitus and Cardiac Function** 32.9.1 International Diagnostic / prognostic Criteria and assessment scales of Diabetes Mellitus and Cardiac Function • **M32U10 Lab testing of Nutritional problems** 32.10.1 Lab testing of Nutritional problems					
		4	**20**	**40**	**60**	**120**
		16	**80**	**160**	**240**	**480**
		64	**320**	**640**	**960**	**1920**

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

Paper No : 1 NOI NAADAL AND ITS CONTEMPORARY UNDERSTANDING IN CLINICAL APPLICATIONS I						
Semester No : 3						
3A Course Outcome	**3B Learning Objective (At the end of the (lecture/practical training /experiential learning) session, the students should be able to)**	**3C Notional learning Hours**	**3D Lecture/ Practical Training/ Experiential Learning**	**3E Domain/ Sub Domain**	**3F Level (Does/Shows how/ Knows how/Know)**	**3G Teaching Learning Methods**
Module 1 : Siddha Febrile Illnesses and Exanthemas and Enanthemas						
Module Learning Objectives **(At the end of the module, the students should be able to)** Create algorithms for diagnosing Siddha Febrile illnesses and Exanthemas through Siddha and Modern diagnostic techniques Analyse causes of Siddha Febrile illnesses and Exanthems through Trihumoral theory and etymology of conditions and subtype Design line of treatment						
M 1 Unit 1 Suram (Febrile illnesses) 1.1.1. Etiology 1.1.2. Premonitory and common signs and symptoms 1.1.3. Types - 64 types according to Sage Yugi 1.1.4. Tri humoral Variation 1.1.5. Line of treatment 1.1.6. Diagnostic techniques used in Siddha system and Modern for Suram. **References:** 1,2,7,22,31,46,68,88,90						
3A	**3B**	**3C**	**3D**	**3E**	**3F**	**3G**

CO1,CO5,CO8	Describe the *Iyal* (definition) of *Sura Noi, Veru peyar* (synonyms), *Peyar Kaaranam* (etymology),*Noi varum vazh*i (etiology), *Murkkurikunanga*l (premonitory signs), and *pothu kurikunanga*l (common signs and symptoms).	3	Lecture	CE	Knows-how	L&GD,L, L&PPT
CO1,CO5,CO8	Discuss types of *Suram* including curable and incurable – with possible Modern comparison. Analyze different causes for *Suram* (fever/pyrexia) like, infectious causes, and non-infectious causes: malignancy, autoimmune diseases, and lethal effects produced in different organ systems due to sustained fever.	2	Lecture	CAN	Knows-how	L&GD
CO1,CO5,CO8	Conduct the examination of a patient through *Yakkai, Udal Thathukkal, Ennvagai Thervu, Manikkadai Nool, Mukkutram* and prescribe the line of treatment based on *Mukkutram, Suvai, gunam and infer the Theerum Theera* nilai of presented *Murai Suram* Noi (may be compared with Typhoid fever) case.	2	Practical Training 1.1	PSY-GUD	Shows-how	CBL,DIS
CO1,CO5,CO8	Apply *Siddha* examination techniques and collaborate with modern diagnostic techniques in light of given / presented case of *Murai Suram* and / or *Maaral Suram* may be compared with (Typhoid fever / Dengue).	3	Experiential-Learning 1.1	PSY-SET	Does	D-BED,CBL,BS
CO1,CO5,CO8	Develop diagnostic trial protocol for selected *Sura noikal* (*Murai Suram / Maaral Suram / Kulir Suram / Ilaippu noiyil varum Suram*) (may be compared with Typhoid fever/fever with chillness / fever associated with Tuberculosis) based on standard guidelines	5	Experiential-Learning 1.2	PSY-ORG	Does	PrBL
CO2,CO4	Conduct the examination of patient through *Yakkai, Udal Thathukkal, Ennvagai Thervu, Manikkadai Nool, Mukkutram* and prescribe the line of treatment based on *Mukkutram, Suvai, gunam and infer the Theerum Theera Nilai of Maaral Suram* / *Pitha Suram* (Dengue fever).	2	Practical Training 1.2	PSY-GUD	Shows-how	CBL,PL,PER,SIM, D-BED
CO1,CO5,CO8	Conduct the examination of a patient through *Yakkai, Udal Thathukkal, Ennvagai Thervu, Manikkadai Nool, Mukkutram* and prescribe the line of treatment based on *Mukkutram, Suvai, gunam and infer the Theerum Theera Nilai* presented *Kulir Suram case (fever with chillness).*	2	Practical Training 1.3	PSY-GUD	Shows-how	SIM,DIS, CBL

CO1,CO5,CO8	Conduct the examination of a patient through *Yakkai, udal Thathukkal, Ennvagai Thervu, Manikkadai Nool, Mukkutram* and prescribe the line of treatment based on *Mukkutram, Suvai, and Gunam* and infer the *Theerum Theera nilai* of presented *Ilaippu Noil varum Suram* (fever in phtyisis) case.	2	Practical Training 1.4	PSY-GUD	Shows-how	DIS,CBL
CO1,CO5,CO8	Apply Siddha diagnostic techniques and collaborate with Modern to thoroughly diagnose case of *Kulir Suram / and Ilaippu noiyil varum Suram* (Fever with chillness and Fever)	3	Experiential-Learning 1.3	PSY-MEC	Does	PER,SIM, DIS,TBL, PL
CO5,CO8	Develop a comprehensive diagnostic algorithm for *Suram* (febrile illnesses) through a systematic approach, integrating clinical assessment, laboratory investigations, and traditional siddha diagnostic methods to accurately identify the underlying etiology of the febrile condition.	4	Experiential-Learning 1.4	PSY-ORG	Does	BS,PER,PL,DIS,TBL

M 1 Unit 2 Mukkuttra Noi/Sanni noi (Apoplexy)

1. 2.1. Etiology 1.2.2. Premonitory and common signs and symptoms 1.2.3. Types - 13 types and 10 types according to SageTheran 1.2.4. Tri humoral Variation 1.2.5. Line of treatment 1.2.6. Diagnostic techniques used in Modern and Siddha for Sanni noi.

References: 1,2,7,10,14,15,37,90

3A	3B	3C	3D	3E	3F	3G
CO1,CO5,CO8	Describe the *Iyal* (definition) ,V*eru peyar* (synonyms),*Peyar Kaaranam* (etymology), *Noi varum vazh*i (etiology), *Murkkurikunanga*l (premonitory signs), and *pothu kurikunangal* (common signs and symptoms) of *Mukkutra Noi.*	1	Lecture	CC	Knows-how	LS
CO1,CO5,CO8	Describe the types of *Mukkutra Noi* according to different schools of thought and develop possible modern comparisons.	2	Lecture	CE	Knows-how	L&GD
CO1,CO5,CO8	Analyse the line of treatment of *Sanni Noi / Mukkutra Noi* based on trihumoural theory and compile literature evidence for *Mukkutra Noi* with possible modern comparison.	3	Experiential-Learning 1.5	PSY-ORG	Does	DIS,BS

M 1 Unit 3 Ammai Noi (Exanthemas and Enanthemas)

1.3.1. Etiology 1.3.2. Premonitory and common signs and symptoms 1.3.3. Types -14 types according to Agathiyar vaisuri and 4 types 1.3.4. Tri humoral Variation 1.3.5. Line of treatment 1.3.6. Diagnostic techniques used in Siddha system for Ammai noi.

References: 1,2,7,14,15,22,37,38,53,54,71,72,90,91

3A	3B	3C	3D	3E	3F	3G
CO1,CO5,CO8	Conduct the examination of a patient through *Yakkai, udal Thathukkal, Ennvagai Thervu, Manikkadai Nool, Mukkutram* and prescribe the line of treatment based on *Mukkutram, Suvai,* and *gunam* and infer the *Theerum Theera nilai* of presented *Neerkkuluvan Ammai Noi* (Chicken pox) or develop skills to diagnose *Neerkkuluvan* through case scenario.	4	Practical Training 1.5	PSY-GUD	Shows-how	DIS,CBL
CO1,CO5,CO8	Describe *Ammai Noi Iyal* (definition) ,*Veru peyargal* (synonyms), *Peyar Kaaranam* (etymology),*Noi varum vazhi* (etiology), *Murkkuri gunangal* (premonitory signs), and *pothu kurigunangal* (common signs and symptoms).	2	Lecture	CC	Knows-how	PrBL,L& PPT
CO1,CO5,CO8	Develop Siddha diagnostic algorithm for different types of *Ammai Noi*.	3	Experiential-Learning 1.6	PSY-ORG	Does	DIS,PER, BS,LRI
CO1,CO5,CO8	Conduct the examination of a patient through *Yakkai, Udal Thathukkal, Ennvagai Thervu, Manikkadai Nool, Mukkutram* and prescribe the line of treatment based on *Mukkutram, Suvai,* and g*unam* and infer the *Theerum Theera nilai* of *Thattammai Noi.*	4	Practical Training 1.6	PSY-GUD	Shows-how	CBL,DIS
CO1,CO5,CO8	Develop a compendium on *Ammai Noikal (*Exanthemas and Enanthemas) through a thorough literature search including ancient manuscripts.	5	Experiential-Learning 1.7	PSY-ORG	Does	DIS,TBL, PrBL,PE R,LS
CO1,CO5,CO8	Conduct the examination of a patient through *Yakkai, Udal Thathukkal, Ennvagai Thervu, Manikkadai Nool, Mukkutram* and prescribe the line of treatment based on *Mukkutram, Suvai, and Gunam and infer the Theerum Theera nilai of Poottuthaal ammai Noi* (Mumps).	4	Practical Training 1.7	PSY-GUD	Shows-how	PL,CBL

Practical Training Activity

Practical Training 1.1 : Diagnosing *Murai Suram*

Duration of Activity- 4 hours
The teacher clearly outlines the objectives of the practical session. A brief introduction on importance of diagnosis including digestive fire status of a patient should be detailed. Either original cases or scenario or case videos may be used.
Activity: Case Based Learning - 1 hour 15 minutes
Activity 1- Teacher should demonstrate how to use Siddha Diagnostic Tools to assess the case through Case Studies / Skill Labs in IPD/OPD Settings and make outcome assessment at the end of each student activity and discuss them during debriefing sessions. (15 Minutes)
Activity 2- History Taking and performance of diagnostic techniques (30 Minutes)
Students should take patient histories, focusing on the onset, duration, and pattern of disease and associated symptoms. Students should assess cases through Siddha diagnostic tools.
Activity 3-Record the documents (15 Minutes)
Instruct students to document the examination of patients through prescribed Case Sheet which contains siddha and modern concepts in structured format. Prognosis of the cases may be assessed by the student through any of the diagnostic/prognostic tools with guidance of teacher.
Activity 4- Interpret findings with Trihumoral vitiation and arrive at provisional diagnosis (15 Minutes)
Activity: Discussion: 45 minutes
Activity 5- Small group discussions on the Tri humoral vitiation which is peculiar to the presented case and their clinical significance should be done along with assessment of digestive fire. (30 Minutes)
Activity 6- Development of line of treatment (10 Minutes)
Discuss and develop various lines of treatment based on aspects of *Suvai, Gunam, Veeriyam, Vibagam* and state its curable and incurable types.
Activity 7: At the end of the session, personalised feedback on students' observation and diagnostic accuracy should be given.(5 Minutes)

Practical Training 1.2 : Diagnosing *Maaral Suram / Pitha Sura*m (Dengue fever)

Duration of Activity- 2 hours
The teacher clearly outlines the objectives of the practical session. A brief introduction on importance of diagnosis including digestive fire status of a patient should be detailed. Either original cases or scenario or case videos may be used.
Activity: Case based learning / Demonstration Bedside may be done if cases are available or if the Institute is having any special facilities of related cases: 1 hour 30 minutes
Activity 1- Teacher should demonstrate how to use Siddha Diagnostic Tools to assess the case through Case Studies / Skill Labs in IPD/OPD Settings and make outcome assessment at the end of each student activity and discuss them during debriefing sessions.(10 Minutes)
Activity 2- History Taking and performance of diagnostic techniques (20 Minutes)
Students should take patient histories, focusing on the onset, duration, and pattern of disease and associated symptoms. Students should assess cases through Siddha diagnostic tools.

Activity 3-Record the documents (30 Minutes)
Instruct students to document the examination of patients through prescribed Case Sheet which contains siddha and modern concepts in structured format. Prognosis of the cases may be assessed by the student through any of the diagnostic/prognostic tools with guidance of teacher.
Activity 4- Interpret findings with Trihumoral vitiation and arrive at provisional diagnosis (15 Minutes)
Activity 5- Small group discussions on the Tri humoral vitiation which is peculiar to the presented case and their clinical significance should be done along with assessment of digestive fire. (15 Minutes)
Activity: Discussion: 30 minutes
Activity 6- Development of line of treatment (15 Minutes)
Discuss and develop various lines of treatment based on aspects of *Suvai, Gunam, Veeriyam, Vibagam* and state its curable and incurable types.
Activity 7: At the end of the session, personalised feedback on students' observation and diagnostic accuracy should be given. ((15 Minutes)

Practical Training 1.3 : Diagnosing *Kulir Suram* (fever with chills)

Duration of Activity- 2 hours
The teacher clearly outlines the objectives of the practical session. A brief introduction on importance of diagnosis including digestive fire status of a patient should be detailed. Either original cases or scenario or case videos may be used.
Activity: Case Based Learning: 1 hour 30 minutes
Activity 1- Teacher should demonstrate how to use Siddha Diagnostic Tools to assess the case through Case Studies / Skill Labs in IPD/OPD Settings and make outcome assessment at the end of each student activity and discuss them during debriefing sessions.(10 Minutes)
Activity 2- History Taking and performance of diagnostic techniques (20 Minutes)Students should take patient histories, focusing on the onset, duration, and pattern of disease and associated symptoms. Students should assess cases through Siddha diagnostic tools.
Activity 3-Record the documents (30 Minutes)
Instruct students to document the examination of patients through prescribed Case Sheet which contains siddha and modern concepts in structured format. Prognosis of the cases may be assessed by the student through any of the diagnostic/prognostic tools with guidance of teacher.
Activity 4- Interpret findings with Trihumoral vitiation and arrive at provisional diagnosis (15 Minutes)
Activity 5- Small group discussions on the Tri humoral vitiation which is peculiar to the presented case and their clinical significance should be done along with assessment of digestive fire.(15 Minutes)
Activity: Discussion: 30 minutes
Activity 6- Development of line of treatment (15 Minutes)
Discuss and develop various lines of treatment based on aspects of *Suvai, Gunam, Veeriyam, Vibagam* and state its curable and incurable types.
Activity 7: At the end of the session, personalised feedback on students' observation and diagnostic accuracy should be given. (15 Minutes)

Practical Training 1.4 : Diagnosing *Ilaippu Noil varum Suram*

Duration of Activity- 2 hours
The teacher clearly outlines the objectives of the practical session. A brief introduction on importance of diagnosis including digestive fire status of a patient should be detailed. Either original cases or scenario or case videos may be used.
Activity: Case Based Learning 1 hour 30 minutes
Activity 1- Teacher should demonstrate how to use Siddha Diagnostic Tools to assess the case through Case Studies / Skill Labs in IPD/OPD Settings and make outcome assessment at the end of each student activity and discuss them during debriefing sessions. (10 Minutes)
Activity 2- History Taking and performance of diagnostic techniques (20 Minutes)
Students should take patient histories, focusing on the onset, duration, and pattern of disease and associated symptoms. Students should assess cases through Siddha diagnostic tools.
Activity 3-Record the documents (30 Minutes)
Instruct students to document the examination of patients through prescribed Case Sheet which contains siddha and modern concepts in structured format. Prognosis of the cases may be assessed by the student through any of the diagnostic/prognostic tools with guidance of teacher.
Activity 4- Interpret findings with Trihumoral vitiation and arrive at provisional diagnosis (15 Minutes)
Activity 5- Small group discussions on the Tri humoral vitiation which is peculiar to the presented case and their clinical significance should be done along with assessment of digestive fire. (15 Minutes)
Activity: Discussions: 30 minutes
Activity 6- Development of line of treatment (15 Minutes)
Discuss and develop various lines of treatment based on aspects of *Suvai, Gunam, Veeriyam, Vibagam* and state its curable and incurable types.
Activity 7: At the end of the session, personalised feedback on students' observation and diagnostic accuracy should be given.(15 Minutes)

Practical Training 1.5 : Diagnosis of *Neerkkuluvan Ammai Noi*

Duration of Activity- 4 hours
The teacher clearly outlines the objectives of the practical session. A brief introduction on importance of diagnosis including digestive fire status of a patient should be detailed. Either original cases or scenario or case videos may be used.
Activity: Case Based Learning: 3 hours 30 minutes
Activity 1- Teacher should demonstrate how to use Siddha Diagnostic Tools to assess the case through Case Studies / Skill Labs in IPD/OPD Settings and make outcome assessment at the end of each student activity and discuss them during debriefing sessions.
Activity 2- History Taking and performance of diagnostic techniques (60 Minutes)
Students should take patient histories, focusing on the onset, duration, and pattern of disease and associated symptoms. Students should assess cases through Siddha diagnostic tools.
Activity 3-Record the documents (60 Minutes)

Instruct students to document the examination of patients through prescribed Case Sheet which contains siddha and modern concepts in structured format. Prognosis of the cases may be assessed by the student through any of the diagnostic/prognostic tools with guidance of teacher.
Activity 4- Interpret findings with Trihumoral vitiation and arrive at provisional diagnosis (30 Minutes)

Activity 5- Small group discussions on the Tri humoral vitiation which is peculiar to the presented case and their clinical significance should be done along with assessment of digestive fire. (30 Minutes)
Activity 6- Development of line of treatment (30 Minutes)
Discuss and develop various lines of treatment based on aspects of *Suvai, Gunam, Veeriyam, Vibagam* and state its curable and incurable types.
Activity: Discussion: 30 minutes
Activity 7: At the end of the session, personalised feedback on students' observation and diagnostic accuracy should be given. (30 Minutes)

Practical Training 1.6 : Diagnosis of *Thattammai Noi*

Duration of Activity- 4 hours
The teacher clearly outlines the objectives of the practical session. A brief introduction on importance of diagnosis including digestive fire status of a patient should be detailed. Either original cases or scenario or case videos may be used.
Activity: Case Based Learning - 2 hours 30 minutes
Activity 1- Teacher should demonstrate how to use Siddha Diagnostic Tools to assess the case through Case Studies / Skill Labs in IPD/OPD Settings and make outcome assessment at the end of each student activity and discuss them during debriefing sessions.
Activity 2- History Taking and performance of diagnostic techniques (60 Minutes)
Students should take patient histories, focusing on the onset, duration, and pattern of disease and associated symptoms. Students should assess cases through Siddha diagnostic tools.
Activity 3-Record the documents (60 Minutes)
Instruct students to document the examination of patients through prescribed Case Sheet which contains siddha and modern concepts in structured format. Prognosis of the cases may be assessed by the student through any of the diagnostic/prognostic tools with guidance of teacher.
Activity 4- Interpret findings with Trihumoral vitiation and arrive at provisional diagnosis (30 Minutes)
Activity: Discussion: 1 hour 30 minutes
Activity 5- Small group discussions on the Tri humoral vitiation which is peculiar to the presented case and their clinical significance should be done along with assessment of digestive fire. (30 Minutes)
Activity 6- Development of line of treatment (30 Minutes)
Discuss and develop various lines of treatment based on aspects of *Suvai, Gunam, Veeriyam, Vibagam* and state its curable and incurable types.
Activity 7: At the end of the session, personalised feedback on students' observation and diagnostic accuracy should be given. (30 Minutes)

Practical Training 1.7 : Diagnosis of *Poottuthaal ammai Noi*

Duration of Activity- 4 hours
The teacher clearly outlines the objectives of the practical session. A brief introduction on importance of diagnosis including digestive fire status of a patient should be detailed. Either original cases or scenario or case videos may be used.
Activity: Case-Based Learning (2 Hours)
Activity 1- Teacher should demonstrate how to use Siddha Diagnostic Tools to assess the case through Case Studies / Skill Labs in IPD/OPD Settings and make outcome assessment at the end of each student activity and discuss them during debriefing sessions.(10 Minutes)
Activity 2- History Taking and performance of diagnostic techniques (50 Minutes)
Students should take patient histories, focusing on the onset, duration, and pattern of disease and associated symptoms. Students should assess cases through Siddha diagnostic tools.
Activity 3-Record the documents (60 Minutes)
Instruct students to document the examination of patients through prescribed Case Sheet which contains siddha and modern concepts in structured format. Prognosis of the cases may be assessed by the student through any of the diagnostic/prognostic tools with guidance of teacher.
Activity 4- Interpret findings with Trihumoral vitiation and arrive at provisional diagnosis (30 Minutes)
Activity: Peer Learning with Discussion (2 Hours)
Activity 5- Small group discussions on the Tri humoral vitiation which is peculiar to the presented case and their clinical significance should be done along with assessment of digestive fire. (30 Minutes)
Activity 6- Development of line of treatment (30 Minutes)
Discuss and develop various lines of treatment based on aspects of *Suvai, Gunam, Veeriyam, Vibagam* and state its curable and incurable types.
Activity 7: At the end of the session, personalised feedback on students' observation and diagnostic accuracy should be given. (30 Minutes)

Experiential learning Activity

Experiential-Learning 1.1 : Diagnosis of Murai Suram and / or Maaral Suram.

Duration of Activity - 3 hours
Students will be asked to elicit the *Ennvagai thervu* and other necessary examinations in a series of minimum 5 patients with *Sura noi* with different etiologies (*Murai Suram* and / or *Maaral Suram*). This should be done during outbreaks in colloboration with tertiary care centres.
Activity: Case Based Learning , if facility available Demonstration Bed side may be done- 1 hour
Activity 1. Introduction and Case Study (60 minutes)
Introduction to *Ennvagai Thervu* and *Sura Noi Murai Suram* and / or *Maaral Suram* .and Case Study (10 minutes + 50 min)
Objective: Briefly introduce the concept of *Ennvagai Thervu* and its importance in diagnosing and managing *Sura Noi* (fever) -*Murai Suram* and / or *Maaral Suram* with

different etiologies.
Explain the components of *Ennvagai Thervu* and the clinical features to look for in patients with *Murai Suram /* and *Maaral Suram.*
Introduce the concept of *Mukkutra Verupadu* and its relevance to Suram (fever)-*Murai Suram* and / or *Maaral Suram* .
Case Study : Patient Introduction and Elicitation of Symptoms (10 minutes X 5 = 50 min)
Objective: Provide participants with a case study of a patient with *Murai Suram and / or Maaral Suram*. Ask them to elicit *Ennvagai Thervu* and other necessary examinations for this patient.
Divide participants into small groups (4-5 people) and have them discuss and collect key data for diagnosis.
Each group can focus on different components of the assessment (e.g., patient history, clinical examination, diagnostic tests).
Activity: Group discussion - 1 hour
Activity 2 : Group Discussion on Differential Diagnosis (60 minutes)
Objective: Facilitate a discussion on differential diagnosis and management strategies.
In each small group, participants will analyze the case and generate potential differential diagnosis.
Encourage them to use the *Mukkutra Verupadu* system to assess the underlying cause.
Open the floor for questions and peer feedback.
Activity : Brainstorming - 1 hour
Activity 3: Reflection, Assessment and Debriefing (60 minutes)
3.1. Reflection on *Ennvagai Thervu* Assessment (30 minutes)
Objective: Focus on the inter-rater reliability of the *Ennvagai Thervu* assessment.
Facilitate a discussion on how different participants (across various backgrounds) assessed the *Ennvagai Thervu.*
If discrepancies in assessment arise, discuss the possible reasons and resolve them with the tutor's input.
Provide insights into the standardization of the assessment process and its impact on patient care.
3.2. Group Debriefing and Sharing Insights (15 minutes)
Objective: Reflect on the experiences during the small group discussions and team-based activities.
Encourage each participant to share one key insight or challenge they faced during the experiential learning session.
Discuss how they approached decision-making, particularly when generating the *Mukkutra Verupadu* for Suram.
3.3. Conclusion and Q&A (15 minutes)
Objective: Wrap up the session with a final Q and A and a summary of the key learning points.
Recap the importance of *Ennvagai Therv*u in clinical practice and how it can guide diagnosis and treatment.
Emphasize the importance of interprofessional collaboration, communication, and critical thinking in managing complex cases.
Provide the opportunity for participants to ask any remaining questions or seek clarification.
Summary of Time Allocation:
Hour 1: Introduction to *Ennvagai Thervu* and *Sura Noi-Murai Suram* and / or *Maaral Suram* + Case Study

Hour 2: Group Discussion on Differential Diagnosis
Hour 3: Reflection on Assessment and Debriefing + Conclusion and Q&A
This structure will allow participants to actively engage with the content, collaborate across professional boundaries, and critically assess their clinical decision-making processes.

Experiential-Learning 1.2 : Diagnostic trial protocol for *Sura noikal*

Duration of Activity- 5 hours
Students will be trained to develop a blinded diagnostic study research protocol, the following 5-hour structured procedure will guide them through understanding key concepts, developing the research protocol, and critically evaluating the sensitivity, specificity, and predictive values of a trial diagnostic tool (In this case, Siddha method by comparing it with a gold standard investigation for *Sura Noikal* (*Murai Suram / Maaral Suram / Kulir Suram / Ilaippu noiyil varum Suram* may be compared with Typhoid fever/fever with chillness / fever associated with Tuberculosis) . The session includes both individual and group activities.
Activity: Project Based Learning - 4 hours
Activity 1: Introduction to Diagnostic Study Design (60 minutes)
1. Introduction to Diagnostic Studies (30 minutes)
Objective: Provide students with a foundational understanding of diagnostic studies.
Key Concepts:
Sensitivity: The ability of the test to correctly identify those with the condition (True Positive Rate).
Specificity: The ability of the test to correctly identify those without the condition (True Negative Rate).
Positive Predictive Value (PPV): The probability that subjects with a positive test result actually have the condition.
Negative Predictive Value (NPV): The probability that subjects with a negative test result actually do not have the condition.
Types of Diagnostic Studies: Overview of blinded diagnostic study design, particularly in the context of comparing a trial tool with a gold standard.
Discuss the importance of using a gold standard (e.g., clinical diagnosis, laboratory test) in comparison with a trial diagnostic tool (e.g., Siddha).
Activity 2. Detailing Key Elements of a Diagnostic Study Protocol (30 minutes)
Objective: Introduce the essential components of a research protocol for a diagnostic study.
Research Question: What are we trying to assess? (e.g., Is the Siddha diagnostic tool effective in diagnosing *Sura Noikal* compared to the gold standard)
Population: Describe the population of patients with *Sura Noikal*. Discuss inclusion/exclusion criteria.
Trial Tool (Siddha): What aspects of the Siddha diagnostic method will be tested?
Gold Standard: Identify the gold standard for diagnosing *Sura Noikal* (e.g., laboratory tests, imaging).
Blinding: Why blinding is crucial to prevent bias in the study.
Outcome Measures: Sensitivity, specificity, PPV, NPV.
Activity 3: Protocol Development - Research Design (60 minutes)
1. Defining the Study Population (30 minutes)

Objective: Guide students to define and describe the population they will study.
Work with the students to develop inclusion and exclusion criteria for *Sura Noikal*.
Discuss how to select a representative sample of patients (e.g., severity of illness, demographic factors).
Identify the sample size needed to detect meaningful differences between the Siddha method and the gold standard.
2. Writing the Research Objectives and Hypothesis (30 minutes)
Objective: Teach students how to write clear research objectives and hypothesIs.
Research Objective: Develop a clear research objective such as, "To evaluate the sensitivity, specificity, PPV, and NPV of the Siddha diagnostic tool in diagnosing *Sura Noikal* compared with the gold standard."
Hypothesis: Define the null and alternative hypothesis.
Activity 4: Data Collection and Study Protocol Design (60 minutes)
1. Designing the Study Flow (30 minutes)
Objective: Teach students how to design the flow of data collection in a blinded diagnostic study.
Break down the steps of the diagnostic procedure:
Patient Recruitment: Describe how patients will be recruited and consented.
Blinding Process: Ensure that participants (patients) and researchers performing the diagnostic tests are blinded to avoid bias.
Testing Procedure: Define the specific steps for conducting both the Siddha diagnostic method and the gold standard diagnostic test.
Data Recording: Discuss how to record results for both methods and any relevant clinical or laboratory data.
2. Developing Outcome Measures and Data Analysis Plan (30 minutes)
Objective: Guide students on how to define and assess diagnostic outcomes.
Define sensitivity, specificity, PPV, and NPV as the primary outcome measures.
Discuss statistical methods for analyzing diagnostic test accuracy (e.g., Chi-square test, ROC curve analysis).
Activity 5: Writing the Protocol (60 minutes)
1. Writing the Research Protocol (30 minutes)
Objective: Have students begin drafting the diagnostic study research protocol.
Guide them to structure the research protocol with the following sections:
Title: A clear, concise title reflecting the study’s objectives.
Introduction: Background information on *Sura Noikal* and diagnostic challenges, including previous studies on diagnostic tools.
Objectives: State the research objective(s) and hypothesis.
Methods: Detailed design of the study including population, inclusion/exclusion criteria, blinding, diagnostic tests, and data collection.
Outcome Measures: Sensitivity, specificity, PPV, and NPV.
Statistical Analysis: Plan for data analysis (e.g., calculations for sensitivity, specificity, PPV, and NPV).
2. Drafting Data Collection Forms (30 minutes)

Objective: Guide students in creating data collection sheets or forms.
Discuss the importance of clear and accurate data collection.
Students will create a simple template/form to record results from both the Siddha method and the gold standard tests.
Ensure that forms allow for proper tracking of true positives, false positives, true negatives, and false negatives.
Activity: Peer Learning - 1 hour
Activity 6 : Review, Critique, and Refining the Protocol (60 minutes)
1. Peer Review and Group Discussion (30 minutes)
Objective: Allow students to peer-review each other's protocols and provide feedback.
Students will exchange their drafted research protocols with a peer.
Each student will review the protocol for clarity, completeness, and adherence to diagnostic study design principles.
Facilitate a group discussion where common challenges or areas of confusion are addressed.
2. Refining Protocols and Finalizing (30 minutes)
Objective: Assist students in refining their protocols based on peer feedback.
Students will make revisions to their research protocols.
Provide final guidance and address any outstanding questions regarding study design, ethical considerations, or statistical analysis.

Experiential-Learning 1.3 : Diagnosis of *Kulir Suram /* and *Ilaippu noiyil varum Suram* (Fever with chillness and Fever phythisis)

Duration of Activity- 3 hours
Students will be asked to elicit the *Ennvagai thervu* and other necessary examinations in a series of 5 patients with Sura noi with different etiologies *(Kulir Suram and / or Ilaippu noiyil varum Suram*).
Activity: Case Based Learning 1 hours
Activity 1: Introduction and Case Study (20 minutes)
Activity 1: Introduction to *Ennvagai Thervu and Kulir Suram /* and *Ilaippu noiyil varum Suram* and Case Study
Objective: Briefly introduce the concept of *Ennvagai Thervu* and its importance in diagnosing and managing *Sura Noi* (fever) with different aetiologies *Kulir Suram / and Ilaippu noiyil varum Suram*.
Explain the components of Ennvagai Thervu and the clinical features to look for in patients with *Kulir Suram / and Ilaippu noiyil varum* Suram.
Introduce the concept of *Mukkutra Verupadu* and its relevance to *Kulir Suram / and Ilaippu noiyil varum Suram.*
Activity 2: Case study (40 minutes)
Case Study: Patient Introduction and Elicitation of Symptoms in a series of 5 patients
Objective: Provide students with a real case or scenario of a patient with *Kulir Suram /* and *Ilaippu noiyil varum Suram.* Ask them to elicit *Ennvagai Thervu* and other necessary examinations for this patient.
Activity : Discussions : 1 hour

Activity 3: Group Discussion on Differential Diagnosis (60 minutes)
Objective: Facilitate a discussion on differential diagnosis and management strategies.
In each small group, students will analyze the case and generate potential differential diagnosis.
Encourage them to use the *Mukkutra Verupadu s*ystem to assess the underlying cause.
Presentation of findings, including the rationale behind their diagnosis and management plan.
Open the floor for questions and peer feedback.
Activity: Peer learning : 1 hour
Activity 4: Reflection, Assessment and Debriefing (60 minutes)
3.1. Reflection on *Ennvagai Thervu* Assessment (30 minutes)
Objective: Focus on the inter-rater reliability of the *Ennvagai thervu* assessment.
Facilitate a discussion on how different students (across various backgrounds) assessed the *Ennvagai Thervu.*
If discrepancies in assessment arise, discuss the possible reasons and resolve them with the tutor's input.
Provide insights into the standardization of the assessment process and its impact on patient care.
3.2. Group Debriefing and Sharing Insights (15 minutes)
Objective: Reflect on the experiences during the small group discussions and team-based activities.
Encourage each participant to share one key insight or challenge they faced during the experiential learning session.
Discuss how they approached decision-making, particularly when generating the *Mukkutra Verupadu* for *Kulir Suram /* and *Ilaippu noiyil varum Suram.*
3.3. Conclusion and Q&A (15 minutes)
Objective: Wrap up the session with a final Q and A and a summary of the key learning points.
Recap the importance of *Ennvagai Thervu i*n clinical practice and how it can guide diagnosis and treatment.
Emphasize the importance of interprofessional collaboration, communication, and critical thinking in managing complex cases.
Provide the opportunity for students to ask any remaining questions or seek clarification.
Summary of Time Allocation:
Hour 1: Introduction to *Ennvagai thervu* and *Kulir Suram /* and *Ilaippu noiyil varum Suram* + Case Study
Hour 2: Group Discussion on Differential Diagnosis
Hour 3: Reflection on Assessment and Debriefing + Conclusion and Q&A
This structure will allow students to actively engage with the content, collaborate across professional boundaries, and critically assess their clinical decision-making processes.

Experiential-Learning 1.4 : Diagnostic algorithm for *Suram Noi* (febrile illnesses)

Duration of Activity- 4 hours
Activity: Brainstorming (this includes discussions also)- 3 hours

Activity 1. Developing the Diagnostic Algorithm (60 minutes)
1.1. Structuring the Diagnostic Algorithm (20 minutes)
Objective: Teach students how to structure a comprehensive diagnostic algorithm for *Suram* (fever)
Break down the algorithm into decision points, such as:
Initial Symptoms: Duration and pattern of fever, associated symptoms (e.g., rashes, pain, cough).
Clinical Assessment: Key physical exam findings (e.g., organomegaly, lymphadenopathy).
Laboratory Tests: Blood cultures, CBC, liver function tests, etc.
Siddha Diagnostic Methods: Integration of *Ennvagai Thervu* and *Mukkutra Verupadu* into the process.
Discuss how these decision points lead to different pathways for diagnosing the condition.
1.2. Group Activity: Designing the Algorithm (40 minutes)
Objective: Students will collaborate in small groups to develop the diagnostic algorithm.
Divide the students into small groups (4-5 people) to create a flowchart or diagram that guides the diagnosis of *Suram.*
Groups will consider:
Clinical history and examination findings.
Laboratory investigations required.
Integration of Siddha methods at each decision point.
Encourage clarity, logic, and practical application when constructing the algorithm.
Activity : Presentation: 1 hour
Activity 2.: Refining and Presenting the Diagnostic Algorithm (60 minutes)
2.1. Group Presentations (30 minutes)
Objective: Present and explain the diagnostic algorithms.
Each group will present their diagnostic algorithm to the class.
The presentation should include:
Rationale for the decision points.
The integration of both modern diagnostics and Siddha diagnostics.
Clear explanation of the Activities followed in the algorithm.
Allow time for questions and peer feedback after each presentation.
Activity : Peer Learning: 30 minutes (This is a sub part of last activity)
2.2. Peer Review and Feedback (30 minutes)
Objective: Provide constructive feedback to improve the algorithms.
After each presentation, allow peers to ask questions and provide suggestions for improving the algorithm.
Discuss areas for improvement, such as:

The clarity of diagnostic pathways.
Any missing decision points or diagnostic tests.
The appropriateness of incorporating Siddha methods with modern practices.
Encourage critical thinking and refine the algorithms based on feedback.
Activity.3. Finalizing the Algorithm (60 minutes)
3.1. Refining the Diagnostic Algorithm (30 minutes)
Objective: Refine and finalize the diagnostic algorithm based on peer feedback.
Students will return to their groups to revise their diagnostic algorithms.
Revisit the decision points and ensure:
Clear flow of clinical, laboratory, and Siddha diagnostic Activities.
Adjustments based on feedback received during peer review.
Ensure the algorithm is practical and can be applied in real-world clinical settings.
3.2. Final Group Discussion (30 minutes)
Objective: Reflect on the process and discuss key learning outcomes.
Facilitate a group discussion where students can reflect on the following:
How integrating Siddha diagnostics alongside modern practices can improve diagnostic accuracy.
The challenges of balancing traditional and modern approaches in the diagnostic algorithm.
How this process enhances their clinical reasoning and decision-making skills.
Activity4. Consolidation and Conclusion (60 minutes)
4.1. Final Group Presentations (30 minutes)
Objective: Present the final diagnostic algorithm and receive final feedback.
Each group will present their final diagnostic algorithm, taking into account all revisions and feedback.
Ensure that the presentation clearly shows:
The structured approach for diagnosing *Suram.*
Integration of both Siddha and modern diagnostics.
Clear flow with decision points, diagnostic tests, and management options.
4.2. Concluding Reflection and Takeaways (30 minutes)
Objective: Reflect on the overall learning experience and discuss takeaways.
Facilitate a final discussion focusing on:
The importance of collaborative learning in designing diagnostic algorithms.
How integrating multiple diagnostic approaches (modern and traditional) can benefit patient care.
Key challenges encountered in the process of developing a comprehensive diagnostic algorithm.

Application of the algorithm in clinical practice and further improvements.
Summary of Hour Distribution:
Hour 1: Structuring and designing the diagnostic algorithm.
Hour 2: Group presentations and peer review.
Hour 3: Refining the algorithm and group discussion.
Hour 4: Final presentations and concluding reflection.

Experiential-Learning 1.5 : *Mukkutra Noi* a 360-degree approach.

Duration of Activity - 3 hours
Activity: Discussion and Brainstorming: 2 hours 30 minutes
Activity 1: The students will be instructed to overview use of *EnnVagai Thervu in Mukkutra Noi* (30 minutes)
Activity 2: Group Discussion: Traditional Concepts in Modern Terms (30 minutes)
Activity 3: Developing a Line of Treatment Based on *Trihumoral Vitiation* based on literature (30 minutes)
Activity 4: Students will be asked to collect evidence of *Mukkutra Noi* in different manuscripts and compare with Modern science (60 minutes)
Activity: Peer Learning : 30 minutes
Activity 5:Group Work: Critical Discussion and Presentation (30 minutes)

Experiential-Learning 1.6 : Diagnostic algorithm and Siddha lab report preparation for selected types of *Ammai Noi (Kuluvan, Poottu thaal ammai / Thattammai*)

Duration of Activity- 3 hours
Introduction to *Ammai Noi* Types and Siddha Diagnostics
Activity: Brainstorming - 1 hour
Activity 1: Overview of *Ammai Noi* and Types (15 minutes)
Objective: Provide students with a comprehensive understanding of the different types of *Ammai Noi* (*Kuluvan, Poottu Thaal Ammai, Thattammai*).
Emphasize how the Trihumoral theory applies to these types of *Ammai Noi*.
Activity.2. Introduction to Siddha Diagnostic Tools (15 minutes)
Objective: Teach students how to utilize traditional Siddha diagnostic methods.
Emphasize how Siddha lab reports are structured and what each diagnostic component reveals about the state of the body's humors and system imbalances.
Siddha Lab Report: Review the structure of a Siddha lab report and what kind of details are included: pulse characteristics, tongue appearance, urine characteristics, and overall diagnosis.
Activity 3: Developing a Diagnostic Algorithm (60 minutes)

3.1. Diagnostic Algorithm Construction (30 minutes)
3.2. Group Activity: Collaborative Algorithm Construction (30 minutes)
Ensure each group incorporates the following:
Clinical presentation, physical exam findings, and Siddha diagnostic methods.
Include decision points for each diagnostic activity
After the group work, allow each group to present their algorithm to the class, followed by a brief discussion.
Activity: Lab report interpretation
Activity 4: Siddha Lab Report Preparation and Case Application (60 minutes)
4.1. Preparing Siddha Lab Report (30 minutes)
Objective: Teach students how to prepare a Siddha lab report for a patient with *Ammai Noi.*
Provide a clinical scenario for each type of Ammai Noi (*Kuluvan, Poottu Thaal Ammai, Thattammai*).
Instruct students to collect clinical information (e.g., symptoms, physical examination findings) and Siddha diagnostic findings (pulse, urine, tongue, stool).
Guide students on how to compile their findings into a comprehensive Siddha lab report, which includes:
Patient's symptoms and clinical history.
Findings from *Ennvagai Thervu (*pulse, tongue, urine).
The humor imbalances (*Vatha, Pitha, Kaba*) and their relevance to the type of *Ammai Noi*.
Proposed treatment based on diagnostic results (dietary, lifestyle, and herbal treatments).
4.2. Group Case Application and Report Presentation (30 minutes)
Objective: Apply diagnostic algorithms and create a detailed Siddha lab report for a case.
Present a clinical case for each type of *Ammai Noi*
Activity: Discussion
Students will work in their groups to:
Use the diagnostic algorithm to analyze the case and identify the type of *Ammai Noi*.
Prepare a detailed Siddha lab report based on the information provided.
Each group will present their lab report to the class, explaining the rationale for their diagnosis, the interpretation of Siddha diagnostic findings, and their treatment plan.
Summary of Hour Distribution:
Hour 1: Overview of *Ammai Noi* types (*Kuluvan, Poottu Thaal Ammai, Thattammai*) and introduction to Siddha diagnostic tools.
Hour 2: Construction of a diagnostic algorithm and group work to create diagnostic pathways for each type of *Ammai Noi.*
Hour 3: Preparation of Siddha lab reports for case scenarios and presentation of reports based on diagnostic findings

Experiential-Learning 1.7 : Compendium on *Ammai Noika*l

Duration of Activity - 5 hours

Activity: Discussion: 1 hour
Activity 1: Overview of *Ammai Noikal* (30 minutes)
Activity 2: Introduction to Literature Search Methods (30 minutes)
Activity: Library Session: 3 hours
Activity 3: Individual Literature Search (30 minutes)
Activity 4: Group Discussion and sharing of findings (30 minutes)
Activity 5: Structuring the Compendium (30 minutes)
Activity 6: Collaborative Writing of the compendium (30 minutes)
Activity 7: Reviewing and Editing the compendium (30 minutes)
Activity 8: Preparing Presentations (30 minutes)
Activity: Presentation: 1 hour
Activity 9: Group Presentations (30 minutes)
Activity 10: Reflection and Feedback (30 minutes)

Modular Assessment

Assessment method	**Hour**
Instructions: Conduct a structured Modular assessment. The assessment will be for 50 marks. Keep a structured marking pattern.Use different assessment methods in each module for the semester. Keep a record of the structured pattern used for assessment. Calculate the Modular grade point as per Table 6 C. CHOOSE ANY OF THE BELOW ASSESSMENT FOR 50 MARKS Total Marks: 50 / Time Duration: 4 Hours 1.VIVA VOCE EXAMINATION (10 Marks) - Assessment Structure: Foster a deeper understanding of the underlying mechanisms of the particular disease to inform clinical decision-making and able to interpret the variations of differential diagnosis Marking Distribution: Knowledge and Understanding (4 marks) Detailed pathological knowledge Understanding of Siddha Diagnostic tools and their application Clinical Application (3 marks) Differential Diagnosis	4

Clinical scenarios
Radiological interpretation
Communication Skills (3 marks)
Clarity of expression
Use of precise terminology
Ability to explain complex concepts
2.OBJECTIVE STRUCTURED CLINICAL EXAMINATION (OSCE) (15 Marks) -
Mark Distribution:
Clinical Examinations of patients through
Yakkai, Agakaruvigal, Pura karuvigal (2 marks)
Udal Thathukkal, ennvagai thervu (2 marks)
Manikkadai Nool (2 marks)
Derangement of Mukkutram (2 marks)
Mukkutra Verupadu (2 marks)
Prescription of the line of treatment based on Mukkutram, Suvai and Gunam (2 marks)
Noi Kanippu (2 mark)
Theerum Theera Nilai (1 mark)
3.CLASS PRESENTATION (10 Marks) -
Assessment Criteria:
Content (4 marks)
Depth of subject matter
Current research inclusion
Clinical correlation
Bibliography
Presentation Skills (3 marks)
Clarity of speech
Time management
Use of visual aids
Audience engagement
Discussion (3 marks)
Handling questions
Critical thinking

Scientific reasoning
Knowledge application
4.PREPARATION OF DIAGNOSTIC ALGORITHM FOR DISEASE IN THIS MODULE (5 Marks)
5.SAQ AND LAQ ASSESSMENT
Total Marks: 10
Or
Any practical in converted form can be taken for assessment. (25 marks)
and
Any experiential, such as portfolios / reflections / presentations can be taken as an assessment. (25 marks)

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

Module 2 : Siddha Respiratory Diseases

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

Discuss the etymology of conditions and subtypes of Siddha Respiratory Diseases.
Describe the approach to respiratory case.
Analyse causes of Siddha Respiratory Diseases through Trihumoral theory.
Create algorithms for diagnosing Siddha Respiratory Diseases through Siddha and Modern diagnostic techniques
Design line of treatment

M 2 Unit 1 Siddha Upper Respiratory Tract Diseases

2.1.1. Etiology 2.1.2. Premonitory and common signs and symptoms 2.1.3. Types : Mookkadaippu (Sinusitis and related conditions), Kural kammal (Hoarseness of voice and related conditions. 2.1.4.Tri humoral Variation 2.1.5 .Line of treatment 2.1.6. Diagnostic techniques used in Siddha system and Modern for Upper respiratory tract diseases.

References: 1,2,7,10,14,15,22,37,42,47,48,55,68,76,77,82,93

3A	3B	3C	3D	3E	3F	3G
CO5,CO8	Describe the types of *Mookkadaippu, Iyal* (definition) of *Sura noi, Peyar Karanam* (etymology), *Veru peya*r (synonyms), *Noi varum vazhi* (etiology), *Murkkurikunangal* (premonitory signs), and p*othu kurikunanga*l (common signs and symptoms) of with possible modern comparison including carcinomatous conditions.	2	Lecture	CAN	Knows-how	L
CO5,CO8	Conduct the examination of a patient through *Yakkai, udal Thathukkal, Ennvagai Thervu, Manikkadai Nool, Mukkutram* and prescribe the line of treatment based on *Mukkutram, Suvai, and gunam a*nd infer the *Theerum Theera nilai* of *Mulai Mookkadaippu Noi* and develope line of treatment .	2	Practical Training 2.1	PSY-GUD	Shows-how	CBL,DIS
CO5,CO8	Apply Siddha diagnostic techniques and collaborate with Modern to thoroughly diagnose case of (*Neer Mookkadaippu (*Rhino sinusitis*) and/ or Mulai Mookkadaippu (Mulberry Hypertrophy*)	3	Experiential-Learning 2.1	PSY-MEC	Does	CBL
CO3,CO5,CO7	Describe *Kural kammal* with *Iyal (*definition) , *Peyar Karanam* (etymology), *Veru peyar* (synonyms), *Noi varum vazhi* (etiology), *Murkkurikunangal* (premonitory signs), and *pothu kurikunangal* (common signs and symptoms).	2	Lecture	CC	Knows-how	L&GD
CO3,CO5,CO7	Apply Siddha diagnostic techniques and collaborate with Modern to thoroughly diagnose case of *Kural Kammal in* malignant conditions (may be compared with Laryngeal cancer) through *Yakkai, udal Thathukkal, Ennvagai Thervu, Manikkadai Nool, Mukkutram* and prescribe the line of treatment based on *Mukkutram, Suvai, and gunam* and infer the *Theerum Theera nilai*	3	Experiential-Learning 2.2	CC	Does	CBL

CO5,CO8	Conduct the examination of a patient through *Yakkai, Udal Thathukkal, Ennvagai Thervu, Manikkadai Nool, Mukkutram* and prescribe the line of treatment based on *Mukkutram, Suvai, and Kunam a*nd infer the *Theerum Theera nilai* of *Kural Kammal* due to Malignant causes and develope line of tretment .	3	Practical Training 2.2	PSY-MEC	Shows-how	SIM,DIS, CBL
CO5,CO8	Describe similar terminologies related to *Kural Kammal* from other domains such as *Kaba Noiga*l and compare with *Kural Kammal*.	1	Lecture	CAN	Knows-how	DIS,L,L& PPT
CO1,CO5,CO8	Conduct the examination of a patient through *Yakkai, udal Thathukkal, Ennvagai Thervu, Manikkadai Nool, Mukkutram* and prescribe the line of treatment based on *Mukkutram, Suvai, Kunam* of *Neer Mookkadaippu Noi* (may be compared with Rhino - sinusitis) *case.*	1	Practical Training 2.3	PSY-GUD	Shows-how	CBL
CO1,CO5,CO8	Apply Siddha diagnostic techniques and collaborate with Modern to thoroughly diagnose case of *Kural kammal in non* malignant conditions (Infectious, neurological and other non - malignant conditions) through *Yakkai, udal Thathukkal, Ennvagai Thervu, Manikkadai Nool, Mukkutram* and prescribe the line of treatment based on *Mukkutram, Suvai, and gunam* and infer the *Theerum Theera nilai*	2	Experiential-Learning 2.3	PSY-SET	Does	CBL,PER ,CD
CO1,CO5,CO8	Conduct the examination of a patient through Y*akkai, udal Thathukkal, Ennvagai Thervu, Manikkadai Nool, Mukkutram* and prescribe the line of treatment based on *Mukkutram, Suvai, and Kunam a*nd infer the *Theerum Theera nilai* of *Kural Kammal* due to Infectious causes and develop line of tretment .	2	Practical Training 2.4	PSY-GUD	Shows-how	CBL,CD
CO1,CO5,CO8	Conduct the examination of a patient through Y*akkai, udal Thathukkal, Ennvagai Thervu, Manikkadai Nool, and Mukkutram* and prescribe the line of treatment based on *Mukkutram, Suvai, and gunam a*nd infer the *Theerum Theera nilai* of *Kural Kammal* due to Non - Malignant tumour conditions and develop a line of treatment.	2	Practical Training 2.5	PSY-MEC	Shows-how	CBL,SIM ,PSM

M 2 Unit 2 Siddha Lower Respiratory Tract Diseases

2.2.1. Etiology 2.2.2. Premonitory and common signs and symptoms 2.2.3. Types (Irumal (Cough), Iraippu (Asthma and related conditions), Ilaippu (cachexia due to respiratory diseases) 2.2.4. Tri humoral Variation 2.2.5 .Line of treatment 2.2.6. Diagnostic techniques used in Siddha system and Modern for Lower respiratory tract diseases.

References: 1,2,7,10,14,15,37,90

3A	3B	3C	3D	3E	3F	3G
CO5,CO8	Describe *Irumal* with Synonyms, Etiology, Premonitory and common signs and symptoms along with etymology, curable and incurable types along with Modern comparison (Acute and Chronic cough, Infectious and Non – infectious cause, psychosomatic cough, Aspiration syndromes, Possible malignant conditions)	2	Lecture	CC	Knows-how	L&GD
CO5,CO8	Develop diagnostic trial protocol for Siddha Respiratory diseases.	4	Experiential-Learning 2.4	PSY-ORG	Does	PrBL,X-Ray,BS
CO5,CO8	Describe about *Iraippu*, synonyms, etiology, premonitory and common signs and symptoms, types – with possible modern comparison including curable and incurable,Intrinsic and Extrinsic Asthma pathology.	1	Lecture	CAN	Knows-how	L&GD
CO5,CO8	Analyse diagnostic techniques for *Iraippu Noi* used in Modern and *Siddha* through algorithm preparation, Tri humoural Variation estimation, and developing a line of treatment based on presenting features.	5	Experiential-Learning 2.5	PSY-SET	Does	PER,DIS, CBL
CO5,CO8	Describe about *Ilaippu* and *Ulaimanthai* with etymology, synonyms, etiology, premonitory, common signs and symptoms, and types – with possible Modern comparisons including curable and incurable.	2	Lecture	CAN	Knows-how	L
CO5,CO8	Conduct the examination of a patient through *Yakkai, udal Thathukkal, Ennvagai Thervu, Manikkadai Nool, Mukkutram* and prescribe the line of treatment based on *Mukkutram, Suvai, and Kunam and infer the Theerum Theera nilai of Irumal Noi (*cough with Infectious origin*)*	2	Practical Training 2.6	PSY-SET	Shows-how	CBL
CO5,CO8	Apply diagnostic techniques used to diagnose *Nurai Iral Putru Noi* (CA Lung), Hands own training through blinded diagnostic studies and developing diagnostic algorithms.	4	Experiential-Learning 2.6	PSY-MEC	Does	CBL
CO5,CO8	Conduct the examination of a patient through *Yakkai, udal Thathukkal, Ennvagai Thervu, Manikkadai Nool, Mukkutram* and prescribe the line of treatment based	2	Practical Training 2.7	PSY-GUD	Shows-how	DIS,CBL, X-

	on *Mukkutram, Suvai, and gunam and infer the Theerum Theera nilai of Iraippu Noi*					Ray,SIM
CO5,CO8	Conduct the examination of a patient through *Yakkai, udal Thathukkal, Ennvagai Thervu, Manikkadai Nool, Mukkutram* and prescribe the line of treatment based on *Mukkutram, Suvai, and Kunam and infer the Theerum Theera nilai of Ilaippu Noi* (Cachexia due to infections like Tuberculosis)	2	Practical Training 2.8	PSY-GUD	Shows-how	CBL,X-Ray,DIS
CO5,CO8	Conduct the examination of a patient through *Yakkai, udal Thathukkal, Ennvagai Thervu, Manikkadai Nool, Mukkutram* and prescribe the line of treatment based on *Mukkutram, Suvai, and gunam* and infer the *Theerum Theera nilai of Irumal* associated with *Putru Noi*	4	Practical Training 2.9	PSY-GUD	Shows-how	PBL,SIM, CBL
CO5,CO8	Apply *Siddha* examination techniques and collaborate with modern diagnostic techniques in presented cases of *Irumal noi with an* infectious cause.	3	Experiential-Learning 2.7	PSY-ORG	Does	LRI,X-Ray,CBL,PER
CO5,CO8	Develop compedium for Siddha lower respiratory tract disesases through searching in different databases including palm leaf manuscripts.	2	Experiential-Learning 2.8	PSY-ORG	Does	LS,DIS

Practical Training Activity

Practical Training 2.1 : Diagnosis of *Mulai Mookkadaippu No*i

Duration of Activity- 2 hours
The teacher clearly outlines the objectives of the practical session. A brief introduction on importance of diagnosis including digestive fire status of a patient should be detailed. Either original cases or scenario or case videos may be used.
Activity: Case Based Learning (1 hour 10 minutes)
Activity 1- Teacher should demonstrate how to perform and assess Siddha Diagnostic Tools through Case Studies / Skill Labs in IPD/OPD Settings (10 Minutes)
Activity 2-History Taking (20 Minutes)
Different Cases/scenarios/skill labs will be given and students will be asked to assess through Siddha diagnostic tools.
Students should practice taking patient histories, focusing on the onset, duration, and pattern of disease and associated symptoms.
Activity 3-Record the documents (30 Minutes)
Instruct students to document the examination of patients through prescribed Case Sheet which contains siddha and modern concepts in structured format. Prognosis of the cases may be assessed by the student through any of the diagnostic/prognostic tools with guidance of teacher.

Activity 4- Compare with Trihumoral vitiation (10 Minutes)
Teacher should instruct students to assess Clinical Findings through Siddha Diagnostic tools and correlate with the Trihumoral vitiation.
Activity: Discussions (50 minutes)
Activity 5- Small group discussions on the Tri humoral vitiation which is peculiar to the presented case and their clinical significance should be done along with assessment of digestive fire. (10 Minutes)
Activity 6- Teacher should explain the possible differential diagnoses of the given condition. (10 Minutes)
Activity 7-Assesment of line of treatment (15 Minutes)
Develop various lines of treatment based on aspects of *Suvai, Gunam, Veeriyam, Vibagam* and state its curable and incurable types.
Activity 8- Personalised feedback on students' observation and diagnostic accuracy should be given and Conduct OSCE sessions at the end of the practical hours given (15 Minutes)

Practical Training 2.2 : Diagnosing *Kural Kammal* due to Malignant causes

Duration of Activity- 3 hours
The teacher clearly outlines the objectives of the practical session. A brief introduction on importance of diagnosis including digestive fire status of a patient should be detailed. Either original cases or scenario or case videos may be used.
Activity: Case Based Learning (2 hours)
Activity 1- Teacher should demonstrate how to perform and assess Siddha Diagnostic Tools through Case Studies / Skill Labs in IPD/OPD Settings (30 Minutes)
Activity 2-History Taking (30 Minutes)
Different Cases/scenarios/skill labs will be given and students will be asked to assess through Siddha diagnostic tools.
Students should practice taking patient histories, focusing on the onset, duration, and pattern of disease and associated symptoms.
Activity 3-Record the documents (30 Minutes)
Instruct students to document the examination of patients through prescribed Case Sheet which contains siddha and modern concepts in structured format. Prognosis of the cases may be assessed by the student through any of the diagnostic/prognostic tools with guidance of teacher.
Activity 4- Compare with Trihumoral vitiation (30 Minutes)
Teacher should instruct students to assess Clinical Findings through Siddha Diagnostic tools and correlate with the Trihumoral vitiation.
Activity : Discussion (1 hour)
Activity 5- Small group discussions on the Tri humoral vitiation which is peculiar to the presented case and their clinical significance should be done along with assessment of digestive fire. (20 Minutes)
Activity 6- Teacher should explain the possible differential diagnoses of the given condition. (10 Minutes)
Activity 7-Assesment of line of treatment (15 Minutes)
Develop various lines of treatment based on aspects of *Suvai, Gunam, Veeriyam, Vibagam* and state its curable and incurable types.
Activity 8- Personalised feedback on students' observation and diagnostic accuracy(15 Minutes)

Practical Training 2.3 : Diagnosis of *Neer Mookadaippu Noi*

Duration of Activity- 1 hour
Activity: Case Based Learning (1 hour)
The teacher clearly outlines the objectives of the practical session. A brief introduction on importance of diagnosis including digestive fire status of a patient should be detailed. Either original cases or scenario or case videos may be used.
Activity 1- Teacher should demonstrate how to perform and assess Siddha Diagnostic Tools through Case Studies / Skill Labs in IPD/OPD Settings (10 Minutes)
Activity 2-History Taking (10 Minutes)
Different Cases/scenarios/skill labs will be given and students will be asked to assess through Siddha diagnostic tools.
Students should practice taking patient histories, focusing on the onset, duration, and pattern of disease and associated symptoms.
Activity 3-Record the documents (10 Minutes)
Instruct students to document the examination of patients through prescribed Case Sheet which contains siddha and modern concepts in structured format. Prognosis of the cases may be assessed by the student through any of the diagnostic/prognostic tools with guidance of teacher.
Activity 4- Compare with Trihumoral vitiation (10 Minutes)
Teacher should instruct students to assess Clinical Findings through Siddha Diagnostic tools and correlate with the Trihumoral vitiation.
Activity 5- Small group discussions on the Tri humoral vitiation which is peculiar to the presented case and their clinical significance should be done along with assessment of digestive fire. (5 Minutes)
Activity 6- Teacher should explain the possible differential diagnoses of the given condition. (5 Minutes)
Activity 7-Assesment of line of treatment (5 Minutes)
Develop various lines of treatment based on aspects of *Suvai, Gunam, Veeriyam, Vibagam* and state its curable and incurable types.
Activity 8- Personalised feedback on students' observation and diagnostic accuracy(5 Minutes)

Practical Training 2.4 : Diagnosing *Kural Kammal* due to Infectious causes

Duration of Activity- 2 hours
The teacher clearly outlines the objectives of the practical session, such as understanding the causes of disease conditions, performing assessments, and exploring management strategies. Original cases/Videos/Simulators/Case scenarios may be taken
Activity 1-Assessment of Siddha Diagnostic Tools through Case Studies and Skill Labs in IPD/OPD Settings (30 Minutes)
Different Cases/scenarios/skill labs will be given, and PG Scholars will be asked to assess the Siddha diagnostic tools. PG scholars can observe the case from IPD/OPD
Activity 2-History Taking (30 Minutes)
Have participants practice taking patient histories, focusing on the onset, duration, and pattern of disease and associated symptoms.
Activity 3-Record the documents (20 Minutes)
Instruct participants to document the examination of the patient through prescribed Case Sheet Format. Prognosis of the disease may be ascertained by the student through

any of the diagnostic tools with guidance of teacher.
Activity 4-Compare with Trihumoral vitiation (10 Minutes)
Assess Clinical Findings through Siddha Diagnostic tools and correlate with the Trihumoral vitiation.
Activity 5- Small group discussions on the pathological findings and their clinical significance should be done along with that assessment of Digestive fire should also be done. (10 Minutes)
Activity 6- Patient case history related to similar disease conditions should be additionally provided for comparison and discussion (5 Minutes)
Activity 7-Assesment of line of treatment (10 Minutes)
Develop various lines of treatment based on aspects of *suvai, kunam, veeriyam, vibagam* and state its curable and incurable types.
Activity 8- Personalised feedback on student's observation and diagnostic accuracy(5 Minutes)

Practical Training 2.5 : Diagnosing *Kural Kammal* due to Non - Malignant tumour causes through the Siddha diagnostic parameters in a prescribed case sheet format.

Duration of Activity- 2 hours
The teacher clearly outlines the objectives of the practical session, such as understanding the causes of disease conditions, performing assessments, and exploring management strategies. *Kural Kammal* due to Non - Malignant tumour and its type should be considered for practical. Original cases/Videos/Simulators/Case scenarios may be taken
Activity : Case-Based Learning: 2 hours
Activity 1-Assessment of Siddha Diagnostic Tools through Case Studies and Skill Labs in IPD/OPD Settings (30 Minutes)
Different Cases/scenarios/skill labs will be given, and PG Scholars will be asked to assess the Siddha diagnostic tools. PG scholars can observe the case from IPD/OPD
Activity 2-History Taking (30 Minutes)
Have participants practice taking patient histories, focusing on the onset, duration, and pattern of disease and associated symptoms.
Activity 3-Record the documents (20 Minutes)
Instruct participants to document the examination of the patient through prescribed Case Sheet Format. Prognosis of the disease may be ascertained by the student through any of the diagnostic tools with guidance of teacher.
Activity 4-compare with Trihumoral vitiation. (10 Minutes)
Assess Clinical Findings through Siddha Diagnostic tools and correlate with the Trihumoral vitiation.
Activity 5- Small group discussions on the pathological findings and their clinical significance should be done along with that assessment of Digestive fire should also be done. (10 Minutes)
Activity 6- Patient case history related to similar disease conditions should be additionally provided for comparison and discussion (5 Minutes)
Activity 7-Assesment of line of treatment (10 Minutes)
Develop various lines of treatment based on aspects of *suvai, kunam, veeriyam, vibagam* and state its curable and incurable types.
Activity 8- Personalised feedback on student's observation and diagnostic accuracy(5 Minutes)

Practical Training 2.6 : Diagnosing *Irumal Noi (*cough with Infectious origin*)*

Duration of Activity- 2 hours
Activity: Case based learning (2 hours)
The teacher clearly outlines the objectives of the practical session. A brief introduction on the importance of diagnosis including digestive fire status of a patient should be detailed. Either original cases or scenario or case videos may be used.
Activity 1- Teacher should demonstrate how to perform and assess Siddha Diagnostic Tools through Case Studies / Skill Labs in IPD/OPD Settings (10 Minutes)
Activity 2-History Taking (20 Minutes)
Different Cases/scenarios/skill labs will be given and students will be asked to assess through Siddha diagnostic tools.
Students should practice taking patient histories, focusing on the onset, duration, and pattern of disease and associated symptoms.
Activity 3-Record the documents (30 Minutes)
Instruct students to document the examination of patients through prescribed Case Sheet which contains siddha and modern concepts in structured format. Prognosis of the cases may be assessed by the student through any of the diagnostic/prognostic tools with guidance of teacher.
Activity 4- Compare with Trihumoral vitiation (10 Minutes)
Teacher should instruct students to assess Clinical Findings through Siddha Diagnostic tools and correlate with the Trihumoral vitiation.
Activity 5- Small group discussions on the Tri humoral vitiation which is peculiar to the presented case and their clinical significance should be done along with assessment of digestive fire. (10 Minutes)
Activity 6- Teacher should explain the possible differential diagnoses of the given condition. (10 Minutes)
Activity 7-Assesment of line of treatment (15 Minutes)
Develop various lines of treatment based on aspects of *Suvai, Gunam, Veeriyam, Vibagam* and state its curable and incurable types.
Activity 8- Personalised feedback on students' observation and diagnostic accuracy(15 Minutes)

Practical Training 2.7 : Diagnosing *Iraippu Noi* and development of Siddha diagnostic report.

Duration of Activity-2 Hours
Teacher clearly outlines the objectives of the practical session, such as understanding the causes of disease condition, performing assessments, and exploring management strategies. *Iraippu Noi* and its type should be considered for practical. Conditions of Chronic Obstructive Pulmonary Diseases with cough, wheeze, and dyspnoea should be taken. Real cases/ case scenarios/Virtual cases may be taken.
Activity: Case Based Learning- (1 hour 25 minutes)
Activity 1-Assessment of Siddha Diagnostic Tools through Case Studies and Skill Labs in IPD/OPD Settings (30 Minutes)
Different Cases/scenarios/skill labs will be given and PG Scholars will be asked to assess the Siddha diagnostic tools. PG scholars can observe the case from IPD/OPD
Activity 2-History Taking (30 Minutes)
Have participants practice taking patient histories, focusing on the onset, duration, and pattern of disease and associated symptoms. Along with this necessary modern

examinations and investigations should be done.
Activity 3-Record the documents (20 Minutes)
Instruct participants to document the examination of the patient through the prescribed Case Sheet Format. Prognosis of the disease may be ascertained by the student through any of the diagnostic tools with the guidance of the teacher. This should include Marana Kurigunangal also.
Activity 4-compare with Trihumoral vitiation. (5 Minutes)
Assess Clinical Findings through Siddha Diagnostic tools and correlate with the Trihumoral vitiation.
Activity - Discussion(35 minutes)
Activity 5- Small group discussions on the pathological findings and their clinical significance should be done along with that assessment of Digestive fire should also be done. (15 Minutes)
Activity 6- Patient case history related to similar disease conditions should be additionally provided for comparison and discussion (5 Minutes)
Activity 7-Assesment of line of treatment (10 Minutes)
Develop various lines of treatment based on aspects of *suvai, kunam, veeriyam, vibagam* and state its curable and incurable types.
Activity 8- Personalised feedback on student's observation and diagnostic accuracy (5 Minutes)

Practical Training 2.8 : Diagnosing *Ilaippu Noi* and Siddha lab report preparation.

Duration of Activity - 2 Hours
Activity: Case Based Learning - (1 hour 25 minutes)
Teacher clearly outlines the objectives of the practical session, such as understanding the causes of disease condition, performing assessments, and exploring management strategies. *Ilaippu Noi* and its type should be considered for practical. Conditions of Tuberculosis or other infectious conditions which lead to cachexia must be taken. Real cases/ case scenarios/Virtual cases may be taken.
Activity 1-Assessment of Siddha Diagnostic Tools through Case Studies and Skill Labs in IPD/OPD Settings (30 Minutes)
Different Cases/scenarios/skill labs will be given and PG Scholars will be asked to assess the Siddha diagnostic tools. PG scholars can observe the case from IPD/OPD
Activity 2-History Taking (30 Minutes)
Have participants practice taking patient histories, focusing on the onset, duration, and pattern of disease and associated symptoms. Along with this necessary modern examinations and investigations should be done.
Activity 3-Record the documents (20 Minutes)
Instruct participants to document the examination of the patient through prescribed Case Sheet Format. Prognosis of the disease may be ascertained by the student through any of the diagnostic tools with guidance of teacher.
Activity 4-compare with Trihumoral vitiation. (5 Minutes)
Assess Clinical Findings through Siddha Diagnostic tools and correlate with the Trihumoral vitiation.
Activity: Group Discussion: 35 minutes
Activity 5- Small group discussions on the pathological findings and their clinical significance should be done along with that assessment of Digestive fire should also be

done. (15 Minutes)
Activity 6- Patient case history related to similar disease conditions should be additionally provided for comparison and discussion (5 Minutes)
Activity 7-Assesment of line of treatment (10 Minutes)
Develop various lines of treatment based on aspects of *suvai, kunam, veeriyam, vibagam* and state its curable and incurable types.
Activity 8- Personalised feedback on student's observation and diagnostic accuracy (5 Minutes)

Practical Training 2.9 : Diagnosing *Irumal* associated with *Putru Noi* through the Siddha and modern diagnostic parameters in a prescribed case sheet format and development of *Siddha* lab report.

Duration of Activity - 4 hours
Activity: Case Based Learning: 4 hours
Teacher clearly outlines the objectives of the practical session, such as understanding the causes of disease condition, performing assessments, and exploring management strategies. Cancerous conditions in which cough is a major sign should be taken.
Activity 1-Assessment of Siddha Diagnostic Tools through Case Studies and Skill Labs in IPD/OPD Settings (30 Minutes)
Different Cases/scenarios/skill labs will be given and PG Scholars will be asked to assess the Siddha diagnostic tools. PG scholars can observe the case from IPD/OPD
Activity 2-History Taking (40 Minutes)
Have participants practice taking patient histories, focusing on the onset, duration, and pattern of disease and associated symptoms. Along with this necessary modern diagnostic techniques may be added.
Activity 3-Record the documents (40 Minutes)
Instruct participants to document the examination of the patient through prescribed Case Sheet Format. Prognosis of the disease may be ascertained by the student through any of the diagnostic tools with guidance of teacher.
Activity 4-compare with Trihumoral vitiation. (30 Minutes)
Assess Clinical Findings through Siddha Diagnostic tools and correlate with the Trihumoral vitiation.
Activity 5- Small group discussions on the pathological findings and their clinical significance should be done along with that assessment of Digestive fire should also be done. A final Siddha diagnostic report should be prepared.(30 Minutes)
Activity 6- Patient case history related to similar disease conditions should be additionally provided for comparison and discussion (30 Minutes)
Activity 7-Assesment of line of treatment (30 Minutes)
Develop various lines of treatment based on aspects of suvai, kunam, veeriyam, vibagam and state its curable and incurable types.
Activity 8- Personalised feedback on student's observation and diagnostic accuracy (10 Minutes)

Experiential learning Activity

Experiential-Learning 2.1 : Hands-on practice to diagnose different types of *Mookkadaippu (Neer Mookkadaippu / Mulai Mookkadaippu*)

Duration of Activity- 3 Hours
Students will be asked to elicit the *Ennvagai thervu* and other necessary examinations in a series of 5 patients with *Mookkadaippu Noi* with different etiologies (*Neer Mookkadaippu* / *Mulai Mookkadaippu*)
Activity : Case Based Learning: 2 hours 30 minutes
Activity 1: Introduction and Case Study (60 minutes)
Objective: Briefly introduce the concept of *Ennvagai Thervu* and its importance in diagnosing and managing (*Neer Mookkadaippu* (Rhino sinusitis) and/ or *Mulai Mookkadaippu* (Mulberry Hypertrophy)
Explain the components of *Ennvagai Thervu* and the clinical features to look for in patients with (*Neer Mookkadaippu* (Rhino sinusitis) and/ or *Mulai Mookkadaippu* (Mulberry Hypertrophy)
Introduce the concept of *Mukkutra Verupadu* and its relevance to the condition.
Case Study : Patient Introduction and Elicitation of Symptoms in a series of 5 patients(10 minutes X 5 = 50 min)
Objective: Provide participants with a case study of a patient with (*Neer Mookkadaippu* (Rhino sinusitis) and/ or *Mulai Mookkadaippu* (Mulberry Hypertrophy). Ask them to elicit *Ennvagai Thervu* and other necessary examinations for this patient.
Divide participants into small groups (4-5 people) and have them discuss and collect key data for diagnosis.
Each group can focus on different components of the assessment (e.g., patient history, clinical examination, diagnostic tests).
Activity 2: Reflection, Assessment and Debriefing (90 minutes)
Reflection on *Ennvagai Thervu* Assessment as well as Virtual demonstration and analysis of Modern techniques
Objective: Focus on the inter-rater reliability of the *Ennvagai Thervu* assessment.
Facilitate a discussion on how different participants (across various backgrounds) assessed the *Ennvagai Thervu*.
Virtual Demonstration of nasal endoscopy and CT scan for rhino sinusitis diagnosis.
Integration of Siddha and Modern Diagnostics and development of Siddha lab report
Activity: Discussion: 30 minutes
Activity 3: Group Debriefing and Sharing Insights (30 minutes)
Objective: Reflect on the experiences during the small group discussions and team-based activities.
Encourage each participant to share one key insight or challenge they faced during the experiential learning session.
Discuss how they approached decision-making, particularly when generating the *Mukkutra Verupadu*.
3.3. Conclusion and Q&A (15 minutes)

Experiential-Learning 2.2 : Hands on training in diagnosing *Kural Kammal* in malignant conditions

Duration of Activity-3 hours
Activity: Case Based Learing: 3 hours

Activity 1- *Yakkai ilakkanam* assessment with Physical Examination - 30 minutes
Physical Examination (Modern)(15 minutes)
Visual inspection for signs of swelling, lumps, or abnormal masses around the neck (potential laryngeal tumor).
Auscultation of the throat to check for hoarseness or difficulty in breathing.
Yakkai Ilakkanam assessment (15 minutes)
Activity 2-*Udal Thathukkal* and *Mukkutram* assessment along with Modern diagnosis- 30 minutes
Modern Diagnostics (15 minutes)
Imaging: Use of CT scans, MRI, or laryngoscopy to visualize the throat and detect possible malignant growths.
Blood Tests: Complete blood count (CBC) to check for signs of infection, anemia, or cancer-related markers like elevated white blood cells or abnormal liver function.
Siddha Diagnosis (*Udal* and *Uyir Thathukkal*) (15 minutes)
Identify humoral imbalances through symptoms
Activity 3- *Ennvagai thervu* (Eight Diagnostic Methods) (30 minutes)
Modern Diagnostics (15 minutes)
Siddha (15 minutes)
Activity 4- Compile data and develop a Siddha Lab Report (30 minutes)
Activity 5- *Theerum Theera Nilai* (Prognosis and Treatment Outcome) -30 minutes
Activity 6- Recommend line of treatment based on *Kutram* and *Suvai*- 30 minutes

Experiential-Learning 2.3 : Hands on training in diagnosing *Kural Kammal* in non - malignant conditions

Duration of Activity- 3 hours
Activity: Case-Based Learning (1 hour 30 minutes)
Activity 1- *Yakkai ilakkanam* assessment with Physical Examination (30 minutes)
Physical Examination (Modern)(15 minutes)
Visual inspection
Auscultation of the throat to check for hoarseness or difficulty in breathing.
Yakkai Ilakkanam assessment(15 minutes)
Activity 2- *Udal Thathukkal* and *Mukkutram* assessment along with Modern diagnosis (30 minutes)
Modern Diagnostics(15 minutes)
Imaging
Blood Tests
Siddha Diagnosis (*Udal* and *Uyir Thathukkal*) (15 minutes)
Identify humoral imbalances through symptoms

Activity 3- *Ennvagai Thervu* (Eight Diagnostic Methods) (30 minutes)
Modern Diagnostics(15 minutes)
Siddha Diagnostics(15 minutes)
Activity: Case Diagnosis (1 hour 30 minutes)
Activity 4- Compile data and develop a Siddha Lab Report (30 minutes)
Activity 5- *Theerum Theera Nilai* (Prognosis and Treatment Outcome) (30 minutes)
Activity 6- Recommend line of treatment based on *Kutram* and *Suvai* (30 minutes)

Experiential-Learning 2.4 : 360-degree approch to diagnose *Nurai Iral Putru Noi* (CA Lung) through *Siddha* and Modern parameters along with Siddha

Duration of Activity- 4 hours
Activity : Case Based Learning (4 hours)
Activity 1- Introduction and Overview of CA Lung Diagnosis (1 hour)
Objective: Introduce the session, explain the diagnosis of CA Lung (Lung Cancer) using both Siddha and modern methods.
Briefly discuss Siddha principles and modern diagnostics (CT scan, biopsy, blood tests).
Divide students into teams, each tasked with diagnosing CA lung patients in cancer institutes.
Activity 2- Applying diagnostic techniques in Siddha for diagnosing the condition before going through Modern Reports. During this step students should be assessing both cancerous and non-cancerous patients in a blinded manner (1 hour)
Activity 3- Apply Modern examination methods. Compare the findings in step two with available Modern diagnostic reports.(30 minutes)
Activity 4- Develop a Siddha lab report with available findings along with diagnostic algorithm.(30 minutes)
Activity 5- Develop Siddha line of treatment (30 minutes)
Activity 6- Presentation and discussion: Discuss the accuracy of Siddha methods in diagnosing CA Lung and how they might be integrated with modern cancer detection methods.(30 minutes)

Experiential-Learning 2.5 : Diagnostic trial protocol for *Nurai eral Noikal*

Duration of Activity- 4 Hour
Students should be asked to select any two lower respiratory tract which resembles to any sub type of *Irumal / Iraippu* or *Ilaippu*.
Student will be trained to develop a blinded diagnostic study research protocol, the following 4-hour structured procedure will guide them through understanding key concepts, developing the research protocol, and critically evaluating the sensitivity, specificity, and predictive values of a trial diagnostic tool (in this case, Siddha method) by comparing it with a gold standard investigation for *Nurai eral Noikal* (*Irumal / Iraippu* or *Ilaippu*. The session includes both individual and group activities.
Activity: Brainstorming (1 hour)
Activity 1: Introduction to Diagnostic Study Design (1 hour)

1. Introduction to Diagnostic Studies (30 minutes)
Objective: Provide students with a foundational understanding of diagnostic studies.
Key Concepts:
Sensitivity: The ability of the test to correctly identify those with the condition (True Positive Rate).
Specificity: The ability of the test to correctly identify those without the condition (True Negative Rate).
Positive Predictive Value (PPV): The probability that subjects with a positive test result actually have the condition.
Negative Predictive Value (NPV): The probability that subjects with a negative test result actually do not have the condition.
Types of Diagnostic Studies: Overview of blinded diagnostic study design, particularly in the context of comparing a trial tool with a gold standard.
Discuss the importance of using a gold standard (e.g., clinical diagnosis, laboratory test) in comparison with a trial diagnostic tool (e.g., Siddha).
2. Key Elements of a Diagnostic Study Protocol (30 minutes)
Objective: Introduce the essential components of a research protocol for a diagnostic study.
Research Question: What are we trying to assess? (e.g., Is the Siddha diagnostic tool effective in diagnosing *Sura Noikal* compared to the gold standard?)
Population: Describe the population of patients with *Nurai eral Noikal* Discuss inclusion/exclusion criteria.
Trial Tool (Siddha): What aspects of the Siddha diagnostic method will be tested?
Gold Standard: Identify the gold standard for diagnosing *Nurai eral Noikal* (e.g., laboratory tests, imaging).
Blinding: Why blinding is crucial to prevent bias in the study.
Outcome Measures: Sensitivity, specificity, PPV, NPV.
Activity: Project Based Learning (3 hours)
Activity 2: Protocol Development - Research Design (1 hour)
1. Defining the Study Population (30 minutes)
Objective: Guide students to define and describe the population they will study.
Work with the students to develop inclusion and exclusion criteria for *Nurai eral Noikal*.
Discuss how to select a representative sample of patients (e.g., severity of illness, demographic factors).
Identify the sample size needed to detect meaningful differences between the Siddha method and the gold standard.
2. Writing the Research Objectives and Hypothesis (30 minutes)
Objective: Teach students how to write clear research objectives and hypothesis.
Research Objectives: Develop a clear research objective such as, "To evaluate the sensitivity, specificity, PPV, and NPV of the Siddha diagnostic tool in diagnosing *Nurai eral Noikal* compared with the gold standard."
Hypothesis: Define the null and alternative hypothesis.
Activity 3: Data Collection and Study Protocol Design (60 minutes)
1. Designing the Study Flow (30 minutes)
Objective: Teach students how to design the flow of data collection in a blinded diagnostic study.

Break down the steps of the diagnostic procedure:
Patient Recruitment: Describe how patients will be recruited and consented.
Blinding Process: Ensure that participants (patients) and researchers performing the diagnostic tests are blinded to avoid bias.
Testing Procedure: Define the specific steps for conducting both the Siddha diagnostic method and the gold standard diagnostic test.
Data Recording: Discuss how to record results for both methods and any relevant clinical or laboratory data.
2. Developing Outcome Measures and Data Analysis Plan (30 minutes)
Objective: Guide students on how to define and assess diagnostic outcomes.
Define sensitivity, specificity, PPV, and NPV as the primary outcome measures.
Discuss statistical methods for analyzing diagnostic test accuracy (e.g., Chi-square test, ROC curve analysis).
Activity 4: Writing the Protocol (60 minutes)
1. Writing the Research Protocol (30 minutes)
Objective: Have students begin drafting the diagnostic study research protocol.
Guide them to structure the research protocol with the following sections:
Title: A clear, concise title reflecting the study's objectives.
Introduction: Background information on *Nurai eral Noikal* and diagnostic challenges, including previous studies on diagnostic tools.
Objectives: State the research objective(s) and hypothesis.
Methods: Detailed design of the study including population, inclusion/exclusion criteria, blinding, diagnostic tests, and data collection.
Outcome Measures: Sensitivity, specificity, PPV, and NPV.
Statistical Analysis: Plan for data analysis (e.g., calculations for sensitivity, specificity, PPV, and NPV).
2. Drafting Data Collection Forms (30 minutes)
Objective: Guide students in creating data collection sheets or forms.
Discuss the importance of clear and accurate data collection.
Students will create a simple template/form to record results from both the Siddha method and the gold standard tests.
Ensure that forms allow for proper tracking of true positives, false positives, true negatives, and false negatives.

Experiential-Learning 2.6 : Application of diagnostic techniques used in Modern and *Siddha* for *Iraippu Noi*.

Duration of Activity- 5 Hours
Students will be asked to elicit the *Ennvagai thervu* and other necessary examinations in a series of 5 patients with *Iraippu* with different etiologies (cases with cough wheeze and dyspnoea due to respiratory cause). This may be done during outbreaks in colloboration with tertiary care centres.
Activity: Case based learning (2 hours)
Activity 1: Introduction and Case Study (1 hour)

Introduction to *Ennvagai Thervu* and *Iraippu Noi* and Case Study
Objective: Briefly introduce the concept of *Ennvagai Thervu* and its importance in diagnosing and managing *Iraippu Noi* with different etiologies.
Explain the components of *Ennvagai Thervu* and the clinical features to look for in patients with *Iraippu*.
Introduce the concept of *Mukkutra Verupadu* and its relevance to *Iraippu*.
Case Study : Patient Introduction and Elicitation of Symptoms (60 minutes)
Objective: Provide participants with a case study of a patient with Iraippu. Ask them to elicit *Ennvagai Thervu* and other necessary examinations for this patient.
Divide participants into small groups (4-5 people) and have them discuss and collect key data for diagnosis.
Each group can focus on different components of the assessment (e.g., patient history, clinical examination, diagnostic tests).
Activity : Discussion (2 hours)
Activity 2: Group Discussion on Differential Diagnosis (2 hours)
Objective: Facilitate a discussion on differential diagnosis and management strategies.
In each small group, participants will analyze the case and generate potential differential diagnoses.
Encourage them to use the *Mukkutra Verupadu* system to assess the underlying cause.
After 20 minutes, each group will present their findings, including the rationale behind their diagnosis and management plan.
Open the floor for questions and peer feedback.
Activity: Presentation (1 hour)
Activity 3: Reflection, Assessment and Debriefing through presentations (1 hour)
3.1. Reflection on *Ennvagai Thervu* Assessment (30 minutes)
Objective: Focus on the inter-rater reliability of the *Ennvagai Thervu* assessment.
Facilitate a discussion on how different participants (across various backgrounds) assessed the *Ennvagai Thervu*.
If discrepancies in assessment arise, discuss the possible reasons and resolve them with the tutor's input.
Provide insights into the standardization of the assessment process and its impact on patient care.
Develop a diagnostic algorithm for *Iraippu* based on signs and symptoms
3.2. Group Debriefing and Sharing Insights (15 minutes)
Objective: Reflect on the experiences during the small group discussions and team-based activities.
Encourage each participant to share one key insight or challenge they faced during the experiential learning session.
Discuss how they approached decision-making, particularly when generating the *Mukkutra Verupadu* for Iraippu.
3.3. Conclusion and Q&A (15 minutes)
Objective: Wrap up the session with a final Q and A and a summary of the key learning points.
Recap the importance of *Ennvagai Thervu i*n clinical practice and how it can guide diagnosis and treatment.
Emphasize the importance of interprofessional collaboration, communication, and critical thinking in managing complex cases.
Provide the opportunity for participants to ask any remaining questions or seek clarification.

Experiential-Learning 2.7 : Hands-on practice to diagnose *Irumal noi with an* infectious cause and generation of Siddha lab report .

Duration of Activity - 3 Hours
Students will be asked to elicit the Ennvagai thervu and other necessary examinations in 5 patients with Irumal with an infectious cause. This may include any lower respiratory tract infection, including Tuberculosis.
Activity: Case Based Learning: 3 hours
Activity 1. Introduction and Case Study (1 hour)
Hour 1: Introduction to Ennvagai Thervu and Irumal Noi and Case Study (10 minutes + 50 min)
Objective: Briefly introduce the concept of Ennvagai Thervu and its importance in diagnosing and managing Irumal with an infectious cause
Explain the components of Ennvagai Thervu and the clinical features to look for in patients with Irumal
Introduce the concept of Mukkutra Verupadu and its relevance to Irumal.
Case Study : Patient Introduction and Elicitation of Symptoms (10 minutes X 5 = 50 mins)
Objective: Provide participants with a case study of a patient with Irumal with an infectious cause. Ask them to elicit Ennvagai Thervu and other necessary modern examinations for this patient.
Divide participants into small groups (4-5 people) and have them discuss and collect key data for diagnosis.
Each group can focus on different components of the assessment (e.g., patient history, clinical examination, diagnostic tests).
Activity 2. Hour 2: Group Discussion on Differential Diagnosis (1 hour)
Objective: Facilitate a discussion on differential diagnosis and management strategies.
In each small group, participants will analyze the case and generate potential differential diagnoses.
Encourage them to use the Mukkutra Verupadu system to assess the underlying cause.
After 20 minutes, each group will present their findings, including the rationale behind their diagnosis and management plan.
Open the floor for questions and peer feedback.
Activity 3. Hour 3: Reflection, Assessment and Debriefing (1 hour)
3.1. Reflection on Ennvagai Thervu Assessment (30 minutes)
Objective: Focus on the inter-rater reliability of the Ennvagai Thervu assessment.
Facilitate a discussion on how different participants (across various backgrounds) assessed the Ennvagai Thervu.
If discrepancies in assessment arise, discuss the possible reasons and resolve them with the tutor's input.
Provide insights into the standardization of the assessment process and its impact on patient care.
3.2. Group Debriefing and Sharing Insights (15 minutes)
Objective: Reflect on the experiences during the small group discussions and team-based activities.
Encourage each participant to share one key insight or challenge they faced during the experiential learning session.
Discuss how they approached decision-making, particularly when generating the Mukkutra Verupadu for Irumal and the development of the Siddha lab report for Irumal

with infectious cause.
3.3. Conclusion and Q&A (15 minutes)
Objective: Wrap up the session with a final Q and A and a summary of the key learning points.
Recap the importance of Ennvagai Thervu in clinical practice and how it can guide diagnosis and treatment.
Emphasize the importance of interprofessional collaboration, communication, and critical thinking in managing complex cases.
Provide the opportunity for participants to ask any remaining questions or seek clarification.
Summary of Time Allocation:
Hour 1: Introduction to Ennvagai Thervu and Irumal Noi + Case Study
Hour 2: Group Discussion on Differential Diagnosis
Hour 3: Reflection on Assessment and Debriefing + Conclusion and Q&A

Experiential-Learning 2.8 : Compedium of *Nurai eral Noika*l in *Siddha*

Duration of Activity - 2 hours
Students should be asked for literature search initially and the collected information compilation should be done during learning hours.
Activity (30 minutes)
Activity 1: Overview of *Nurai Iral Noikal* and Introduction to Literature Search Methods(30 minutes)
Activity Library Session (1 hour 30 minutes)
Activity 2: Individual Literature Search, Group Discussion and sharing of findings (30 minutes)
Activity 3: Structuring the Compendium (30 minutes)
Activity 4: Collaborative Writing of the compendium, Reviewing and Editing the compendium (30 minutes)

Modular Assessment

Assessment method	**Hour**
Instructions: Conduct a structured Modular assessment. The assessment will be for 50 marks. Keep a structured marking pattern. Use different assessment methods in each module for the semester. Keep a record of the structured pattern used for assessment. Calculate the Modular grade point as per Table 6 C. CHOOSE ANY OF THE BELOW ASSESSMENT FOR 50 MARKS Total Marks: 50 / Time Duration: 4 Hours 1.VIVA VOCE EXAMINATION (10 Marks) - Assessment Structure:	4

Foster a deeper understanding of the underlying mechanisms of the particular disease to inform clinical decision-making and able to interpret the variations of differential diagnosis Marking Distribution: Knowledge and Understanding (4 marks) Detailed pathological knowledge Understanding of Siddha Diagnostic tools and their application Clinical Application (3 marks) Differential Diagnosis Clinical scenarios Radiological interpretation Communication Skills (3 marks) Clarity of expression Use of precise terminology Ability to explain complex concepts 2.OBJECTIVE STRUCTURED CLINICAL EXAMINATION (OSCE) (15 Marks) - Mark Distribution: Clinical Examinations of patients through Yakkai, Aga karuvigal, Pura karuvigal (2 marks) Udal Thaathukkal, ennvagai thervu (2 marks) Manikadai Nool (2 marks) Derangement of Mukkutram (2 marks) Mukkutra Verupadu (2 marks) Prescription of the line of treatment based on Mukkutram, Suvai and Gunam (2 marks) Noi Kanippu (2 marks) Theerum Theera Nilai (1 mark) 3.CLASS PRESENTATION (10 Marks) - Assessment Criteria: Content (4 marks) Depth of subject matter Current research inclusion Clinical correlation Bibliography Presentation Skills (3 marks) Clarity of speech		

Time management
Use of visual aids
Audience engagement
Discussion (3 marks)
Handling questions
Critical thinking
Scientific reasoning
Knowledge application
4.PREPARATION OF DIAGNOSTIC ALGORITHM FOR DISEASE IN THIS MODULE (5 Marks)
5.SAQ AND LAQ ASSESSMENT
Total Marks: 10
Or
Any practical in converted form can be taken for assessment. (25 marks)
and
Any experiential, such as portfolios / reflections / presentations can be taken as an assessment. (25 marks)

Semester No : 4

3A Course Outcome	3B Learning Objective (At the end of the (lecture/practical training /experiential learning) session, the students should be able to)	3C Notional learning Hours	3D Lecture/ Practical Training/ Experiential Learning	3E Domain/ Sub Domain	3F Level (Does/Shows how/ Knows how/Know)	3G Teaching Learning Methods
Module 3 : Siddha Cardiovascular Diseases and Diseases of Circulation Including Haematological Conditions						
Module Learning Objectives **(At the end of the module, the students should be able to)** Discuss the etymology of conditions related to Siddha Cardio Vascular Diseases and Haematological conditions(Including subtypes)						

Describe the approach to Cardio Vascular Case and causes of Siddha Cardio Vascular Diseases through trihumoral theory
Create algorithms for diagnosing Siddha Cardio Vascular Diseases through Siddha and Modern diagnostic techniques
Design line of treatment.

M 3 Unit 1 Thamaraga Noi (Cardiac Diseases)

3.1.1. Etiology 3.1.2. Premonitory and common signs and symptoms 3.1.3. Types 3.1.4. Tri humoral Variation 3.1.5. Line of treatment 3.1.6. Diagnostic techniques used in Siddha system and Modern for cardiac diseases.

References: 1,2,7,10,14,15,22,30,37,46,48,67,68,76,77,88

3A	3B	3C	3D	3E	3F	3G
CO3,CO5,CO7	Describe the *Iyal* (definition) of *Thamaraga noi, Veru peyar* (synonyms), *Peyar Karanam* (etymology),*Noi varum vazhi* (etiology), *Murkkurikunanga*l (premonitory signs), and *pothu kurikunanga*l (common signs and symptoms) and types – with possible Modern comparison including detailed pathophysiology of CAD.	2	Lecture	CC	Knows-how	L_VC,L
CO3,CO5,CO7	Conduct the examination of a patient through *Yakkai, Udal Thathukkal, Ennvagai Thervu, Manikkadai Nool, Mukkutram* and prescribe the line of treatment based on *Mukkutram, Suvai, Kunam & infer the Theerum Theera* presented *Aiyya Thamaraga Noi* (Myocardial Infarction)case.	3	Practical Training 3.1	PSY-GUD	Shows-how	D
CO3,CO5,CO7	Conduct the examination of a patient through *Yakkai, Udal Thathukkal, Ennvagai Thervu, Manikkadai Nool, Mukkutram* and prescribe the line of treatment based on *Mukkutram, Suvai, gunam gunam infer the Theerum Theera* presented *Vali Thamaraga Noi* case.	2	Practical Training 3.2	PSY-ORG	Shows-how	CD,CBL
CO3,CO5,CO7	Apply *Siddha* examination techniques and collaborate with Modern diagnostic techniques in presented cases of *Vali Thamaraga Noi* (Rheumatic Heart Disease).	2	Experiential-Learning 3.1	PSY-ORG	Does	CBL

CO3,CO5,CO7	Differentiate between the disease condition resulting due to iatrogenic cause, drug-induced or other usual causes which mimic like *Thamaraga Noi.*	1	Lecture	CC	Knows-how	L
CO3,CO5,CO7	Develop compedium for *Iruthaya Noigal* in *Siddha* through searching in different databases including palm leaf manuscripts.	2	Experiential-Learning 3.2	PSY-ORG	Does	PrBL
CO3,CO5,CO7	Conduct the examination of a patient through *Yakkai, Udal Thathukkal, Ennvagai Thervu, Manikkadai Nool, Mukkutram* and prescribe the line of treatment based on *Mukkutram, Suvai, Kunam & infer the Theerum Theera* presented *Azhal Thamaraga Noi* case.	3	Practical Training 3.3	PSY-GUD	Shows-how	CBL
CO3,CO5,CO7	Apply *Siddha* examination techniques and collaborate with modern diagnostic techniques in presented cases of *Aiyya Thamaraga Noi* (Myocardial Infarction).	2	Experiential-Learning 3.3	PSY-ORG	Does	CBL
CO3,CO5,CO7	Apply *Siddha* examination techniques and collaborate with Modern diagnostic techniques in presented cases of *Azhal Thamaraga Noi*	2	Experiential-Learning 3.4	PSY-ORG	Does	CBL
CO3,CO5,CO7	Develop diagnostic trial protocol for selected *Iruthaya noigal* (Cardiac diseases) based on standard guidelines	2	Experiential-Learning 3.5	PSY-ORG	Does	BS

M 3 Unit 2 Athi Kuruthi Azhutham noi/Uratha Pitham noi (Hypertension)

3.2.1. Etiology 3.2.2. Symptoms 3.2.3. Tri humoral Variation 3.2.4. Line of treatment 3.2.5. Diagnostic techniques used in Siddha and Modern for Hypertension.

References: 1,2,7,14,19,22,46,67,68

3A	3B	3C	3D	3E	3F	3G
CO3,CO5,CO7	Describe *Iyal* (definition) , *Peyar Karanam* (etymology), *Veru peyar* (synonyms), *Noi varum vazh*i (etiology), *Murkkurikunanga*l (premonitory signs), and *pothu kurikunanga*l (common signs and symptoms) of *Athi Kuruthi Azhutham.*	1	Lecture	CC	Knows-how	L&GD
CO3,CO5,CO7	Conduct the examination of patient through *Yakkai, udal Thathukkal, Ennvagai Thervu, Manikkadai Nool, Mukkutram* and prescribe the line of treatment based on *Mukkutram,*	3	Practical Training 3.4	PSY-GUD	Shows-how	PBL

	Suvai, Gunam and infer the Theerum Theera Nilai of Athi Kuruthi Azhutham.					
CO3,CO5,CO7	Conduct Advanced Blood Pressure Measurement Techniques and Devices and compare with *Siddh*a diagnostic techniques for Secondary Hypertension.	3	Practical Training 3.5	PSY-SET	Shows-how	CBL
CO3,CO5,CO7	Apply Siddha diagnostic techniques and collaborate with Modern to thoroughly diagnose case of *Athi Kuruthi Azhutham* (Primary and Secondary hypertension) through *Yakkai, Udal Thathukkal, Ennvagai Thervu, Manikkadai Nool, Mukkutram* and prescribe the line of treatment based on *Mukkutram, Suvai, and Kunam* and infer the *Theerum Theera nilai*	2	Experiential-Learning 3.6	PSY-ORG	Does	CD,PBL, CBL,DIS
CO3,CO5,CO7	Develop knowledge about *Athi Kuruthi Azhutham* caused due to various reasons in *Siddha* as well as modern purview.	1	Lecture	PSY-ORG	Knows-how	PBL,L,L &GD,DIS
CO3,CO5,CO7	Develop diagnostic trial protocol for *Athi Kuruthi Azhutham* with standard guidelines	2	Experiential-Learning 3.7	CE	Does	PrBL
CO3,CO5,CO7	Interpret the diagnostic accuracy of Siddha diagnostic tools In *Athi Kuruthi Azhutham.*	3	Experiential-Learning 3.8	PSY-ORG	Does	PrBL

M 3 Unit 3 Ratha Pitha noi (Haemodynamic/Purpuric conditions)

3.3.1. Etiology 3.3.2. Premonitory and common signs and symptoms 3.3.3. Types - different school of thoughts 3.3.4. Tri humoral Variations 3.3.5. Line of treatment 3.3.6. Diagnostic techniques used in Siddha system and Modern for Ratha pitha noi.

References: 1,2,7,14,22,46,67,68

3A	3B	3C	3D	3E	3F	3G
CO3,CO5,CO7	Describe *Raththa Pitham* with, *Iyal (*definition) , *Veru peyar* (synonyms), *Peyar Karanam* (etymology),*Noi varum vazhi* (etiology), *Murkkurikunangal* (premonitory signs), and *pothu kurikunangal* (common signs and symptoms).	2	Lecture	CAN	Knows-how	L,L&GD
CO3,CO5,CO7	Design a diagnostic algorithm with techniques used in Modern and *Siddha* for *Raththa Pitham*, analysis of *Tri humoural Variation*	1	Experiential-Learning 3.9	PSY-SET	Does	PER,BS

M 3 Unit 4 Paandu noi (Anaemia and related conditions)

3.4.1. Etiology 3.4.2. Premonitory and common signs and symptoms 3.4.3. Types - different school of thoughts 3.4.4. Tri humoral Variations 3.4.5. Line of treatment 3.4.6. Diagnostic techniques used in Siddha system and Modern for Paandu Noi.

References: 1,2,7,10,14,15,22,25,26,37,46,67,68,98,99,133

3A	3B	3C	3D	3E	3F	3G
CO3,CO5,CO7	Describe about *Iyal* (definition), *Peyar Karanam* (etymology), *Veru peyar* (synonyms), *Noi varum vazh*i (etiology), *Murkkurikunanga*l (premonitory signs), and *pothu kurikunanga*l (common signs and symptoms) of *Paandu Noi.*	2	Lecture	CS	Knows-how	DIS
CO1,CO5,CO8	Conduct the examination of a patient through *Yakkai, Udal Thathukkal, Ennvagai Thervu, Manikkadai Nool, Mukkutram* and prescribe the line of treatment based on *Mukkutram, Suvai, Kunam and infer the Theerum Theera* presented *Vatha Paandu* Noi case.	3	Practical Training 3.6	PSY-ORG	Shows-how	CBL
CO3,CO5,CO7	Develop a comprehensive diagnostic algorithm for *Paandu* through a systematic approach, integrating clinical assessment, laboratory investigations, and traditional siddha diagnostic methods to identify the underlying etiology accurately. Anthropometric tools may also be included in diagnosing, including *Manikkadai Nool*.	4	Experiential-Learning 3.10	PSY-SET	Does	PrBL
CO1,CO5,CO8	Conduct the examination of a patient through *Yakkai, Udal Thathukkal, Ennvagai Thervu, Manikkadai Nool, Mukkutram* and prescribe the line of treatment based on *Mukkutram, Suvai, Kunam & infer the Theerum Theera* presented *Pitha Paandu* Noi case.	3	Practical Training 3.7	PSY-GUD	Shows-how	CBL,DIS
CO3,CO5,CO7	Interpret the diagnose of *Paandu Noi* (anemia) using advanced diagnostic techniques, emphasizing precision, speed, and depth in diagnosis.	3	Experiential-Learning 3.11	PSY-MEC	Does	DL

M 3 Unit 5 Sobai noi (Plethora / Anasarca / Swelling / Oedema)

3.5.1. Etiology 3.5.2. Premonitory and common signs and symptoms 3.5.3. Types 3.5.4. Tri humoral Variations 3.5.5. Line of treatment 3.5.6. Diagnostic techniques used in Siddha system and Modern for Sobai.

References: 1,2,7,10,14,15,22,25,26,37,46,67,68

3A	3B	3C	3D	3E	3F	3G
CO3,CO5,CO7	Discuss the *Iyal* (definition) of *Sobai noi, Peyar Karanam* (etymology), *Veru peyar* (synonyms), *Noi varum vazh*i (etiology), *Murkkurikunanga*l (premonitory signs), and *pothu kurikunanga*l (common signs and symptoms).	1	Lecture	CC	Knows-how	L&GD,L
CO3,CO5,CO7	Develop a comprehensive diagnostic algorithm for *Sobai Noi* through a systematic approach, integrating clinical assessment, laboratory investigations, and traditional S*iddha* diagnostic methods to accurately identify the underlying etiology of *Sobai No*i.	1	Experiential-Learning 3.12	PSY-MEC	Does	PER,BS

Practical Training Activity

Practical Training 3.1 : Diagnosing *Aiyya Thamaraga Noi* (Myocardial Infarction) based on Siddha and Modern Parameters

Duration of Activity - 3 hours
The teacher clearly outlines the objectives of the practical session, such as understanding the causes of disease condition, performing assessments, and exploring management strategies.
Activity: Demonstration: 3 hours
Activity 1-Assessment of Siddha Diagnostic Tools through Case Studies and Skill Labs in IPD/OPD Settings (30 Minutes)
Different Cases/scenarios/skill labs will be given and PG Scholars will be asked to assess the Siddha diagnostic tools. PG scholars can observe the case from IPD/OPD
Activity 2-History Taking (30 Minutes)
Have participants practice taking patient histories, focusing on the onset, duration, and pattern of disease
Activity 3-Record the documents (30 Minutes)
Instruct participants to document the examination of the patient through prescribed Case Sheet Format. The student may ascertain prognosis of the disease through any of the diagnostic tools with guidance of teacher.
Activity 4- Compare with Trihumoral vitiation. (20Minutes)
Assess Clinical Findings through Siddha and Modern Diagnostic tools and correlate with the Trihumoral vitiation.
Activity 5- Small group discussions on the pathological findings and their clinical significance should be done along with that assessment of Digestive fire should also be done. Discuss symptoms that warrant immediate medical attention, that require referral to another system of medicine (20 Minutes)

Activity 6- Patient case history related to similar disease conditions should be additionally provided for comparison and discussion (20 Minutes)
Activity 7-Assesment of line of treatment (20 Minutes)
Develop various lines of treatment based on aspects of *suvai, kunam, veeriyam, vibagam* and state its curable and incurable types.
Activity 8- Personalised feedback on student's observation and diagnostic accuracy (10 Minutes)

Practical Training 3.2 : Diagnosing *Vali Thamaraga Noi (Rheumatic Heart Disease)* based on Siddha and Modern Parameters through prescribed case sheet format.

Duration of Activity - 2 hours
Activity: Case Based Learning which includes Case Diagnosis also: 2 hours
The teacher clearly outlines the objectives of the practical session, such as understanding the causes of disease condition, performing assessments, and exploring management strategies.
Activity 1-Assessment of Siddha Diagnostic Tools through Case Studies and Skill Labs in IPD/OPD Settings (10 Minutes)
Different Cases/scenarios/skill labs will be given and PG Scholars will be asked to assess the Siddha diagnostic tools. PG scholars can observe the case from IPD/OPD
Activity 2-History Taking (30 Minutes)
Have participants practice taking patient histories, focusing on the onset, duration, and pattern of disease
Activity 3-Record the documents (20 Minutes)
Instruct participants to document the examination of the patient through prescribed Case Sheet Format. The student may ascertain prognosis of the disease through any of the diagnostic tools with guidance of teacher.
Activity 4- Compare with Trihumoral vitiation. (5 Minutes)
Assess Clinical Findings through Siddha and Modern Diagnostic tools and correlate with the Trihumoral vitiation.
Activity 5- Small group discussions on the pathological findings and their clinical significance should be done along with that assessment of Digestive fire should also be done. Discuss symptoms that warrant immediate medical attention, that require referral to another system of medicine (15 Minutes)
Activity 6- Patient case history related to similar disease conditions should be additionally provided for comparison and discussion (20 Minutes)
Activity 7-Assesment of line of treatment (10 Minutes)
Develop various lines of treatment based on aspects of *suvai, kunam, veeriyam, vibagam* and state its curable and incurable types.
Activity 8- Personalised feedback on student's observation and diagnostic accuracy (10 Minutes)

Practical Training 3.3 : Diagnosing *Azhal Thamaraga Noi (*Angina Pectoris*)* based on Siddha and Modern Parameters through prescribed case sheet format.

Duration of Activity- 3 hours
The teacher clearly outlines the objectives of the practical session, such as understanding the causes of disease condition, performing assessments, and exploring management strategies.
Activity: Case Based Learning: 3 hours

Activity 1-Assessment of Siddha Diagnostic Tools through Case Studies and Skill Labs in IPD/OPD Settings (30 Minutes)
Different Cases/scenarios/skill labs will be given and PG Scholars will be asked to assess the Siddha diagnostic tools. PG scholars can observe the case from IPD/OPD
Activity 2-History Taking (30 Minutes)
Have participants practice taking patient histories, focusing on the onset, duration, and pattern of disease
Activity 3-Record the documents (30 Minutes)
Instruct participants to document the examination of the patient through prescribed Case Sheet Format. The student may ascertain prognosis of the disease through any of the diagnostic tools with guidance of teacher.
Activity 4- Compare with Trihumoral vitiation. (25Minutes)
Assess Clinical Findings through Siddha and Modern Diagnostic tools and correlate with the Trihumoral vitiation.
Activity 5- Small group discussions on the pathological findings and their clinical significance should be done along with that assessment of Digestive fire should also be done. Discuss symptoms that warrant immediate medical attention, that require referral to another system of medicine (15 Minutes)
Activity 6- Patient case history related to similar disease conditions should be additionally provided for comparison and discussion (20 Minutes)
Activity 7-Assesment of line of treatment (20 Minutes)
Develop various lines of treatment based on aspects of *suvai, kunam, veeriyam, vibagam* and state its curable and incurable types.
Activity 8- Personalised feedback on student's observation and diagnostic accuracy (10 Minutes)

Practical Training 3.4 : Diagnosing *Athi Kuruthi Azhutham* through prescribed case sheet format

Duration of Activity- 3 hours
The teacher clearly outlines the objectives of the practical session, such as understanding the causes of disease condition, performing assessments, and exploring management strategies. Association of *Athi Kuruthi Azhutham* with other conditions should also be assessed during practical session.
Activity: Problem Based Learning: 3 hours
Activity 1-Assessment of Siddha Diagnostic Tools through Case Studies and Skill Labs in IPD/OPD Settings (30 Minutes)
Different Cases/scenarios/skill labs will be given and PG Scholars will be asked to assess the Siddha diagnostic tools. PG scholars can observe the case from IPD/OPD
Activity 2-History Taking (30 Minutes)
Have participants practice taking patient histories, focusing on the onset, duration, and pattern of disease,
Activity 3-Record the documents (20 Minutes)
Instruct participants to document the examination of the patient through prescribed Case Sheet Format. The student may ascertain prognosis of the disease through any of the diagnostic tools with guidance of teacher.
Activity 4- Compare with Trihumoral vitiation. (20 Minutes)
Assess Clinical Findings through Siddha Diagnostic tools and correlate with the Trihumoral vitiation.
Activity 5- Small group discussions on the pathological findings and their clinical significance should be done along with that assessment of Digestive fire should also be done. Discuss symptoms that warrant immediate medical attention, and the conditions that require referral to another system of medicine (20Minutes)

Activity 6- Patient case history related to similar disease conditions should be additionally provided for comparison and discussion (20 Minutes)
Activity 7-Assesment of line of treatment (20 Minutes)
Develop various lines of treatment based on aspects of *suvai, kunam, veeriyam, vibagam* and state its curable and incurable types.
Activity 8- Personalised feedback on student's observation and diagnostic accuracy(20 Minutes)

Practical Training 3.5 : Diagnosing Secondary hypertension through *Siddha* and Modern techniques

Duration of Activity- 3 hours
Activity: Case Based Learning: 3 hours
The teacher clearly outlines the objectives of the practical session, such as understanding the causes of disease condition, performing assessments, and exploring management strategies through Case Studies/ Skill Labs in IPD/OPD Settings
Advanced Blood Pressure Measurement Techniques and Devices and comparison with diagnostic techniques like *Naadi* (60 minutes)
Objective: To teach scholars how to use advanced blood pressure monitoring devices and understand variations in BP readings and compare the findings with Siddha methods
Activity 1: Demonstrate the use of automated BP cuffs, oscillometric devices, and ambulatory BP monitors (ABPM).
Discuss the concept and clinical relevance of 24-hour ABPM in diagnosing white coat syndrome and masked hypertension. Compare this with Siddha diagnostic assessment.
Activity 2: Hands-On Practice:
Scholars will practice using devices on each other in pairs. Emphasis on technique: accurate placement of cuffs, the role of the arm position, and device calibration.
Show how to measure BP in different positions (supine, sitting, standing) and explain the significance of orthostatic hypotension.
Activity 3: Interpretation of Readings: Discuss the interpretation of automated readings and how they differ from manual measurements
Hypertension Diagnosis and Red Flags (60 minutes)
Objective: To enhance the diagnostic accuracy by discussing clinical red flags and secondary causes of hypertension.
Activity 4: Red Flags for Secondary Hypertension: Discuss when to suspect secondary hypertension (e.g., sudden onset in young people, resistant hypertension, symptoms of pheochromocytoma, Cushing's syndrome). Assessment of these conditions through *Naadi*.
Discuss diagnostic clues such as: Rapid onset or worsening of hypertension, History of snoring or sleep apnea, Family history of endocrine disorders
Activity 5: Focused Approach:
Teach how to systematically rule out secondary causes through focused history and examination
Activity 6: Key Investigations:
Discuss when to order specific tests (e.g., plasma aldosterone-renin ratio, urinary catecholamines for pheochromocytoma, CT scan for primary hyperaldosteronism) and compare it with Siddha diagnostic tools
Activity 7: Practical Application: Differential Diagnosis and Management (60 minutes) OSCE method will be followed for Assessment
Objective: To provide scholars with real-life clinical decision-making experiences in hypertension management.
Activity 7.1

Case Scenarios:
Present 2-3 challenging hypertension cases with varying complications (e.g., a patient with chronic kidney disease and resistant hypertension, hypertensive crisis with encephalopathy).
Ask scholars to:
Perform a differential diagnosis.
Decide on initial investigations.
Discuss the importance of diet, exercise, and other lifestyle modifications. Ask scholars to propose a patient lifestyle management plan for each case.
Discuss the management of hypertensive emergencies and the importance of blood pressure reduction in a Siddha way.

Practical Training 3.6 : Diagnosing *Vatha Paandu Noi* through prescribed case sheet format.

Duration of Activity-3 hours
The teacher clearly outlines the objectives of the practical session, such as understanding the causes of disease condition, performing assessments, and exploring management strategies for *Vatha Paandu.*
Activity: Case Based Learning - 3 hours
Activity 1-Assessment of Siddha Diagnostic Tools through Case Studies and Skill Labs in IPD/OPD Settings (30 Minutes)
Different Cases/scenarios/skill labs will be given and PG Scholars will be asked to assess the Siddha diagnostic tools. PG scholars can observe the case from IPD/OPD
Activity 2-History Taking (30 Minutes)
Have participants practice taking patient histories, focusing on the onset, duration, and pattern of disease (continuous, intermittent, remittent) and associated symptoms (e.g., chills, sweating, and headache).
Activity 3-Record the documents (30 Minutes)
Instruct participants to document the examination of the patient through prescribed Case Sheet Format. The student may ascertain prognosis of the disease through any of the diagnostic tools with guidance of teacher.
Activity 4- Compare with Trihumoral vitiation. (20 Minutes)
Assess Clinical Findings through Siddha Diagnostic tools and correlate with the Trihumoral vitiation.
Activity 5- Small group discussions on the pathological findings and their clinical significance should be done along with that assessment of Digestive fire should also be done. Discuss symptoms that warrant immediate medical attention and the conditions that require referral to another system of medicine (10 Minutes)
Activity 6- Patient case history related to similar disease conditions should be additionally provided for comparison and discussion (20 Minutes)
Activity 7-Assesment of line of treatment (30 Minutes)
Develop various lines of treatment based on aspects of *suvai, kunam, veeriyam, vibagam* and state its curable and incurable types.
Activity 8-Personalised feedback on student’s observation and diagnostic accuracy (10 Minutes)

Practical Training 3.7 : Diagnosing *Pitha Paandu Noi* through prescribed case sheet format.

Duration of Activity- 3 hours
The teacher clearly outlines the objectives of the practical session, such as understanding the causes of disease condition, performing assessments, and exploring management strategies for *Pitha Paandu*
Activity :Case-Based Learning (1 hour 30 minutes)
Activity 1-Assessment of Siddha Diagnostic Tools through Case Studies and Skill Labs in IPD/OPD Settings (30 Minutes)
Different Cases/scenarios/skill labs will be given and PG Scholars will be asked to assess the Siddha diagnostic tools. PG scholars can observe the case from IPD/OPD
Activity 2-History Taking (20 Minutes)
Have participants practice taking patient histories, focusing on the onset, duration, and pattern of disease (continuous, intermittent, remittent) and associated symptoms (e.g., chills, sweating, and headache).
Activity 3-Record the documents (20 Minutes)
Instruct participants to document the examination of the patient through prescribed Case Sheet Format. The student may ascertain prognosis of the disease through any of the diagnostic tools with guidance of teacher.
Activity 4- Compare with Trihumoral vitiation. (20 Minutes)
Assess Clinical Findings through Siddha Diagnostic tools and correlate with the Trihumoral vitiation.
Activity: Discussions (1 hour 30 minutes)
Activity 5- Small group discussions on the pathological findings and their clinical significance should be done along with that assessment of Digestive fire should also be done. Discuss symptoms that warrant immediate medical attention and the conditions that require referral to another system of medicine (30 Minutes)
Activity 6- Patient case history related to similar disease conditions should be additionally provided for comparison and discussion (30 Minutes)
Activity 7-Assesment of line of treatment (15 Minutes)
Develop various lines of treatment based on aspects of *suvai, kunam, veeriyam, vibagam* and state its curable and incurable types.
Activity 8- Personalised feedback on student's observation and diagnostic accuracy(15 Minutes)

Experiential learning Activity

Experiential-Learning 3.1 : Hands-on training to diagnose *Vali Thamaraga Noi* (Rheumatic Heart Disease).

Duration of Activity- 2 Hours
Students will be asked to elicit the Ennvagai thervu and other necessary examinations in 5 patients with *Vali Thamaraga Noi* (Rheumatic Heart Disease).
Activity: Case Based Learning: 2 hours
Activity 1: Introduction and Case Study (40 minutes)
Hour 1: Introduction to *Ennvagai Thervu* and *Vali Thamaraga Noi* (Rheumatic Heart Disease)and Case Study
Objective: Briefly introduce the concept of *Ennvagai Thervu* and its importance in diagnosing and managing *Vali Thamaraga Noi*
Explain the components of *Ennvagai Thervu* and the clinical features to look for in patients with *Vali Thamaraga Noi*

Introduce the concept of *Mukkutra Verupadu* and its relevance to *Vali Thamaraga Noi* (Rheumatic Heart Disease).
Case Study : Patient Introduction and Elicitation of Symptoms (10 minutes X 5 = 50 min)
Objective: Provide participants with a case study of a patient with *Vali Thamaraga Noi* (Rheumatic Heart Disease). Ask them to elicit *Ennvagai Thervu* and other necessary modern examinations for this patient.
Divide participants into small groups (4-5 people) and have them discuss and collect key data for diagnosis.
Each group can focus on different components of the assessment (e.g., patient history, clinical examination, diagnostic tests).
Activity 2. Hour 2: Group Discussion on Differential Diagnosis (30 minutes)
Objective: Facilitate a discussion on differential diagnosis and management strategies.
In each small group, participants will analyze the case and generate potential differential diagnoses.
Encourage them to use the *Mukkutra Verupadu* system to assess the underlying cause.
After 20 minutes, each group will present their findings, including the rationale behind their diagnosis and management plan.
Open the floor for questions and peer feedback.
Reflection, Assessment and Debriefing Apply Siddha examination techniques and collaborate with modern diagnostic techniques in presented cases of *Vali Thamaraga Noi*
Reflection on *Ennvagai Thervu* Assessment
Objective: Focus on the inter-rater reliability of the *Ennvagai Thervu* assessment.
Facilitate a discussion on how different participants (across various backgrounds) assessed the *Ennvagai Thervu*.
If discrepancies in assessment arise, discuss the possible reasons and resolve them with the tutor's input.
Provide insights into the standardization of the assessment process and its impact on patient care.
3.2. Group Debriefing and Sharing Insights (15 minutes)
Objective: Reflect on the experiences during the small group discussions and team-based activities.
Encourage each participant to share one key insight or challenge they faced during the experiential learning session.
Discuss how they approached decision-making, particularly when generating the *Mukkutra Verupadu* for *Vali Thamaraga Noi* and the development of the Siddha lab report for Vali Thamaraga Noi with infectious cause.
Conclusion and Q&A
Objective: Wrap up the session with a final Q and A and a summary of the key learning points.
Recap the importance of *Ennvagai Thervu* in clinical practice and how it can guide diagnosis and treatment.
Emphasize the importance of interprofessional collaboration, communication, and critical thinking in managing complex cases.
Provide the opportunity for participants to ask any remaining questions or seek clarification.

Experiential-Learning 3.2 : Compedium of *Iruthaya Noigal* in *Siddha*

Duration of Activity- 2 hours
Activity: Project Based Learning: 2 hours

Students should be asked for literature search initially and the collected information compilation should be done during learning hours.
Activity 1: Overview of Iruthaya Noikal and Introduction to Literature Search Methods(30 minutes)
Activity 2: Individual Literature Search, Group Discussion , and sharing of findings (30 minutes)
Activity 3: Structuring the Compendium (30 minutes)
Activity 4: Collaborative Writing of the compendium, Reviewing and Editing the compendium (30 minutes)

Experiential-Learning 3.3 : Hands-on training to diagnose *Aiyya Thamaraga Noi* (Myocardial Infarction).

Duration of Activity - 2 Hours
Students will be asked to elicit the *Ennvagai thervu* and other necessary examinations in 5 patients with *Aiyya Thamaraga Noi* (Myocardial Infarction).This may include any lower respiratory tract infection, including Tuberculosis.
Activity: Case Based Learning (2 hours)
Activity 1: Introduction and Case Study (40 minutes)
Introduction to *Ennvagai Thervu* and *Aiyya Thamaraga Noi* (Myocardial Infarction).and Case Study
Objective: Briefly introduce the concept of *Ennvagai Thervu* and its importance in diagnosing and managing *Aiyya Thamaraga Noi* (Myocardial Infarction)
Explain the components of *Ennvagai Thervu* and the clinical features to look for in patients with *Aiyya Thamaraga Noi* (Myocardial Infarction).
Introduce the concept of *Mukkutra Verupadu* and its relevance to *Aiyya Thamaraga Noi* (Myocardial Infarction).
Case Study : Patient Introduction and Elicitation of Symptoms (10 minutes X 5 = 50 min)
Objective: Provide participants with a case study of a patient with *Aiyya Thamaraga Noi* (Myocardial Infarction). Ask them to elicit *Ennvagai Thervu* and other necessary modern examinations for this patient.
Divide participants into small groups (4-5 people) and have them discuss and collect key data for diagnosis.
Each group can focus on different components of the assessment (e.g., patient history, clinical examination, diagnostic tests).
Activity 2:Group Discussion on Differential Diagnosis (40 minutes)
Objective: Facilitate a discussion on differential diagnosis and management strategies.
In each small group, participants will analyze the case and generate potential differential diagnoses.
Encourage them to use the *Mukkutra Verupadu* system to assess the underlying cause.
After 20 minutes, each group will present their findings, including the rationale behind their diagnosis and management plan.
Open the floor for questions and peer feedback.
Activity 3: Reflection, Assessment and Debriefing (40 Minutes) Apply Siddha examination techniques and collaborate with modern diagnostic techniques in presented cases of *Aiyya Thamaraga Noi* (Myocardial Infarction).
3.1. Reflection on *Ennvagai Thervu* Assessment (30 minutes)
Objective: Focus on the inter-rater reliability of the *Ennvagai Thervu* assessment.
Facilitate a discussion on how different participants (across various backgrounds) assessed the *Ennvagai Thervu*.

If discrepancies in assessment arise, discuss the possible reasons and resolve them with the tutor's input.
Provide insights into the standardization of the assessment process and its impact on patient care.
3.2. Group Debriefing and Sharing Insights (15 minutes)
Objective: Reflect on the experiences during the small group discussions and team-based activities.
Encourage each participant to share one key insight or challenge they faced during the experiential learning session.
Discuss how they approached decision-making, particularly when generating the *Mukkutra Verupadu* for *Aiyya Thamaraga Noi* (Myocardial Infarction)and the development of the Siddha lab report for *Aiyya Thamaraga Noi* (Myocardial Infarction).
3.3. Conclusion and Q&A (15 minutes)
Objective: Wrap up the session with a final Q and A and a summary of the key learning points.
Recap the importance of *Ennvagai Thervu* in clinical practice and how it can guide diagnosis and treatment.
Emphasize the importance of interprofessional collaboration, communication, and critical thinking in managing complex cases.
Provide the opportunity for participants to ask any remaining questions or seek clarification.

Experiential-Learning 3.4 : Diagnosing *Azhal Thamaraga Noi* hands on training

Duration of Activity- 2 Hours
Students will be asked to elicit the *Ennvagai thervu* and other necessary examinations in 5 patients with *Azhal Thamaraga Noi* (Angina Pectoris). Case scenario / Virtual cases / original cases may be taken. Students may be posted for this experiential learning in nearby Cardiac Care Units. Possible *Ennvagai Thervu* may be done. If there is a practical difficulty in performing procedures, the concept and possible findings alone may be discussed.
Activity: Case Based Learning - 2 hours
Activity: Introduction and Case Study (40 minutes)
Introduction to *Ennvagai Thervu* and *Azhal Thamaraga Noi* and Case Study
Objective: Briefly introduce the concept of Ennvagai Thervu and its importance in diagnosing and managing *Azhal Thamaraga Noi*
Explain the components of *Ennvagai Thervu* and the clinical features to look for in patients with *Azhal Thamaraga Noi*
Introduce the concept of *Mukkutra Verupadu* and its relevance to *Azhal Thamaraga Noi*
Case Study : Patient Introduction and Elicitation of Symptoms (50 min)
Objective: Provide participants with a case study of a patient with *Azhal Thamaraga Noi* .Ask them to elicit *Ennvagai Thervu* and other necessary modern examinations for this patient.
Divide participants into small groups (4-5 people) and have them discuss and collect key data for diagnosis.
Each group can focus on different components of the assessment (e.g., patient history, clinical examination, diagnostic tests).
Activity 2: Group Discussion on Differential Diagnosis (40 minutes)
Objective: Facilitate a discussion on differential diagnosis and management strategies.
In each small group, participants will analyze the case and generate potential differential diagnoses.

Encourage them to use the *Mukkutra Verupadu* system to assess the underlying cause.
After 20 minutes, each group will present their findings, including the rationale behind their diagnosis and management plan.
Open the floor for questions and peer feedback.
Activity 3: Reflection, Assessment and Debriefing (40 min) Apply Siddha examination techniques and collaborate with modern diagnostic techniques in presented cases of *Azhal Thamaraga Noi*
3.1. Reflection on *Ennvagai Thervu* Assessment (30 minutes)
Objective: Focus on the inter-rater reliability of the *Ennvagai Thervu* assessment.
Facilitate a discussion on how different participants (across various backgrounds) assessed the *Ennvagai Thervu*.
If discrepancies in assessment arise, discuss the possible reasons and resolve them with the tutor's input.
Provide insights into the standardization of the assessment process and its impact on patient care.
3.2. Group Debriefing and Sharing Insights (15 minutes)
Objective: Reflect on the experiences during the small group discussions and team-based activities.
Encourage each participant to share one key insight or challenge they faced during the experiential learning session.
Discuss how they approached decision-making, particularly when generating the *Azhal Thamaraga Noi* and the development of the Siddha lab report for *Azhal Thamaraga Noi*
3.3. Conclusion and Q&A (15 minutes)

Experiential-Learning 3.5 : Diagnostic trial protocol for *Iruthaya noigal*

Duration of Activity-2 hours
Student will be trained to develop a blinded diagnostic study research protocol, the following 2-hour structured procedure will guide them through understanding key concepts, developing the research protocol, and critically evaluating the sensitivity, specificity, and predictive values of a trial diagnostic tool (in this case, Siddha method) by comparing it with a gold standard investigation for *Iruthaya noikal* . (Heart disease) The session includes both individual and group activities. Since students are having prior knowledge in designing protocols, they should be advised to do necessary homework before starting this experiencial learning. Likewise, any conditions which falls under the heading *Iruthaya Noikal* may be taken for Experiential learning.
Activity: Brainstorming: 2 hours
Activity 1: Introduction to Diagnostic Study Design (30 minutes)
Introduction to Diagnostic Studies (15 minutes)
Objective: Provide students with a foundational understanding of diagnostic studies.
Key Concepts:
Sensitivity: The ability of the test to correctly identify those with the condition (True Positive Rate).
Specificity: The ability of the test to correctly identify those without the condition (True Negative Rate).
Positive Predictive Value (PPV): The probability that subjects with a positive test result actually have the condition.

Negative Predictive Value (NPV): The probability that subjects with a negative test result actually do not have the condition.
Types of Diagnostic Studies: Overview of blinded diagnostic study design, particularly in the context of comparing a trial tool with a gold standard.
Discuss the importance of using a gold standard (e.g., clinical diagnosis, laboratory test) in comparison with a trial diagnostic tool (e.g., Siddha).
Key Elements of a Diagnostic Study Protocol (15 minutes)
Objective: Introduce the essential components of a research protocol for a diagnostic study.
Research Question: What are we trying to assess? (e.g., Is the Siddha diagnostic tool effective in diagnosing *Iruthaya noikal* compared to the gold standard?)
Population: Describe the population of patients with Iruthaya noikal. Discuss inclusion/exclusion criteria.
Trial Tool (Siddha): What aspects of the Siddha diagnostic method will be tested?
Gold Standard: Identify the gold standard for diagnosing *Iruthaya noikal* (e.g., laboratory tests, imaging).
Blinding: Why blinding is crucial to prevent bias in the study.
Outcome Measures: Sensitivity, specificity, PPV, NPV.
Activity 2: Protocol Development - Research Design (15 minutes)
Defining the Study Population
Objective: Guide students to define and describe the population they will study.
Work with the students to develop inclusion and exclusion criteria for *Iruthaya noikal*
Discuss how to select a representative sample of patients (e.g., severity of illness, demographic factors).
Identify the sample size needed to detect meaningful differences between the Siddha method and the gold standard.
Writing the Research Objectives & Hypothesis
Objective: Teach students how to write clear research objectives and hypothesis.
Research Objectives: Develop a clear research objective such as, "To evaluate the sensitivity, specificity, PPV, and NPV of the Siddha diagnostic tool in diagnosing *Iruthaya noikal* compared with the gold standard."
Hypothesis: Define the null and alternative hypothesis.
Activity 3: Data Collection and Study Protocol Design (15 minutes)
Designing the Study Flow
Objective: Teach students how to design the flow of data collection in a blinded diagnostic study.
Break down the steps of the diagnostic procedure:
Patient Recruitment: Describe how patients will be recruited and consented.
Blinding Process: Ensure that participants (patients) and researchers performing the diagnostic tests are blinded to avoid bias.
Testing Procedure: Define the specific steps for conducting both the Siddha diagnostic method and the gold standard diagnostic test.
Data Recording: Discuss how to record results for both methods and any relevant clinical or laboratory data.
Developing Outcome Measures and Data Analysis Plan
Objective: Guide students on how to define and assess diagnostic outcomes.

Define sensitivity, specificity, PPV, and NPV as the primary outcome measures.
Discuss statistical methods for analyzing diagnostic test accuracy (e.g., Chi-square test, ROC curve analysis).
Activity 4: Writing the Protocol (30 minutes)
Objective: Have students begin drafting the diagnostic study research protocol.
Guide them to structure the research protocol with the following sections:
Title: A clear, concise title reflecting the study's objectives.
Introduction: Background information on Iruthaya noikal and diagnostic challenges, including previous studies on diagnostic tools.
Objectives: State the research objective(s) and hypothesis.
Methods: Detailed design of the study including population, inclusion/exclusion criteria, blinding, diagnostic tests, and data collection.
Outcome Measures: Sensitivity, specificity, PPV, and NPV.
Statistical Analysis: Plan for data analysis (e.g., calculations for sensitivity, specificity, PPV, and NPV).
Activity 5: Drafting Data Collection Forms (15 minutes)
Objective: Guide students in creating data collection sheets or forms.
Discuss the importance of clear and accurate data collection.
Students will create a simple template/form to record results from both the Siddha method and the gold standard tests.
Ensure that forms allow for proper tracking of true positives, false positives, true negatives, and false negatives.
Activity 6: Review, Critique, and Refining the Protocol, Refining Protocols and Finalizing (15 minutes)
Peer Review and Group Discussion
Objective: Allow students to peer-review each other's protocols and provide feedback.
Students will exchange their drafted research protocols with a peer.
Each student will review the protocol for clarity, completeness, and adherence to diagnostic study design principles.
Facilitate a group discussion where common challenges or areas of confusion are addressed.
Objective: Assist students in refining their protocols based on peer feedback.
Students will make revisions to their research protocols.
Provide final guidance and address any outstanding questions regarding study design, ethical considerations, or statistical analysis.

Experiential-Learning 3.6 : Hands-on practice to diagnose *Athi Kuruthi Azhutham* (Primary and Secondary hypertension)

Duration of Activity- 2 Hours
Students will be asked to elicit the *Ennvagai thervu* and other necessary examinations in a series of 5 patients with *Athi Kuruthi Azhutham* (Primary and Secondary hypertension) with different etiologies. This may be done in colloboration with tertiary care centres also.
Activity: Case Based Learning including Case Diagnosis (1 hour)

Activity 1: Introduction and Case Study (60 minutes)
Hour 1: Introduction to *Ennvagai Thervu* and *Athi Kuruthi Azhutham* and Case Study (10 minutes + 50 min)
Objective: Briefly introduce the concept of *Ennvagai Thervu* and its importance in diagnosing and managing *Athi Kuruthi Azhutham* (Primary and Secondary hypertension) with different etiologies.
Explain the components of Ennvagai Thervu and the clinical features to look for in patients with *Athi Kuruthi Azhutham* (Primary and Secondary hypertension)
Introduce the concept of *Mukkutra Verupadu* and its relevance to *Athi Kuruthi Azhutham* (Primary and Secondary hypertension).
Case Study : Patient Introduction and Elicitation of Symptoms (10 minutes X 5 = 50 min)
Objective: Provide participants with a case study of a patient with *Athi Kuruthi Azhutham* (Primary and Secondary hypertension). Ask them to elicit *Ennvagai Thervu* and other necessary examinations for this patient.
Divide participants into small groups (4-5 people) and have them discuss and collect key data for diagnosis.
Each group can focus on different components of the assessment (e.g., patient history, clinical examination, diagnostic tests).
Activity: Discussion (1 hour)
Activity 2: Group Discussion on Differential Diagnosis (60 minutes)
Objective: Facilitate a discussion on differential diagnosis and management strategies.
In each small group, participants will analyze the case and generate potential differential diagnoses.
Encourage them to use the *Mukkutra Verupadu* system to assess the underlying cause.
After 20 minutes, each group will present their findings, including the rationale behind their diagnosis and management plan.
Open the floor for questions and peer feedback.
Focus on the inter-rater reliability of the *Ennvagai Thervu* assessment.
Facilitate a discussion on how different participants (across various backgrounds) assessed the *Ennvagai Thervu*.
If discrepancies in assessment arise, discuss the possible reasons and resolve them with the tutor's input.
Provide insights into the standardization of the assessment process and its impact on patient care.

Experiential-Learning 3.7 : Diagnostic trial protocol for *Athi Kuruthi Azhutham*

Duration of Activity- 2 Hours
Activity: Project Based Learning: 2 hours
Students should be asked to select any two lower respiratory tract which resembles to any sub type of *Athi Kuruthi Azhutham*
Student will be trained to develop a blinded diagnostic study research protocol, the following 2 hour structured procedure will guide them through understanding key concepts, developing the research protocol, and critically evaluating the sensitivity, specificity, and predictive values of a trial diagnostic tool (in this case, Siddha method) by comparing it with a gold standard investigation for *Athi Kuruthi Azhutham*. The session includes both individual and group activities.
Activity 1: Introduction to Diagnostic Study Design (30 minutes)
Introduction to Diagnostic Studies

Objective: Provide students with a foundational understanding of diagnostic studies.
Key Concepts:
Sensitivity: The ability of the test to correctly identify those with the condition (True Positive Rate).
Specificity: The ability of the test to correctly identify those without the condition (True Negative Rate).
Positive Predictive Value (PPV): The probability that subjects with a positive test result actually have the condition.
Negative Predictive Value (NPV): The probability that subjects with a negative test result actually do not have the condition.
Types of Diagnostic Studies: Overview of blinded diagnostic study design, particularly in the context of comparing a trial tool with a gold standard.
Discuss the importance of using a gold standard (e.g., clinical diagnosis, laboratory test) in comparison with a trial diagnostic tool (e.g., Siddha).
Activity 2 - Detailing Key Elements of a Diagnostic Study Protocol (30 minutes)
Objective: Introduce the essential components of a research protocol for a diagnostic study.
Research Question: What are we trying to assess? (e.g., Is the Siddha diagnostic tool effective in diagnosing *Athi Kuruthi Azhutham* compared to the gold standard?)
Population: Describe the population of patients with *Athi Kuruthi Azhutham* Discuss inclusion/exclusion criteria.
Trial Tool (Siddha): What aspects of the Siddha diagnostic method will be tested?
Gold Standard: Identify the gold standard for diagnosing *Athi Kuruthi Azhutham*(e.g., laboratory tests, imaging).
Blinding: Why blinding is crucial to prevent bias in the study.
Outcome Measures: Sensitivity, specificity, PPV, NPV.
Activity 3- Protocol Development - Research Design (30 minutes)
Defining the Study Population
Objective: Guide students to define and describe the population they will study.
Work with the students to develop inclusion and exclusion criteria for *Athi Kuruthi Azhutham*
Discuss how to select a representative sample of patients (e.g., severity of illness, demographic factors).
Identify the sample size needed to detect meaningful differences between the Siddha method and the gold standard.
Writing the Research Objectives & Hypothesis
Objective: Teach students how to write clear research objectives and hypothesis.
Research Objectives: Develop a clear research objective such as, "To evaluate the sensitivity, specificity, PPV, and NPV of the Siddha diagnostic tool in diagnosing *Athi Kuruthi Azhutham* compared with the gold standard."
Hypothesis: Define the null and alternative hypothesis.
Data Collection and Study Protocol Design
Designing the Study Flow
Objective: Teach students how to design the flow of data collection in a blinded diagnostic study.
Break down the steps of the diagnostic procedure:
Patient Recruitment: Describe how patients will be recruited and consented.

Blinding Process: Ensure that participants (patients) and researchers performing the diagnostic tests are blinded to avoid bias.
Testing Procedure: Define the specific steps for conducting both the Siddha diagnostic method and the gold standard diagnostic test.
Data Recording: Discuss how to record results for both methods and any relevant clinical or laboratory data.
Developing Outcome Measures and Data Analysis Plan (30 minutes)
Objective: Guide students on how to define and assess diagnostic outcomes.
Define sensitivity, specificity, PPV, and NPV as the primary outcome measures.
Discuss statistical methods for analyzing diagnostic test accuracy (e.g., Chi-square test, ROC curve analysis).
Activity 4: Writing the Protocol (30 minutes)
Writing the Research Protocol
Objective: Have students begin drafting the diagnostic study research protocol.
Guide them to structure the research protocol with the following sections:
Title: A clear, concise title reflecting the study's objectives.
Introduction: Background information on *Athi Kuruthi Azhutham* and diagnostic challenges, including previous studies on diagnostic tools.
Objectives: State the research objective(s) and hypothesis.
Methods: Detailed design of the study including population, inclusion/exclusion criteria, blinding, diagnostic tests, and data collection.
Outcome Measures: Sensitivity, specificity, PPV, and NPV.
Statistical Analysis: Plan for data analysis (e.g., calculations for sensitivity, specificity, PPV, and NPV).
Drafting Data Collection Forms (30 minutes)
Objective: Guide students in creating data collection sheets or forms.
Discuss the importance of clear and accurate data collection.
Students will create a simple template/form to record results from both the Siddha method and the gold standard tests.
Ensure that forms allow for proper tracking of true positives, false positives, true negatives, and false negatives.

Experiential-Learning 3.8 : Diagnostic accuracy testing of Siddha tools in *Athi Kuruthi Azhutham*.

Duration of Activity - 3 hours
Students will be asked to perform blinded dignostic clinical trial to evaluate the sensitivity and specificity of any Siddha diagnostic tool for *Athi Kuruthi Azhutham*.
Activity: Project Based Learning - 3 hours
Activity 1: Introduction to *Athi Kuruthi Azhutham* Diagnostic Trial (30 minutes)
Activity 2: Understanding the Testing Protocol (30 minutes)
Activity 3: Preparation for Accuracy Testing: Equipment & Setup (30 minutes)
Activity 4: Conducting Accuracy Testing (Any one of the *Enn Vagai Thervu* may be taken as Index test)(60 minutes)
Activity 5: Data Analysis & Evaluation (30 minutes)

Experiential-Learning 3.9 : Diagnostic Alogorithm development for *Raththa Pitham*.

Duration of Activity- 1 hour
Activity: Brainstorming and Presentations (1 hour)
Activity 1- Clearly outline specific objectives, such as improving assessment skills, understanding treatment protocols, and enhancing patient education. (30 minutes)
Activity 2- Develop diagnostic algorithm for Ratha Pitham correlating Siddha and Modern Science through thorough literature search and analysis of trihumoural variation.(30 minutes).

Experiential-Learning 3.10 : Diagnostic algorithm for *Paandu Noi*

Duration of Activity- 4 hours
Activity: Project Based Learning: 4 hours
Activity 1: Developing the Diagnostic Algorithm (60 minutes)
1.1. Structuring the Diagnostic Algorithm (20 minutes)
Objective: Teach students how to structure a comprehensive diagnostic algorithm for *Paandu*
Break down the algorithm into decision points, such as:
Initial Symptoms: Duration and associated symptoms
Clinical Assessment: Key physical exam findings
Laboratory Tests: Blood cultures, CBC, liver function tests, etc.
Siddha Diagnostic Methods: Integration of *Ennvagai Thervu*, *Manikkadai Nool* and possible modern anthropometric measures and *Mukkutra Verupadu* into the process.
Discuss how these decision points lead to different pathways for diagnosing the condition.
1.2. Group Activity: Designing the Algorithm (40 minutes)
Objective: Students will collaborate in small groups to develop the diagnostic algorithm.
Divide the students into small groups (4-5 people) to create a flowchart or diagram that guides the diagnosis of *Paandu*.
Groups will consider:
Clinical history and examination findings.
Laboratory investigations required.
Integration of Siddha methods at each decision point.
Encourage clarity, logic, and practical application when constructing the algorithm.
Activity 2: Refining and Presenting the Diagnostic Algorithm (60 minutes)
2.1. Group Presentations (30 minutes)
Objective: Present and explain the diagnostic algorithms.
Each group will present their diagnostic algorithm to the class.

The presentation should include:
Rationale for the decision points.
The integration of both modern diagnostics and Siddha diagnostics.
Clear explanation of the steps followed in the algorithm.
Allow time for questions and peer feedback after each presentation.
2.2. Peer Review & Feedback (30 minutes)
Objective: Provide constructive feedback to improve the algorithms.
After each presentation, allow peers to ask questions and provide suggestions for improving the algorithm.
Discuss areas for improvement, such as:
The clarity of diagnostic pathways.
Any missing decision points or diagnostic tests.
The appropriateness of incorporating Siddha methods with modern practices.
Encourage critical thinking and refine the algorithms based on feedback.
Activity 3: Finalizing the Algorithm (60 minutes)
3.1. Refining the Diagnostic Algorithm (30 minutes)
Objective: Refine and finalize the diagnostic algorithm based on peer feedback.
Students will return to their groups to revise their diagnostic algorithms.
Revisit the decision points and ensure:
Clear flow of clinical, laboratory, and Siddha diagnostic steps.
Adjustments based on feedback received during peer review.
Ensure the algorithm is practical and can be applied in real-world clinical settings.
3.2. Final Group Discussion (30 minutes)
Objective: Reflect on the process and discuss key learning outcomes.
Facilitate a group discussion where students can reflect on the following:
How integrating Siddha diagnostics alongside modern practices can improve diagnostic accuracy.
The challenges of balancing traditional and modern approaches in the diagnostic algorithm.
How this process enhances their clinical reasoning and decision-making skills.
Activity 4: Consolidation and Conclusion (60 minutes)
4.1. Final Group Presentations (30 minutes)
Objective: Present the final diagnostic algorithm and receive final feedback.
Each group will present their final diagnostic algorithm, taking into account all revisions and feedback.
Ensure that the presentation clearly shows:

The structured approach for diagnosing *Paandu*
Integration of both Siddha and modern diagnostics.
Clear flow with decision points, diagnostic tests, and management options.
4.2. Concluding Reflection and Takeaways (30 minutes)
Objective: Reflect on the overall learning experience and discuss takeaways.
Facilitate a final discussion focusing on:
The importance of collaborative learning in designing diagnostic algorithms.
How integrating multiple diagnostic approaches (modern and traditional) can benefit patient care.
Key challenges encountered in the process of developing a comprehensive diagnostic algorithm.
Application of the algorithm in clinical practice and further improvements

Experiential-Learning 3.11 : Diagnosing Anemia with Advanced Diagnostic Techniques

Duration of Activity – 3 hours
This may make use of virtual labs or may visit centres that outsource services.
Activity: Demonstration Lab (1 hour)
Activity 1: Introduction and Overview: 1 hour
Introduction to Anemia (10 minutes):
Overview of anemia, its prevalence, and health implications.
Importance of accurate diagnosis, including both Siddha and Modern
Advanced Diagnostic Techniques (20 minutes):
Overview of advanced diagnostic tools:
Automated Hematology Analyzers: Use of cyanmethemoglobin method for precise hemoglobin measurement.
Point-of-Care (POC) Devices: HemoCue, Hemo-Control, and DiaSpect for rapid hemoglobin assessment.
Molecular Insights: Metabolomics and nutritional profiling for identifying underlying deficiencies.
Role of AI in Anemia Diagnosis: Enhancing diagnostic accuracy and personalized treatment plans. This may include AI based *Yakkai Ilakkanam* assessment
Group Discussion (30 minutes):
Participants discuss challenges in current diagnostic practices and potential benefits of advanced techniques. Discussion should include comparison of Siddha diagnostic parameters also.
Activity: Practical (2 hours)
Activity 2: Hands-On Experience
Hands-On Stations (40 minutes):
Station 1: Automated Hematology Analyzers

Participants practice using automated analyzers to measure hemoglobin levels.
Discussion on quality control measures and calibration.
Station 2: POC Devices
Participants use POC devices to assess hemoglobin levels.
Comparison of results with automated analyzers.
Station 3: Molecular Profiling
Participants analyze case studies involving metabolomics and nutritional profiling.
Discussion on interpreting results to identify nutritional deficiencies.
Rotating Through Stations (20 minutes):
Participants rotate through each station to gain comprehensive experience.
Activity 3: Case Studies and Conclusion
Case Study Presentations (30 minutes):
Participants work in groups to analyse case studies involving different types of anemia both modern and Siddha classifications.
Use of advanced diagnostic techniques to identify underlying causes.
Conclusion and Reflection (20 minutes):
Participants reflect on their learning experience.
Discussion on integrating advanced diagnostic techniques into clinical practice.

Experiential-Learning 3.12 : Diagnostic algorithm for *Sobai Noi*

Duration of Activity (1 hour)
Activity: Brainstorming (50 minutes)
Students will engage in intensive group brainstorming to explore diagnostic approaches.
They will discuss and identify key elements relevant to the disease and diagnostic flow.
Activity 1: Structuring and Designing the Diagnostic Algorithm (20 minutes)
Groups will outline the diagnostic algorithm based on both Siddha and modern methods.
This step focuses on logical sequencing and accurate clinical reasoning.
Activity 2: Group Presentations and Peer Review (20 minutes)
Each group will present their algorithm to others for feedback.
Peers will offer insights, raise questions, and suggest improvements.
Activity 3: Refining the Algorithm and Group Discussion (10 minutes)
Groups will make quick revisions based on the review discussion.
This helps enhance clarity, completeness, and clinical relevance.

Activity: Presentation (10 minutes)
Activity 4: Final Presentations and Concluding Reflection (10 minutes)
Students will reflect on what they learned during the session.
Facilitator will summarize key takeaways and practical applications.

Modular Assessment

Assessment method	**Hour**
Instructions: Conduct a structured Modular assessment. The assessment will be for 50 marks.Keep a structured marking pattern. Use different assessment methods in each module for the semester. Keep a record of the structured pattern used for assessment. Calculate the Modular grade point as per Table 6 C. CHOOSE ANY OF THE BELOW ASSESSMENT FOR 50 MARKS Total Marks: 50 / Time Duration: 4 Hours 1.VIVA VOCE EXAMINATION (10 Marks) Assessment Structure: Foster a deeper understanding of the underlying mechanisms of the particular disease to inform clinical decision-making and able to interpret the variations of differential diagnosis Marking Distribution: Knowledge and Understanding (4 marks) Detailed pathological knowledge Understanding of Siddha Diagnostic tools and their application Clinical Application (3 marks) Differential Diagnosis Clinical scenarios Radiological interpretation Communication Skills (3 marks) Clarity of expression Use of precise terminology Ability to explain complex concepts 2.OBJECTIVE STRUCTURED CLINICAL EXAMINATION (OSCE) (15 Marks) - Mark Distribution: Clinical Examinations of patients through Yakkai, Aga karuvigal, Pura karuvigal (2 marks) Udal Thaathukkal, ennvagai thervu (2 marks)	4

Manikkadai Nool (2 marks)
Derangement of Mukkutram (2 marks)
Mukkutra Verupadu (2 marks)
Prescription of the line of treatment based on Mukkutram, Suvai and Gunam (2 marks)
Noi Kanippu (2 marks)
Theerum Theera Nilai (1 mark)
3.CLASS PRESENTATION (10 Marks)Assessment Criteria:
Content (4 marks)
Depth of subject matter
Current research inclusion
Clinical correlation
Bibliography
Presentation Skills (3 marks)
Clarity of speech
Time management
Use of visual aids
Audience engagement
Discussion (3 marks)
Handling questions
Critical thinking
Scientific reasoning
Knowledge application
4.POSTER AND CHART MAKING (5 Marks)
Assessment Criteria:
Creativity and Presentation (2 marks)
Clarity of Concepts and Originality (2 marks)
Attractive visuals and Organization (1 mark)
5.SAQ AND LAQ ASSESSMENT
Total Marks: 10
Or
Any practical in converted form can be taken for assessment. (25 marks)
and

Any experiential, such as portfolios / reflections / presentations can be taken as an assessment. (25 marks)

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

Module 4 : Siddha Gastro Enterology

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

Describe the etymology of conditions related to Siddha Gastro Enterological conditions(Including subtypes)
Describe how to approach a Gastro Enterology case
Discuss the cause of Siddha Gastro Enterological condition through Trihumoral theory
Create algorithms for diagnosing Siddha Gastro Enterological condition through Siddha and Modern diagnostic techniques
Design line of treatment

M 4 Unit 1 Suvaiinmai and Neer Vetkai (Ageusia/Diminished appetite/Polydipsia)

4.1.1. Etiology 4.1.2. Premonitory and common signs and symptoms 4.1.3. Types 4.1.4. Tri humoral Variation 4.1.5. Line of treatment 4.1.6. Diagnostic techniques used in siddha system and modern for *Suvai inmai* and *Neer vetkai.*

References: 1,2,7,10,14,15,22,27,37,46,50,102,107

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

CO5,CO7,CO8	Describe the *Iyal* (definition) of *Suvai Inmai* and *Neer vetkai*, *Peyar Karanam* (etymology), *Veru peyar* (synonyms), *Noi varum vazh*i (etiology), *Murkkurikunanga*l (premonitory signs), and *pothu kurikunanga*l (common signs and symptoms) and types (including curable and incurable) with possible modern comparison	2	Lecture	CC	Knows-how	L&PPT
CO5,CO7,CO8	Develop a comprehensive diagnostic algorithm for *Suvai Inmai and Neer Vetkai* through a systematic approach, integrating clinical assessment, laboratory investigations, and traditional siddha diagnostic methods to accurately identify the underlying etiology.	2	Experiential-Learning 4.1	PSY-ORG	Does	TPW
CO5,CO7,CO8	Conduct the examination of a patient through *Yakkai, udal Thathukkal, Ennvagai Thervu, Manikkadai Nool, Mukkutram* and prescribe the line of treatment based on *Mukkutram, Suvai, Kunam and infer the Theerum Theera Nilai of* presented *Suvai Inmai as well as Neervetkai* case.	1	Practical Training 4.1	PSY-GUD	Shows-how	CBL

M 4 Unit 2 Seriyamai noi (Indigestion)

4.2.1. Etiology 4.2.2. Premonitory and common signs and symptoms 4.2.3. Types - 9 types and 4 types 4.2.4. Analysing Tri humoral Variation 4.2.5. Line of treatment 4.2.6.Diagnostic techniques used in Modern and Siddha for Seriyamai.

References: 1,2,7,10,14,15,22,27,37,46,50,67,68

3A	3B	3C	3D	3E	3F	3G
CO5,CO7,CO8	Describe the *Iyal* (definition) of *Seriyamai, Peyar Karanam* (etymology), *Veru peyar* (synonyms), *Noi varum vazh*i (etiology), *Murkkurikunanga*l (premonitory signs), and *pothu kurikunanga*l (common signs and symptoms) and Possible digestive disorders which can be compared including digestive disorders present in Geriatrics.	1	Lecture	CC	Knows-how	L&PPT
CO5,CO7,CO8	Demonstrate Tri humoural Variation estimation and developing line of treatment based on presenting features of *Seriyamai.*	2	Practical Training 4.2	PSY-ORG	Shows-how	DIS,CBL
CO5,CO7,CO8	Analyse Tri humoural Variation estimation and developing line of treatment based on presenting features of *Seriyamai* and its sub types.	3	Experiential-Learning 4.2	PSY-ORG	Does	CD,CBL, D-

						BED,SIM

M 4 Unit 3 Vikkal noi (Hiccups)

4.3.1. Etiology 4.3.2. Premonitory and common signs and symptoms 4.3.3. Types - 6 types 4.3.4. Tri humoral Variation 4.3.5. Line of treatment 4.3.6. Diagnostic techniques used in Siddha system and modern for *Vikkal*

References: 1,2,7,10,14,15,22,31,37,47,50,67,68

3A	3B	3C	3D	3E	3F	3G
CO5,CO7,CO8	Describe the *Iyal* (definition) of *Vikkal noi*, *Peyar Karanam* (etymology), *Veru peyar* (synonyms), *Noi varum vazh*i (etiology), *Murkkurikunanga*l (premonitory signs), and *pothu kurikunanga*l (common signs and symptoms).	1	Lecture	CC	Knows-how	L&PPT
CO5,CO7,CO8	Identify Diagnostic techniques used in Modern and Siddha for *Vikkal* (Hiccups) and develop a diagnostic algorithm.	2	Experiential-Learning 4.3	PSY-ORG	Does	DIS,BS
CO5,CO7,CO8	Analyse Tri humoural Variation and developing line of treatment based on presenting features of *Vikkal* (Hiccough) including possible effect of Varmam in alleviating the condition.	2	Experiential-Learning 4.4	PSY-ORG	Does	BS,TPW
CO5,CO7,CO8	Analyse *Vikkal* (Hiccough)resulting due to iatrogenic cause, drug induced or other usual causes.	1	Experiential-Learning 4.5	PSY-ORG	Does	BS

M 4 Unit 4 Vaanthi noi (Emesis)

4.4.1. Etiology 4.4.2. Premonitory and common signs and symptoms 4.4.3. Types - 11 types and 10 types 4.4.4. Tri humoral Variation 4.4.5. Line of treatment 4.4.6. Diagnostic techniques used in Siddha system and Modern for *Vaanthi*.

References: 1,2,7,10,14,15,22,46,50,67,68

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

CO5,CO7,CO8	Define *Vaanthi, Iyal* (definition), *Peyar Karanam* (etymology), *Veru peyar* (synonyms), *Noi varum vazh*i (etiology), *Murkkurikunanga*l (premonitory signs), and *pothu kurikunanga*l (common signs and symptoms). ,vomiting reflex, Types (Including Curable and incurable) with possible Modern comparison	1	Lecture	CC	Knows-how	L&PPT
CO5,CO7,CO8	Apply and analyse diagnostic techniques used in Modern and Siddha, Tri humoural Variation estimation, and develop a line of treatment for *Vaanthi.*	3	Experiential-Learning 4.6	PSY-ORG	Does	SIM

M 4 Unit 5 Maantham noi (Sluggishness)

4.5.1. Etiology 4.5.2. Premonitory and common signs and symptoms 4.5.3. Types -3 types 4.5.4. Tri humoural Variation 4.5.5. Line of treatment 4.5.6. Diagnostic techniques used in Siddha system for *Maantham*

References: 1,2,7,10,14,15,22,27,46,50,67,68

3A	3B	3C	3D	3E	3F	3G
CO5,CO7,CO8	Define *Maantham Iyal* (definition), *Peyar Karanam* (etymology), *Veru peyar* (synonyms), *Noi varum vazh*i (etiology), *Murkkurikunanga*l (premonitory signs), and *pothu kurikunanga*l (common signs and symptoms) and types (including curable and incurable) with possible modern comparison	2	Lecture	CC	Knows-how	L&PPT
CO5,CO7,CO8	Conduct the examination of a patient through *Yakkai, udal Thathukkal, Ennvagai Thervu, Manikkadai Nool, Mukkutram* and prescribe the line of treatment based on *Mukkutram, Suvai, and gunam and infer the Theerum Theera nilai of* Maantham.	2	Practical Training 4.3	PSY-ORG	Shows-how	DIS,CBL, PBL
CO5,CO7,CO8	Analyse Diagnostic techniques used in Modern and Siddha which helps to assess Maantham and develop a tool to assess *Udal Thee*	5	Experiential-Learning 4.7	PSY-ORG	Does	PER,LS

M 4 Unit 6 Gunmam noi (Acute and Chronic Abdomen)

4.6.1. Etiology 4.6.2. Premonitory and common signs and symptoms 4.6.3. Types - 8 types asper Sage Yugi and other school of thoughts 4.6.4. Tri humoural Variation 4.6.5. Line of treatment 4.6.6. Diagnostic techniques used in Siddha system and Modern.

References: 1,2,7,10,14,15,22,46,50,67,68

3A	3B	3C	3D	3E	3F	3G
CO5,CO7,CO8	Describe the *Iyal* (definition) of *Gunmam noi*, *Peyar Karanam* (etymology), *Veru peyar* (synonyms), *Noi varum vazh*i (etiology), *Murkkurikunanga*l (premonitory signs), and *pothu kurikunanga*l (common signs and symptoms). Types including curable and incurable – with possible Modern comparison (Including Carcinomatous conditions in GIT,).	2	Lecture	CC	Knows-how	L&GD
CO5,CO7,CO8	Apply diagnostic techniques used in Modern and Siddha to arrive at diagnosis of *Gunmam* including analysis of Tri humoural Variation for development of line of treatment.	8	Practical Training 4.4	PSY-ORG	Shows-how	CBL
CO5,CO7,CO8	Observe and analyse the appropriate medicinal combinations for treating *Gunmam* based on different *Dehi/Yakkai Ilakkanam* (temperament) types as per Siddha principles, and determine which set of medicines is most suitable for each *Yaakkai* type for optimal treatment outcomes.	4	Experiential-Learning 4.8	PSY-ORG	Does	CBL
CO5,CO7,CO8	Demonstrate developing diagnostic or prognostic assessment tool for *Gunmam* through standard guidelines.	7	Practical Training 4.5	PSY-SET	Shows-how	PrBL
CO5,CO7,CO8	Compare and analyse the types of *Gunmam* through symptamatology in Siddha Medicine and Modern Science	3	Experiential-Learning 4.9	PSY-ORG	Does	PrBL

M 4 Unit 7 Kudal Pidippu noi (Acute / Chronic Intestinal conditions)

4.7.1. Etiology 4.7.2. Premonitory and common signs and symptoms 4.7.3. Types - 4 types 4.7.4. Tri humoral Variation 4.7.5. Line of treatment 4.7.6. Diagnostic techniques used in Modern and Siddha for *Kudal Pidippu noi*.

References: 1,2,7,10,14,15,22,46,50,67,68

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

CO1,CO5,CO8	Analyse *Kudal Pidippu*, Synonyms, Etiology, Premonitory and common signs and symptoms, Types (including Curable and incurable) with possible Modern comparison	1	Lecture	CC	Knows-how	L&GD
CO1,CO5,CO8	Analyse Diagnostic techniques used in Modern and Siddha and evaluate Tri humoural Variation followed by developing line of treatment based on presenting features of *Kudal Pidippu* through thorough literature search.	1	Experiential-Learning 4.10	PSY-ORG	Does	PER,LS

Practical Training Activity

Practical Training 4.1 : Diagnosing as well as developing line of treatment for *Suvai Inmai* and *Neer Vetkai* as per the prescribed case sheet format

Duration of Activity - 1 hour
The teacher clearly outlines the objectives of the practical session, such as understanding the causes of disease condition, performing assessments, and exploring management strategies. Both conditions may be taken for practical.
Activity: Case-Based Learning (1 hour)
Activity 1-Assessment of Siddha Diagnostic Tools through Case Studies and Skill Labs in IPD/OPD Settings (10 Minutes)
Different Cases/scenarios/skill labs will be given and PG Scholars will be asked to assess the Siddha diagnostic tools. PG scholars can observe the case from IPD/OPD
Activity 2-History Taking (10 Minutes)
Have participants practice taking patient histories, focusing on the onset, duration, and pattern of disease and associated symptoms
Activity 3-Record the documents (10 Minutes)
Instruct participants to document the examination of the patient through prescribed Case Sheet Format. The student may ascertain prognosis of the disease through any of the diagnostic tools with guidance of teacher.
Activity 4- Compare with Trihumoral vitiation. (5 Minutes)
Assess Clinical Findings through Siddha Diagnostic tools and correlate with the Trihumoral vitiation.
Activity 5- Patient case history related to similar disease conditions should be additionally provided for comparison and discussion (5 Minutes)
Activity 6-Assesment of line of treatment (10 Minutes)
Develop various lines of treatment based on aspects of *suvai, kunam, veeriyam, vibagam* and state its curable and incurable types.
Activity 7- Personalised feedback on student's observation and diagnostic accuracy. Discuss the similarities among the findings of each tools in *Ennvagai Thervu* along with inter-rater reliability among students. (10 Minutes)

Practical Training 4.2 : Diagnosing *Seriyamai* through the Siddha diagnostic parameters in a prescribed case sheet format.

Duration of Activity- 2 hours

The teacher clearly outlines the objectives of the practical session, such as understanding the causes of disease condition, performing assessments, and exploring management strategies.
Activity : Case-Based Learning (1 hour)
Activity 1-Assessment of Siddha Diagnostic Tools through Case Studies and Skill Labs in IPD/OPD Settings (10 Minutes)
Different Cases/scenarios/skill labs will be given and PG Scholars will be asked to assess the Siddha diagnostic tools. PG scholars can observe the case from IPD/OPD
Activity 2-History Taking (20 Minutes)
Have participants practice taking patient histories, focusing on the onset, duration, and pattern of disease
Activity 3-Record the documents (20 Minutes)
Instruct participants to document the examination of the patient through prescribed Case Sheet Format. The student may ascertain prognosis of the disease through any of the diagnostic tools with guidance of teacher.
Activity 4-Compare with Trihumoral vitiation. (10 Minutes)
Assess Clinical Findings through Siddha Diagnostic tools and correlate with the Trihumoral vitiation.
Activity: Discussions (1 hour)
Activity 5- Small group discussions on the pathological findings and their clinical significance should be done along with that assessment of Digestive fire should also be done. Discuss symptoms that warrant immediate medical attention,and the conditions that require referral to another system of medicine (20 Minutes)
Activity 6-Patient case history related to similar disease conditions should be additionally provided for comparison and discussion (20 Minutes)
Activity 7-Assesment of line of treatment (10 Minutes)
Develop various lines of treatment based on aspects of *suvai, kunam, veeriyam, vibagam* and state its curable and incurable types.
Activity 8- Personalised feedback on student's observation and diagnostic accuracy(10 Minutes)

Practical Training 4.3 : Diagnosis of *Maantham* through prescribed case sheet format

Duration of Activity- 2 hours
The teacher clearly outlines the objectives of the practical session, such as understanding the causes of disease condition, performing assessments, and exploring management strategies.
Activity: Case-Based Learning (1 hour)
Activity 1-Assessment of Siddha Diagnostic Tools through Case Studies and Skill Labs in IPD/OPD Settings (10 Minutes)
Different Cases/scenarios/skill labs will be given and PG Scholars will be asked to assess the Siddha diagnostic tools. PG scholars can observe the case from IPD/OPD
Activity 2-History Taking (20 Minutes)
Have participants practice taking patient histories, focusing on the onset, duration, and pattern of disease and associated symptoms
Activity 3-Record the documents (20 Minutes)
Instruct participants to document the examination of the patient through prescribed Case Sheet Format. The student may ascertain prognosis of the disease through any of the diagnostic tools with guidance of teacher.

Activity 4- Compare with Trihumoral vitiation. (10 Minutes)
Assess Clinical Findings through Siddha Diagnostic tools and correlate with the Trihumoral vitiation.
Activity:Discussions (1 hour)
Activity 5- Small group discussions on the pathological findings and their clinical significance should be done along with that assessment of Digestive fire should also be done. Discuss symptoms that warrant immediate medical attention, and the conditions that require referral to another system of medicine (20 Minutes)
Activity 6-Patient case history related to similar disease conditions should be additionally provided for comparison and discussion (20 Minutes)
Activity 7-Assesment of line of treatment (10 Minutes)
Develop various lines of treatment based on aspects of *suvai, kunam, veeriyam, vibagam* and state its curable and incurable types.
Activity 8- Personalised feedback on student's observation and diagnostic accuracy(10 Minutes)

Practical Training 4.4 : Diagnosing *Gunmam* and its sub types through prescribed case sheet format.

Duration of Activity - 8 Hours
Activity: Case Based Learning (8 Hours)
Apply diagnostic techniques used in Modern and Siddha to arrive at diagnosis.
Cases or case scenario should be given to students and instruct how to do as well as analyse diagnostic tests.
Gunmam in general as well as subtypes should be demonstrated for arriving at diagnosis.
Duration of Activity- 2 hours for each type of *Gunmam* (*Vali/Azhal/Aiyyam/Eri* types may be taken) may be compared with Peptic ulcer, Duodenal ulcer, Carcinomatous condition etc.
Any gynaecological condition with features of any subtypes of Gunmam- 2 hours
The teacher clearly outlines the objectives of the practical session, such as understanding the causes of disease condition, performing assessments, and exploring management strategies.
Activity 1-Assessment of Siddha Diagnostic Tools through Case Studies and Skill Labs in IPD/OPD Settings (10 Minutes)
Different Cases/scenarios/skill labs will be given and PG Scholars will be asked to assess the Siddha diagnostic tools. PG scholars can observe the case from IPD/OPD
Activity 2-History Taking (30 Minutes)
Have participants practice taking patient histories, focusing on the onset, duration, and pattern of disease
Activity 3-Record the documents (20 Minutes)
Instruct participants to document the examination of the patient through prescribed Case Sheet Format. The student may ascertain prognosis of the disease through any of the diagnostic tools with guidance of teacher.
Demonstrate how to perform *Ennvagai thervu* assessment to arrive at diagnosis.
Demonstrate common modern diagnostic techniques for Mulai Mookkadaippu including examination of the nasopharynx.
Activity 4- Compare with Trihumoral vitiation. (5 Minutes)
Assess Clinical Findings through Siddha Diagnostic tools and correlate with the Trihumoral vitiation.

Activity 5- Small group discussions on the pathological findings and their clinical significance should be done along with that assessment of Digestive fire should also be done. Discuss symptoms that warrant immediate medical attention, such as persistent high fever, difficulty breathing, or rash, and the conditions that require referral to another system of medicine (15 Minutes)
Activity 6- Patient case history related to similar disease conditions should be additionally provided for comparison and discussion (20 Minutes)
Activity 7-Assesment of line of treatment (10 Minutes)
Develop various lines of treatment based on aspects of *suvai, kunam, veeriyam, vibagam* and state its curable and incurable types.
Activity 8- Personalised feedback on student's observation and diagnostic accuracy (10 Minutes)

Practical Training 4.5 : Assessment tool for Gunmam

Duration of Activity- 7 Hours
Activity: Project Based Learning: 7 hours
Students will be demonstrated how to write a diagnostic trial proposal for Gunmam.
Tool development and validation procedures will be demonstrated.
Activity1: Define Problem and Create Questionnaire (1 hour 30 Minutes)
Define the Problem and Purpose (15 mins)
Clarify the condition or outcome being assessed (e.g., mental health, chronic disease risk) and the tool’s objectives (diagnostic or prognostic).
Identify Key Variables (15 mins)
Determine the factors or variables that will be assessed through the questionnaire (e.g., symptoms, lifestyle factors, medical history).
Design Questionnaire (30 mins)
Create a set of relevant questions, ensuring they are clear, concise, and cover the key variables identified. Choose appropriate question types (e.g., Likert scale, yes/no, multiple choice).
Pilot the Questionnaire Internally (30 mins)
Conduct a quick internal pilot test to check for clarity, redundancy, and understandability of questions.
Activity 2: Pre-Test and Refine (1 hour)
Pre-Test the Questionnaire (30 mins)
Run a small-scale pre-test with a sample of participants from the target population (e.g., patients, general public). Collect feedback on clarity, response accuracy, and engagement.
Refine the Questionnaire (30 mins)
Based on the feedback from the pre-test, refine or reword any confusing questions. Remove redundant or irrelevant items and improve the flow of the questionnaire.
Activity 3: Validity Testing – Content and Face Validity (1 hour)
Establish Content Validity (30 mins)
Ensure that the questionnaire covers all relevant aspects of the condition or outcome it aims to measure. Consult experts in the field (e.g., clinicians, researchers) to confirm

that the content is appropriate.
Assess Face Validity (30 mins)
Evaluate whether the questionnaire appears to measure what it intends to, based on feedback from non-expert participants. This is more about the subjective judgment of the target population.
Activity 4: Reliability Testing (1 hour)
Test Reliability – Internal Consistency (30 mins)
Use statistical measures (e.g., Cronbach's Alpha) to evaluate the internal consistency of the questionnaire. Ensure that related items are measuring the same construct.
Test Reliability – Test-Retest (30 mins)
Administer the same questionnaire to the same sample group at two different points in time (e.g., a week apart) and measure the consistency of responses.
Activity 5: Validity Testing – Construct and Criterion Validity (1 hour)
Assess Construct Validity (30 mins)
Use statistical methods (e.g., factor analysis) to check if the questionnaire items align with the theoretical constructs it aims to measure.
Assess Criterion Validity (30 mins)
Compare questionnaire responses with a gold standard or other validated tools (e.g., clinical diagnoses, biomarkers) to assess how well the questionnaire predicts outcomes.
Activity 6: Analyse and Interpret Results (1 hour)
Analyse Validation Results (45 mins)
Compile and analyze data from reliability and validity tests. Look for issues or areas where the questionnaire could be improved.
Revise Based on Results (15 mins)
Revise the questionnaire based on statistical findings, expert feedback, and any issues identified in the validation process.
Activity 7: Final Adjustments, Documentation, and Preparation (30 mins)
Prepare Final Version and Documentation (30 mins)
Finalize the questionnaire with any modifications. Write clear instructions for participants and clinicians on how to use it. Prepare any necessary documentation for future validation or implementation.

Experiential learning Activity

Experiential-Learning 4.1 : Diagnostic algorithm for *Suvai Inmai and Neer Vetkai*

Duration of Activity (2 hours)
Activity:Team Project work (2 hours)
Activity 1: Group Formation and Algorithm Designing (30 Minutes)
Students will form small groups, with each group assigned one or two specific causes of the disease.
They will collaboratively develop a diagnostic algorithm integrating Siddha and modern diagnostic methods.

Activity 2: Group Presentations and Peer Review (30 Minutes)
Each group will present their designed algorithm to the class.
Peers and facilitators will provide constructive feedback for improvement.
Activity 3: Algorithm Refinement and Group Discussion (30 Minutes)
Groups will revise their algorithms based on feedback received.
This activity encourages critical thinking and collaborative refinement.
Activity 4: Final Presentations and Concluding Reflection(30 Minutes)
Finalized algorithms will be presented to the class for review.
A concluding reflection will help consolidate learning and highlight key insights.

Experiential-Learning 4.2 : Hands-on training to diagnose of *Seriyamai*

Duration of Activity- 3 hours
Students will be asked to elicit the *Ennvagai thervu* and other necessary examinations in a series of 5 patients with *Seriyamai* with different etiologies
Activity: Case-Based Learning (1 hour)
Activity 1: Introduction and Case Study (1 hour)
Objective: Briefly introduce the concept of *Ennvagai Thervu* and its importance in diagnosing and managing *Seriyamai* with different etiologies
Explain the components of *Ennvagai Thervu* and the clinical features to look for in patients with Seriyamai
Introduce the concept of *Mukkutra Verupadu* and its relevance to Seriyamai
Case Study : Patient Introduction and Elicitation of Symptoms in a series of 5 patients(10 minutes X 5 = 50 min)
Objective: Provide participants with a case study of a patient with *Seriyamai* . Ask them to elicit *Ennvagai Thervu* and other necessary examinations for this patient.
Divide participants into small groups (4-5 people) and have them discuss and collect key data for diagnosis.
Each group can focus on different components of the assessment (e.g., patient history, clinical examination, diagnostic tests).
Activity: Case-Based Learning (2 hours)
Activity 2: Group Discussion on Differential Diagnosis (1 hour)
Objective: Facilitate a discussion on differential diagnosis and management strategies.
In each small group, participants will analyse the case and generate potential differential diagnoses.
Encourage them to use the *Mukkutra Verupadu* system to assess the underlying cause.
After 20 minutes, each group will present their findings, including the rationale behind their diagnosis and management plan.
Open the floor for questions and peer feedback.
Activity 3: Reflection, Assessment and Debriefing (1 hour)
3.1. Reflection on *Ennvagai Thervu* Assessment (30 minutes)
Objective: Focus on the inter-rater reliability of the *Ennvagai Thervu* assessment.

Facilitate a discussion on how different participants (across various backgrounds) assessed the *Ennvagai Thervu*.
If discrepancies in assessment arise, discuss the possible reasons and resolve them with the tutor's input.
Provide insights into the standardization of the assessment process and its impact on patient care.
3.2. Group Debriefing and Sharing Insights (15 minutes)
Objective: Reflect on the experiences during the small group discussions and team-based activities.
Encourage each participant to share one key insight or challenge they faced during the experiential learning session.
Discuss how they approached decision-making, particularly when generating the *Mukkutra Verupadu* for *Seriyamai*
3.3. Conclusion and Q&A (15 minutes)
Objective: Wrap up the session with a final Q and A and a summary of the key learning points.
Recap the importance of *Ennvagai Thervu* in clinical practice and how it can guide diagnosis and treatment.
Emphasize the importance of interprofessional collaboration, communication, and critical thinking in managing complex cases.
Provide the opportunity for participants to ask any remaining questions or seek clarification.

Experiential-Learning 4.3 : Diagnostic Algorithm for *Vikkal* (Hiccups)

Duration of Activity (2 hours)
Activity: Brainstorming (1 hour)
Activity 1: Summarize Diagnostic Techniques and Design Algorithm
Students will brainstorm and discuss various Siddha and modern diagnostic methods for *vikkal* (hiccough)
They will collaboratively structure a preliminary diagnostic algorithm based on shared insights.
Activity 2: Group Presentations and Peer Review
Each group will present their algorithm to the class for open discussion.
Peers will engage in critical dialogue, offering suggestions and alternative viewpoints.
Activity: Discussions (1 hour)
Activity 3: Refining the Algorithm and Group Discussion
Groups will reflect on the peer feedback and refine their diagnostic models.
This session promotes deeper discussion and consolidation of ideas.
Activity 4: Final Presentations and Concluding Reflection
Final versions of the algorithms will be shared with the class.
The session ends with a reflective discussion on learning outcomes and diagnostic clarity.

Experiential-Learning 4.4 : Developing line of treatment including effect of varmam for *Vikkal* through analysis of *Trihumoural* vitiation with a thorough literature search.

Duration of Activity- 2 hours
Step 1: Detail the Tri humoural vitiation in *Vikkal* and its subtypes (15 minutes)
Step 2: Compare Siddha and the modern etiology of *vikkal* (30 minutes)
Step 3: Correlate Vagal Nerve Stimulation and Diaphragm Massage with *Dasa Naadi and Varmam* (30 minutes)
Step 4: Develop a Siddha diagnostic report for each subtype of *vikkal* (30 minutes)
Step 5: Develop line of treatment based on tri humoural theory (15 minutes)

Experiential-Learning 4.5 : Analyse causes of *Vikkal*

Duration of Activity - 1 hour
Activity: Brainstorming (1 hour)
Activity 1:Introduction to *Vikkal* Causes (5 minutes)
Understand the common causes of hiccups.
Discuss the usual causes of hiccups, including eating habits, stress, and medical conditions.
Activity 2:Iatrogenic and Drug-Induced Causes (20 minutes)
Iatrogenic Causes
Hiccups can occur due to medical procedures or treatments, such as anesthesia or certain medications.
Participants review case studies of hiccups caused by medical interventions.
Drug-Induced Causes
Certain medications like steroids, antibiotics, and psychiatric drugs can trigger hiccups.
Activity: Participants identify common drugs known to cause hiccups and discuss their mechanisms.
Activity 3: Common Causes of Hiccups (20 minutes)
Eating Habits
Eating too quickly, spicy foods, or carbonated beverages can cause hiccups.
Participants share personal experiences with food-related hiccups.
Stress and Emotional Factors
Stress and strong emotions can trigger hiccups.
Participants discuss how stress affects their body and how it might lead to hiccups.
Medical Conditions
Conditions like GERD, nerve irritation, or metabolic disorders can cause persistent hiccups.
Participants explore case studies of hiccups linked to medical conditions.

Activity 4: Conclusion and Reflection (15 minutes)
Summarize the learning experience and reflect on the causes of hiccups.

Experiential-Learning 4.6 : Applying diagnostic techniques in Siddha and modern to develop line of treatment for *Vaanthi.*

Duration of Activity - 3 hours
Activity:Simulation (3 hours)
Activity 1: Different types of *Vaanthi* scenario will be presented to students for developing line of treatment based on vitiated humour, assessed through Siddha diagnostic parameters.(30 minutes)
Activity 2:Students will be asked to interpret vitiated humour in different types of *Vaanthi*. (30 minutes)
Activity 3: A diagnostic algorithm on Siddha as well as modern should be arrived.(60 minutes)
Activity 4:Through an understanding of humoural variation line of treatment will be arrived.(30 minutes)
Activity 5:Group discussions may be conducted to assess the line of treatment developed by each candidate based on their understanding. (30 minutes)

Experiential-Learning 4.7 : Developing *Udal Thee* Assessment Tool

Duration of Activity - 5 hours
Activity :Library Session (1hour 30 minutes)
Activity 1: Literature Search (1 hour)
Students will conduct a focused literature review on *Udal Thee*-related assessment tools and concepts.
This will include exploring both Siddha texts and modern clinical resources to build a strong foundation.
Activity 2: Rough Draft (30 minutes)
Based on the literature findings, students will prepare a preliminary draft of the assessment tool.
This draft will include proposed domains, items, and format for evaluation.
Activity :Team project work (3 hurs 30 minutes)
Activity 3: Check Content Validity (1 hour)
The tool will be reviewed by experts to assess whether it covers all relevant aspects of *Udal Thee*.
Feedback will help refine the tool to ensure completeness and relevance.
Activity 4: Check Construct Validity (1 hour)
Students will verify if the tool truly measures the concept of *Udal Thee* as intended.
This involves comparing it against established theoretical constructs and clinical observations.
Activity 5: Statistical Analysis (30 minutes)
Collected data will be analyzed using appropriate statistical methods to evaluate reliability and validity.

This will help quantify the tool's effectiveness in assessing *Udal Thee.*
Activity 6: Publication and OPD Application (1 hour)
The finalized tool will be prepared for publication and introduced in OPD for practical assessment.
Its use will continue as a routine process for evaluating *Udal Thee* in real-time patients.

Experiential-Learning 4.8 : Decoding types of *Gunmam*

Duration of Activity- 3 hours
Activity: Project Based Learning - 3 hours
Activity 1: Introduction to *Gunmam* in Siddha and Modern Medicine (30 mins)
Symptomatology Overview: Siddha vs. Modern Medicine
Interactive Discussion: Diagnosis Frameworks (20 mins)
Activity 2: Symptom Comparison through Case Studies as well as literature (60 mins)
Activity 3: Integration and Final Reflection (30 mins)
Integrating Siddha and Modern Approaches to *Gunmam* (30 mins)
Final Reflection and Q&A (10 mins)

Experiential-Learning 4.9 : *Yakkai Ilakkanam analysis* for developing optimal treatment outcomes.

Duration of Activity - 4 Hours
Activity: Case-Based Learning: 4 hours
Activity 1: Introduction to Siddha Principles and *Yakkai Ilakkanam* (Temperament Types) (30 mins)
Overview of Siddha medicine as a traditional system of medicine.
Introduction to key concepts: *Gunmam*, *Yakkai Ilakkanam* (temperament), and the role of temperament assessment in treatment plan preparation.
Importance of personalizing treatment based on *Yakkai* (temperament) types for effective management
Understanding *Yakkai Ilakkanam* (Temperament Types) (15 mins)
Characteristics, common ailments, and tendencies associated with each *Yakkai*.
How *Yakkai* types influence the manifestation of Gunmam.
Interactive Discussion (15 mins)
Engage with students to discuss the concept of *Yakkai* and how they perceive its influence on diseases
Share case studies to highlight the different types of *Yakkai* and how *Gunmam* manifests in each.
Activity 2: Pathophysiology of *Gunmam* and Treatment Approaches (30 mins)
Understanding *Gunmam* in Siddha Medicine

Pathophysiology of *Gunmam*
Symptoms and signs of *Gunmam* in different Yakkai types.
Activity 3: Observe Treatment Protocols in Siddha for Gunmam (30 mins)
Activity 4: Mapping Herbs to *Yakkai* Types (30 mins)
Activity 5: Practical Application – Observe and document *Yakkai ilakkanam* of patients with *Gunmam* and document the medicines prescribed. Each student should document details of atleast 5 patients (60 mins)
Activity 6: Case Study Analysis (15 mins)
Activity 7: Suggest Treatment Plan for each *dehi* with *Gunmam* accordingly (30 mins)
Activity 8: Final Q&A and Reflection (15 mins)
Open the floor for final questions and discussions.
Students share reflections on the learning process and any challenges they encountered in developing treatment plans.
Instructor summarizes key points and emphasizes the importance of personalized treatment based on *Yakkai Ilakkanam* for treating Gunmam.

Experiential-Learning 4.10 : Dignosing and developing line of treatment for *Kudal Pidipu* through literature search

Duration of Activity- 1 hour
Activity: Library Session (45 minutes)
Activity 1: Introduction to Diagnostic Techniques in Modern and Siddha Medicine (10 mins)
Activity 2: Evaluating Tri-Humoral Variations in *Kudal Pidippu* (15 mins)
Analyzing the Humoral Imbalances in *Kudal Pidippu*
Activity 3: Literature Search for *Kudal Pidippu* and Line of Treatment (20 mins)
Group Work: Literature Search and Treatment Development
Activity: Presentations: 15 minutes
Group Presentation
Activity 4: Discussion and Conclusion (15 mins)
Class-wide Discussion on Integration
Final Reflection and Takeaways

Modular Assessment

Assessment method	**Hour**
Instructions: Conduct a structured Modular assessment. The assessment will be for 50 marks. Keep a structured marking pattern. Use different assessment methods in	4

each module for the semester. Keep a record of the structured pattern used for assessment. Calculate the Modular grade point as per Table 6 C.
CHOOSE ANY OF THE BELOW ASSESSMENT FOR 50 MARKS
Total Marks: 50 / Time Duration: 4 Hours
1.VIVA VOCE EXAMINATION (10 Marks)
Assessment Structure:
Foster a deeper understanding of the underlying mechanisms of the particular disease to inform clinical decision-making and able to interpret the variations of differential diagnosis
Marking Distribution:
Knowledge and Understanding (4 marks)
Detailed pathological knowledge
Understanding of Siddha Diagnostic tools and their application Clinical Application (3 marks)
Differential Diagnosis
Clinical scenarios
Radiological interpretation Communication Skills (3 marks)
Clarity of expression
Use of precise terminology
Ability to explain complex concepts
2.?OBJECTIVE STRUCTURED CLINICAL EXAMINATION (OSCE) (15 Marks) -
Mark Distribution:
Clinical Examinations of patients through
Yakkai, Aga karuvigal, Pura karuvigal (2 marks)
Udal Thaathukkal, ennvagai thervu (2 marks)
Manikkadai Nool (2 marks)
Derangement of Mukkutram (2 marks)
Mukkutra Verupadu (2 marks)
Prescription of the line of treatment based on Mukkutram, Suvai and Gunam (2 marks)
Noi Kanippu (2 marks)
Theerum Theera Nilai (1 mark)
3.CLASS PRESENTATION (15 Marks) -
Assessment Criteria:
Content (5 marks)
Depth of subject matter

Current research inclusion
Clinical correlation
Bibliography
Presentation Skills (5 marks)
Clarity of speech
Time management
Use of visual aids
Audience engagement
Discussion (5 marks)
Handling questions
Critical thinking
Scientific reasoning
Knowledge application
4.SAQ AND LAQ ASSESSMENT
Total Marks: 10
Or
Any practical in converted form can be taken for assessment. (25 marks)
and
Any experiential, such as portfolios / reflections / presentations can be taken as an assessment. (25 marks)

Semester No : 5

3A Course Outcome	3B Learning Objective (At the end of the (lecture/practical training /experiential learning) session, the students should be able to)	3C Notional learning Hours	3D Lecture/ Practical Training/ Experiential Learning	3E Domain/ Sub Domain	3F Level (Does/Shows how/ Knows how/Know)	3G Teaching Learning Methods
Module 5 : Siddha Splenic, Hepato-Biliary and diseases with Ascites						

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

Describe the etymology of conditions related to Siddha Hepato conditions (Including subtypes)
Describe how to approach a Hepato Biliary case
Discuss the cause of Siddha Hepato Biliary condition through Trihumoral theory
Create algorithms for diagnosing Hepato Biliary condition through Siddha and Modern diagnostic techniques
Design line of treatment

M 5 Unit 1 Kalleeral Noi (Hepatic diseases)

5.1.1. Etiology 5.1.2. Premonitory and common signs and symptoms 5.1.3.Types -3 types 5.1.4. Tri humoral Variation 5.1.5. Line of treatment 5.1.6. Diagnostic techniques used in Siddha system and modern for *Kalleeral noikal.*

References: 1,2,7,10,14,15,22,46,50,51,67,68

3A	3B	3C	3D	3E	3F	3G
CO4,CO5,CO7	Describe the *Iyal* (definition) of *Kalleeral Noi, Peyar Karanam* (etymology), *Veru peyar* (synonyms), *Noi varum vazh*i (etiology), *Murkkurikunanga*l (premonitory signs), and *pothu kurikunanga*l (common signs and symptoms), types (including curable and incurable) with possible Modern comparison	2	Lecture	CC	Knows-how	L&GD,L
CO4,CO5,CO7	Analyse the diffference between the *Kalleeral Noi* condition resulting due to iatrogenic cause, drug induced or other usual causes.	2	Experiential-Learning 5.1	PSY-GUD	Does	BS
CO4,CO5,CO7	Conduct the examination of a patient through *Yakkai, Udal Thathukkal, Ennvagai Thervu, Manikkadai Nool, Mukkutram* and prescribe the line of treatment based on *Mukkutram, Suvai, Kunam & infer the Theerum Theera* presented *Vali Kalleeral*	3	Practical Training 5.1	PSY-GUD	Shows-how	DIS,PL,CBL

	Noi case.					
CO4,CO5,CO7	Develop diagnostic algorithm for *Kalleeral Noi* through *Siddha* and Modern literature.	2	Experiential-Learning 5.2	CC	Does	BS,PBL, DIS
CO4,CO5,CO7	Conduct the examination of a patient through *Yakkai, udal Thathukkal, Ennvagai Thervu, Manikkadai Nool, Mukkutram* and prescribe the line of treatment based on *Mukkutram, Suvai,* and *Kunam* and infer the *Theerum Theera nilai of Aiyya kalleeral Noi.*	4	Practical Training 5.2	PSY-ORG	Shows-how	DIS,CBL
CO4,CO5,CO7	Analyse Diagnostic techniques used in Siddha and Modern, evaluate Tri humoural variation and develop line of treatment for *Kalleeral noi.*	4	Experiential-Learning 5.3	PSY-MEC	Does	DIS
CO4,CO5,CO7	Conduct the examination of a patient through *Yakkai, udal Thathukkal, Ennvagai Thervu, Manikkadai Nool, Mukkutram* and prescribe the line of treatment based on *Mukkutram, Suvai,* and *Kunam* and infer the *Theerum Theera nilai of Azhal kalleeral Noi.*	3	Practical Training 5.3	PSY-GUD	Shows-how	CBL,LRI, PER,DIS

M 5 Unit 2 Manneeral Noi (Splenic diseases)

5.2.1. Etiology 5.2.2. Premonitory and common signs and symptoms 5.2.3. Types - 4 types 5.2.4. Tri humoral Variation 5.2.5. Line of treatment 5.2.6. Diagnostic techniques used in and Siddha system and modern for *Manneeral noikal*.

References: 1,2,7,10,14,15,22,46,50,51,67,68

3A	3B	3C	3D	3E	3F	3G
CO4,CO5,CO7	Describe *Manneeral Noi* synonyms, etiology, premonitory and common signs and symptoms, types with possible modern comparison (including curable and incurable)	1	Lecture	CC	Knows-how	L,L&GD

M 5 Unit 3 Kaamaalai noi (Apathy / Loss of libido / Lack of interest)

5.3.1. Etiology 5.3.2. Premonitory and common signs and symptoms 5.3.3. Types - 13 types 5.3.4. Tri humoral Variation 5.3.5. Line of treatment 5.3.6. Diagnostic

techniques used in Siddha system and modern for *Kaamalai.*

References: 1,2,7,10,14,15,22,46,50,51,67,68

3A	3B	3C	3D	3E	3F	3G
CO4,CO5,CO7	Describe the *Iyal* (definition) of *Kaamalai noi, Peyar Karanam* (etymology), *Veru peyar* (synonyms), *Noi varum vazh*i (etiology), *Murkkurikunanga*l (premonitory signs), and *pothu kurikunanga*l (common signs and symptoms). Types – with possible Modern comparison and curable and incurable status of subtypes.	4	Lecture	CC	Know	L&GD,L
CO4,CO5,CO7	Analyse different types of *Kaamalai noi* through *Ennvagai thervu* and tri humoural theory.	4	Experiential-Learning 5.4	PSY-ORG	Does	L,CBL,DIS
CO4,CO5,CO7	Conduct the examination of a patient through *Yaakai, udal Thathukkal, Ennvagai Thervu, Manikadai Nool, Mukkutram* and prescribe the line of treatment based on *Mukkutram, Suvai, Gunam and infer the Theerum Theera Nilai of* presented Kaamalai case with infectious etiology.	3	Practical Training 5.4	PSY-GUD	Shows-how	CBL,DIS
CO4,CO5,CO7	Observe and analyze the appropriate medicinal combinations for treating *Kaamalai* based on different *Dehi/Yakkai Ilakkanam* (temperament) types as per Siddha principles, and determine which set of medicines is most suitable for each *Yakkai* type for optimal treatment outcomes.	4	Experiential-Learning 5.5	PSY-ORG	Does	PBL,CBL
CO4,CO5,CO7	Conduct the examination of a patient through *Yakkai, udal Thathukkal, Ennvagai Thervu, Manikkadai Nool, Mukkutram* and prescribe the line of treatment based on *Mukkutram, Suvai, Kunam and infer the Theerum Theera Nilai of* presented *Kaamalai* case with non - infectious etiology.	3	Practical Training 5.5	PSY-GUD	Shows-how	DIS,CBL
CO4,CO5,CO7	Describe, summarize and analyse diagnostic techniques used in Modern and Siddha for *Kaamalai* (Jaundice) and develop a diagnostic algorithm.	2	Experiential-Learning 5.6	PSY-ORG	Does	BS,DIS

M 5 Unit 4 Peruvayiru noi (Abdominal enlargement / Ascites)

5.4.1. Etiology 5.4.2. Premonitory and common signs and symptoms 5.4.3. Types - 32 types 5.4.4. Tri humoral Variation 5.4.5. Line of treatment 5.4.6. Diagnostic techniques used in Siddha system and modern for *Peruvayiru*

References: 1,2,7,10,14,15,22,46,50,51,67,68

3A	3B	3C	3D	3E	3F	3G
CO4,CO5,CO7	Describe the *Iyal* (definition) of *Peruvayiru noi, Peyar Karanam* (etymology), *Veru peyar* (synonyms), *Noi varum vazh*i (etiology), *Murkkurikunanga*l (premonitory signs), and *pothu kurikunanga*l (common signs and symptoms). Types – with possible Modern comparison, Curable and incurable.	3	Lecture	CC	Know	L
CO4,CO5,CO7	Develop a compendium on *Peruvayiru Noi (Ascites*) through a thorough literature search including ancient manuscripts and make possible correlations with Modern science for each subtype.	5	Experiential-Learning 5.7	PSY-ORG	Does	LS,PER, DIS
CO4,CO5,CO7	Demonstrate Tri humoural Variation estimation and developing line of treatment based on presenting features of *Peruvayiru Noi.*	4	Practical Training 5.6	PSY-GUD	Shows-how	CBL,DIS
CO4,CO5,CO7	Discuss and Summarize Diagnostic techniques used in Modern and Siddha for *Peruvayiru Noi* (Ascites) and develop a diagnostic algorithm.	3	Experiential-Learning 5.8	PSY-ORG	Does	BS,DIS

Practical Training Activity

Practical Training 5.1 : Diagnosing *Vali Kalleeral Noi*

Duration of Activity- 3 hours
Teacher clearly outlines the objectives of the practical session, such as understanding the causes of disease condition, performing assessments, and exploring management strategies. Original cases/Videos/Simulators/Case scenorio may be taken. Clearly outline the objectives of the practical session, including understanding causes, assessment techniques, and management strategies related to *kalleeral noi.* Any hepatic disease with features of *Vali kalleeral noi* may be taken.
Activity: Case-Based Learning (2 Hours)
Activity 1- Assessment of Siddha Diagnostic Tools through Case Studies and Skill Labs in IPD/OPD Settings Different Cases/scenarios/skill labs will be given and PG Scholars will be asked to assess the Siddha diagnostic tools. PG scholars can observe the case from IPD/OPD (30 Minutes)
Activity 2- History Taking (30 Minutes)

Have participants practice taking patient histories, focusing on the onset, duration, and pattern of disease and associated symptoms.
Activity 3- Record the documents (30 Minutes)
Instruct participants to document the examination of the patient through prescribed Case Sheet Format. Onset, duration, and progression of *Vali kalleeral noi,* Associated symptoms (dark urine, pale stools, pruritus), Alcohol consumption, medications, and past liver disease, Travel history and recent infections.
Activity 4- compare with Trihumoral vitiation (30 Minutes)
Assess Clinical Findings through Siddha Diagnostic tools and correlate with the Trihumoral vitiation.
Activity: Peer Learning with Discussions (1 Hour)
Activity 5- Small group discussions on the pathological findings and their clinical significance should be done along with that assessment of Digestive fire should also be done. (20 Minutes)
Activity 6- Patient case history related to similar disease conditions should be additionally provided for comparison and discussion (20 Minutes)
Activity 7- Assesment of line of treatment (10 Minutes)
Develop various lines of treatment based on aspects of *suvai, kunam, veeriyam, vibagam* and state its curable and incurable types.
Activity 8- Personalised feedback on student's observation and diagnostic accuracy (10 Minutes)

Practical Training 5.2 : Diagnosing *Aiyya Kalleeral noi* through prescribed case sheet format

Duration of Activity - 4 hours
The teacher clearly outlines the objectives of the practical session, such as understanding the causes of disease conditions, performing assessments, and exploring management strategies. Original cases/Videos/Simulations/Case scenarios may be taken. Clearly outline the objectives of the practical session, including understanding causes, assessment techniques, and management strategies related to *Aiyya kalleeral noi*. Any hepatic disease with features of *Aiyya kalleeral noi* may be taken preferably carcinomatous conditions.
Activity: Case-Based Learning (2 hours)
Activity 1-Assessment of Siddha Diagnostic Tools through Case Studies and Skill Labs in IPD/OPD Settings (30 Minutes)
Different Cases/scenarios/skill labs will be given and PG Scholars will be asked to assess the Siddha diagnostic tools. PG scholars can observe the case from IPD/OPD
Activity 2-History Taking (30 Minutes)
Have participants practice taking patient histories, focusing on the onset, duration, and pattern of disease and associated symptoms.
Activity 3-Record the documents (30 Minutes)
Instruct participants to document the examination of the patient through prescribed Case Sheet Format. Onset, duration, and progression of *Aiyya kalleeral noi,* Associated symptoms (dark urine, pale stools, pruritus), Alcohol consumption, medications, and past liver disease, Travel history and recent infections.
Activity 4-compare with Trihumoral vitiation (30 Minutes)
Assess Clinical Findings through Siddha Diagnostic tools and correlate with the Trihumoral vitiation.
Activity: Discussions (2 hours)
Activity 5- Small group discussions on the pathological findings and their clinical significance should be done along with an assessment of Digestive fire should also be

done. (30 Minutes)
Activity 6- Patient case history related to similar disease conditions should be additionally provided for comparison and discussion (30 Minutes)
Activity 7-Assesment of line of treatment (30 Minutes)
Develop various lines of treatment based on aspects of *suvai, kunam, veeriyam, vibagam* and state its curable and incurable types.
Activity 8- Personalized feedback on student's observation and diagnostic accuracy (30 Minutes)

Practical Training 5.3 : Diagnosing *Azhal Kalleeral noi*

Duration of Activity- 3 hours
Teacher clearly outlines the objectives of the practical session, such as understanding the causes of disease condition, performing assessments, and exploring management strategies. Original cases/Videos/Simulators/Case scenorio may be taken. Clearly outline the objectives of the practical session, including understanding causes, assessment techniques, and management strategies related to *Azhal kalleeral noi*. Any hepatic disease with features of *Azhal kalleeral noi* may be taken.
Activity: Case-Based Learning (2 hours)
Activity 1-Assessment of Siddha Diagnostic Tools through Case Studies and Skill Labs in IPD/OPD Settings (30 Minutes)
Different Cases/scenarios/skill labs will be given and PG Scholars will be asked to assess the Siddha diagnostic tools. PG scholars can observe the case from IPD/OPD
Activity 2-History Taking (30 Minutes)
Have participants practice taking patient histories, focusing on the onset, duration, and pattern of disease and associated symptoms.
Activity 3-Record the documents (30 Minutes)
Instruct participants to document the examination of the patient through prescribed Case Sheet Format. Onset, duration, and progression of *Azhal kalleeral noi*, Associated symptoms (dark urine, pale stools, pruritus), Alcohol consumption, medications, and past liver disease, Travel history and recent infections.
Activity 4-compare with Trihumoral vitiation. (30 Minutes)
Assess Clinical Findings through Siddha Diagnostic tools and correlate with the Trihumoral vitiation.
Activity: Discussions (1 hour)
Activity 5- Small group discussions on the pathological findings and their clinical significance should be done along with that assessment of Digestive fire should also be done. (15 Minutes)
Activity 6- Patient case history related to similar disease conditions should be additionally provided for comparison and discussion (20 Minutes)
Activity 7-Assesment of line of treatment (15 Minutes)
Develop various lines of treatment based on aspects of *suvai, kunam, veeriyam, vibagam* and state its curable and incurable types. Students should be able to inter[pret lab reports relevant to the condition.
Activity 8- Personalised feedback on student's observation and diagnostic accuracy(10 Minutes)

Practical Training 5.4 : Diagnosing *kaamalai noi* (Jaundice) with infectious etiology

Duration of Activity - 3 hours
Teacher clearly outlines the objectives of the practical session, such as understanding the causes of disease condition, performing assessments, and exploring management strategies. Original cases/Videos/Simulators/Case scenorio may be taken. Clearly outline the objectives of the practical session, including understanding causes, assessment techniques, and management strategies related to Kaamalai noi (Jaundice) with infectious etiology.
Activity: Case-Based Learning (2 hours)
Activity 1-Assessment of Siddha Diagnostic Tools through Case Studies and Skill Labs in IPD/OPD Settings (30 Minutes)
Different Cases/scenarios/skill labs will be given and PG Scholars will be asked to assess the Siddha diagnostic tools. PG scholars can observe the case from IPD/OPD
Activity 2-History Taking (30 Minutes)
Have participants practice taking patient histories, focusing on the onset, duration, and pattern of disease and associated symptoms.
Activity 3-Record the documents (30 Minutes)
Instruct participants to document the examination of the patient through prescribed Case Sheet Format. Onset, duration, and progression of *Kaamalai noi*, Associated symptoms (dark urine, pale stools, pruritus), Alcohol consumption, medications, and past liver disease, Travel history and recent infections.
Activity 4-compare with Trihumoral vitiation. (30 Minutes)
Assess Clinical Findings through Siddha Diagnostic tools and correlate with the Trihumoral vitiation.
Activity: Discussions (1 hour)
Activity 5- Small group discussions on the pathological findings and their clinical significance should be done along with that assessment of Digestive fire should also be done. (15 Minutes)
Activity 6- Patient case history related to similar disease conditions should be additionally provided for comparison and discussion (20 Minutes)
Activity 7-Assesment of line of treatment (15 Minutes)
Develop various lines of treatment based on aspects of *suvai, kunam, veeriyam, vibagam* and state its curable and incurable types.
Activity 8- Personalised feedback on student’s observation and diagnostic accuracy (10 Minutes)

Practical Training 5.5 : Diagnosing *kaamalai noi* (Jaundice) with infectious etiology

Duration of Activity - 3 hours
Teacher clearly outlines the objectives of the practical session, such as understanding the causes of disease condition including *marana kurigunangal*, performing assessments, and exploring management strategies. Original cases/Videos/Simulators/Case scenorio may be taken. Clearly outline the objectives of the practical session, including understanding causes, assessment techniques, and management strategies related to *Kaamalai noi* (Jaundice) with non- infectious etiology.

Activity: Case-Based Learning (2 hours)
Activity 1-Assessment of Siddha Diagnostic Tools through Case Studies and Skill Labs in IPD/OPD Settings (30 Minutes)
Different Cases/scenarios/skill labs will be given and PG Scholars will be asked to assess the Siddha diagnostic tools. PG scholars can observe the case from IPD/OPD
Activity 2-History Taking (30 Minutes)
Have participants practice taking patient histories, focusing on the onset, duration, and pattern of disease and associated symptoms.
Activity 3-Record the documents (30 Minutes)
Instruct participants to document the examination of the patient through prescribed Case Sheet Format. Onset, duration, and progression of *kaamalai noi*, Associated symptoms (dark urine, pale stools, pruritus), Alcohol consumption, medications, and past liver disease, Travel history and recent infections.
Activity 4-compare with Trihumoral vitiation. (30 Minutes)
Assess Clinical Findings through Siddha Diagnostic tools and correlate with the Trihumoral vitiation.
Activity: Discussions (1 hour)
Activity 5- Small group discussions on the pathological findings and their clinical significance should be done along with that assessment of Digestive fire should also be done. (15 Minutes)
Activity 6- Patient case history related to similar disease conditions should be additionally provided for comparison and discussion (20 Minutes)
Activity 7-Assesment of line of treatment (15 Minutes)
Develop various lines of treatment based on aspects of *suvai, kunam, veeriyam, vibagam* and state its curable and incurable types.
Activity 8- Personalised feedback on student's observation and diagnostic accuracy (10 Minutes)

Practical Training 5.6 : Diagnosing *Peruvayiru* through the Siddha diagnostic parameters in a prescribed case sheet format.

Duration of Activity - 4 hours
The teacher clearly outlines the objectives of the practical session, such as understanding the causes of disease conditions including *Marana kurigunangal* (Fatal signs) performing assessments, and exploring management strategies.
Activity: Case-Based Learning (2 hours)
Activity 1-Assessment of Siddha Diagnostic Tools through Case Studies and Skill Labs in IPD/OPD Settings (30 Minutes)
Different Cases/scenarios/skill labs will be given and PG Scholars will be asked to assess the Siddha diagnostic tools. PG scholars can observe the case from IPD/OPD
Activity 2-History Taking (30 Minutes)
Have participants practice taking detailed patient histories, focusing on: Onset, duration, and progression of abdominal distension and associated symptoms (e.g., abdominal pain, shortness of breath, weight changes)
Medical history (liver disease, heart failure, malignancies)
Medication history and lifestyle factors (e.g., alcohol intake)
Activity 3-Record the documents (30 Minutes)
Instruct participants to document the examination of the patient through prescribed Case Sheet Format. The student may ascertain prognosis of the disease through any of the

diagnostic tools with guidance of teacher.
Activity 4- Compare with Trihumoral vitiation. (30 Minutes)
Assess Clinical Findings through Siddha Diagnostic tools and correlate with the Trihumoral vitiation.
Activity: Discussions (2 hours)
Activity 5- Small group discussions on the pathological findings and their clinical significance should be done along with that assessment of Digestive fire should also be done. Discuss symptoms that warrant immediate medical attention,and the conditions that require referral to another system of medicine (30 Minutes)
Activity 6- Patient case history related to similar disease conditions should be additionally provided for comparison and discussion (15 Minutes)
Activity 7-Assesment of line of treatment (30 Minutes)
Develop various lines of treatment based on aspects of *suvai, kunam, veeriyam, vibagam* and state its curable and incurable types.
Activity 8- Personalised feedback on student's observation and diagnostic accuracy (15 Minutes)
Clearly outline the objectives for the practical session, emphasizing understanding, assessment, and management of *Peruvayiru* including ascites.

Experiential learning Activity

Experiential-Learning 5.1 : Analysing cause for development of *Kalleeral Noi*

Duration of Activity- 2 hours
Activity: Brainstorming (2 hours)
Activity 1: Introduction to *Kalleeral Noi* (Jaundice) in Siddha Medicine (30 mins)
Definition and Overview
Types of *Kalleeral Noi* in Siddha
Symptoms in Siddha
Activity 2: *Kalleeral Noi* in Modern Medicine (30 mins)
Modern Understanding of Jaundice:
Jaundice is caused by an increase in bilirubin due to liver dysfunction or bile flow obstruction.
Common causes include hepatitis, alcohol-related liver disease, gallstones, and pancreatitis.
Diagnostic Techniques in Modern Medicine:
Blood Tests: Bilirubin levels, liver function tests (ALT, AST), complete blood count (CBC), and coagulation tests.
Imaging: Ultrasound, CT scan, or MRI to detect gallstones, tumors, or liver abnormalities.
Liver Biopsy: To identify liver inflammation, cirrhosis, or hepatitis.
Iatrogenic and Drug-Induced Causes:
Brainstorming discussion on Iatrogenic Causes: Jaundice due to medical interventions like invasive procedures, infections acquired in hospitals, or transfusions.
Drug-Induced Causes: Medications (e.g., acetaminophen overdose, antibiotics, antifungals, and antiretrovirals) causing liver injury or cholestasis.

Other Usual Causes:
Hepatitis (viral or alcoholic), gallstones, pancreatic issues, and cirrhosis are typical causes of jaundice.
Diagnosis in Modern Medicine: Blood tests, liver biopsy, and imaging to
Activity 3: Diagnostic Methods in Siddha and Modern Medicine – Comparative Analysis (30 mins)
Experiential Activities:
Activity 4: Case Study and Group Work (20 mins)
Divide the students into groups. Provide each group with a case study of a patient with *Kalleeral Noi* (Jaundice):
Case Study 1: Drug-Induced Jaundice – A patient has recently started a new medication regimen and presents with jaundice symptoms.
Case Study 2: Iatrogenic Jaundice – A patient develops jaundice post-surgery.
Case Study 3: Viral Hepatitis Jaundice – A patient presents with jaundice after being diagnosed with hepatitis.
Activity 5: Group Presentations and Discussion (10 mins)

Experiential-Learning 5.2 : Diagnostic algorithm for *Kalleeral Noi*

Duration of Activity- 2 hours
Activity: Brainstorming (1 hour)
Activity 1: Introduction and Group Formation (30 minutes)
Begin with a brief introduction to *Kalleeral Noi* and the objectives of the session. Divide participants into small groups of 4 to 6 members and provide each group with a clinical case scenario.
Activity 2: Brainstorming and Structuring the Diagnostic Algorithm (30 minutes)
Each group discusses the given case, identifies relevant findings through *Ennvagai Thervu* and modern diagnostic tools like liver function tests and ultrasound. They determine the *Mukkutra Verupadu* and draft a preliminary diagnostic algorithm.
Activity: presentations with discussions (1 hour)
Activity 3: Group Presentations and Peer Review (15 minutes)
Groups present their diagnostic algorithms to the class, with each group allotted five minutes. Peer groups and the facilitator offer constructive feedback and identify commonalities and differences.
Activity 4: Teaching Management Strategies (15 minutes)
The facilitator gives a short, focused teaching session on evidence-based management strategies from both Siddha and modern medicine. This includes herbal formulations, dietary guidelines, hepatoprotective agents, and supportive care. An open discussion follows on integrating these approaches.
Activity 5: Refinement of Algorithm and Formulation of Management Plan (15 minutes)
Groups revise their diagnostic algorithms based on feedback and add corresponding management plans. The focus is on aligning treatment steps with the identified *Mukkutra Verupadu* and relevant modern findings.
Activity 6: Final Presentations and Concluding Reflection (15 minutes)

Each group presents their refined algorithm and management strategy. The session concludes with a reflective discussion on what was learned, emphasizing the value of integrative diagnostics and collaborative reasoning.

Experiential-Learning 5.3 : Hands-on training to diagnose of *Kalleeral noi.*

Duration of Activity - 4 hours
Students will be asked to elicit the *Ennvagai thervu* and other necessary examinations in a series of 5 patients with *Kalleeral noi.*with different etiologies. Real cases/scenarios/case videos / simulated patients/reports of patients with *Kalleeral noi.* may be taken.
Activity: Lecture (1 hour 40 Minutes)
Activity 1: Introduction and Case Study (1 hour 40 Minutes)
Introduction to *Ennvagai Thervu* and *Kalleeral noi*.and Case Study
Objective: Briefly introduce the concept of Ennvagai Thervu and its importance in diagnosing and managing *Kalleeral noi* .with different etiologies
Explain the components of *Ennvagai Thervu* and the clinical features to look for in patients with *Kalleeral noi*
Introduce the concept of *Mukkutra Verupadu* and its relevance to *Kalleeral noi*
Case Study : Patient Introduction and Elicitation of Symptoms in a series of 5 patients(20 minutes X 5 = 100 min)
Objective: Provide participants with a case study of a patient with *Kalleeral noi* , Ask them to elicit *Ennvagai Thervu* and other necessary examinations for this patient.
Divide participants into small groups (4-5 people) and have them discuss and collect key data for diagnosis.
Each group can focus on different components of the assessment (e.g., patient history, clinical examination, diagnostic tests).
Activity: Discussions(1 hour 40 Minutes)
Activity 2: Group Discussion on Differential Diagnosis (1 hour)
Objective: Facilitate a discussion on differential diagnosis and management strategies.
In each small group, participants will analyze the case and generate potential differential diagnoses.
Encourage them to use the *Mukkutra Verupadu* system to assess the underlying cause and develop line of treatment based on that.
After 20 minutes, each group will present their findings, including the rationale behind their diagnosis and management plan.
Open the floor for questions and peer feedback.
Activity 3: Reflection, Assessment and Debriefing (40 Minutes)
3.1. Reflection on *Ennvagai Thervu* Assessment (20 minutes)
Objective: Focus on the inter-rater reliability of the *Ennvagai Thervu* assessment.
Facilitate a discussion on how different participants (across various backgrounds) assessed the *Ennvagai Thervu*.
If discrepancies in assessment arise, discuss the possible reasons and resolve them with the tutor's input.
Provide insights into the standardization of the assessment process and its impact on patient care.
3.2. Group Debriefing and Sharing Insights (20 Minutes)
Objective: Reflect on the experiences during the small group discussions and team-based activities.

Encourage each participant to share one key insight or challenge they faced during the experiential learning session.
Discuss how they approached decision-making, particularly when generating the *Mukkutra Verupadu* for *Kalleeral noi*
Activity 4: Developing a Siddha lab report or analyzing modern lab reports in the context of Siddha medicine principles and foundational concepts (20 Minutes)
Activity 5: Conclusion and Q&A (20 Minutes)
Objective: Wrap up the session with a final Q and A and a summary of the key learning points.
Recap the importance of *Ennvagai Thervu* in clinical practice and how it can guide diagnosis and treatment.
Emphasize the importance of interprofessional collaboration, communication, and critical thinking in managing complex cases.
Provide the opportunity for participants to ask any remaining questions or seek clarification.

Experiential-Learning 5.4 : Analyze Tri humoural Variation in different types of *Kaamalai*

Durationof Activity - 4 hours
Activity: Lecture (40 minutes)
Activity 1: Introductory Lecture and Orientation (40 minutes)
The facilitator introduces *Kaamalai Noi*, covering its classification, causes, clinical features, and progression according to Siddha medicine. Emphasis is laid on the importance of *Ennvagai Thervu* and its components (*Naa, Niram, Mozhi, Vizhi, Sparisam, Malam, Moothiram, Naadi*) and how they are interpreted in liver-related disorders. The concept of *Mukkutra Verupadu* is explained in the context of *Kaamalai*, with examples showing how different doshic imbalances manifest in clinical features.
Activity: Case diagnosis (1 hour)
Activity 2: Case Study Introduction and Group Work (1 hour)
Three to five varied case scenarios of *Kaamalai Noi* are introduced (e.g., *Pitha Kaamalai* due to viral infection, *Pitha kaba Kaamalai* in alcoholic liver disease, *Mukkuttra Kaamalai* in chronic hepatic failure). Each group receives a different case. Students analyze case histories and elicit findings through simulated or presented data based on *Ennvagai Thervu*. Each group assesses *Naadi, Niram, Naa,* etc., and uses those findings to determine the dominant dosham and type of *Kaamalai Noi.* A Siddha-style case sheet is filled by each group.
Activity: Discussions (2 hours 20 Minutes)
Activity 3: Group Discussion on Diagnosis and *Mukkutram* Correlation (1 hour)
Groups now focus on constructing differential diagnoses and proposing a treatment line using the observed *Ennvagai Thervu* data and understanding of tri-*dosha* vitiation. They discuss the doshic nature of the *Kaamalai* type, its (pathogenesis), and prognosis. Each group presents their findings, diagnostic logic, and treatment proposals. This is followed by peer questions and expert commentary to refine diagnostic reasoning and therapeutic choices.
Activity 4: Siddha-Modern Correlation and Reflection (Duration: 40 minutes)
Students now receive mock lab reports (e.g., elevated bilirubin, SGPT/SGOT levels, USG liver findings). They must integrate these findings with Siddha assessment data. Each group discusses how *Moothiram (Neikkuri/Neerkkuri)* and *Naadi* match or differ from modern lab results. They also reflect on the consistency and subjectivity in *Ennvagai Thervu* among peers and explore the importance of standardization. This deepens understanding of diagnostic accuracy.

Activity 5: Debrief and Conclusion (Duration: 40 minutes)
A guided debriefing session follows, where students share insights and challenges faced in applying *Ennvagai Thervu*. Faculty summarizes the key learning points: how types of *Kaamalai* differ clinically, how dosha dominance is determined, and how integrated reasoning enhances accuracy in diagnosis. The session concludes with open Q&A and discussion on the role of experiential learning in mastering clinical Siddha practice.

Experiential-Learning 5.5 : *Yakkai Ilakkanam analysis* for developing optimal treatment outcomes.

Duration of Activity - 4 hours
Activity: Case-Based Learning (30 Minutes)
Activity 1: Introduction to Siddha Principles and *Yakkai Ilakkanam* (Temperament Types) (30 Minutes)
Overview of Siddha medicine as a traditional system of medicine.
Introduction to key concepts: *Kaamalai*, *Yakkai Ilakkanam* (temperament), and the role of temperament assessment in treatment plan preparation.
Importance of personalizing treatment based on *Yakkai* (temperament) types for effective management
Understanding *Yakkai Ilakkanam* (Temperament Types) (15 mins)
Characteristics, common ailments, and tendencies associated with each *Yakkai*.
How *Yakkai* types influence the manifestation of *Kaamalai,*
Interactive Discussion (15 mins)
Engage with students to discuss the concept of *Yakkai* and how they perceive its influence on diseases
Share case studies to highlight the different types of *Yakkai* and how *Kaamalai,* manifests in each.
Activity: Problem-Based Learning (3 hours 30 Minutes)
Activity 2: Pathophysiology of *Gunmam* and Treatment Approaches (30 mins)
Understanding *Kaamalai,* in Siddha Medicine
Pathophysiology of *Gunmam*
Symptoms and signs of *Gunmam* in different *Yakkai* types.
Activity 3: Observe Treatment Protocols in Siddha for *Kaamalai,* (30 mins)
Activity 4: Mapping Herbs to *Yakkai* Types (30 mins)
Activity 5: Practical Application – Observe and document *Yakkai ilakkanam* of patients with *Kaamalai,* and document the medicines prescribed. Each student should document details of atleast 5 patients (1 hour)
Activity 6: Case Study Analysis (15 mins)
Activity 7: Suggest Treatment Plan for each dehi with *gunmam* accordingly (30 mins)
Activity 8: Final Q&A and Reflection (15 mins)
Open the floor for final questions and discussions.
Students share reflections on the learning process and any challenges they encountered in developing treatment plans.

Instructor summarizes key points and emphasizes the importance of personalized treatment based on *Yakkai Ilakkanam* for treating *Kaamalai*, and a 360-degree performance evaluation should be done.

Experiential-Learning 5.6 : Diagnostic algorithm for *Kaamalai* (Jaundice)

Duration of Activity - 2 hours
Activity: Brainstorming (1 Hour)
Activity 1: Group Work – Designing a Diagnostic Algorithm
Students work in groups to create diagnostic algorithms integrating both Siddha and modern methods, focusing on specific disease causes.
Activity 2: Group Presentations & Peer Review
Each group presents their algorithm for feedback and suggestions from peers to improve clarity and clinical relevance.
Activity: Discussion (1 Hour)
Activity 3: Refining the Algorithm & Group Discussion
Groups revise their algorithms based on feedback and engage in discussion to address gaps and enhance integration of both systems.
Activity 4: Final Presentations & Reflection
Final versions are presented, followed by reflective discussion on challenges, insights, and the value of integrated diagnostic approaches.

Experiential-Learning 5.7 : Compendium of *Peruvayiru Noi* (Ascites)

Duration of Activity - 5 hours
Activity: Library session (1 hour 30 Minutes)
Activity 1: Overview of *Peruvayiru Noi* (30 Minutes)
Instructor led interactive discussion on etiology, pathology, and clinical features in Siddha and modern medicine.
Students ask questions and clarify conceptual understanding.
Activity 2: Introduction to Literature Search Methods (30 Minutes)
Orientation on using Siddha texts, medical databases, journals, and indexing methods.
Demonstrate keywords, Boolean logic, and referencing tools.
Activity 3: Individual Literature Search (30 Minutes)
Students independently gather references and information on *Peruvayiru Noi*.
Focus on historical context, classical texts, and modern research findings.
Activity: Discussions (2 hours)
Activity 4: Group Discussion and Sharing of Findings (30 Minutes)
Groups discuss their literature findings, identify gaps, and validate sources.

Align data under themes: symptoms, causes, diagnostic tools, treatment.
Activity 5: Structuring the Compendium (30 Minutes)
Plan the layout: introduction, causes, diagnosis, treatment (Siddha & modern), prognosis.
Assign sections to group members.
Activity 6: Collaborative Writing of the Compendium (30 Minutes)
Groups collaboratively write assigned sections using agreed format.
Use citations from literature search.
Activity 7: Reviewing and Editing the Compendium (30 Minutes)
Exchange compendiums across groups for peer review.
Edit for clarity, accuracy, coherence, and references.
Activity: Presentations (1 hour 30 Minutes)
Activity 8: Preparing Presentations (30 Minutes)
Groups design a concise presentation based on compendium highlights.
Include diagnostic flowcharts, treatment strategies, and key research insights.
Activity 9: Group Presentations (30 Minutes)
Each group presents their compendium content.
Peers and instructors ask questions and give constructive feedback.
Activity 10: Reflection and Feedback (30 Minutes)
Open floor for student reflections on the process and content learned.
Instructor summarizes key takeaways and gives feedback on group outputs.

Experiential-Learning 5.8 : Diagnostic Algorithm for *Peruvayiru* (Ascites)

Duration of Activity - 3 hours
Activity: Brainstorming (1 hour 30 Minutes)
Activity 1: Group Brainstorming & Algorithm Design (1 hour)
Students are divided into groups to identify specific disease causes and design diagnostic algorithms integrating Siddha and modern methods.
Each group collaborates to structure step-by-step diagnostic pathways based on traditional and contemporary approaches.
Activity 2: Group Presentations & Peer Review (30 Minutes)
Groups present their draft algorithms to peers.
Peer feedback is encouraged to evaluate clarity, integration, and clinical feasibility.
Activity: Discussions (1 hour 30 Minutes)
Activity 3: Refinement & Group Discussion (30 Minutes)

Groups refine their algorithms based on peer input.
An open discussion helps validate logic and harmonize traditional-modern diagnostics.
Activity 4: Final Presentations & Reflection (1 hour)
Final algorithms are presented, showcasing improved versions.
Students reflect on the integration process, challenges faced, and key takeaways.

Modular Assessment

Assessment method	**Hour**
Instructions: Conduct a structured Modular assessment. The assessment will be for 50 marks. Keep a structured marking pattern. Use different assessment methods in each module for the semester. Keep a record of the structured pattern used for assessment. Calculate the Modular grade point as per Table 6 C. CHOOSE ANY OF THE BELOW ASSESSMENT FOR 50 MARKS Total Marks: 50 / Time Duration: 4 Hours 1.VIVA VOCE EXAMINATION (10 Marks) Assessment Structure: Foster a deeper understanding of the underlying mechanisms of the particular disease to inform clinical decision-making and able to interpret the variations of differential diagnosis Marking Distribution: Knowledge and Understanding (4 marks) Detailed pathological knowledge Understanding of Siddha Diagnostic tools and their application Clinical Application (3 marks) Differential Diagnosis Clinical scenarios Radiological interpretation Communication Skills (3 marks) Clarity of expression Use of precise terminology Ability to explain complex concepts 2.OBJECTIVE STRUCTURED CLINICAL EXAMINATION (OSCE) (15 Marks) Mark Distribution: Clinical Examinations of patients through Yakkai, Aga karuvigal, Pura karuvigal (2 marks)	4

Udal Thathukkal, ennvagai thervu (2 marks)
Manikkadai Nool (2 marks)
Derangement of Mukkutram (2 marks)
Mukkutra Verupadu (2 marks)
Prescription of the line of treatment based on Mukkutram, Suvai and Gunam (2 marks)
Noi Kanippu (2 marks)
Theerum Theera Nilai (1 mark)
3.CLASS PRESENTATION (10 Marks)
Assessment Criteria:
Content (4 marks)
Depth of subject matter
Current research inclusion
Clinical correlation
Bibliography
Presentation Skills (3 marks)
Clarity of speech
Time management
Use of visual aids
Audience engagement
Discussion (3 marks)
Handling questions
Critical thinking
Scientific reasoning
Knowledge application
4.POSTER AND CHART MAKING (5 Marks)
Assessment Criteria:
Creativity and Presentation (2 marks)
Clarity of Concepts and Originality (2 marks)
Attractive visuals and Organization (1 mark)
5.SAQ AND LAQ ASSESSMENT
Total Marks: 10
Or

Any practical in converted form can be taken for assessment. (25 marks)
and
Any experiential, such as portfolios / reflections / presentations can be taken as an assessment. (25 marks)

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

Module 6 : Diarrhoeal Diseases and Proctology

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

Describe the symptoms of diarrhoeal and proctological conditions to classify them based on the Trihumoral theory and identify the underlying imbalances.
Develop a diagnostic algorithm to arrive at an accurate diagnosis along with the development of Siddha lab reports.
Design an appropriate treatment plan based on the identified humour imbalances and demonstrate the application of Siddha therapeutic principles in addressing diarrheal diseases and proctological conditions.

M 6 Unit 1 Kirumi Noikal

6.1.1. Etiology 6.1.2. Premonitory and common signs and symptoms 6.1.3. Types 6.1.4. Analysing Tri humoral Variations 6.1.5. Line of treatment 6.1.6. Evaluating Diagnostic techniques used in Siddha system

References: 1,2,7,10,14,15,37,90

3A	3B	3C	3D	3E	3F	3G
CO5,CO6,CO8	Describe *Kirumi Noikal* Premonitory and common signs and symptoms and introduction to Gut dysbiosis –Gut Microbiome.	2	Lecture	CC	Know	L&GD
CO5,CO6,CO8	Discuss and connect modern and Siddha perspectives on gut dysbiosis and *Kirumi Noikal* microbial infections.	4	Experiential-Learning 6.1	PSY-GUD	Does	BS

M 6 Unit 2 Perunkazhichal noi, Ninakkazhichal noi, KaduppuKazhichal noi

6.2.1. Etiology 6.2.2. Premonitory and common signs and symptoms 6.2.3. Types of *perunkazhichal,Ninakazhichal* and *kaduppukazhichal* 6.2.4. Analysing Tri humoral Variations 6.2.5. Line of treatment 6.2.6. Evaluating Diagnostic techniques used in Siddha system

References: 1,2,7,10,14,15,37,90

3A	3B	3C	3D	3E	3F	3G
CO5,CO6,CO8	Describe the *Iyal* (definition) of *Perunkazhichal*, *Ninakkazhicahal*, *Kaduppu Kazhichal*, *Peyar Karanam* (etymology), *Veru peyar* (synonyms), *Noi varum vazhi* (etiology), *Murkkurikunanga*l (premonitory signs), and *pothu kurikunanga*l (common signs and symptoms) and types – with possible Modern comparison (including Curable and incurable)	2	Lecture	CC	Know	L&GD
CO5,CO6,CO8	Demonstrate how to diagnose *Perunkazhichal*, *Ninakazhichal* and *Kaduppukkazhichal*..	6	Practical Training 6.1	PSY-GUD	Shows-how	DIS,CBL
CO5,CO6,CO8	Develop diagnostic algorithm for diarrhoeal diseases in Siddha	4	Experiential-Learning 6.2	PSY-ORG	Does	DIS,PL,BS

M 6 Unit 3 Oozhi Noi

6.3.1. Etiology 6.3.2. Premonitory and common signs and symptoms 6.3.3. Types 6.3.4. Analysing Tri humoral Variations 6.3.5. Line of treatment 6.3.6. Evaluating Diagnostic techniques used in Siddha system

References: 1,2,7,10,14,15,37,90

3A	3B	3C	3D	3E	3F	3G
CO5,CO6,CO8	Define *Oozhi Noi* (Cholera) Synonyms, Entymology, Etiology, Premonitory and common signs and symptoms, Types – with possible Modern comparison (Including Curable and incurable)	2	Lecture	CC	Know	L&GD

M 6 Unit 4 Eruvaai mulai Noi

6.4.1. Etiology 6.4.2. Premonitory and common signs and symptoms 6.4.3. Types 6.4.4. Analysing Tri humoral Variations 6.4.5. Line of treatment 6.4.6. Evaluating Diagnostic techniques used in Siddha system

References: 1,2,7,8,14,15,37,90

3A	3B	3C	3D	3E	3F	3G
CO5,CO6,CO8	Describe the *Iyal* (definition), *Peyar Karanam* (etymology), *Veru peyar* (synonyms), *Noi varum vazh*i (etiology), *Murkkurikunanga*l (premonitory signs), and *pothu kurikunanga*l (common signs and symptoms) of *Eruvai Mulai Noi* with possible modern comparison and prognosis.	2	Lecture	CC	Knows-how	L&GD
CO5,CO6,CO8	Demonstrate how to perform diagnostic tests, both Modern and Siddha to diagnose *Eruvai mulai noi*.	7	Practical Training 6.2	PSY-GUD	Does	CBL,D,DIS
CO5,CO6,CO8	Apply skills to diagnose and developing line of treatment for different types of *Eruvai Mulai Noikal*.	5	Experiential-Learning 6.3	AFT-RES	Does	

M 6 Unit 5 Powthiram noi

6.5.1. Etiology 6.5.2. Premonitory and common signs and symptoms 6.5.3. Types 6.5.4. Analysing Tri humoral Variations 6.5.5. Line of treatment 6.5.6. Evaluating Diagnostic techniques used in Siddha system

References: 1,2,7,8,14,15,37,90

3A	3B	3C	3D	3E	3F	3G
CO5,CO6,CO8	Define *Powthiram*, Synonyms, Etymology, Etiology, Premonitory and common signs and symptoms, Types – with possible Modern comparison, (including Curable and incurable)	2	Lecture	CC	Know	L&GD
CO5,CO6,CO8	Demonstrate how to diagnose different types of *powthiram* through examination in *Siddha and Modern diagnostic techniques.*	7	Practical Training 6.3	PSY-GUD	Does	DIS,L,D
CO5,CO6,CO8	Apply skills to analyse diagnostic techniques used in Modern and Siddha and evaluate t*ri humoural v*ariations followed by originating line of treatment based on presenting features of *Powthira noi.*	5	Experiential-Learning 6.4	AFT-RES	Knows-how	
CO5,CO6,CO8	Analyse the trihumoural theory behind the ingredients of different *Karanool* preparations used for Ano - rectal diseases with different etiologies.	8	Experiential-Learning 6.5	PSY-GUD	Does	CBL,BS

Practical Training Activity

Practical Training 6.1 : Diagnose *Perunkazhichal, Ninakkazhichal, Kaduppukazhichal* through prescribed case sheet format

Duration of activity - 6 hours
Diarrhea as well as dysentery conditions that match with features of *Perunkazhichal, Ninakkazhicahal,* and *Kaduppukazhichal* should be taken for practical. In case real cases are not available, case scenario/video, etc may be considered.
The teacher clearly outlines the objectives of the practical session, such as understanding the causes of disease conditions including *Marana kurigunangal* (fatal signs)performing assessments, and exploring management strategies.
Activity: Case-Based Learning (4 hours)
Activity 1- Assessment of Siddha Diagnostic Tools through Case Studies and Skill Labs in IPD/OPD Settings (20 Minutes X 3)
Different Cases/scenarios/skill labs will be given and PG Scholars will be asked to assess the Siddha diagnostic tools. PG scholars can observe the case from IPD/OPD
Activity 2 - History Taking (20 Minutes X 3)
Have participants practice taking patient histories, focusing on the onset, duration, and pattern of disease
Activity 3 - Record the documents (20 Minutes X 3)
Instruct participants to document the examination of the patient through the prescribed Case Sheet Format. The student may ascertain the prognosis of the disease through any of the diagnostic tools with the guidance of the teacher.
Activity 4 - Compare with Trihumoral vitiation. (20 Minutes X 3)

Assess Clinical Findings through Siddha and Modern Diagnostic tools and correlate with the Trihumoral vitiation.
Activity : Discussion (2 hours)
Activity 5 - Small group discussions on the pathological findings and their clinical significance should be done along with that assessment of Digestive fire should also be done. Discuss symptoms that warrant immediate medical attention, that require referral to another system of medicine (10 X 3 Minutes)
Activity 6 - Patient case history related to similar disease conditions should be additionally provided for comparison and discussion (10 Minutes X 3 Minutes)
Activity 7- Assesment of line of treatment (10 Minutes X 3)
Develop various lines of treatment based on aspects of *suvai, kunam, veeriyam, vibagam* and state its curable and incurable types.
Activity 8 - Personalised feedback on student's observation and diagnostic accuracy (10 Minutes X 3)

Practical Training 6.2 : Diagnosing *Eruvai Mulai Noi* through prescribed case sheet format.

Duration of Activity - 7 hours
Activity : Case - Based Learning (1 hour)
Activity 1: Define Learning Objectives: Clearly outline what participants should achieve, such as understanding conditions, performing assessments, and managing treatments. (1 hour)
Have participants practice taking detailed patient histories
Instruct participants to assess the overall health of the patient, including vital signs.
Activity : Demonstration (2 hours)
Activity 2: Teach participants how to inspect the ano-rectal area for visible abnormalities (e.g., hemorrhoids, fissures). (1 hour)
Demonstrate proper technique for DRE, focusing on: Positioning of the patient (e.g., left lateral or standing position), Proper use of gloves and lubrication, Assessment for masses, tenderness, and stool consistency
Activity 3: Demonstrate how to perform Siddha diagnostic techniques (1 hour)
Palpation of Abdominal Region: Include palpation for any associated abdominal findings.
Utilizing Diagnostic Tools
Anoscopy/Sigmoidoscopy Demonstration: If equipment is available, demonstrate the use of anoscopy or sigmoidoscopy to visualize the rectal area.
Activity : Discussion (4 hours)
Activity 4: Discuss Indications and Contraindications: Explain when to use these tools and any patient preparation required. (1 hour)
Activity 5: Train to differentiate different types of *Eruvai Mulai Noi*. (1 hour)
Activity 6: Develop line of treatment on the basis of trihumoural vitiation (1 hour)
Activity 7: Providing data of cases treated through Siddha from various sources (1 hour)

Practical Training 6.3 : Diagnosing different types of *Powthiram* condition through prescribed case sheet format

Duration of Activity - 7 hours (if cases are available different types of *powthiram* may be taken)
Activity : Lecture (2 hours)
Activity 1: Clearly outline what participants should achieve, such as understanding the anatomy, assessment techniques, and management of *Powthiram* including fistula in ano. (1 hour)
Activity 2: Have participants practice taking detailed patient histories, focusing on: Onset, duration, and nature of symptoms (e.g., pain, discharge) (1 hour)
Previous treatments for anal abscesses or related issues.
Medical history, including gastrointestinal disorders and past surgeries
Emphasize the importance of comprehensive history-taking for accurate diagnosis and management.
Activity : Demonstration (4 hours)
Activity 3: Physical Examination Techniques (2 hours)
General Assessment: Instruct participants to assess the patient's overall health and vital signs.
Ano-Rectal Examination: Inspection: Teach participants to inspect the perianal area for visible signs of a fistula or abscess (e.g., openings, discharge). Digital Rectal Examination (DRE): Demonstrate proper technique for DRE, focusing on the positioning of the patient (e.g., left lateral position) Use of gloves and lubrication, Assessment for tenderness, masses, and any signs of inflammation, Anoscopy: If possible, demonstrate the use of an anoscope to visualize the internal opening of the fistula.
Activity 4: Demonstrate how to perform *Ennvagai Thervu* (1 hour)
Activity 5: Imaging Demonstration: If available, demonstrate how to use ultrasound or MRI to evaluate the anatomy of the fistula. (1 hour)
Activity : Discussion (1 hour)
Activity 6: Discuss Indications and Interpretation: Explain the rationale for imaging studies and how to interpret the results in the context of fistula management. (1 hour)

Experiential learning Activity

Experiential-Learning 6.1 : Integrating Gut Dysbiosis and *Kirumi Noikal*: An Experiential Exploration of Modern and Siddha Perspectives on Microbial Imbalances

Duration of Activity - 4 hours
Activity: Brainstorming (4 hours)
Activity 1: Introduction and Conceptual Overview (60 minutes)
Goal: Gain foundational knowledge of gut dysbiosis and *Kirumi Noikal* in Siddha medicine.
Introduction to Gut Dysbiosis
Explanation of gut dysbiosis:
Define gut dysbiosis as an imbalance in the gut microbiome.
Understand its impact on health: digestive disorders, immune dysfunction, mental health, etc.
Modern perspective on gut dysbiosis:
Discuss the role of the gut microbiome and how it affects overall health.

Overview of scientific studies linking gut dysbiosis to diseases.
Key Signs and Symptoms of Gut Dysbiosis:
Bloating, constipation, diarrhea, fatigue, etc.
Stress and emotional connection to gut health.
Introduction to *Kirumi Noikal*
Siddha understanding of gut health:
Discuss the role of the digestive fire (Agni) and its relationship to gut health in Siddha.
Connection between the physical and mental aspects of health in the Siddha system.
Activity 2: Theoretical Deep Dive (60 minutes)
Goal: Explore how gut dysbiosis and *Kirumi Noikal* are linked in modern and Siddha contexts.
Diagnostic methods:
Fecal microbiota transplant (FMT).
Stool tests, blood tests, and advanced genetic profiling.
Diagnosis and treatment methods in Siddha:
Examine how Siddha practitioners identify microbial infections.
Activity 3: Practical Exploration of Siddha Remedies and Treatments (60 minutes)
Siddha Remedies for Gut Dysbiosis and *Kirumi Noikal* in relation to *Mukkutra Thathuvam* and *Suvai*
Siddha Treatment for *Kirumi Noikal* (Parasites)
Purification therapies (*Virechanam, Vamanam*):
How detoxification is carried out in Siddha to cleanse the body of microbial infections.
External therapies: medicated oils as enema, and their application for gut health.
Activity 4: Interactive Application and Case Studies (60 minutes)
Goal: Apply knowledge to case studies and practice identifying symptoms and treatments.
Case Study Analysis
Present hypothetical or real-world case studies where gut dysbiosis and *Kirumi Noikal* are diagnosed.
Analyze symptoms from both a modern and Siddha perspective.
Summary of Key Takeaways:
How gut dysbiosis is understood in modern medicine and Siddha.
The relationship between gut health and overall well-being.
How *Kirumi Noikal* is addressed in Siddha through diagnostic and treatment methods.

Experiential-Learning 6.2 : Diagnostic algorithm for diarrhoeal diseases in Siddha

Duration of Activity - 4 hours
Activity: Brainstorming (1 hour)
Activity 1: Group Brainstorming and Diagnostic Algorithm Design (1 hour)
Students are divided into groups to brainstorm specific causes of the condition. Each group designs a diagnostic algorithm integrating both Siddha and modern diagnostic approaches.
Activity: Peer learning (1 hour)
Activity 2: Group Presentations and Peer Review (1 hour)
Groups present their diagnostic algorithms to peers for review and feedback. This encourages critical thinking, collaborative learning, and identification of areas for improvement.
Activity: Discussions (2 hours)
Activity 3: Refining the Algorithm and Group Discussion (1 hour)
Based on feedback, groups refine their diagnostic algorithms. Open discussion promotes deeper understanding and integration of both systems of medicine.
Activity 4: Final Presentations, Reflection, and 360-Degree Evaluation (1 hour)
Groups deliver final presentations followed by reflective discussion. A 360-degree evaluation is conducted to assess participation, teamwork, and the effectiveness of the outcomes.

Experiential-Learning 6.3 : Hands on training to diagnose different types of *Eruvai Mulai Noikal.*

Duration of Activity - 5 hours
Students should be able to diagnose different types of *Eruvai Mulai noikal* through Siddha and relevant modern diagnostic techniques for a series of atleast 5 patients.
Activity: Kinaesthetic Learning (5 hours)
Activity 1- *Yakkai ilakkanam* assessment with Physical Examination (1 hour)
Physical Examination (Modern) (30 Minutes)
Visual inspection
Yakkai Ilakkanam assessment (30 Minutes)
Activity 2 - *Udal Thathukkal* and *Mukkutram* assessment along with Modern diagnosis (1 hour)
Modern Diagnostics (30 minutes)
Imaging, Blood Tests and ano rectal examinations
Siddha Diagnosis (*Udal* and *Uyir Thathukkal*) (30 minutes)
Identify humoral imbalances through symptoms
Activity 3 - *Ennvagai Thervu* (Eight Diagnostic Methods) (1 hour)
Modern Diagnostics (30 minutes)

Siddha (30 minutes)
Activity 4 - Compile data and develop a Siddha Lab Report (1 hour)
Activity 5 - *Theerum Theera Nilai* (Prognosis and Treatment Outcome) (30 minutes)
Activity 6 - Recommend line of treatment based on *Kutram* and *Suvai* (30 minutes)

Experiential-Learning 6.4 : Hands on training in diagnosing and developing line of treatment for *Powthira noi*

Duration of Activity- 5 hours
Students should be able to diagnose any type of *powthiram* through Siddha and relevant modern diagnostic techniques for a series of atleast 5 patients.
Activity : Kinaesthetic Learning (5 hours)
Activity 1- *Yakkai ilakkanam* assessment with Physical Examination (30 minutes)
Physical Examination (Modern) (15 minutes)
Visual inspection
Yakkai Ilakkanam assessment (15 minutes)
Activity 2- *Udal Thathukkal* and *Mukkutram* assessment along with Modern diagnosis (30 minutes)
Modern Diagnostics (15 minutes)
Imaging, Blood Tests and Probing
Siddha Diagnosis (*Udal* and *Uyir Thathukkal*) (15 minutes)
Identify humoral imbalances through symptoms
Activity 3- *Ennvagai Thervu* (Eight Diagnostic Methods) (30 minutes)
Modern Diagnostics (15 minutes)
Siddha (15 minutes)
Activity 4- Compile data and develop a Siddha Lab Report (30 minutes)
Activity 5- *Theerum Theera Nilai* (Prognosis and Treatment Outcome) (30 minutes)
Activity 6- Recommend line of treatment based on *Kutram* and *Suvai* (30 minutes)
Activity 7: Compare prognosis of *Karanool* therapy when compared to conventional treatment strategies (1 hour)
Activity 8: Share guidelines, articles, and evidence-based resources related to the diagnosis and management of Ano rectal pathologies for further study. (1 hour)

Experiential-Learning 6.5 : Siddha pharmacodynamics for different *Karanool* preparations.

Duration of Activity - 8 hours
Activity : Brainstorming (2 hours)

Activity 1: Introduction to *Karanool* and Trihumoural Theory (1 hour)
Introduce Trihumoural Theory (15 mins)
Overview of *Karanool* (15 mins)
Discuss *Karanool's* historical use, ingredients, and primary therapeutic benefits in the context of balancing the *doshas.*
Formulation Variations (30 mins)
List the different combinations of herbs or ingredients in *Karanool*. Identify which ingredients primarily affect which *dosha*
Activity 2 : Preparation and Standardization (1 hour)
Prepare Different Combinations (30 mins)
Prepare multiple *Karanool* formulations, varying the ingredients.Ensure consistency in preparation method.
Standardize Dosages (30 mins)
Establish dosage protocols for each combination. Record measurements accurately and ensure uniformity across batches.
Activity : Case-Based Learning (6 hours)
Activity 3: Initial Testing and Documentation (1 hour)
Administer/ observe *Karanool* Combinations
Monitor and record
Activity 4: Observing *Dosha* Imbalances (1 hour)
Activity 5: Long-Term Monitoring and Symptom Tracking – retrospective data analysis may be done (1 hour)
Track Long-Term Symptoms
Assess Patient Feedback
Activity 6: Comparative Analysis of Combinations (1 hour)
Compare Effects of Different Formulations (45 mins)
Analyze how the different combinations of *Karanool* impacted each *dosha* differently. Look for patterns where specific combinations effectively balanced certain *doshas* while exacerbating others.
Analyze Data and Draw Conclusions (15 mins)
Use the documented data (objective and subjective) to compare the outcomes of each combination.Identify which formulations worked best for each *dosha* imbalance.
Activity 7: Final Documentation and Recommendations (2 hours)
Document Final Prognosis
Create a final report on the prognosis of each *Karanool* combination. Offer recommendations for each formulation based on the *dosha* imbalance it addresses
Key Notes to Document and Analyse:
Dosha-specific Effects
Individual Variability
Optimal Combinations: Identify which combinations of *Karanool* provide the most balanced and therapeutic results for each dosha.

Potential Side Effects: Track any side effects, especially with overuse or inappropriate combinations.
Long-Term Benefits: Monitor any long-term health benefits or improvements in the balance of *doshas*.

Modular Assessment

Assessment method	**Hour**
Instructions: Conduct a structured Modular assessment. The assessment will be for 50 marks. Keep a structured marking pattern. Use different assessment methods in each module for the semester. Keep a record of the structured pattern used for assessment. Calculate the Modular grade point as per Table 6 C. CHOOSE ANY OF THE BELOW ASSESSMENT FOR 50 MARKS Total Marks: 50 / Time Duration: 4 Hours 1.VIVA VOCE EXAMINATION (10 Marks) Assessment Structure: Foster a deeper understanding of the underlying mechanisms of the particular disease to inform clinical decision-making and able to interpret the variations of differential diagnosis Marking Distribution: Knowledge and Understanding (4 marks) Detailed pathological knowledge Understanding of Siddha Diagnostic tools and their application Clinical Application (3 marks) Differential Diagnosis Clinical scenarios Radiological interpretation Communication Skills (3 marks) Clarity of expression Use of precise terminology Ability to explain complex concepts 2.?OBJECTIVE STRUCTURED CLINICAL EXAMINATION (OSCE) (15 Marks) Mark Distribution: Clinical Examinations of patients through Yakkai, Aga karuvigal, Pura karuvigal (2 marks) Udal Thaathukkal, ennvagai thervu (2 marks) Manikkadai Nool (2 marks) Derangement of Mukkutram (2 marks)	4

Mukkutra Verupadu (2 marks) Prescription of the line of treatment based on Mukkutram, Suvai and Gunam (2 marks) Noi Kanippu (2 marks) Theerum Theera Nilai (1 mark) 3.CLASS PRESENTATION (15 Marks) Assessment Criteria: Content (5 marks) Depth of subject matter Current research inclusion Clinical correlation Bibliography Presentation Skills (5 marks) Clarity of speech Time management Use of visual aids Audience engagement Discussion (5 marks) Handling questions Critical thinking Scientific reasoning Knowledge application 4.SAQ AND LAQ ASSESSMENT Total Marks: 10 Or Any practical in converted form can be taken for assessment. (25 marks) and Any experiential, such as portfolios / reflections / presentations can be taken as an assessment. (25 marks)	

Semester No : 6

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

Course Outcome	Learning Objective (At the end of the (lecture/practical training /experiential learning) session, the students should be able to)	Notional learning Hours	Lecture/ Practical Training/ Experiential Learning	Domain/ Sub Domain	Level (Does/Shows how/ Knows how/Know)	Teaching Learning Methods
Module 7 : Vatha Noikal – Siddha Ortho–Rheumatology, Neurology and Conditions of Pain						
Module Learning Objectives **(At the end of the module, the students should be able to)** Describe the etymology of conditions related to Vaatha Noikal, Keel Vaayu noi, Soolai noi (Including subtypes) Describe how to approach cases Discuss cause through Trihumoral theory Create algorithms for diagnosing specific types of Vaatha Noikal, Keel Vaayu noi, and Soolai Noi through Siddha and Modern diagnostic techniques Design line of treatment based on Suvai and Tri humoural theory						
M 7 Unit 1 Vaatha Noikal 7.1.1. Etiology 7.1.2. Premonitory and common signs and symptoms 7.1.3. Types - 80 types (84) according to *Sage Yugi* and 80 types depends upon organs affected 7.1.4. Analysing Tri humoral Variation 7.1.5. Line of treatment 7.1.6. Evaluating Diagnostic techniques used in Siddha system **References:** 1,2,7,10,14,15,22,25,26,32,49,52,66,71,90,91,95,96,97						
3A	**3B**	**3C**	**3D**	**3E**	**3F**	**3G**
CO2,CO6,CO8	Describe *Vatha Noikal*, Synonyms, Etymology, Etiology, Premonitory and common signs and symptoms along with types with possible Modern comparison.	2	Lecture	CS	Knows-how	L&PPT ,L&GD

CO2,CO6,CO8	Compare specific *Vatha Noikal* with Geriatric conditions, Categorizing *Vatha Noikal* under Degenerative conditions, Auto-Immune conditions, Cerebro Vascular Events and Psychiatric conditions including structural defects.	5	Lecture	CC	Shows-how	L&GD
CO2,CO6,CO8	Perform diagnostic techniques used in Siddha and Modern for *Thandagavaatham/ Vathasthambam* (Lumbar spondylosis/ Sciatica) followed by *Tri humoural vitiation* estimation and conduct the examination of a patient through *Yakkai, Udal Thathukkal, Ennvagai Thervu, Manikkadai Nool, Mukkutram* and prescribe the line of treatment based on *Mukkutram, Suvai,* and *Kunam* and infer the *Theerum Theera nilai* of presented *Thandagavaatham/ Vaathasthambam* (Lumbar spondylosis/ Sciatica) or develop skills to diagnose *Thandagavaatham/ Vathasthambam* (Lumbar spondylosis/ Sciatica) through case scenario.	2	Practical Training 7.1	PSY-GUD	Shows-how	CBL,DIS
CO2,CO6,CO8	Develop a compendium of any *Vatha Noikal* for eg., *Thandagavatham/ Vathasthambam/ Pakkavatham* thorough literature search including ancient manuscripts.	4	Experiential-Learning 7.1	PSY-SET	Does	LS,PER, DIS
CO2,CO6,CO8	Develop the Diagnostic trial protocol for *Vatha Noikal for eg., Thandagavatham/ Vathasthambam/ Pakkavatham*	5	Experiential-Learning 7.2	PSY-GUD	Does	TPW
CO2,CO6,CO8	Perform diagnostic techniques used in Siddha and Modern for *Ceganavatham* (Cervical Spondylosis) followed by *Tri humoural vitiation* estimation and conduct the examination of a patient through *Yakkai, Udal Thathukkal, Ennvagai Thervu, Manikkadai Nool, Mukkutram* and prescribe the line of treatment based on *Mukkutram, Suvai,* and *Kunam* and infer the *Theerum Theera nilai* of presented *Ceganavatham* (Cervical Spondylosis) or develop skills to diagnose *Ceganavatham* (Cervical Spondylosis) through case scenario.	2	Practical Training 7.2	PSY-GUD	Shows-how	CBL,DIS
CO2,CO6,CO8	Observe and analyse appropriate medicinal combinations for treating *Vatha Noikal (Thandagavatham/ Vathasthambam/ Pakkavatham/ Nadukkuvatham)* based on different *Dehi / Yakkai ilakkanam* types as per Siddha principles and determine which set of medicines or most suitable for each *Yaakkai* type for optimal treatment outcomes.	4	Experiential-Learning 7.3	PSY-GUD	Does	CBL
CO2,CO6,CO8	Perform diagnostic techniques used in Siddha and Modern for *Pakkavatham/*	2	Practical	PSY-	Shows-	CBL,DIS,

	Patchavatham (Hemiplegia) followed by *Tri humoural vitiation* estimation and conduct the examination of a patient through *Yakkai, Udal Thathukkal, Ennvagai Thervu, Manikkadai Nool, Mukkutram* and prescribe the line of treatment based on *Mukkutram, Suvai,* and *Kunam* and infer the *Theerum Theera nilai* of presented *Pakkavatham/ Patchavatham (Hemiplegia)* or develop skills to diagnose *Pakkavatham/ Patchavatham (Hemiplegia)* through case scenario		Training 7.3	GUD	how	PBL
CO2,CO6,CO8	Apply *Siddha* examination techniques and collaborate with modern diagnostic techniques in light of the given/presented case of *Vatha Noikal (Thandagavatham and/ or Vathasthambam and/ or Ceganavatham)* and/ or may be compared with (Lumbar Spondylosis/ Sciatica/ Cervical Spondylosis).	4	Experiential-Learning 7.4	PSY-MEC	Does	CBL,PBL,CD,DIS
CO2,CO6,CO8	Apply *Siddha* examination techniques and collaborate with modern diagnostic techniques in light of the given/presented case of *Vaatha Noigal (Nadukku Vaatham and/ or Mudangu Vaatham) and/ or* may be compared with (Parkinsonism/ Ankylosing Spondylosis).	3	Experiential-Learning 7.5	PSY-MEC	Does	DIS,CBL
CO2,CO6,CO8	Perform diagnostic techniques used in Siddha and Modern for *Arpudha Vaatham* (Facial palsy) followed by *Tri humoural vitiation* estimation and conduct the examination of a patient through *Yakkai, Udal Thathukkal, Ennvagai Thervu, Manikkadai Nool, Mukkutram* and prescribe the line of treatment based on *Mukkutram, Suvai,* and *Kunam* and infer the *Theerum Theera nilai* of presented *Arpudha Vatham* (Facial palsy) or develop skills to diagnose *Arpudha Vatham* (Facial palsy) through case scenario.	2	Practical Training 7.4	PSY-GUD	Does	CBL,DIS
CO2,CO6,CO8	Perform diagnostic techniques used in Siddha and Modern for *Mudangu Vatham* (Ankylosing Spondylosis) followed by *Tri humoural vitiation* estimation and conduct the examination of a patient through *Yakkai, Udal Thathukkal, Ennvagai Thervu, Manikkadai Nool, Mukkutram* and prescribe the line of treatment based on *Mukkutram, Suvai,* and *Kunam* and infer the *Theerum Theera nilai* of presented *Mudangu Vatham* (Ankylosing Spondylosis) or develop skills to diagnose *Mudangu Vatham* (Ankylosing Spondylosis) through case scenario.	2	Practical Training 7.5	PSY-GUD	Does	CBL,DIS
CO2,CO6,CO8	Perform diagnostic techniques used in Siddha and Modern	2	Practical	PSY-	Does	CBL,DIS

	for *Nadukku Vatham* (Parkinsonism) followed by *Tri humoural vitiation* estimation and conduct the examination of a patient through *Yakkai, Udal Thathukkal, Ennvagai Thervu, Manikkadai Nool, Mukkutram* and prescribe the line of treatment based on *Mukkutram, Suvai,* and *Kunam* and infer the *Theerum Theera nilai* of presented *Nadukku Vatham* (Parkinsonism) or develop skills to diagnose *Nadukku Vatham* (Parkinsonism) through case scenario.		Training 7.6	GUD		

M 7 Unit 2 Keelvaayu Noi (Rheumatological conditions)

7.2.1. Etiology 7.2.2. Premonitory and common signs and symptoms 7.2.3. Types -10 types 7.2.4. Tri humoral Variation 7.2.5. Line of treatment 7.2.6. Diagnostic techniques used Siddha system and Modern for *Keel Vaayu*.

References: 1,2,7,10,14,15,22,32,46,52,66,67,68

3A	3B	3C	3D	3E	3F	3G
CO2,CO6,CO8	Describe definition, synonyms, etiology, premonitory and common signs and symptoms of Keel Vaayu. Introduction to principles of Geriatrics in terms of Siddha	2	Lecture	CC	Know	L&GD
CO2,CO6,CO8	Perform diagnostic techniques used in Siddha and Modern for *Vali Keel Vaayu and/ or Azhal Keel Vaayu* followed by *Tri humoural vitiation* estimation and conduct the examination of a patient through *Yakkai, Udal Thathukkal, Ennvagai Thervu, Manikkadai Nool, Mukkutram* and prescribe the line of treatment based on *Mukkutram, Suvai,* and *Kunam* and infer the *Theerum Theera nilai* of presented *Vali Keel Vaayu and/ or Azhal Keel Vaayu* or develop skills to diagnose *Vali Keel Vaayu and/ or Azhal Keel Vaayu* through case scenario	3	Practical Training 7.7	PSY-GUD	Shows-how	CBL,PBL,DIS
CO2,CO6,CO8	Observe and analyse the appropriate medicinal combinations based on *Suvai* for treating *Keel Vaayu* (Any of the ten classifications) based on the trihumoral theory and five element theory according to Siddha principles and determine which set of medicines is most suitable for each condition to achieve optimal treatment outcomes	3	Experiential-Learning 7.6	PSY-MEC	Does	PBL,L
CO2,CO6,CO8	Perform diagnostic techniques used in Siddha and Modern for *Iyya Keel Vaayu* and / or	2	Practical	PSY-	Shows-	CBL,DIS

	Vali Azhal Keel Vaayu followed by *Tri humoural vitiation* estimation and conduct the examination of a patient through *Yakkai, Udal Thathukkal, Ennvagai Thervu, Manikkadai Nool, Mukkutram* and prescribe the line of treatment based on *Mukkutram, Suvai,* and *Kunam* and infer the *Theerum Theera nilai* of presented Aiyya Keel Vaayu and / or Vali Azhal Keel Vaayu or develop skills to diagnose *Iyya Keel Vaayu* and / or *Vali Azhal Keel Vaayu* through case scenario		Training 7.8	GUD	how	

M 7 Unit 3 Soolai Noi (Lancinating Pain)

7.3.1. Etiology 7.3.2. Premonitory and common signs and symptoms 7.3.3. Types - 15 types 7.3.4. Tri humoral Variation 7.3.5. Line of treatment 7.3.6. Diagnostic techniques used in Siddha system and Modern for *Soolai Noi.*

References: 1,2,7,10,14,15,22,32,66,67,68

3A	3B	3C	3D	3E	3F	3G
CO2,CO6,CO8	Describe about *Soolai noi* with definition, synonyms, etiology, premonitory and common signs and symptoms, types with possible Modern comparison (including Curable and incurable)	1	Lecture	CC	Knows-how	L&GD
CO2,CO6,CO8	Perform diagnostic techniques used in Siddha and Modern for *Dhoora Soolai* followed by *Tri humoural vitiation* estimation and conduct the examination of a patient through *Yakkai, Udal Thathukkal, Ennvagai Thervu, Manikkadai Nool, Mukkutram* and prescribe the line of treatment based on *Mukkutram, Suvai,* and *Kunam* and infer the *Theerum Theera nilai* of presented *Dhoora Soolai* or develop skills to diagnose *Dhoora Soolai* through case scenario/ real cases.	2	Practical Training 7.9	PSY-GUD	Shows-how	CBL,DIS
CO2,CO6,CO8	Perform diagnostic techniques used in Siddha and Modern for *Nithamba Soolai* followed by *Tri humoural vitiation* estimation and conduct the examination of a patient through *Yakkai, Udal Thathukkal, Ennvagai Thervu, Manikkadai Nool, Mukkutram* and prescribe the line of treatment based on *Mukkutram, Suvai,* and *Kunam* and infer the *Theerum Theera nilai* of presented *Nithamba Soolai* or develop skills to diagnose *Nithamba Soolai* through case scenario	1	Practical Training 7.10	PSY-GUD	Shows-how	DIS,CBL

CO2,CO6,CO8	Apply *Siddha* examination techniques and collaborate with modern diagnostic techniques in light of the given/presented case of *Soolai (any type of Soolai Noikal)*	3	Experiential-Learning 7.7	PSY-SET	Does	DIS,CBL

Practical Training Activity

Practical Training 7.1 : Diagnosing *Thandagavaatham/ Vathasthambam* (Lumbar spondylosis/ Sciatica) through Siddha diagnostic parameters in a prescribed case sheet format.

Duration of Activity - 2 hours
The teacher clearly outlines the objectives of the practical session, such as understanding the causes of disease condition, performing assessments, and exploring management strategies.
Activity: Case-Based Learning (1 hour)
Activity 1-Assessment of Siddha Diagnostic Tools through Case Studies and Skill Labs in IPD/OPD Settings (10 Minutes)
Different Cases/scenarios/skill labs will be given and PG Scholars will be asked to assess the Siddha diagnostic tools. PG scholars can observe the case from IPD/OPD
Activity 2-History Taking (20 Minutes)
Have participants practice taking patient histories, focusing on the onset, duration, and pattern of disease (persistent pain, occasional pain, aggravating factor) and associated symptoms (e.g. radiating pain, Numbness).
Activity 3-Record the documents (20 Minutes)
Instruct participants to document the examination of the patient through prescribed Case Sheet Format. The student may ascertain prognosis of the disease through any of the diagnostic tools with guidance of teacher.
For assessment Oswestry Disability Index / Aberdeen scorings may be used.
Activity 4- Compare with Trihumoral vitiation. (10 Minutes)
Assess Clinical Findings through Siddha Diagnostic tools and correlate with the Trihumoral vitiation.
Activity: Discussion (1 hour)
Activity 5- Small group discussions on the pathological findings and their clinical significance should be done along with that assessment of Digestive fire should also be done. Discuss symptoms that warrant immediate medical attention, and the conditions that require referral to another system of medicine (15 Minutes)
Activity 6-Patient case history related to similar disease conditions should be additionally provided for comparison and discussion (20 Minutes)
Activity 7-Assessment of line of treatment (15 Minutes)
Develop various lines of treatment based on aspects of *suvai, kunam, veeriyam, vibagam* and state its curable and incurable types.
Activity 8- Personalised feedback on students' observation and diagnostic accuracy (10 Minutes)

Practical Training 7.2 : Diagnosing *Ceganavatham* (Cervical Spondylosis) through Siddha diagnostic parameters in a prescribed case sheet format.

Duration of Activity- 2 hours
The teacher clearly outlines the objectives of the practical session, such as understanding the causes of disease condition, performing assessments, and exploring management strategies.
Activity: Case-Based Learning (1 hour)
Activity 1-Assessment of Siddha Diagnostic Tools through Case Studies and Skill Labs in IPD/OPD SettingsDifferent Cases/scenarios/skill labs will be given and PG Scholars will be asked to assess the Siddha diagnostic tools. PG scholars can observe the case from IPD/OPD (10 Minutes)
Activity 2-History Taking (20 Minutes)
Have participants practice taking patient histories, focusing on the onset, duration, and pattern of disease and associated symptoms (e.g., Radiating pain to upper limbs, Numbness, Giddiness).
Activity 3-Record the documents (20 Minutes)
Instruct participants to document the examination of the patient through prescribed Case Sheet Format. The student may ascertain prognosis of the disease through any of the diagnostic tools with guidance of teacher.
Activity 4- Compare with Trihumoral vitiation. (10 Minutes)
Assess Clinical Findings through Siddha Diagnostic tools and correlate with the Trihumoral vitiation.
Activity: Discussions (1 hour)
Activity 5- Small group discussions on the pathological findings and their clinical significance should be done along with that assessment of Digestive fire should also be done. Discuss symptoms that warrant immediate medical attention and the conditions that require referral to another system of medicine (15 Minutes)
Activity 6- Patient case history related to similar disease conditions should be additionally provided for comparison and discussion (20 Minutes)
Activity 7-Assessment of line of treatment (15 Minutes)
Develop various lines of treatment based on aspects of *suvai, kunam, veeriyam, vibagam* and state its curable and incurable types.
Activity 8- Personalised feedback on students' observation and diagnostic accuracy (10 Minutes)

Practical Training 7.3 : Diagnosing *Pakkavatham/ Patchavatham (Hemiplegia)* through Siddha diagnostic parameters in a prescribed case sheet format.

Duration of Activity - 2 hours
The teacher clearly outlines the objectives of the practical session, such as understanding the causes of disease condition, performing assessments, and exploring management strategies.
Activity: Case-Based Learning (1 hour)
Activity 1-Assessment of Siddha Diagnostic Tools through Case Studies and Skill Labs in IPD/OPD Settings (10 Minutes)
Different Cases/scenarios/skill labs will be given and PG Scholars will be asked to assess the Siddha diagnostic tools. PG scholars can observe the case from IPD/OPD
Activity 2-History Taking (20 Minutes)
Have participants practice taking patient histories, focusing on the onset, duration, and pattern of disease (persistent pain, occasional pain, aggravating factor) and associated

symptoms (e.g. Weakness of limbs, Slurring Speech, Semi-circumduction gait).
Activity 3-Record the documents (20 Minutes)
Instruct participants to document the examination of the patient through prescribed Case Sheet Format. The student may ascertain prognosis of the disease through any of the diagnostic tools with guidance of teacher. Assessment may be done through Fugl meyer scoring.
Activity 4- Compare with Trihumoral vitiation. (10 Minutes)
Assess Clinical Findings through Siddha Diagnostic tools and correlate with the Trihumoral vitiation.
Activity: Discussions (1 hour)
Activity 5- Small group discussions on the pathological findings and their clinical significance should be done along with that assessment of Digestive fire should also be done. Discuss symptoms that warrant immediate medical attention, and the conditions that require referral to another system of medicine (15 Minutes)
Activity 6- Patient case history related to similar disease conditions should be additionally provided for comparison and discussion (20 Minutes)
Activity 7-Assessment of line of treatment (15 Minutes)
Develop various lines of treatment based on aspects of *suvai, kunam, veeriyam, vibagam* and state its curable and incurable types.
Activity 8- Personalised feedback on students' observation and diagnostic accuracy (10 Minutes)

Practical Training 7.4 : Diagnosing *Arpudha Vatham* (Facial palsy) through Siddha diagnostic parameters in a prescribed case sheet format.

Duration of Activity - 2 hours
The teacher clearly outlines the objectives of the practical session, such as understanding the causes of disease condition, performing assessments, and exploring management strategies.
Activity:Case-Based Learning (1 hour)
Activity 1-Assessment of Siddha Diagnostic Tools through Case Studies and Skill Labs in IPD/OPD Settings (10 Minutes)
Different Cases/scenarios/skill labs will be given and PG Scholars will be asked to assess the Siddha diagnostic tools. PG scholars can observe the case from IPD/OPD
Activity 2-History Taking (20 Minutes)
Have participants practice taking patient histories, focusing on the onset, duration, and pattern of disease and associated symptoms (e.g.Drooping of the face, Difficulty blinking, swallowing, or eating, Difficulty closing the eye on the affected side).
Activity 3-Record the documents (20 Minutes)
Instruct participants to document the examination of the patient through prescribed Case Sheet Format. The student may ascertain prognosis of the disease through any of the diagnostic tools with guidance of teacher.
Activity 4-Compare with Trihumoral vitiation. (10 Minutes)
Assess Clinical Findings through Siddha Diagnostic tools and correlate with the Trihumoral vitiation.
Activity:Discussions (1 hour)
Activity 5-Small group discussions on the pathological findings and their clinical significance should be done along with that assessment of Digestive fire should also be done. Discuss symptoms that warrant immediate medical attention, and the conditions that require referral to another system of medicine (15 Minutes)

Activity 6-Patient case history related to similar disease conditions should be additionally provided for comparison and discussion (20 Minutes)
Activity 7-Assessment of line of treatment (15 Minutes)
Develop various lines of treatment based on aspects of *suvai, kunam, veeriyam, vibagam* and state its curable and incurable types.
Activity 8-Personalised feedback on students' observation and diagnostic accuracy (10 Minutes)

Practical Training 7.5 : Diagnosing *Mudangu Vatham* (Ankylosing Spondylosis) through Siddha diagnostic parameters in a prescribed case sheet format.

Duration of Activity - 2 hours
The teacher clearly outlines the objectives of the practical session, such as understanding the causes of disease condition, performing assessments, and exploring management strategies.
Activity: Case-Based Learning (1 hour)
Activity 1-Assessment of Siddha Diagnostic Tools through Case Studies and Skill Labs in IPD/OPD Settings (10 Minutes)
Different Cases/scenarios/skill labs will be given and PG Scholars will be asked to assess the Siddha diagnostic tools. PG scholars can observe the case from IPD/OPD
Activity 2-History Taking (20 Minutes)
Have participants practice taking patient histories, focusing on the onset, duration, and pattern of disease (persistent pain, occasional pain, aggravating factor) and associated symptoms (e.g. Chronic back pain and Stiffness, uveitis and inflammation in other joints).
Activity 3-Record the documents (20 Minutes)
Instruct participants to document the examination of the patient through prescribed Case Sheet Format. The student may ascertain prognosis of the disease through any of the diagnostic tools with guidance of teacher.
Activity 4-Compare with Trihumoral vitiation (10 Minutes)
Assess Clinical Findings through Siddha Diagnostic tools and correlate with the Trihumoral vitiation.
Activity: Discussions (1 hour)
Activity 5-Small group discussions on the pathological findings and their clinical significance should be done along with that assessment of Digestive fire should also be done. Discuss symptoms that warrant immediate medical attention, and the conditions that require referral to another system of medicine (15 Minutes)
Activity 6-Patient case history related to similar disease conditions should be additionally provided for comparison and discussion (20 Minutes)
Activity 7-Assessment of line of treatment (15 Minutes)
Develop various lines of treatment based on aspects of *suvai, kunam, veeriyam, vibagam* and state its curable and incurable types.
Activity 8-Personalised feedback on students' observation and diagnostic accuracy (10 Minutes)

Practical Training 7.6 : Diagnosing *Nadukku Vatham* (Parkinsonism) through Siddha diagnostic parameters in a prescribed case sheet format.

Duration of Activity - 2 hours
The teacher clearly outlines the objectives of the practical session, such as understanding the causes of disease condition, performing assessments, and exploring

management strategies.
Activity: Case-Based Learning (1 hour)
Activity 1-Assessment of Siddha Diagnostic Tools through Case Studies and Skill Labs in IPD/OPD Settings Different Cases/scenarios/skill labs will be given and PG Scholars will be asked to assess the Siddha diagnostic tools. PG scholars can observe the case from IPD/OPD (10 Minutes)
Activity 2 - History Taking (20 Minutes)
Have participants practice taking patient histories, focusing on the onset, duration, and pattern of disease and associated symptoms (e.g. Bradykinesia, Tremors, Poor balance and postures).
Activity 3 - Record the documents (20 Minutes)
Instruct participants to document the examination of the patient through prescribed Case Sheet Format. The student may ascertain prognosis of the disease through any of the diagnostic tools with guidance of teacher.
Activity 4- Compare with Trihumoral vitiation. (10 Minutes)
Assess Clinical Findings through Siddha Diagnostic tools and correlate with the Trihumoral vitiation.
Activity: Discussions (1 hour)
Activity 5- Small group discussions on the pathological findings and their clinical significance should be done along with that assessment of Digestive fire should also be done. Discuss symptoms that warrant immediate medical attention, and the conditions that require referral to another system of medicine (15 Minutes)
Activity 6 - Patient case history related to similar disease conditions should be additionally provided for comparison and discussion (20 Minutes)
Activity 7-Assessment of line of treatment (15 Minutes)
Develop various lines of treatment based on aspects of *suvai, kunam, veeriyam, vibagam* and state its curable and incurable types.
Activity 8 - Personalised feedback on students' observation and diagnostic accuracy (10 Minutes)

Practical Training 7.7 : Diagnosing *Vali Keel Vaayu and/ or Azhal Keel Vaayu* through Siddha diagnostic parameters in a prescribed case sheet format.

Duration of Activity - 3 hours
The teacher clearly outlines the objectives of the practical session, such as understanding the causes of the disease condition, performing assessments, and exploring management strategies. Original cases/Videos/Simulators/Case scenarios may be taken
Activity:Case-Based Learning (2 hours)
Activity 1-Assessment of Siddha Diagnostic Tools through Case Studies and Skill Labs in IPD/OPD Settings (30 Minutes)
Different Cases/scenarios/skill labs will be given and PG Scholars will be asked to assess the Siddha diagnostic tools. PG scholars can observe the case from IPD/OPD
Activity 2-History Taking (30 Minutes)
Have participants practice taking patient histories, focusing on the onset, duration, and pattern of disease and associated symptoms.
Activity 3-Record the documents (30 Minutes)
Instruct participants to document the examination of the patient through prescribed Case Sheet Format. Prognosis of the disease may be ascertained by the student through any of the diagnostic tools with guidance of teacher.

Activity 4-compare with Trihumoral vitiation. (30 Minutes)
Assess Clinical Findings through Siddha Diagnostic tools and correlate with the Trihumoral vitiation.
Activity: Discussions (1 hour)
Activity 5- Small group discussions on the pathological findings and their clinical significance should be done along with that assessment of Digestive fire should also be done. (15 Minutes)
Activity 6- Patient case history related to similar disease conditions should be additionally provided for comparison and discussion (20 Minutes)
Activity 7-Assesment of line of treatment (15 Minutes)
Develop various lines of treatment based on aspects of *suvai, kunam, veeriyam, vibagam* and state its curable and incurable types.
Activity 8- Personalised feedback on students' observation and diagnostic accuracy (10 Minutes)

Practical Training 7.8 : Diagnosing *Aiyya Keel Vaayu* and / or *Vali Azhal Keel Vaayu* through Siddha diagnostic parameters in a prescribed case sheet format.

Duration of Activity - 2 hours
Activity: Case-Based Learning (1 hour)
The teacher clearly outlines the objectives of the practical session, such as understanding the causes of disease condition, performing assessments, and exploring management strategies.
Activity 1-Assessment of Siddha Diagnostic Tools through Case Studies and Skill Labs in IPD/OPD Settings Different Cases/scenarios/skill labs will be given and PG Scholars will be asked to assess the Siddha diagnostic tools. PG scholars can observe the case from IPD/OPD (10 Minutes)
Activity 2-History Taking (20 Minutes)
Have participants practice taking patient histories, focusing on the onset, duration, and pattern of disease and associated symptoms
Activity 3-Record the documents (20 Minutes)
Instruct participants to document the examination of the patient through prescribed Case Sheet Format. The student may ascertain prognosis of the disease through any of the diagnostic tools with guidance of teacher.
Activity 4- Compare with Trihumoral vitiation. (10 Minutes)
Assess Clinical Findings through Siddha Diagnostic tools and correlate with the Trihumoral vitiation.
Activity: Discussions (1 hour)
Activity 5- Small group discussions on the pathological findings and their clinical significance should be done along with that assessment of Digestive fire should also be done. Discuss symptoms that warrant immediate medical attention, and the conditions that require referral to another system of medicine (15 Minutes)
Activity 6- Patient case history related to similar disease conditions should be additionally provided for comparison and discussion (20 Minutes)
Activity 7-Assessment of line of treatment (15 Minutes)
Develop various lines of treatment based on aspects of *suvai, kunam, veeriyam, vibagam* and state its curable and incurable types.
Activity 8- Personalised feedback on students' observation and diagnostic accuracy should be given and Conduct OSCE sessions at the end of the practical hours given (10 Minutes)

Practical Training 7.9 : Diagnosing *Dhoora Soolai* through Siddha diagnostic parameters in a prescribed case sheet format.

Duration of Activity - 2 hours
The teacher clearly outlines the objectives of the practical session, such as understanding the causes of the disease condition, performing assessments, and exploring management strategies.
Activity: Case-Based Learning (1 hour)
Activity 1-Assessment of Siddha Diagnostic Tools through Case Studies and Skill Labs in IPD/OPD Settings Different Cases/scenarios/skill labs will be given, and PG Scholars will be asked to assess the Siddha diagnostic tools. PG scholars can observe the case from IPD/OPD (10 Minutes)
Activity 2-History Taking (20 Minutes)
Have participants practice taking patient histories, focusing on the onset, duration, and pattern of disease (Throbbing, cramping pain, continuous, intermittent) and associated symptoms (e.g., Pain in lower abdomen, nausea, vomiting).
Activity 3-Record the documents (20 Minutes)
Instruct participants to document the examination of the patient through prescribed Case Sheet Format. The student may ascertain prognosis of the disease through any of the diagnostic tools with guidance of teacher.
Activity 4- Compare with Trihumoral vitiation (10 Minutes)
Assess Clinical Findings through Siddha Diagnostic tools and correlate with the Trihumoral vitiation.
Activity: Discussions (1 hour)
Activity 5- Small group discussions on the pathological findings and their clinical significance should be done along with that assessment of Digestive fire should also be done. Discuss symptoms that warrant immediate medical attention and the conditions that require referral to another system of medicine (15 Minutes)
Activity 6- Patient case history related to similar disease conditions should be additionally provided for comparison and discussion (20 Minutes)
Activity 7-Assessment of line of treatment (15 Minutes)
Develop various lines of treatment based on aspects of *suvai, kunam, veeriyam, vibagam* and state its curable and incurable types.
Activity 8- Personalised feedback on students' observation and diagnostic accuracy (10 Minutes)

Practical Training 7.10 : Diagnosing *Nithamba Soolai* through Siddha diagnostic parameters in a prescribed case sheet format.

Duration of Activity - 1 hour
The teacher clearly outlines the objectives of the practical session, such as understanding the causes of the disease condition, performing assessments, and exploring management strategies.
Activity:Case-Based Learning (30 Minutes)
Activity 1-Assessment of Siddha Diagnostic Tools through Case Studies and Skill Labs in IPD/OPD SettingsDifferent Cases/scenarios/skill labs will be given, and PG Scholars will be asked to assess the Siddha diagnostic tools. PG scholars can observe the case from IPD/OPD (10 Minutes)
Activity 2-History Taking (10 Minutes)

Have participants practice taking patient histories, focusing on the onset, duration, and pattern of disease and associated symptoms.
Activity 3-Record the documents (5 Minutes)
Instruct participants to document the examination of the patient through prescribed Case Sheet Format. The student may ascertain prognosis of the disease through any of the diagnostic tools with guidance of teacher.
Activity 4- Compare with Trihumoral vitiation. (5 Minutes)
Assess Clinical Findings through Siddha Diagnostic tools and correlate with the Trihumoral vitiation.
Activity:Discussions (30 Minutes)
Activity 5-Small group discussions on the pathological findings and their clinical significance should be done along with that assessment of Digestive fire should also be done. Discuss symptoms that warrant immediate medical attention and the conditions that require referral to another system of medicine (5 Minutes)
Activity 6- Patient case history related to similar disease conditions should be additionally provided for comparison and discussion (10 minutes)
Activity 7-Assesment of line of treatment (10 Minutes)
Develop various lines of treatment based on aspects of *suvai, kunam, veeriyam, vibagam* and state its curable and incurable types.
Activity 8- Personalised feedback on students' observation and diagnostic accuracy (5 Minutes)

Experiential learning Activity

Experiential-Learning 7.1 : Compendium of *Vatha Noikal*

Duration of Activity - 4 hours
Activity: Library Session (1 hour)
Utilize library resources to explore references related to *Vatha Noikal*. This session encourages evidence-based academic exploration.
Activity 1: Overview of *Vatha Noikal* and Introduction to Literature Search Methods (30 minutes)
An introduction to the concept, causes, and classifications of Vaatha Noikal. Basic techniques for effective literature searching are also covered.
Activity 2: Individual Literature Search (30 minutes)
Conduct an independent search for classical and modern references on assigned subtopics. The goal is to collect relevant materials for compendium development.
Activity: Discussions (1 hour 30 Minutes)
Activity 3: Group Discussion and Sharing of Findings (30 Minutes)
Engage in group discussions to share literature findings. Collaborative exchange helps refine content and align research direction.
Activity 4: Structuring the Compendium and Collaborative Writing (30 Minutes)
Outline the structure and flow of the compendium. Begin collaborative drafting with a focus on clarity, coherence, and relevance.
Activity 5: Reviewing and Editing the Compendium (30 Minutes)
Review and revise the draft through peer feedback. Aim to enhance content accuracy, language, and consistency.
Activity: Presentations (1 hour 30 Minutes)

Activity 6: Preparing Presentations (30 Minutes)
Organize and design presentations to effectively communicate key insights from the compendium. Focus on structure, clarity, and visual support.
Activity 7: Group Presentations (30 Minutes)
Present group work to peers and faculty, highlighting key findings and compendium structure. Followed by Q&A and constructive feedback.
Activity 8: Reflection and Feedback (30 Minutes)
Reflect on the learning experience and share feedback on the session. Supports self-evaluation and continuous improvement.

Experiential-Learning 7.2 : *Yakkai Ilakkanam analysis* for *Vatha Noikal*

Duration of Activity - 4 hours
Activity: Case-Based Learning (4 hours)
Activity 1: Introduction to Siddha Principles and *Yakkai Ilakkanam* (Temperament Types) (30 mins)
Overview of Siddha medicine as a traditional system of medicine.
Introduction to key concepts: *Vatha Noikal, Yakkai Ilakkanam* (temperament), and the role of temperament assessment in treatment plan preparation.
Importance of personalizing treatment based on *Yaakkai* (temperament) types for effective management
Understanding *Yakkai Ilakkanam* (Temperament Types) (15 mins)
Characteristics, common ailments, and tendencies associated with each *Yakkai*.
How *Yakkai* types influence the manifestation of *Vatha Noikal* ,
Interactive Discussion (15 mins)
Engage with students to discuss the concept of *Yakkai* and how they perceive its influence on diseases
Share case studies to highlight the different types of *Yakkai* and how *Vatha Noikal* , manifests in each.
Activity 2: Pathophysiology of *Vatha Noikal* and Treatment Approaches (30 mins)
Understanding *Vatha Noikal* , in Siddha Medicine
Pathophysiology of *Vatha Noikal*
Symptoms and signs of *Vatha Noikal* in different *Yaakkai* types.
Activity 3: Observe Treatment Protocols in Siddha for *Vatha Noikal*, (30 mins)
Activity 4: Mapping Herbs to *Yakkai* Types (30 mins)
Activity 5: Practical Application – Observe and document *Yakkai ilakkanam* of patients with *Vatha Noikal*, and document the medicines prescribed. Each student should document details of at least 5 patients (60 mins)
Activity 6: Case Study Analysis (15 mins)
Activity 7: Suggest Treatment Plan for each dehi with *Vatha Noikal* accordingly (30 mins)
Activity 8: Final Q&A and Reflection (15 mins)
Open the floor for final questions and discussions.

Students share reflections on the learning process and any challenges they encountered in developing treatment plans.
Instructor summarizes key points and emphasizes the importance of personalized treatment based on *Yakkai Ilakkanam* for treating *Vatha Noigal*, and a 360-degree performance evaluation should be done.

Experiential-Learning 7.3 : Diagnostic trial protocol for *Vatha Noikal*

Duration of Activity - 5 hours
Student will be trained to develop a blinded diagnostic study research protocol, the following 5-hour structured procedure will guide them through understanding key concepts, developing the research protocol, and critically evaluating the sensitivity, specificity, and predictive values of a trial diagnostic tool (in this case, Siddha method) by comparing it with a gold standard investigation for *Vatha Noikal* (*Thandagavatham/ Vaathasthambam/ Pakkavatham*) . The session includes both individual and group activities.
Activity: Team-Project work (5 hours)
Activity 1: Introduction to Diagnostic Study Design (60 minutes)
1.Introduction to Diagnostic Studies (30 minutes)
Objective: Provide students with a foundational understanding of diagnostic studies.
Key Concepts:
Sensitivity: The ability of the test to correctly identify those with the condition (True Positive Rate).
Specificity: The ability of the test to correctly identify those without the condition (True Negative Rate).
Positive Predictive Value (PPV): The probability that subjects with a positive test result actually have the condition.
Negative Predictive Value (NPV): The probability that subjects with a negative test result actually do not have the condition.
Types of Diagnostic Studies: Overview of blinded diagnostic study design, particularly in the context of comparing a trial tool with a gold standard.
Discuss the importance of using a gold standard (e.g., clinical diagnosis, laboratory test) in comparison with a trial diagnostic tool (e.g., Siddha).
2.Key Elements of a Diagnostic Study Protocol (30 minutes)
Objective: Introduce the essential components of a research protocol for a diagnostic study.
Research Question: What are we trying to assess? (e.g., Is the Siddha diagnostic tool effective in diagnosing *Vatha Noikal* compared to the gold standard?
Population: Describe the population of patients with *Vatha Noikal*. Discuss inclusion/exclusion criteria.
Trial Tool (Siddha): What aspects of the Siddha diagnostic method will be tested?
Gold Standard: Identify the gold standard for diagnosing *Vaatha Noikal* (e.g., laboratory tests, imaging).
Blinding: Why blinding is crucial to prevent bias in the study.
Outcome Measures: Sensitivity, specificity, PPV, NPV.
Activity 2: Protocol Development - Research Design (60 minutes)
1.Defining the Study Population (30 minutes)
Objective: Guide students to define and describe the population they will study.

Work with the students to develop inclusion and exclusion criteria for *Vatha Noikal.*
Discuss how to select a representative sample of patients (e.g., severity of illness, demographic factors).
Identify the sample size needed to detect meaningful differences between the Siddha method and the gold standard.
2. Writing the Research Objectives and Hypothesis (30 minutes)
Objective: Teach students how to write clear research objectives and hypotheses.
Research Objectives: Develop a clear research objective such as, "To evaluate the sensitivity, specificity, PPV, and NPV of the Siddha diagnostic tool in diagnosing *Vatha Noikal* compared with the gold standard."
Hypothesis: Define the null and alternative hypotheses.
Activity 3: Data Collection and Study Protocol Design (60 minutes)
1. Designing the Study Flow (30 minutes)
Objective: Teach students how to design the flow of data collection in a blinded diagnostic study.
Break down the steps of the diagnostic procedure:
Patient Recruitment: Describe how patients will be recruited and consented.
Blinding Process: Ensure that participants (patients) and researchers performing the diagnostic tests are blinded to avoid bias.
Testing Procedure: Define the specific steps for conducting both the Siddha diagnostic method and the gold standard diagnostic test.
Data Recording: Discuss how to record results for both methods and any relevant clinical or laboratory data.
2. Developing Outcome Measures and Data Analysis Plan (30 minutes)
Objective: Guide students on how to define and assess diagnostic outcomes.
Define sensitivity, specificity, PPV, and NPV as the primary outcome measures.
Discuss statistical methods for analyzing diagnostic test accuracy (e.g., Chi-square test, ROC curve analysis).
Activity 4: Writing the Protocol (60 minutes)
1. Writing the Research Protocol (30 minutes)
Objective: Have students begin drafting the diagnostic study research protocol
Guide them to structure the research protocol with the following sections:
Title: A clear, concise title reflecting the study’s objectives.
Introduction: Background information on *Vatha Noikal* and diagnostic challenges, including previous studies on diagnostic tools.
Objectives: State the research objective(s) and hypotheses.
Methods: Detailed design of the study including population, inclusion/exclusion criteria, blinding, diagnostic tests, and data collection.
Outcome Measures: Sensitivity, specificity, PPV, and NPV.
Statistical Analysis: Plan for data analysis (e.g., calculations for sensitivity, specificity, PPV, and NPV).
2. Drafting Data Collection Forms (30 minutes)
Objective: Guide students in creating data collection sheets or forms.

Discuss the importance of clear and accurate data collection.
Students will create a simple template/form to record results from both the Siddha method and the gold standard tests.
Ensure that forms allow for proper tracking of true positives, false positives, true negatives, and false negatives.
Activity 5: Review, Critique, and Refining the Protocol (60 minutes)
1. Peer Review and Group Discussion (30 minutes)
Objective: Allow students to peer-review each other's protocols and provide feedback.
Students will exchange their drafted research protocols with a peer.
Each student will review the protocol for clarity, completeness, and adherence to diagnostic study design principles.
Facilitate a group discussion where common challenges or areas of confusion are addressed.
2. Refining Protocols and Finalizing (30 minutes)
Objective: Assist students in refining their protocols based on peer feedback.
Students will make revisions to their research protocols.
Provide final guidance and address any outstanding questions regarding study design, ethical considerations, or statistical analysis.
Summary of Time Allocation:
Activity 1: Introduction to diagnostic studies and key components of a research protocol
Activity 2: Defining study population and research objectives
Activity 3: Data collection design and statistical analysis planning
Activity 4: Writing the research protocol and data collection forms
Activity 5: Peer review, group critique, and protocol refinement, assessment should be made according to presentation and creativity.

Experiential-Learning 7.4 : Hands-on training to diagnose *Vatha Noikal (Thandagavatham and/ or Vathasthambam and/ or Ceganavatham)*

Duration of Activity - 4 hours
Students will be asked to elicit the Ennvagai thervu and other necessary examinations in a series of 5 patients with *Vatha Noikal* (*Thandagavatham* and/ or *Vathasthambam* and/ or *Ceganavatham*) with different etiologies. Real cases/scenarios/case videos / simulated patients/reports of patients with *Vatha Noikal* (*Thandagavatham* and/ or *Vathasthambam* and/ or *Ceganavatham*) may be taken.
Activity: Case-Based Learning (1 hour)
Activity 1: Introduction and Case Study (1 hour)
Introduction to *Ennvagai Thervu* and *Vatha Noikal* (*Thandagavatham* and/ or *Vathasthambam* and/ or *Ceganavaatham*) and Case Study
Objective: Briefly introduce the concept of *Ennvagai Thervu* and its importance in diagnosing and managing *Vatha Noikal* (*Thandagavatham* and/ or *Vathasthambam* and/ or *Ceganavatham*) with different etiologies
Explain the components of *Ennvagai Thervu* and the clinical features to look for in patients with *Vatha Noikal* (*Thandagavatham* and/ or *Vathasthambam* and/ or *Ceganavatham*)

Introduce the concept of *Mukkutra Verupadu* and its relevance to *Vatha Noigal* (*Thandagavatham* and/ or *Vathasthambam* and/ or *Ceganavatham*)
Case Study : Patient Introduction and Elicitation of Symptoms in a series of 5 patients
Objective: Provide participants with a case study of a patient with *Vatha Noigal* (*Thandagavatham* and/ or *Vathasthambam* and/ or *Ceganavatham*). Ask them to elicit *Ennvagai Thervu* and other necessary examinations for this patient.
Divide participants into small groups (4-5 people) and have them discuss and collect key data for diagnosis.
Each group can focus on different components of the assessment (e.g., patient history, clinical examination, diagnostic tests).
Activity: Case diagnosis (1 hour)
Activity 2: Group Discussion on Differential Diagnosis (1 hour)
Objective: Facilitate a discussion on differential diagnosis and management strategies.
In each small group, participants will analyze the case and generate potential differential diagnoses.
Encourage them to use the *Mukkutra Verupadu* system to assess the underlying cause and develop line of treatment based on that.
After 20 minutes, each group will present their findings, including the rationale behind their diagnosis and management plan.
Open the floor for questions and peer feedback.
Activity: Discussions (2 hours)
Activity 3: Reflection, Assessment and Debriefing (1 hour)
3.1. Reflection on *Ennvagai Thervu* Assessment (30 minutes)
Objective: Focus on the inter-rater reliability of the *Ennvagai Thervu* assessment.
Facilitate a discussion on how different participants (across various backgrounds) assessed the *Ennvagai Thervu*.
If discrepancies in assessment arise, discuss the possible reasons and resolve them with the tutor's input.
Provide insights into the standardization of the assessment process and its impact on patient care.
3.2. Group Debriefing and Sharing Insights (30 minutes)
Objective: Reflect on the experiences during the small group discussions and team-based activities.
Encourage each participant to share one key insight or challenge they faced during the experiential learning session.
Discuss how they approached decision-making, particularly when generating the *Mukkutra Verupadu* for *Vatha Noikal* (*Thandagavatham* and/ or *Vathasthambam* and/ or *Ceganaatham*)
Activity 4- Developing a Siddha lab report or analyzing modern lab reports in the context of Siddha medicine principles and foundational concepts (30 minutes)
Activity 5 Conclusion and Q&A (30 minutes)
Objective: Wrap up the session with a final Q and A and a summary of the key learning points.
Recap the importance of *Ennvagai Thervu* in clinical practice and how it can guide diagnosis and treatment.
Emphasize the importance of interprofessional collaboration, communication, and critical thinking in managing complex cases.
Provide the opportunity for participants to ask any remaining questions or seek clarification.

Experiential-Learning 7.5 : Hands-on training to diagnose *Vaatha Noigal (Nadukku Vaatham and/ or Mudangu Vaatham)*

Duration of Activity - 3 hours
Students will be asked to elicit the Ennvagai thervu and other necessary examinations in a series of 5 patients with *Vaatha Noigal* (*Nadukku Vaatham and/ or Mudangu Vaatham*) with different etiologies. Real cases/scenarios/case videos / simulated patients/reports of patients with Vaatha Noigal (*Nadukku Vaatham* and/ or *Mudangu Vaatham*) may be taken.
Activity: Case Based Learning 1 hour
Activity 1: Introduction to *Ennvagai Thervu* and *Vaatha Noigal* (*Nadukku Vaatham* and/ or *Mudangu Vaatham*) and Case Study(1 hour)
Objective: Briefly introduce the concept of *Ennvagai Thervu* and its importance in diagnosing and managing *Vaatha Noigal (Nadukku Vaatham* and/ or *Mudangu Vaatham*) with different etiologies
Explain the components of *Ennvagai Thervu* and the clinical features to look for in patients with *Vaatha Noigal* (*Nadukku Vaatham* and/ or *Mudangu Vaatham*)
Introduce the concept of Mukkutra Verupadu and its relevance to *Vaatha Noigal* (*Nadukku Vaatham* and/ or *Mudangu Vaatham*)
Case Study : Patient Introduction and Elicitation of Symptoms in a series of 5 patients
Objective: Provide participants with a case study of a patient with *Vaatha Noigal* (*Nadukku Vaatham* and/ or *Mudangu Vaatham*). Ask them to elicit Ennvagai Thervu and other necessary examinations for this patient.
Divide participants into small groups (4-5 people) and have them discuss and collect key data for diagnosis.
Each group can focus on different components of the assessment (e.g., patient history, clinical examination, diagnostic tests).
Activity: Discussions (2 hours)
Activity 2: Group Discussion on Differential Diagnosis (1 hour)
Objective: Facilitate a discussion on differential diagnosis and management strategies.
In each small group, participants will analyze the case and generate potential differential diagnoses.
Encourage them to use the *Mukkutra Verupadu* system to assess the underlying cause and develop line of treatment based on that.
After 20 minutes, each group will present their findings, including the rationale behind their diagnosis and management plan.
Open the floor for questions and peer feedback.
Activity 3: Reflection, Assessment and Debriefing (30 minutes)
3.1. Reflection on *Ennvagai Thervu* Assessment
Objective: Focus on the inter-rater reliability of the *Ennvagai Thervu* assessment.
Facilitate a discussion on how different participants (across various backgrounds) assessed the *Ennvagai Thervu*.
If discrepancies in assessment arise, discuss the possible reasons and resolve them with the tutor's input.
Provide insights into the standardization of the assessment process and its impact on patient care.
3.2. Group Debriefing and Sharing Insights
Objective: Reflect on the experiences during the small group discussions and team-based activities.

Encourage each participant to share one key insight or challenge they faced during the experiential learning session.
Discuss how they approached decision-making, particularly when generating the *Mukkutra Verupadu* for *Vaatha Noigal* (*Nadukku Vaatham* and/ or *Mudangu Vaatham*)
Activity 4- Developing a Siddha lab report or analyzing modern lab reports in the context of Siddha medicine principles and foundational concepts (15 min)
Activity 5- Conclusion and Q&A (15 minutes)
Objective: Wrap up the session with a final Q and A and a summary of the key learning points.
Recap the importance of *Ennvagai Thervu* in clinical practice and how it can guide diagnosis and treatment.
Emphasize the importance of interprofessional collaboration, communication, and critical thinking in managing complex cases.
Provide the opportunity for participants to ask any remaining questions or seek clarification.

Experiential-Learning 7.6 : Trihumoral theory and five elements theory analysis for *Keel Vaayu*

Duration of Activity - 3 hours
Activity: Lecture (30 Minutes)
Activity 1: Introduction to Siddha Principles and Trihumoral theory and five elements theory (30 mins)
Overview of Siddha medicine as a traditional system of medicine.
Introduction to key concepts: *Keel Vaayu,*Trihumoral theory and five elements theory and the role of Trihumoral theory and five elements theory assessment in treatment plan preparation.
Importance of personalizing treatment based on Trihumors and five elements types for effective management
Understanding Trihumors and five elements types (15 mins)
Characteristics, common ailments, and tendencies associated with each humor and element
Interactive Discussion (15 mins)
Engage with students to discuss the concept of Trihumor and five elements and how they perceive its influence on diseases
Share case studies to highlight the different types of *Suvai* combinations drugs and how each one of them is manifested in treating *Keel Vaayu*
Activity: Problem-Based Learning (30 Minutes)
Activity 2: Pathophysiology of *Keel Vaayu* and Treatment Approaches (30 mins)
Understanding *Keel Vaayu,* in Siddha Medicine
Pathophysiology of *Keel Vaayu*
Symptoms and signs of *Keel Vaayu* classifications
Activity 3: Observe Treatment Protocols in Siddha for *Keel Vaayu,* (30 mins)
Activity 4: Mapping Herbs/ medicines based on *Suvai* (Trihumoral and five element) (30 mins)
Activity 5: Practical Application – Observe and document the prognosis of patients with *Keel vaayu,* and document the medicines prescribed. Each student should document details of at least 5 patients (60 mins)
Activity 6: Case Study Analysis (15 mins)

Activity 7: Suggest Treatment Plan with different suvai combination drugs for *Keel Vaayu* accordingly (30 mins)
Activity 8: Final Q&A and Reflection (15 mins)
Open the floor for final questions and discussions.
Students share reflections on the learning process and any challenges they encountered in developing treatment plans.
Instructor summarizes key points and emphasizes the importance of personalized treatment based on *Suvai*, element and humor for treating Keel Vaayu, and a 360-degree performance evaluation should be done.

Experiential-Learning 7.7 : Hands-on training to diagnose *Soolai*

Duration of Activity - 3 hours
Students will be asked to elicit the *Ennvagai therv*u and other necessary examinations in a series of 5 patients with *Soolai Noikal* (any type of *Soolai noikal* preferably *Dhoora soolai/ Nithamba Soolai*) with different etiologies. Real cases/scenarios/case videos / simulated patients/reports of patients with *Soolai Noikal* may be taken.
Activity: Case-Based Learning (1 hour)
Activity 1: Introduction to *Ennvagai Thervu* and *Soolai Noikal* and Case Study (1 hour)
Objective: Briefly introduce the concept of *Ennvagai Thervu* and its importance in diagnosing and managing *Soolai Noikal* with different etiologies
Explain the components of *Ennvagai Thervu* and the clinical features to look for in patients with *Soolai Noikal*
Introduce the concept of *Mukkutra Verupadu* and its relevance to *Soolai Noikal*
Case Study: Patient Introduction and Elicitation of Symptoms in a series of 5 patients
Objective: Provide participants with a case study of a patient with *Soolai Noikal*. Ask them to elicit *Ennvagai Thervu* and other necessary examinations for this patient.
Divide participants into small groups (4-5 people) and have them discuss and collect key data for diagnosis.
Each group can focus on different components of the assessment (e.g., patient history, clinical examination, diagnostic tests).
Activity: Discussions (2 hours)
Activity 2: Group Discussion on Differential Diagnosis (1 hour)
Objective: Facilitate a discussion on differential diagnosis and management strategies.
In each small group, participants will analyze the case and generate potential differential diagnoses.
Encourage them to use the *Mukkutra Verupadu* system to assess the underlying cause and develop line of treatment based on that.
After 20 minutes, each group will present their findings, including the rationale behind their diagnosis and management plan.
Open the floor for questions and peer feedback.
Activity 3: Reflection, Assessment and Debriefing (30 minutes)
3.1. Reflection on *Ennvagai Thervu* Assessment
Objective: Focus on the inter-rater reliability of the *Ennvagai Thervu* assessment.
Facilitate a discussion on how different participants (across various backgrounds) assessed the *Ennvagai Thervu*.
If discrepancies in assessment arise, discuss the possible reasons and resolve them with the tutor's input.

Provide insights into the standardization of the assessment process and its impact on patient care.
3.2. Group Debriefing and Sharing Insights
Objective: Reflect on the experiences during the small group discussions and team-based activities.
Encourage each participant to share one key insight or challenge they faced during the experiential learning session.
Discuss how they approached decision-making, particularly when generating the *Mukkutra Verupadu* for *Soolai Noikal*.
Activity 4: Developing a Siddha lab report or analyzing modern lab reports in the context of Siddha medicine principles and foundational concepts (15 min)
Activity 5: Conclusion and Q&A (15 minutes)
Objective: Wrap up the session with a final Q and A and a summary of the key learning points.
Recap the importance of *Ennvagai Thervu* in clinical practice and how it can guide diagnosis and treatment.
Emphasize the importance of interprofessional collaboration, communication, and critical thinking in managing complex cases.
Provide the opportunity for participants to ask any remaining questions or seek clarification.

Modular Assessment

Assessment method	**Hour**
Instructions: Conduct a structured Modular assessment. The assessment will be for 50 marks. Keep a structured marking pattern. Use different assessment methods in each module for the semester. Keep a record of the structured pattern used for assessment. Calculate the Modular grade point as per Table 6 C. CHOOSE ANY OF THE BELOW ASSESSMENT FOR 50 MARKS Total Marks: 50 / Time Duration: 4 Hours 1.VIVA VOCE EXAMINATION (10 Marks) Assessment Structure: Foster a deeper understanding of the underlying mechanisms of the particular disease to inform clinical decision-making and able to interpret the variations of differential diagnosis Marking Distribution: Knowledge and Understanding (4 marks) Detailed pathological knowledge Understanding of Siddha Diagnostic tools and their application Clinical Application (3 marks) Differential Diagnosis Clinical scenarios Radiological interpretation Communication Skills (3 marks) Clarity of expression	4

Use of precise terminology
Ability to explain complex concepts
2.OBJECTIVE STRUCTURED CLINICAL EXAMINATION (OSCE) (25 Marks)
Mark Distribution:
Clinical Examinations of patients through
Yakkai, Aga karuvigal, Pura karuvigal (2 marks)
Udal Thathukkal, en vagai thervu (2 marks)
Manikkadai Nool (2 marks)
Derangement of Mukkutram (2 marks)
Mukkutra Verupadu (2 marks)
Prescription of the line of treatment based on Mukkutram, Suvai and Kunam (2 marks)
Noi Kanippu (2 marks)
Theerum Theera Nilai (1 mark)
3.CLASS PRESENTATION (10 Marks)
Assessment Criteria:
Content (4 marks)
Depth of subject matter
Current research inclusion
Clinical correlation
Bibliography
Presentation Skills (3 marks)
Clarity of speech
Time management
Use of visual aids
Audience engagement
Discussion (3 marks)
Handling questions
Critical thinking
Scientific reasoning
Knowledge application
4.RECORD KEEPING (5 Marks)
Assessment Criteria:

Clinical Assessments (4 marks)
Profound Disease Interpretation
Analysis with analogous modern terminologies
Radiological integration Written Presentation Skills (1 mark)
Innovative Ideas
Clarity of Concepts
SAQ AND LAQ ASSESSMENT
Total Marks: 10
Or
Any practical in converted form can be taken for assessment. (25 marks)
and
Any experiential, such as portfolios / reflections / presentations can be taken as an assessment. (25 marks)

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

Module 8 : Siddha – Pitha and Kaba Diseases

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

Describe the etymology of conditions related to Pitha Noigal, Kaba Noigal including subtypes
Describe how to approach a case
Discuss the cause through Trihumoral theory
Create algorithms for diagnosing Pitha Noigal and Kaba Noigal through Ennvagai thervu and assess Mukkuta Verupaadu
Design line of treatment based on Suvai and Trihumoural vitiation.

M 8 Unit 1 Pitha Noikal

8.1.1. Etiology 8.1.2. Premonitory and common signs and symptoms 8.1.3. Types - 42 types according to *Sage Yugi* 8.1.4. *Tri humoral Variation* 8.1.5. Line of treatment 8.1.6. Diagnostic techniques used in Siddha system and Modern for *Pitha Noikal*.

References: 1,2,7,10,14,15,22,23,24,25,26,27,32,35,36,37,38,39,40,41,46,52,58,59,66,67,68,71,72,78,83,90,91,92

3A	3B	3C	3D	3E	3F	3G
CO2,CO6,CO8	Describe about *Pitha noikal*, synonyms, etiology, premonitory signs, common signs and symptoms, types – with possible modern comparison.	6	Lecture	CC	Knows-how	L&GD
CO2,CO6,CO8	Perform diagnostic techniques used in Siddha and Modern for *Vanni Pitham* followed by *Tri humoural vitiation* estimation and conduct the examination of a patient through *Yakkai, Udal Thathukkal, Ennvagai Thervu, Manikkadai Nool, Mukkutram* and prescribe the line of treatment based on *Mukkutram, Suvai,* and *Kunam* and infer the *Theerum Theera nilai* of presented *Vanni Pitham* or develop skills to diagnose *Vanni Pitham* through case scenario.	2	Practical Training 8.1	PSY-GUD	Shows-how	CBL,DIS
CO2,CO6,CO8	Develop a compendium of any *Pitha Noikal* for eg., *Vanni pitham/ Eri pitham/ uratha pitham* thorough literature search including ancient manuscripts.	4	Experiential-Learning 8.1	PSY-MEC	Does	PER,DIS, LS
CO2,CO6,CO8	Apply *Siddha* examination techniques and collaborate with modern diagnostic techniques in light of the given/presented case of *Pitha Noikal (Vanni Pitham)* and/ or may be compared with (Inflammatory Bowel Disease).	2	Experiential-Learning 8.2	PSY-MEC	Does	CBL,PBL ,DIS
CO2,CO6,CO8	Perform diagnostic techniques used in Siddha and Modern for *Uratha Pitham* followed by *Tri humoural vitiation* estimation and conduct the examination of a patient through *Yakkai, Udal Thathukkal, Ennvagai Thervu, Manikkadai Nool, Mukkutram* and prescribe the line of treatment based on *Mukkutram, Suvai,* and *Kunam* and infer	2	Practical Training 8.2	PSY-GUD	Shows-how	DIS,CBL

	the *Theerum Theera nilai* of presented *Uratha Pitham* or develop skills to diagnose *Uratha Pitham* through case scenario.					
CO2,CO6,CO8	Perform diagnostic techniques used in Siddha and Modern for *Eri Pitham* followed by *Tri humoural vitiation* estimation and conduct the examination of a patient through *Yakkai, Udal Thathukkal, Ennvagai Thervu, Manikkadai Nool, Mukkutram* and prescribe the line of treatment based on *Mukkutram, Suvai,* and *Kunam* and infer the *Theerum Theera nilai* of presented *Eri Pitham* or develop skills to diagnose *Eri Pitham* through case scenario.	2	Practical Training 8.3	PSY-GUD	Shows-how	DIS,CBL
CO2,CO6,CO8	Perform diagnostic techniques used in Siddha and Modern for *Kaya Pitham* followed by *Tri humoural vitiation* estimation and conduct the examination of a patient through *Yakkai, Udal Thathukkal, Ennvagai Thervu, Manikkadai Nool, Mukkutram* and prescribe the line of treatment based on *Mukkutram, Suvai,* and *Kunam* and infer the *Theerum Theera nilai* of presented *Kaya Pitham* or develop skills to diagnose *Kaya Pitham* through case scenario.	2	Practical Training 8.4	PSY-GUD	Shows-how	CBL,DIS
CO2,CO6,CO8	Perform diagnostic techniques used in Siddha and Modern for *Karappan Pitham* followed by *Tri humoural vitiation* estimation and conduct the examination of a patient through *Yakkai, Udal Thathukkal, Ennvagai Thervu, Manikkadai Nool, Mukkutram* and prescribe the line of treatment based on *Mukkutram, Suvai,* and *Kunam* and infer the *Theerum Theera nilai* of presented *Karappan Pitham* or develop skills to diagnose *Karappan Pitham* through case scenario.	2	Practical Training 8.5	PSY-GUD	Shows-how	DIS,CBL, PBL
CO2,CO6,CO8	Apply *Siddha* examination techniques and collaborate with modern diagnostic techniques in light of the given/presented case of *Pitha Noikal (Uratha Pitham and Eri pitham)* and/ or may be compared with (Hypertension/ Neuropathy).	4	Experiential-Learning 8.3	PSY-MEC	Does	CBL,DIS, PBL
CO2,CO6,CO8	Apply *Siddha* examination techniques and collaborate with modern diagnostic techniques in light of the given/presented case of *Pitha Noikal (Vanni Pitham)* may be compared with (Inflammatory Bowel Disorder).	2	Practical Training 8.6	PSY-MEC	Does	DIS,CBL, PBL
CO2,CO6,CO8	Apply *Siddha* examination techniques and collaborate with modern diagnostic techniques in light of the given/presented case of *Pitha Noikal (Eri Pitham and Uratha*	4	Experiential-Learning 8.4	PSY-MEC	Does	DIS,CBL

	pitham) this may be compared with (Neuropathy/ Hypertension)					

M 8 Unit 2 Kaba Noikal

8.2.1. Etiology 8.2.2. Premonitory and common signs and symptoms 8.2.3. Types - 20 types according to *Sage Yugi* 8.2.4. Analysing *Tri humoral* Variation 8.2.5. Line of treatment 8.2.6. Evaluating Diagnostic techniques used in Siddha system for arrival of diagnosis

References: 1,2,7,10,14,15,22,23,24,25,26,27,32,46,47,52,53,54,55,56,57,66,90

3A	3B	3C	3D	3E	3F	3G
CO2,CO6,CO8	Describe about *Kaba noikal*, synonyms, etiology, etymology, premonitory and common signs and symptoms, types – with possible modern comparison including curable and incurable.	4	Lecture	CC	Know	L
CO2,CO6,CO8	Develop a compendium of any four types of *Kaba Noikal (*for eg., *Irumal Aiyam/ Kaasa Aiyam/ Virana Aiyam/ Suronitha Aiyam*) with modern equalant comparison thorough literature search including ancient manuscripts.	4	Experiential-Learning 8.5	PSY-MEC	Does	PER,LS, DIS
CO2,CO6,CO8	Perform diagnostic techniques used in Siddha and Modern for *any four types of Kaba Noikal preferably Irumal Kaba Noi, Kaasa Kaba Noi, Virana Kaba Noi, Suronitha Kaba Noi* followed by *Tri humoural vitiation* estimation and conduct the examination of a patient through *Yakkai, Udal Thathukkal, Ennvagai Thervu, Manikkadai Nool, Mukkutram* and prescribe the line of treatment based on *Mukkutram, Suvai,* and *Kunam* and infer the *Theerum Theera nilai* of presented *Kaba Noigal* or develop skills to diagnose *Kaba Noigal* through case scenario.	8	Practical Training 8.7	PSY-GUD	Shows-how	CBL,DIS
CO2,CO6,CO8	Apply *Siddha* examination techniques and collaborate with modern diagnostic techniques in light of the given/presented case of *Kaba Noikal (Virana Kaba Noi)* and/ or may be compared with Tonsilitis.	4	Experiential-Learning 8.6	PSY-MEC	Does	CBL,CD
CO2,CO6,CO8	Apply *Siddha* examination techniques and collaborate with modern diagnostic techniques in light of the given/presented case of *Kaba Noikal (Suronitha Kaba Noi)* and/ or may be compared with Pelvic Inflammatory Diseases.	4	Experiential-Learning 8.7	PSY-MEC	Does	DIS,CD,CBL

Practical Training Activity
Practical Training 8.1 : Diagnosing *Vanni Pitham* through Siddha diagnostic parameters in a prescribed case sheet format.
Duration of Activity - 2 hours The teacher clearly outlines the objectives of the practical session, such as understanding the causes of disease condition, performing assessments, and exploring management strategies. Activity:Case-Based Learning (1 hour) Activity 1-Assessment of Siddha Diagnostic Tools through Case Studies and Skill Labs in IPD/OPD Settings. Different Cases/scenarios/skill labs will be given and PG Scholars will be asked to assess the Siddha diagnostic tools. PG scholars can observe the case from IPD/OPD (10 Minutes) Activity 2-History Taking (20 Minutes) Have participants practice taking patient histories, focusing on the onset, duration, and pattern of disease and associated symptoms (e.g.,Bloody diarrhea, blackish discoloration of stolols,palor, Dizziness). Activity 3-Record the documents (20 Minutes) Instruct participants to document the examination of the patient through prescribed Case Sheet Format. The student may ascertain prognosis of the disease through any of the diagnostic tools with guidance of teacher. Activity 4- Compare with Trihumoral vitiation. (10 Minutes) Assess Clinical Findings through Siddha Diagnostic tools and correlate with the Trihumoral vitiation. Activity: Discussion (1 hour) Activity 5- Small group discussions on the pathological findings and their clinical significance should be done along with that assessment of Digestive fire should also be done. Discuss symptoms that warrant immediate medical attention and the conditions that require referral to another system of medicine (15 Minutes) Activity 6- Patient case history related to similar disease conditions should be additionally provided for comparison and discussion (20 Minutes) Activity 7-Assessment of line of treatment (15 Minutes) Develop various lines of treatment based on aspects of *suvai, kunam, veeriyam, vibagam* and state its curable and incurable types. Activity 8- Personalised feedback on students' observation and diagnostic accuracy (10 Minutes)
Practical Training 8.2 : Diagnosing *Uratha Pitham* through Siddha diagnostic parameters in a prescribed case sheet format.
Duration of Activity- 2 hours The teacher clearly outlines the objectives of the practical session, such as understanding the causes of disease condition, performing assessments, and exploring management strategies. Activity:Case-Based Learning (1 hour) Activity 1-Assessment of Siddha Diagnostic Tools through Case Studies and Skill Labs in IPD/OPD Settings (10 Minutes)

Different Cases/scenarios/skill labs will be given and PG Scholars will be asked to assess the Siddha diagnostic tools. PG scholars can observe the case from IPD/OPD
Activity 2-History Taking (20 Minutes)
Have participants practice taking patient histories, focusing on the onset, duration, and pattern of disease and associated symptoms (e.g.,Outburst of anger, Redness of eye, Insominia).
Activity 3-Record the documents (20 Minutes)
Instruct participants to document the examination of the patient through prescribed Case Sheet Format. The student may ascertain prognosis of the disease through any of the diagnostic tools with guidance of teacher.
Activity 4- Compare with Trihumoral vitiation.(10 Minutes)
Assess Clinical Findings through Siddha Diagnostic tools and correlate with the Trihumoral vitiation.
Activity: Discussions (1 hour)
Activity 5- Small group discussions on the pathological findings and their clinical significance should be done along with that assessment of Digestive fire should also be done. Discuss symptoms that warrant immediate medical attention and the conditions that require referral to another system of medicine (15 Minutes)
Activity 6- Patient case history related to similar disease conditions should be additionally provided for comparison and discussion (20 Minutes)
Activity 7-Assessment of line of treatment (15 Minutes)
Develop various lines of treatment based on aspects of *suvai, kunam, veeriyam, vibagam* and state its curable and incurable types.
Activity 8- Personalised feedback on students' observation and diagnostic accuracy (10 Minutes)

Practical Training 8.3 : Diagnosing *Eri Pitham* through Siddha diagnostic parameters in a prescribed case sheet format.

Duration of Activity - 2 hours
The teacher clearly outlines the objectives of the practical session, such as understanding the causes of disease condition, performing assessments, and exploring management strategies.
Activity: Case-Based Learning (1 hour)
Activity 1-Assessment of Siddha Diagnostic Tools through Case Studies and Skill Labs in IPD/OPD Settings (10 Minutes)
Different Cases/scenarios/skill labs will be given and PG Scholars will be asked to assess the Siddha diagnostic tools. PG scholars can observe the case from IPD/OPD
Activity 2-History Taking (20 Minutes)
Have participants practice taking patient histories, focusing on the onset, duration, and pattern of disease and associated symptoms (e.g.,Burning sensation over palms, soles).
Activity 3-Record the documents (20 Minutes)
Instruct participants to document the examination of the patient through prescribed Case Sheet Format. The student may ascertain prognosis of the disease through any of the diagnostic tools with guidance of teacher.
Activity 4- Compare with Trihumoral vitiation. (10 Minutes)
Assess Clinical Findings through Siddha Diagnostic tools and correlate with the Trihumoral vitiation.

Activity: Discussions (1 hour)
Activity 5- Small group discussions on the pathological findings and their clinical significance should be done along with that assessment of Digestive fire should also be done. Discuss symptoms that warrant immediate medical attention and the conditions that require referral to another system of medicine (15 Minutes)
Activity 6- Patient case history related to similar disease conditions should be additionally provided for comparison and discussion (20 Minutes)
Activity 7-Assessment of line of treatment (15 Minutes)
Develop various lines of treatment based on aspects of *suvai, kunam, veeriyam, vibagam* and state its curable and incurable types.
Activity 8- Personalised feedback on students' observation and diagnostic accuracy (10 Minutes)

Practical Training 8.4 : Diagnosing *Kaya Pitham* through Siddha diagnostic parameters in a prescribed case sheet format.

Duration of Activity- 2 hours
The teacher clearly outlines the objectives of the practical session, such as understanding the causes of disease condition, performing assessments, and exploring management strategies.
Activity: Case-Based Learning (1 hour)
Activity 1-Assessment of Siddha Diagnostic Tools through Case Studies and Skill Labs in IPD/OPD Settings (10 Minutes)
Different Cases/scenarios/skill labs will be given and PG Scholars will be asked to assess the Siddha diagnostic tools. PG scholars can observe the case from IPD/OPD
Activity 2-History Taking (20 Minutes)
Have participants practice taking patient histories, focusing on the onset, duration, and pattern of disease and associated symptoms (e.g.,Cough, darkness over face, giddiness, constipation).
Activity 3-Record the documents (20 Minutes)
Instruct participants to document the examination of the patient through prescribed Case Sheet Format. The student may ascertain prognosis of the disease through any of the diagnostic tools with guidance of teacher.
Activity 4- Compare with Trihumoral vitiation. (10 Minutes)
Assess Clinical Findings through Siddha Diagnostic tools and correlate with the Trihumoral vitiation.
Activity: Discussions (1 hour)
Activity 5- Small group discussions on the pathological findings and their clinical significance should be done along with that assessment of Digestive fire should also be done. Discuss symptoms that warrant immediate medical attention and the conditions that require referral to another system of medicine (15 Minutes)
Activity 6- Patient case history related to similar disease conditions should be additionally provided for comparison and discussion (20 Minutes)
Activity 7- Assessment of line of treatment (15 Minutes)
Develop various lines of treatment based on aspects of *suvai, kunam, veeriyam, vibagam* and state its curable and incurable types.
Activity 8- Personalised feedback on students' observation and diagnostic accuracy (10 Minutes)

Practical Training 8.5 : Diagnosing *Karappan Pitham* through Siddha diagnostic parameters in a prescribed case sheet format.

Duration of Activity - 2 hours
The teacher clearly outlines the objectives of the practical session, such as understanding the causes of disease condition, performing assessments, and exploring management strategies.
Activity: Case-Based Learning (1 hour)
Activity 1-Assessment of Siddha Diagnostic Tools through Case Studies and Skill Labs in IPD/OPD Settings (10 Minutes)
Different Cases/scenarios/skill labs will be given and PG Scholars will be asked to assess the Siddha diagnostic tools. PG scholars can observe the case from IPD/OPD
Activity 2-History Taking (20 Minutes)
Have participants practice taking patient histories, focusing on the onset, duration, and pattern of disease and associated symptoms (e.g.,Itching over the body).
Activity 3-Record the documents (20 Minutes)
Instruct participants to document the examination of the patient through prescribed Case Sheet Format. The student may ascertain prognosis of the disease through any of the diagnostic tools with guidance of teacher.
Activity 4- Compare with Trihumoral vitiation. (10 Minutes)
Assess Clinical Findings through Siddha Diagnostic tools and correlate with the Trihumoral vitiation.
Activity: Discussions (1 hour)
Activity 5- Small group discussions on the pathological findings and their clinical significance should be done along with that assessment of Digestive fire should also be done. Discuss symptoms that warrant immediate medical attention and the conditions that require referral to another system of medicine (15 Minutes)
Activity 6- Patient case history related to similar disease conditions should be additionally provided for comparison and discussion (20 Minutes)
Activity 7-Assessment of line of treatment (15 Minutes)
Develop various lines of treatment based on aspects of *suvai, kunam, veeriyam, vibagam* and state its curable and incurable types.
Activity 8- Personalised feedback on students' observation and diagnostic accuracy (10 Minutes)

Practical Training 8.6 : Hands-on training to diagnose *Vanni Pitham*

Duration of Activity - 2 hours
Students should be given atleast 3-5 cases of *Vanni Pitham* in a series for diagnosis
Activity: Case-Bsed Learning (30 minutes)
Activity 1: Introduction and Case Study (30 minutes)
Explain the components of *Ennvagai Thervu* and the clinical features to look for in patients with *Pitha noikal*
Introduce the concept of *Mukkutra Verupadu* and its relevance
Case Study : Patient Introduction and Elicitation of Symptoms
Objective: Provide participants with a case study of a patient with *Vanni Pitham*. Ask them to elicit *Ennvagai Thervu* and other necessary examinations for this patient.
Divide participants into small groups (4-5 people) and have them discuss and collect key data for diagnosis.

Each group can focus on different components of the assessment (e.g., patient history, clinical examination, diagnostic tests).
Activity: Discussion (1 hour 30 minutes)
Activity 2 : Group Discussion on Differential Diagnosis (1 hour)
Objective: Facilitate a discussion on differential diagnosis and management strategies.
In each small group, participants will analyze the case and generate potential differential diagnosis.
Encourage them to use the *Mukkutra Verupadu* system to assess the underlying cause.
After 20 minutes, each group will present their findings, including the rationale behind their diagnosis and management plan.
Open the floor for questions and peer feedback.
Activity 3: Reflection, Assessment and Debriefing (30 minutes)
3.1. Reflection on *Ennvagai Thervu* Assessment
Objective: Focus on the inter-rater reliability of the *Ennvagai Thervu* assessment.
Facilitate a discussion on how different participants (across various backgrounds) assessed the *Ennvagai Thervu.*
If discrepancies in assessment arise, discuss the possible reasons and resolve them with the tutor's input.
Provide insights into the standardization of the assessment process and its impact on patient care.
3.2. Group Debriefing and Sharing Insights
Objective: Reflect on the experiences during the small group discussions and team-based activities.
Encourage each participant to share one key insight or challenge they faced during the experiential learning session.
Discuss how they approached decision-making, particularly when generating the *Mukkutra Verupadu*
3.3. Conclusion and Q&A
Objective: Wrap up the session with a final Q and A and a summary of the key learning points.
Recap the importance of *Ennvagai Thervu* in clinical practice and how it can guide diagnosis and treatment.
Emphasize the importance of interprofessional collaboration, communication, and critical thinking in managing complex cases.
Provide the opportunity for participants to ask any remaining questions or seek clarification.

Practical Training 8.7 : Diagnosing *Kaba Noikal* through Siddha diagnostic parameters in a prescribed case sheet format.

Duration of Activity - 8 hours
The teacher clearly outlines the objectives of the practical session, such as understanding the causes of disease condition, performing assessments, and exploring management strategies.
Activity:Case-Based Learning (4 hours)
Activity 1-Assessment of Siddha Diagnostic Tools through Case Studies and Skill Labs in IPD/OPD Settings (10x4=40 Minutes).Different Cases/scenarios/skill labs will be given and PG Scholars will be asked to assess the Siddha diagnostic tools. PG scholars can observe four different cases of *kaba noigal* from IPD/OPD
Activity 2-History Taking (20x4=80 Minutes)

Have participants practice taking patient histories, focusing on the onset, duration, and pattern of disease and associated symptoms.
Activity 3-Record the documents (20x4=80 Minutes)
Instruct participants to document the examination of the patient through prescribed Case Sheet Format. The student may ascertain prognosis of the disease through any of the diagnostic tools with guidance of teacher.
Activity 4- Compare with Trihumoral vitiation. (10x4=40 Minutes)
Assess Clinical Findings through Siddha Diagnostic tools and correlate with the Trihumoral vitiation.
Activity: Discussions (4 hours)
Activity 5- Small group discussions on the pathological findings and their clinical significance should be done along with that assessment of Digestive fire should also be done. Discuss symptoms that warrant immediate medical attention and the conditions that require referral to another system of medicine (15x4=60 Minutes)
Activity 6- Patient case history related to similar disease conditions should be additionally provided for comparison and discussion (20x4=80 Minutes)
Activity 7-Assessment of line of treatment (15x4=60 Minutes)
Develop various lines of treatment based on aspects of *suvai, kunam, veeriyam, vibagam* and state its curable and incurable types.
Activity 8- Personalised feedback on students' observation and diagnostic accuracy (10x4=40 Minutes)

Experiential learning Activity

Experiential-Learning 8.1 : Compendium of *Pitha Noikal*

Duration of Activity - 4 hours
Activity:Library session (1 hour)
Activity 1: Overview of *Pitha Noikal* and Introduction to Literature Search Methods (30 minutes)
Students are introduced to the concept of *Pitha Noikal* with emphasis on *Vanni Pitham* and guided on effective literature search techniques. This sets the foundation for evidence-based exploration.
Activity 2: Individual Literature Search (30 minutes)
Each student conducts a focused search of classical texts and modern references related to *Pitha Noikal*. Findings are noted for later discussion.
Activity: Discussions (1 hour 30 minutes)
Activity 3: Group Discussion and Sharing of Findings (30 minutes)
Students collaborate in groups to share individual search results. Insights are compared and compiled for deeper understanding.
Activity 4: Structuring the Compendium and Collaborative Writing of the Compendium (30 minutes)
Groups organize the collected data into a structured format. Collaborative writing begins with clearly defined sections and roles.
Activity 5: Reviewing and Editing the Compendium (30 minutes)
Students peer-review the draft compendium for content accuracy, clarity, and structure. Edits are made collaboratively to finalize the document.
Activity: Presentations (1 hour 30 minutes)

Activity 6: Preparing Presentations (30 minutes)
Each group prepares a short presentation based on their compendium. Key findings and diagnostic approaches are highlighted.
Activity 7: Group Presentations (30 minutes)
Groups present their work to the class, sharing insights on *Pitha Noikal* diagnosis and literature-based analysis.
Activity 8: Reflection and Feedback (30 minutes)
Students and facilitators reflect on the learning process. Feedback is shared to improve future case-based and literature-integrated learning sessions.

Experiential-Learning 8.2 : Hands-on training to diagnose *Pitha Noikal (Vanni Pitham)*

Duration of Activity-2 hours
Activity: Case- Based Learning (30 Minutes)
Activity 1: Overview of Pitha Noikal (*Vanni Pitham*) (30 minutes)
Brief introduction to *Vanni Pitham* focusing on causes, symptoms, and Siddha diagnostic tools such as *Ennvagai Thervu, Naadi,* and *Udal Thathukkal*. Present a sample case scenario for initial understanding.
Activity: Discussions (1 hour 30 Minutes)
Activity 2: Case Analysis, Literature Correlation, and Group Discussion (30 minutes)
Students individually analyze the case using Siddha principles. Perform a literature search to support findings. Conduct a group discussion to compare diagnostic approaches and treatment ideas.
Activity 3: Compendium Structuring Based on Case and Literature Findings (30 minutes)
Organize findings from the case discussion and literature search. Define the structure of the compendium including introduction, case details, diagnostic steps, literature support, and Siddha management plan.
Activity 4: Collaborative Writing, Review, and Finalization of the Compendium (30 minutes)
Groups collaboratively write their sections of the compendium. Peer review and edit for clarity, consistency, and completeness. Compile and finalize the document for submission or presentation.

Experiential-Learning 8.3 : Hands-on training to diagnose *Pitha Noikal (Uratha Pitham and Eri pitham)*

Duration of Activity - 4 hours
Students will be asked to elicit the *Ennvagai thervu* and other necessary examinations in a series of 5 patients with *Pitha Noikal* (*Uratha Pitham* and *Eri pitham*) with different etiologies. Real cases/scenarios/case videos / simulated patients/reports of patients with *Pitha Noikal* (*Uratha Pitham* and *Eri pitham*) may be taken.
Activity: Case-Based Learning (1 hour)
Activity 1: Introduction and Case Study (1 hour)
Introduction to *Ennvagai Thervu* and *Pitha Noikal (Uratha Pitham* and *Eri pitham*) and Case Study

Objective: Briefly introduce the concept of *Ennvagai Thervu* and its importance in diagnosing and managing *Pitha Noikal* (*Uratha Pitham* and *Eri pitham*) with different etiologies
Explain the components of *Ennvagai Thervu* and the clinical features to look for in patients with *Pitha Noikal* (*Uratha Pitham* and *Eri pitham*)
Introduce the concept of *Mukkutra Verupadu* and its relevance to *Pitha Noikal* (*Uratha Pitham* and *Eri pitham*)
Case Study : Patient Introduction and Elicitation of Symptoms in a series of 5 patients
Objective: Provide participants with a case study of a patient with *Pitha Noikal* (*Uratha Pitham* and/ or *Eri pitham*). Ask them to elicit *Ennvagai Thervu* and other necessary examinations for this patient.
Divide participants into small groups (4-5 people) and have them discuss and collect key data for diagnosis.
Each group can focus on different components of the assessment (e.g., patient history, clinical examination, diagnostic tests).
Activity: Discussion (3 hours)
Activity 2: Group Discussion on Differential Diagnosis (1 hour)
Objective: Facilitate a discussion on differential diagnosis and management strategies.
In each small group, participants will analyse the case and generate potential differential diagnoses.
Encourage them to use the *Mukkutra Verupadu* system to assess the underlying cause and develop line of treatment based on that.
After 20 minutes, each group will present their findings, including the rationale behind their diagnosis and management plan.
Open the floor for questions and peer feedback.
Activity 3: Reflection, Assessment and Debriefing (60 minutes)
3.1. Reflection on *Ennvagai Thervu* Assessment (30 minutes)
Objective: Focus on the inter-rater reliability of the *Ennvagai Thervu* assessment.
Facilitate a discussion on how different participants (across various backgrounds) assessed the *Ennvagai Thervu*.
If discrepancies in assessment arise, discuss the possible reasons and resolve them with the tutor's input.
Provide insights into the standardization of the assessment process and its impact on patient care.
3.2. Group Debriefing and Sharing Insights (30 minutes)
Objective: Reflect on the experiences during the small group discussions and team-based activities.
Encourage each participant to share one key insight or challenge they faced during the experiential learning session.
Discuss how they approached decision-making, particularly when generating the *Mukkutra Verupadu* for *Pitha Noikal* (*Uratha Pitham* and *Eri pitham*)
Activity 4: Developing a Siddha lab report or analyzing modern lab reports in the context of Siddha medicine principles and foundational concepts (30 minutes)
Activity 5: Conclusion and Q&A (30 minutes)
Objective: Wrap up the session with a final Q and A and a summary of the key learning points.
Recap the importance of *Ennvagai Thervu* in clinical practice and how it can guide diagnosis and treatment.
Emphasize the importance of interprofessional collaboration, communication, and critical thinking in managing complex cases.
Provide the opportunity for participants to ask any remaining questions or seek clarification.

Experiential-Learning 8.4 : Hands-on training to diagnose *Pitha Noikal (Eri Pitham and Uratha pitham)*

Duration of Activity - 4 hours
Students will be asked to elicit the *Ennvagai thervu* and other necessary examinations in a series of 5 patients with *Pitha Noikal* (*Eri Pitham* and *Uratha pitham*) with different etiologies. Real cases/scenarios/case videos / simulated patients/reports of patients with *Pitha Noikal* (*Eri Pitham* and *Uratha pitham*) may be taken.
Activity: Case-Based Learning (1 hour)
Activity 1: Introduction and Case Study (1 hour)
Introduction to *Ennvagai Thervu* and *Pitha Noikal* (*Eri Pitham* and *Uratha pitham*) and Case Study
Objective: Briefly introduce the concept of *Ennvagai Thervu* and its importance in diagnosing and managing *Pitha Noikal* (*Eri Pitham* and *Uratha pitham*) with different etiologies
Explain the components of *Ennvagai Thervu* and the clinical features to look for in patients with *Pitha Noikal* (*Eri Pitham* and *Uratha pitham*).
Introduce the concept of *Mukkutra Verupadu* and its relevance to *Pitha Noikal* (*Eri Pitham* and *Uratha pitham*).
Case Study : Patient Introduction and Elicitation of Symptoms in a series of 5 patients
Objective: Provide participants with a case study of a patient with *Pitha Noikal* (*Eri Pitham* and *Uratha pitham)*. Ask them to elicit *Ennvagai Thervu* and other necessary examinations for this patient.
Divide participants into small groups (4-5 people) and have them discuss and collect key data for diagnosis.
Each group can focus on different components of the assessment (e.g., patient history, clinical examination, diagnostic tests).
Activity: Discussion (3 hours)
Activity 2: Group Discussion on Differential Diagnosis (1 hour)
Objective: Facilitate a discussion on differential diagnosis and management strategies.
In each small group, participants will analyze the case and generate potential differential diagnoses.
Encourage them to use the *Mukkutra Verupadu* system to assess the underlying cause and develop line of treatment based on that.
After 20 minutes, each group will present their findings, including the rationale behind their diagnosis and management plan.
Open the floor for questions and peer feedback.
Activity 3: Reflection, Assessment and Debriefing (1 hour)
3.1. Reflection on *Ennvagai Thervu* Assessment (30 minutes)
Objective: Focus on the inter-rater reliability of the *Ennvagai Thervu* assessment.
Facilitate a discussion on how different participants (across various backgrounds) assessed the *Ennvagai Thervu*.
If discrepancies in assessment arise, discuss the possible reasons and resolve them with the tutor's input.
Provide insights into the standardization of the assessment process and its impact on patient care.
3.2. Group Debriefing and Sharing Insights (30 minutes)
Objective: Reflect on the experiences during the small group discussions and team-based activities.

Encourage each participant to share one key insight or challenge they faced during the experiential learning session.
Discuss how they approached decision-making, particularly when generating the *Mukkutra Verupadu* for *Pitha Noikal* (*Eri Pitham* and *Uratha pitham*).
Activity 4: Developing a Siddha lab report or analyzing modern lab reports in the context of Siddha medicine principles and foundational concepts (30 minutes)
Activity 5: Conclusion and Q&A (30 minutes)
Objective: Wrap up the session with a final Q and A and a summary of the key learning points.
Recap the importance of *Ennvagai Thervu* in clinical practice and how it can guide diagnosis and treatment.
Emphasize the importance of interprofessional collaboration, communication, and critical thinking in managing complex cases.
Provide the opportunity for participants to ask any remaining questions or seek clarification.

Experiential-Learning 8.5 : Compendium of *Kaba Noikal*

Duration of Activity - 4 hours
Activity:Library Session (1 hour)
Students access relevant Siddha texts and research materials in the library. They begin exploring sources related to *Kaba Noikal* under supervision.
Activity 1: Overview of *Kaba Noikal* and Introduction to Literature Search Methods (30 minutes)
An introduction to *Kaba Noikal*, covering causes, symptoms, and Siddha diagnostics, followed by guidance on how to conduct structured literature searches.
Activity 2: Individual Literature Search (30 minutes)
Students individually search classical and contemporary sources for information on *Kaba Noikal* and record findings for group discussion.
Activity:Discussion (1 hour 30 minutes)
Facilitated group interactions and writing tasks are carried out to compile and reflect on the literature findings collaboratively.
Activity 3: Group Discussion and Sharing of Findings (30 minutes)
Group members share and compare their individual literature search results. Key points are identified for inclusion in the compendium.
Activity 4: Structuring the Compendium and Collaborative Writing of the Compendium (30 minutes)
The group organizes their findings into a coherent structure and collaboratively begins writing the compendium sections.
Activity 5: Reviewing and Editing the Compendium (30 minutes)
The draft compendium is reviewed for accuracy, clarity, and consistency. Edits are made collectively to finalize the document.
Activity:Presentations (1 hour 30 minutes)
Students prepare and deliver group presentations followed by collective reflection and feedback.
Activity 6: Preparing Presentations (30 minutes)
Each group creates a concise and clear presentation based on the finalized compendium, emphasizing key learnings and diagnostic insights.
Activity 7: Group Presentations (30 minutes)
Groups present their compendium findings and literature-based understanding of *Kaba Noikal* to the class.
Activity 8: Reflection and Feedback (30 minutes)

Students reflect on the learning experience, and facilitators provide feedback on both content and presentation for continuous improvement.

Experiential-Learning 8.6 : Hands-on training to diagnose *Kaba Noikal (Virana Kaba Noi)*

Duration of Activity - 4 hours
Students will be asked to elicit the *Ennvagai thervu* and other necessary examinations in a series of 5 patients with *Kaba Noikal* (*Virana Kaba Noi*) with different etiologies.
Real cases/scenarios/case videos / simulated patients/reports of patients with *Kaba Noikal* (*Virana Kaba Noi*) may be taken.
Activity: Case-Based Learning (1 hour)
Activity 1: Introduction and Case Study (1 hour)
Introduction to *Ennvagai Thervu* and *Kaba Noikal* (*Virana Kaba Noi*) and Case Study
Objective: Briefly introduce the concept of *Ennvagai Thervu* and its importance in diagnosing and managing *Kaba Noikal* (*Virana Kaba Noi*) with different etiologies
Explain the components of *Ennvagai Thervu* and the clinical features to look for in patients with *Kaba Noikal* (*Virana Kaba Noi*).
Introduce the concept of *Mukkutra Verupadu* and its relevance to *Kaba Noikal* (*Virana Kaba Noi*).
Case Study : Patient Introduction and Elicitation of Symptoms in a series of 5 patients
Objective: Provide participants with a case study of a patient with *Kaba Noikal* (*Virana Kaba Noi*). Ask them to elicit *Ennvagai Thervu* and other necessary examinations for this patient.
Divide participants into small groups (4-5 people) and have them discuss and collect key data for diagnosis.
Each group can focus on different components of the assessment (e.g., patient history, clinical examination, diagnostic tests).
Activity: Case-Diagnosis (3 hours)
Activity 2: Group Discussion on Differential Diagnosis (1 hour)
Objective: Facilitate a discussion on differential diagnosis and management strategies.
In each small group, participants will analyze the case and generate potential differential diagnoses.
Encourage them to use the *Mukkutra Verupadu* system to assess the underlying cause and develop line of treatment based on that.
After 20 minutes, each group will present their findings, including the rationale behind their diagnosis and management plan.
Open the floor for questions and peer feedback.
Activity 3: Reflection, Assessment and Debriefing (1 hour)
3.1. Reflection on *Ennvagai Thervu* Assessment (30 minutes)
Objective: Focus on the inter-rater reliability of the *Ennvagai Thervu* assessment.
Facilitate a discussion on how different participants (across various backgrounds) assessed the *Ennvagai Thervu*.
If discrepancies in assessment arise, discuss the possible reasons and resolve them with the tutor's input.
Provide insights into the standardization of the assessment process and its impact on patient care.
3.2. Group Debriefing and Sharing Insights (30 minutes)
Objective: Reflect on the experiences during the small group discussions and team-based activities.

Encourage each participant to share one key insight or challenge they faced during the experiential learning session.
Discuss how they approached decision-making, particularly when generating the *Mukkutra Verupadu* for *Kaba Noikal* (*Virana Kaba Noi*).
Activity 4- Developing a Siddha lab report or analyzing modern lab reports in the context of Siddha medicine principles and foundational concepts (30 minutes)
Activity 5- Conclusion and Q&A (30 minutes)
Objective: Wrap up the session with a final Q and A and a summary of the key learning points.
Recap the importance of *Ennvagai Thervu* in clinical practice and how it can guide diagnosis and treatment.
Emphasize the importance of interprofessional collaboration, communication, and critical thinking in managing complex cases.
Provide the opportunity for participants to ask any remaining questions or seek clarification.

Experiential-Learning 8.7 : Hands-on training to diagnose *Kaba Noikal (Suronitha Kaba Noi).*

Duration of Activity - 4 hours
Students will be asked to elicit the *Ennvagai thervu* and other necessary examinations in a series of 5 patients with *Kaba Noikal* (*Suronitha Kaba Noi*) with different etiologies. Real cases/scenarios/case videos / simulated patients/reports of patients with *Kaba Noikal* (*Suronitha Kaba Noi*) may be taken.
Activity :Case-Based Learning with Case diagnosis (1 hour)
Activity 1: Introduction and Case Study (1 hour)
Introduction to *Ennvagai Thervu* and *Kaba Noikal* (*Suronitha Kaba Noi*) and Case Study
Objective: Briefly introduce the concept of *Ennvagai Thervu* and its importance in diagnosing and managing *Kaba Noikal* (*Suronitha Kaba Noi*) with different etiologies
Explain the components of *Ennvagai Thervu* and the clinical features to look for in patients with *Kaba Noikal* (*Suronitha Kaba Noi*).
Introduce the concept of *Mukkutra Verupadu* and its relevance to *Kaba Noikal* (*Suronitha Kaba Noi*).
Case Study : Patient Introduction and Elicitation of Symptoms in a series of 5 patients
Objective: Provide participants with a case study of a patient with *Kaba Noikal* (*Suronitha Kaba Noi*). Ask them to elicit *Ennvagai Thervu* and other necessary examinations for this patient.
Divide participants into small groups (4-5 people) and have them discuss and collect key data for diagnosis.
Each group can focus on different components of the assessment (e.g., patient history, clinical examination, diagnostic tests).
Activity : Discussion (1 hour)
Activity 2: Group Discussion on Differential Diagnosis (1 hour)
Objective: Facilitate a discussion on differential diagnosis and management strategies.
In each small group, participants will analyze the case and generate potential differential diagnoses.
Encourage them to use the *Mukkutra Verupadu* system to assess the underlying cause and develop line of treatment based on that.
After 20 minutes, each group will present their findings, including the rationale behind their diagnosis and management plan.
Open the floor for questions and peer feedback.
Activity 3: Reflection, Assessment and Debriefing (1 hour)

3.1. Reflection on *Ennvagai Thervu* Assessment (30 minutes)
Objective: Focus on the inter-rater reliability of the *Ennvagai Thervu* assessment.
Facilitate a discussion on how different participants (across various backgrounds) assessed the *Ennvagai Thervu*.
If discrepancies in assessment arise, discuss the possible reasons and resolve them with the tutor's input.
Provide insights into the standardization of the assessment process and its impact on patient care.
3.2. Group Debriefing and Sharing Insights (30 minutes)
Objective: Reflect on the experiences during the small group discussions and team-based activities.
Encourage each participant to share one key insight or challenge they faced during the experiential learning session.
Discuss how they approached decision-making, particularly when generating the *Mukkutra Verupadu* for *Kaba Noikal* (*Suronitha Kaba Noi*).
Activity 4: Developing a Siddha lab report or analyzing modern lab reports in the context of Siddha medicine principles and foundational concepts (30 minutes)
Activity 5: Conclusion and Q&A (30 minutes)
Objective: Wrap up the session with a final Q and A and a summary of the key learning points.
Recap the importance of *Ennvagai Thervu* in clinical practice and how it can guide diagnosis and treatment.
Emphasize the importance of interprofessional collaboration, communication, and critical thinking in managing complex cases.
Provide the opportunity for participants to ask any remaining questions or seek clarification.

Modular Assessment

Assessment method	**Hour**
Instructions: Conduct a structured Modular assessment. The assessment will be for 50 marks. Keep a structured marking pattern. Use different assessment methods in each module for the semester. Keep a record of the structured pattern used for assessment. Calculate the Modular grade point as per Table 6 C. CHOOSE ANY OF THE BELOW ASSESSMENT FOR 50 MARKS Total Marks: 50 / Time Duration: 4 Hours 1.VIVA VOCE EXAMINATION (10 Marks) Assessment Structure: Foster a deeper understanding of the underlying mechanisms of the particular disease to inform clinical decision-making and able to interpret the variations of differential diagnosis Marking Distribution: Knowledge and Understanding (4 marks) Detailed pathological knowledge Understanding of Siddha Diagnostic tools and their application Clinical Application(3 marks)	4

Differential Diagnosis
Clinical scenarios
Radiological interpretation Communication Skills(3 marks)
Clarity of expression
Use of precise terminology
Ability to explain complex concepts
2.OBJECTIVE STRUCTURED CLINICAL EXAMINATION (OSCE)(25 Marks)
Mark Distribution:
Clinical Examinations of patients through
Yakkai, aga karuvigal, Pura karuvigal (2 marks)
Udal Thaathukkal, ennvagai thervu (2 marks)
Manikkadai Nool (2 marks)
Derangement of Mukkutram (2 marks)
Mukkutra Verupadu (2 marks)
Prescription of the line of treatment based on Mukkutram, Suvai and Kunam(2 marks)
Noi Kanippu (2 marks)
Theerum Theera Nilai (1 mark)
3.CLASS PRESENTATION (10 Marks) -
Assessment Criteria:
Content (4 marks)
Depth of subject matter
Current research inclusion
Clinical correlation
Bibliography
Presentation Skills (3 marks)
Clarity of speech
Time management
Use of visual aids
Audience engagement
Discussion (3 marks)
Handling questions
Critical thinking

Scientific reasoning Knowledge application 4.PREPARATION OF DIAGNOSTIC ALGORITHM FOR DISEASE IN THIS MODULE (5 Marks) 5.SAQ AND LAQ ASSESSMENT Total Marks: 10 Or Any practical in converted form can be taken for assessment.(25 marks) and Any experiential, such as portfolios / reflections / presentations can be taken as an assessment.(25 marks)	

Paper No : 2 NOI NAADAL AND ITS CONTEMPORARY UNDERSTANDING IN CLINICAL APPLICATIONS- II

Semester No : 3

Module 9 : Sira Noi Nithaanam (Cephalic Diseases)

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

Describe the Iyal(Definition), Peyar Kaaranam(Synonyms), Noi karanam(Etiology), Noi enn(Classifications) and Theerum,theera nilai(Curable and incurable conditions) of *Utchi Noi, Moolai Noi, Kannoigal, Sevi Noi, Mookku Noi, Vaai Noi-Uthadu Noi, Naakku Noi* and *Pal Noi.*
Interpret Siddha disease classifications and Siddha diagnostic tools with modern diagnosis and modern diagnostic parameters.
Create Diagnostic paradigms to diagnose diseases of *Sira Noi Nithaanam.*
Apply the differential diagnosis of diseases of *Sira Noi Nithaanam.*
Design the line of treatment based on *Mukkutram, Suvai, Gunam.*

M 9 Unit 1 Utchi/Mandai Noi-46 types (Diseases of the Head)

9.1.1. *Vali muthaliya kutrathaal varum noigal* (10)
9.1.2. *Mandai Therai* (1)
9.1.3. *Mandai Karappan* (6)
9.1.4. *Mandai Kuttam* (5)
9.1.5. *Mandai Pilavai* (10)
9.1.6. *Mandai Thimirppu* (2)
9.1.7. *Mandai Kirumi* (2)
9.1.8. *Mandai Kanappu* (3)
9.1.9. *Mandai Vali*
9.1.10. *Mandai Kuthu*
9.1.11. *Mandai Varatchi*
9.1.12. *Mandai Soolai* (3)

9.1.13. *Mandai Thodam*

References: 1,2,3,5,7,8,14,15,19,22,23,24,27,30,42,46,48,53,54,55,66,67,68,71,72,76,77,82,93,95,97,102

3A	3B	3C	3D	3E	3F	3G
CO1	Describe about the etiology, classifications, signs and symptoms and Curable and incurable conditions of *Utchi Noi.*	2	Lecture	CAN	Knows-how	L&GD,IBL
CO4,CO5	Perform the examination of patient through *Yaakai, udal Thathukkal, Ennvagai Thervu, Manikadai Nool, Mukkutram* and prescribe the line of treatment based on *Mukkutram suvai,gunam* and infer the *therum theera nilai of Mandai karappan* .	2	Practical Training 9.1	PSY-ADT	Shows-how	PER,D-BED,CBL,IBL,DIS
CO5	Perform the examination of patient through *Yaakai, udal Thathukkal, Ennvagai Thervu, Manikadai Nool, Mukkutram* and prescribe the line of treatment based on *Mukkutram, Suvai, Gunam* and infer the *Theerum Theera Nilai of Peenisam noi* .	2	Practical Training 9.2	PSY-ADT	Shows-how	CBL,CD,IBL,DIS,C_L
CO1,CO2	Integrate the various classifications of *Mandai Noi* by decoding the verses of *Para Raasa Segara Sira roga Nidhaanam, Naagamuni Thalai Noi Vaidhiyam, Agathiyar Thalai Noi Maruthuvam* and other Siddha Classical texts and compare with various analogus pathological conditions.	3	Experiential-Learning 9.1	AFT-REC	Does	TBL,PER,LS,DIS,PL
CO4,CO6,CO8	Perform pharmacogenomic analysis with various combinations of Siddha medicines for the treatment of *Mandai Vali* (Headache) patients with different *yakkai ilakkanam* and determine which set of treatment *(agamaruthuvam/puramaruthuvam)* is most suitable for each *Thegi* type for optimal treatment outcomes.	3	Experiential-Learning 9.2	PSY-ORG	Does	PAL,IBL,PER,TBL,CBL

M 9 Unit 2 Moolai Noi-16 types (Diseases of Brain)

9.2.1. *Moolai Vali*
9.2.2. *Moolai azhal*
9.2.3. *Moolai Iyam*

9.2.4. *Moolai Vali Iyam*
9.2.5. *Moolai Vali Azhal*
9.2.6. *Moolai Azhal Iyam*
9.2.7. *Moolai Azhal Vali*
9.2.8. *Moolai Iya Vali*
9.2.9. *Moolai Iya Azhal*
9.2.10. *Moolai Varatchi*
9.2.11. *Moolai Thodam*
9.2.12. *Moolai Neer*
9.2.13. *Moolai Kuruthi*
9.2.14. *Moolai Neer Soolai*
9.2.15. *Moolai Kuruthi Soolai*
9.2.16. *Moolai Vali Soolai*

References: 1,2,3,5,7,8,14,15,19,22,24,27,33,36,37,38,39,40,41,42,43,46,48,53,54,55,57,66,67,68,83,93,95,97

3A	3B	3C	3D	3E	3F	3G
CO1	Describe about the etiology, classifications, signs and symptoms and Curable and incurable conditions of *Moolai Noi.*	2	Lecture	CAN	Knows-how	L&PPT
CO2,CO4	Conduct the examination of patient through *Yaakai, udal Thathukkal, Envagai Thervu, Manikadai Nool, Mukkutram* and prescribe the line of treatment based on *Mukkutram, Suvai, Gunam* & infer the *Theerum Theera Nilai* of *Moolai Kuruthi kasivu* .	2	Practical Training 9.3	PSY-ADT	Shows-how	C_L,DIS, IBL,CBL, CD
CO4,CO6	Conduct the examination of patient through *Yaakai, udal Thathukkal, Ennvagai Thervu, Manikadai Nool, Mukkutram* and prescribe the line of treatment based on *Mukkutram, Suvai, Gunam* and infer the *Theerum Theera Nilai of Moolai Vippuruthi* .	2	Practical Training 9.4	PSY-ADT	Shows-how	IBL,D-B ED,PER, C_L,CD
CO1,CO4	Integrate the various classifications of *Moolai Noi* with corresponding pathologic conditions.Integrate the various classifications of *Moolai Noi* with corresponding pathologic conditions.	2	Experiential-Learning 9.3	AFT-REC	Does	
CO4,CO6	Construct the Siddha way of Lab interpretation for *Moolai Vippuruthi Noi* patients in	2	Experiential-	PSY-	Does	PL,DIS,C

	OPD/IPD through assessing Siddha and Modern parameters along with modern anthropometry.		Learning 9.4	ORG		BL,LRI,PER

M 9 Unit 3 Kan Noigal-96 types (Diseases of Eye)

9.3.1. Karuvizhi Noigal (45 Types)
9.3.2. Velvizhi Noigal (20 Types)
9.3.3. Imai Noigal (16 Types)
9.3.4. Kadaikkan Noigal (15 Types)

References: 1,2,3,5,7,8,12,14,15,16,22,24,27,46,53,54,55,57,67,68,69,70,76,77,78,88

3A	3B	3C	3D	3E	3F	3G
CO1	Describe about the *Iyal*, etiology as per various Siddhars, classifications, signs & symptoms causes *Karuvizhi Noigal, Velvizhi Noigal, Imai Noiga*l and *Kadai Kan Noigal.*	2	Lecture	CAN	Knows-how	L&PPT
CO4,CO5,CO6	Perform the examination of patient through *Yaakai, udal Thathukkal, Ennvagai Thervu, Manikadai Nool, Mukkutram* and prescribe the line of treatment based on *Mukkutram, Suvai, Gunam and* infer the *Theerum Theera Nilai* of *Pitha Kaasam* .	2	Practical Training 9.5	PSY-ADT	Shows-how	D-BED,CD,CBL,IBL,PER
CO4,CO5,CO6	Perform the examination of patient through *Yaakai, udal Thathukkal, Ennvagai Thervu, Manikkadai Nool, Mukkutram* and prescribe the line of treatment based on *Mukkutram, Suvai, Gunam and* infer the *Theerum Theera Nilai* of *Naaga padalam* .	2	Practical Training 9.6	PSY-ADT	Shows-how	D-BED,PER,CBL,IBL,C_L
CO4,CO7	Discuss the usage of recent Ocular diagnostic tools for assessment of various ocular Diseases.	2	Experiential-Learning 9.5	AFT-REC	Does	LS,PER,DIS,JC,PAL
CO6	Create a diagnostic analysis of Metabolomics and its applications in ophthalmology. Integrate it with Siddha *Vizhi Neer Parisodhanai* and with *thega illakanam.*	2	Experiential-Learning 9.6	AFT-SET	Does	LS,LRI,PAL,PER
CO7,CO8	Construct an interpretation about Myopia Biomarkers and *Yaakai ilakkanam.*	2	Experiential-Learning 9.7	PSY-ORG	Does	CBL,TBL,PER,CD

M 9 Unit 4 Sevi Noi, Mookku Noi (Diseases of Ear and Nose)

9.4.1. Sevi Noi: (Diseases of Ear)
9.4.1.1. Sevi Vali Noi (4 Types)
9.4.1.2. Sevi Soolai (6 Types)
9.4.1.3. Sevi Sanni (4Types)
9.4.1.4. Sevi Vippuruthi (6 Types)
9.4.1.5. Sevi ezhuchi (6 Types)
9.4.1.6 Sevi Karappan, Sevi Kuttam, Sevi Paru 9.4.2. Mookku Noi: (Diseases of Nose)
9.4.2.1. Neer Paaichal
9.4.2.2. Peenisam
9.4.2.3. Naasiga Peedam
9.4.2.4. Mookku Karappan
9.4.2.5. Kazhalai
9.4.2.6. Mookku Paru
9.4.2.7. Mookku Pilavai

References: 1,2,3,5,6,7,8,14,15,19,22,24,30,32,42,43,46,47,48,53,54,55,57,67,68,76,77,82,93,95,97,99

3A	3B	3C	3D	3E	3F	3G
CO1	Describe about the etiology, classifications, signs and symptoms and Curable and incurable conditions of *Sevi Vali Noi, Sevi Soolai, Sevi Sanni, Sevi Vippuruthi, Sevi Ezhuchi, Sevi Karappan, Sevi Kuttam, Sevi Paru.*	1	Lecture	CAN	Knows-how	L,L&PPT
CO1,CO2	Analyse the etiology, classifications, signs and symptoms and Curable and incurable conditions of *Mookku Noi.*	1	Lecture	CAN	Knows-how	BL
CO4,CO5	Perform the examination of patient through *Yaakai, udal Thathukkal, Ennvagai Thervu, Manikadai Nool, Mukkutram* and prescribe the line of treatment based on *Mukkutram, Suvai, Gunam* and infer the *Theerum Theera Nilai* of *Sevi Mandham (Tinnitus)* .	2	Practical Training 9.7	PSY-ADT	Shows-how	D-BED,CBL,DIS,C_L,PER
CO4,CO5	Perform the examination of patient through *Yaakai, udal Thathukkal, Ennvagai Thervu,*	2	Practical	PSY-	Shows-	DIS,D-B

	Manikadai Nool, Mukkutram and prescribe the line of treatment based on *Mukkutram, Suvai, Gunam* and infer the *Theerum Theera Nilai* of *Naasiga Peedam* (Nasal Polyp) .		Training 9.8	ADT	how	ED,CD,CBL,PER
CO3,CO4,CO5	Observe *Sevi Mandham(Hard of hearing),Kathiraichel* (Tinnitus) patients in OPD/IPD to assess their Siddha diagnostic lab investigations. Integrate it with interpretations of Audiometry, tympanometry or balance test of ear.	2	Experiential-Learning 9.8	AFT-SET	Does	LRI,CBL,DIS,PL,PER
CO3,CO5	Perform the pharmacogenomic analysis with various combinations of Siddha medicines for the treatment of *Sevi Mandham* patients in OPD/IPD with different *yakkai ilakkanam* and determine which set of medicines *(agamaruthuvam/puramaruthuvam)* is most suitable for each *Thegi* type for optimal treatment outcomes.	2	Experiential-Learning 9.9	PSY-ORG	Does	TBL,CD,DIS,PER,IBL
CO4,CO6	Perform the pharmacogenomic analysis with various combinations of Siddha medicines for the treatment of Peenisam patients in OPD/IPD with different *yakkai ilakkanam* and determine which set of medicines *(agamaruthuvam / puramaruthuvam)* is most suitable for each *Thegi* type for optimal treatment outcomes.	2	Experiential-Learning 9.10	PSY-ORG	Does	IBL,CBL,PER,DIS,PAL

M 9 Unit 5 Vaai Noi - Uthadu Noi ,Naakku Noi, Pal Noi. (Oral Pathology)

9.5.1. Uthadu Noi:(Diseases of conditions affecting Lips)
9.5.1.1. Vali Uthadu
9.5.1.2. Azhal Uthadu
9.5.1.3. Iya Uthadu
9.5.1.4. Mukkutra Uthadu
9.5.1.5. Sathai Uthadu
9.5.1.6. Neer Uthadu
9.5.1.7. Minuminuppu Uthadu
9.5.1.8. Kuruthi Uthadu
9.5.1.9. Kutta Uthadu
9.5.1.10. Vedippu Uthadu
9.5.1.11. Uthattil adipatta veekam 9.5.2. Naakku Noi:(Diseases of Tongue)
9.5.2.1. Naakkaranai
9.5.2.2. Naakku Puttru

9.5.2.3. Naakku Pilavai
9.5.2.4. Naakku Kirandhi
9.5.2.5. Naakku Pun
9.5.2.6. Naakku Silandhi
9.5.2.7. Ul naakku Valarchi 9.5.3. Pal Noi:(Diseases of Dental conditions)
9.5.3.1. Pal Koocham
9.5.3.2. Pal Kuththal
9.5.3.3. Pal Aattam
9.5.3.4. Pal Saaithal
9.5.3.5. Kutty Pal
9.5.3.6. Pal Siraai
9.5.3.7. Pal Uthiral
9.5.3.8. Pal Karuththal
9.5.3.9. Pal Pilaththal
9.5.3.10. Pal Puzhu

References: 1,2,3,5,7,8,14,15,19,22,27,30,42,43,46,48,53,54,55,57,67,68,76,77,102

3A	3B	3C	3D	3E	3F	3G
CO1,CO2	Describe about the etiology, classifications, signs and symptoms , Curable and incurable conditions of *Vaai Noi - Uthadu Noi, Naakku Noi and Pal Noi.*	2	Lecture	CC	Knows-how	TBL,L,L &PPT
CO3,CO4	Perform the examination of patient through *Yaakai, udal Thathukkal, Ennvagai Thervu, Manikadai Nool, Mukkutram* and prescribe the line of treatment based on *Mukkutram, Suvai, Gunam* and infer the *Theerum Theera Nilai* of type of *Naakku Puttru* .	2	Practical Training 9.9	PSY-ADT	Shows-how	IBL,CD, DIS,C_L, PER
CO4,CO5	Perform the examination of patient through *Yaakai, udal Thathukkal, Ennvagai Thervu, Manikadai Nool, Mukkutram* and prescribe the line of treatment based on *Mukkutram, Suvai, Gunam* and infer the *Theerum Theera Nilai* of type of *Vaai puttru Noi* .	2	Practical Training 9.10	PSY-ADT	Shows-how	CD,PER,IBL,C_L, CBL
CO4,CO5,CO6	Observe and analyse the patients with dental pathology (Enamel demineralization,Detal Carries) in OPD/IPD and assess their Modern Anthropometry measurements	2	Experiential-Learning 9.1	AFT-SET	Does	X-Ray,CBL,TBL,

	and *Yaakkai Ilakkanam* to integrate with Modern parameters.		1			PER,DIS
CO4,CO5,CO6	Observe and analyse the color and consistency of Saliva in patients of OPD/IPD to diagnose their disease manifested as per *Theraiyar Yamagam* Text and integrate the results with Salivary pH along with prediction of mortality and longivity through salivary assessment.	2	Experiential-Learning 9.1 2	PSY-ORG	Does	LRI,CBL, DIS

Practical Training Activity

Practical Training 9.1 : Diagnosis of *Mandai Karappan.*

Total Activity hours- 2 hours
Teachers overview
The teacher clearly outlines the objectives of the practical session. A brief introduction to the importance of the diagnosis of a patient should be detailed. Either original cases or scenarios, or case videos may be used.
Activity 1- Case-Based Learning/Demonstration Bedside. (15 Minutes)
The teacher demonstrates how to use Siddha Diagnostic Tools to assess the case through Case Studies / Skill Labs in IPD/OPD Settings and make outcome assessment at the end of each student activity, and discuss them during debriefing sessions.
Activity 2- Inquiry-Based learning. (15 Minutes)
History Taking and performance of diagnostic Techniques: Students should take patient histories, focusing on the onset, duration, and pattern of disease and associated symptoms. Students should assess cases through Siddha diagnostic tools.
Activity 3-Record the documents. (15 Minutes)
Instruct students to document the examination of patients through the prescribed Case Sheet, which contains siddha and modern concepts in a structured format. Prognosis of the cases may be assessed by the student through any of the diagnostic/prognostic tools with the guidance of the teacher.
Activity 4- Case Diagnosis. (15 Minutes)
Interpret findings with Trihumoral vitiation and arrive at a provisional diagnosis
Activity 5- Discussion. (15 Minutes)
Small group discussions on the tri-humoral vitiation, which is peculiar to the presented case, and their clinical significance should be done along with an assessment of digestive fire.
Activity 6-Co Learning (30 Minutes)
Development of lines of treatment: Discuss and develop various lines of treatment based on aspects of *Suvai, Gunam, Veeriyam, and Vibagam,* and categorize them as curable and incurable types.

Activity 7: Presentation. (15 Minutes)
At the end of the session, based on the presentation, personalized feedback on students' observation and diagnostic accuracy should be given.

Practical Training 9.2 : Diagnosis of *Peenisam* noi.

Total Activity hours- 2 hours
Teachers overview
The teacher clearly outlines the objectives of the practical session. A brief introduction to the importance of the diagnosis of a patient should be detailed. Either original cases or scenarios, or case videos may be used.
Activity 1- Case-Based Learning/Demonstration Bedside. (15 Minutes)
The teacher demonstrates how to use Siddha Diagnostic Tools to assess the case through Case Studies / Skill Labs in IPD/OPD Settings and make outcome assessment at the end of each student activity, and discuss them during debriefing sessions.
Activity 2- Inquiry-Based learning. (15 Minutes)
History Taking and performance of diagnostic Techniques: Students should take patient histories, focusing on the onset, duration, and pattern of disease and associated symptoms. Students should assess cases through Siddha diagnostic tools.
Activity 3-Record the documents. (15 Minutes)
Instruct students to document the examination of patients through the prescribed Case Sheet, which contains siddha and modern concepts in a structured format. Prognosis of the cases may be assessed by the student through any of the diagnostic/prognostic tools with the guidance of the teacher.
Activity 4- Case Diagnosis. (15 Minutes)
Interpret findings with Trihumoral vitiation and arrive at a provisional diagnosis
Activity 5- Discussion. (15 Minutes)
Small group discussions on the tri-humoral vitiation, which is peculiar to the presented case, and their clinical significance should be done along with an assessment of digestive fire.
Activity 6-Co Learning (30 Minutes)
Development of lines of treatment: Discuss and develop various lines of treatment based on aspects of *Suvai, Gunam, Veeriyam, and Vibagam*, and categorize them as curable and incurable types.
Activity 7: Presentation. (15 Minutes)
At the end of the session, based on the presentation, personalized feedback on students' observation and diagnostic accuracy should be given.

Practical Training 9.3 : Diagnosis of *Moolai Kuruthi kasivu*.

Total Activity hours- 2 hours
Teachers overview

The teacher clearly outlines the objectives of the practical session. A brief introduction to the importance of the diagnosis of a patient should be detailed. Either original cases or scenarios, or case videos may be used.

Activity 1- Case-Based Learning/Demonstration Bedside. (15 Minutes)

The teacher demonstrates how to use Siddha Diagnostic Tools to assess the case through Case Studies / Skill Labs in IPD/OPD Settings and make outcome assessment at the end of each student activity, and discuss them during debriefing sessions.

Activity 2- Inquiry-Based learning. (15 Minutes)

History Taking and performance of diagnostic Techniques: Students should take patient histories, focusing on the onset, duration, and pattern of disease and associated symptoms. Students should assess cases through Siddha diagnostic tools.

Activity 3-Record the documents. (15 Minutes)

Instruct students to document the examination of patients through the prescribed Case Sheet, which contains siddha and modern concepts in a structured format. Prognosis of the cases may be assessed by the student through any of the diagnostic/prognostic tools with the guidance of the teacher.

Activity 4- Case Diagnosis. (15 Minutes)

Interpret findings with Trihumoral vitiation and arrive at a provisional diagnosis

Activity 5- Discussion. (15 Minutes)

Small group discussions on the tri-humoral vitiation, which is peculiar to the presented case, and their clinical significance should be done along with an assessment of digestive fire.

Activity 6-Co Learning (30 Minutes)

Development of lines of treatment: Discuss and develop various lines of treatment based on aspects of *Suvai, Gunam, Veeriyam, and Vibagam*, and categorize them as curable and incurable types.

Activity 7: Presentation. (15 Minutes)

At the end of the session, based on the presentation, personalized feedback on students' observation and diagnostic accuracy should be given.

Practical Training 9.4 : Diagnosis of *Moolai Vippuruthi.*

Total Activity hours- 2 hours

Teachers overview

The teacher clearly outlines the objectives of the practical session. A brief introduction to the importance of the diagnosis of a patient should be detailed. Either original cases or scenarios, or case videos may be used.

Activity 1- Case-Based Learning/Demonstration Bedside. (15 Minutes)

The teacher demonstrates how to use Siddha Diagnostic Tools to assess the case through Case Studies / Skill Labs in IPD/OPD Settings and make outcome assessment at the end of each student activity, and discuss them during debriefing sessions.

Activity 2- Inquiry-Based learning. (15 Minutes)

History Taking and performance of diagnostic Techniques: Students should take patient histories, focusing on the onset, duration, and pattern of disease and associated

symptoms. Students should assess cases through Siddha diagnostic tools.
Activity 3-Record the documents. (15 Minutes)
Instruct students to document the examination of patients through the prescribed Case Sheet, which contains siddha and modern concepts in a structured format. Prognosis of the cases may be assessed by the student through any of the diagnostic/prognostic tools with the guidance of the teacher.
Activity 4- Case Diagnosis. (15 Minutes)
Interpret findings with Trihumoral vitiation and arrive at a provisional diagnosis
Activity 5- Discussion. (15 Minutes)
Small group discussions on the tri-humoral vitiation, which is peculiar to the presented case, and their clinical significance should be done along with an assessment of digestive fire.
Activity 6-Co Learning (30 Minutes)
Development of lines of treatment: Discuss and develop various lines of treatment based on aspects of *Suvai, Gunam, Veeriyam, and Vibagam,* and categorize them as curable and incurable types.
Activity 7: Presentation. (15 Minutes)
At the end of the session, based on the presentation, personalized feedback on students' observation and diagnostic accuracy should be given.

Practical Training 9.5 : Diagn*osis of Pitha Kaasam.*

Total Activity hours- 2 hours
Teachers overview
The teacher clearly outlines the objectives of the practical session. A brief introduction to the importance of the diagnosis of a patient should be detailed. Either original cases or scenarios, or case videos may be used.
Activity 1- Case-Based Learning/Demonstration Bedside. (15 Minutes)
The teacher demonstrates how to use Siddha Diagnostic Tools to assess the case through Case Studies / Skill Labs in IPD/OPD Settings and make outcome assessment at the end of each student activity, and discuss them during debriefing sessions.
Activity 2- Inquiry-Based learning. (15 Minutes)
History Taking and performance of diagnostic Techniques: Students should take patient histories, focusing on the onset, duration, and pattern of disease and associated symptoms. Students should assess cases through Siddha diagnostic tools.
Activity 3-Record the documents. (15 Minutes)
Instruct students to document the examination of patients through the prescribed Case Sheet, which contains siddha and modern concepts in a structured format. Prognosis of the cases may be assessed by the student through any of the diagnostic/prognostic tools with the guidance of the teacher.
Activity 4- Case Diagnosis. (15 Minutes)
Interpret findings with Trihumoral vitiation and arrive at a provisional diagnosis
Activity 5- Discussion. (15 Minutes)

Small group discussions on the tri-humoral vitiation, which is peculiar to the presented case, and their clinical significance should be done along with an assessment of digestive fire.
Activity 6-Co Learning (30 Minutes)
Development of lines of treatment: Discuss and develop various lines of treatment based on aspects of *Suvai, Gunam, Veeriyam, and Vibagam,* and categorize them as curable and incurable types.
Activity 7: Presentation. (15 Minutes)
At the end of the session, based on the presentation, personalized feedback on students' observation and diagnostic accuracy should be given.

Practical Training 9.6 : Diagnos*is of Naaga padalam.*

Total Activity hours- 2 hours
Teachers overview
The teacher clearly outlines the objectives of the practical session. A brief introduction to the importance of the diagnosis of a patient should be detailed. Either original cases or scenarios, or case videos may be used.
Activity 1- Case-Based Learning/Demonstration Bedside. (15 Minutes)
The teacher demonstrates how to use Siddha Diagnostic Tools to assess the case through Case Studies / Skill Labs in IPD/OPD Settings and make outcome assessment at the end of each student activity, and discuss them during debriefing sessions.
Activity 2- Inquiry-Based learning. (15 Minutes)
History Taking and performance of diagnostic Techniques: Students should take patient histories, focusing on the onset, duration, and pattern of disease and associated symptoms. Students should assess cases through Siddha diagnostic tools.
Activity 3-Record the documents. (15 Minutes)
Instruct students to document the examination of patients through the prescribed Case Sheet, which contains siddha and modern concepts in a structured format. Prognosis of the cases may be assessed by the student through any of the diagnostic/prognostic tools with the guidance of the teacher.
Activity 4- Case Diagnosis. (15 Minutes)
Interpret findings with Trihumoral vitiation and arrive at a provisional diagnosis
Activity 5- Discussion. (15 Minutes)
Small group discussions on the tri-humoral vitiation, which is peculiar to the presented case, and their clinical significance should be done along with an assessment of digestive fire.
Activity 6-Co Learning (30 Minutes)
Development of lines of treatment: Discuss and develop various lines of treatment based on aspects of *Suvai, Gunam, Veeriyam, and Vibagam,* and categorize them as curable and incurable types.
Activity 7: Presentation. (15 Minutes)
At the end of the session, based on the presentation, personalized feedback on students' observation and diagnostic accuracy should be given.

Practical Training 9.7 : Diagnosis of *Sevi Mandham* (Tinnitus).

Total Activity hours- 2 hours
Teachers overview
The teacher clearly outlines the objectives of the practical session. A brief introduction to the importance of the diagnosis of a patient should be detailed. Either original cases or scenarios, or case videos may be used.
Activity 1- Case-Based Learning/Demonstration Bedside. (15 Minutes)
The teacher demonstrates how to use Siddha Diagnostic Tools to assess the case through Case Studies / Skill Labs in IPD/OPD Settings and make outcome assessment at the end of each student activity, and discuss them during debriefing sessions.
Activity 2- Inquiry-Based learning. (15 Minutes)
History Taking and performance of diagnostic Techniques: Students should take patient histories, focusing on the onset, duration, and pattern of disease and associated symptoms. Students should assess cases through Siddha diagnostic tools.
Activity 3-Record the documents. (15 Minutes)
Instruct students to document the examination of patients through the prescribed Case Sheet, which contains siddha and modern concepts in a structured format. Prognosis of the cases may be assessed by the student through any of the diagnostic/prognostic tools with the guidance of the teacher.
Activity 4- Case Diagnosis. (15 Minutes)
Interpret findings with Trihumoral vitiation and arrive at a provisional diagnosis
Activity 5- Discussion. (15 Minutes)
Small group discussions on the tri-humoral vitiation, which is peculiar to the presented case, and their clinical significance should be done along with an assessment of digestive fire.
Activity 6-Co Learning (30 Minutes)
Development of lines of treatment: Discuss and develop various lines of treatment based on aspects of *Suvai, Gunam, Veeriyam, and Vibagam,* and categorize them as curable and incurable types.
Activity 7: Presentation. (15 Minutes)
At the end of the session, based on the presentation, personalized feedback on students' observation and diagnostic accuracy should be given.

Practical Training 9.8 : Dia*gnosis of Naasiga Peedam* (Nasal Polyp) .

Total Activity hours- 2 hours
Teachers overview
The teacher clearly outlines the objectives of the practical session. A brief introduction to the importance of the diagnosis of a patient should be detailed. Either original cases or scenarios, or case videos may be used.
Activity 1- Case-Based Learning/Demonstration Bedside. (15 Minutes)

The teacher demonstrates how to use Siddha Diagnostic Tools to assess the case through Case Studies / Skill Labs in IPD/OPD Settings and make outcome assessment at the end of each student activity, and discuss them during debriefing sessions.
Activity 2- Inquiry-Based learning. (15 Minutes)
History Taking and performance of diagnostic Techniques: Students should take patient histories, focusing on the onset, duration, and pattern of disease and associated symptoms. Students should assess cases through Siddha diagnostic tools.
Activity 3-Record the documents. (15 Minutes)
Instruct students to document the examination of patients through the prescribed Case Sheet, which contains siddha and modern concepts in a structured format. Prognosis of the cases may be assessed by the student through any of the diagnostic/prognostic tools with the guidance of the teacher.
Activity 4- Case Diagnosis. (15 Minutes)
Interpret findings with Trihumoral vitiation and arrive at a provisional diagnosis
Activity 5- Discussion. (15 Minutes)
Small group discussions on the tri-humoral vitiation, which is peculiar to the presented case, and their clinical significance should be done along with an assessment of digestive fire.
Activity 6-Co Learning (30 Minutes)
Development of lines of treatment: Discuss and develop various lines of treatment based on aspects of *Suvai, Gunam, Veeriyam, and Vibagam*, and categorize them as curable and incurable types.
Activity 7: Presentation. (15 Minutes)
At the end of the session, based on the presentation, personalized feedback on students' observation and diagnostic accuracy should be given.

Practical Training 9.9 : Diagnosis of *Naakku Puttru.*

Total Activity hours- 2 hours
Teachers overview
The teacher clearly outlines the objectives of the practical session. A brief introduction to the importance of the diagnosis of a patient should be detailed. Either original cases or scenarios, or case videos may be used.
Activity 1- Case-Based Learning/Demonstration Bedside. (15 Minutes)
The teacher demonstrates how to use Siddha Diagnostic Tools to assess the case through Case Studies / Skill Labs in IPD/OPD Settings and make outcome assessment at the end of each student activity, and discuss them during debriefing sessions.
Activity 2- Inquiry-Based learning. (15 Minutes)
History Taking and performance of diagnostic Techniques: Students should take patient histories, focusing on the onset, duration, and pattern of disease and associated symptoms. Students should assess cases through Siddha diagnostic tools.
Activity 3-Record the documents. (15 Minutes)
Instruct students to document the examination of patients through the prescribed Case Sheet, which contains siddha and modern concepts in a structured format. Prognosis of

the cases may be assessed by the student through any of the diagnostic/prognostic tools with the guidance of the teacher.
Activity 4- Case Diagnosis. (15 Minutes)
Interpret findings with Trihumoral vitiation and arrive at a provisional diagnosis
Activity 5- Discussion. (15 Minutes)
Small group discussions on the tri-humoral vitiation, which is peculiar to the presented case, and their clinical significance should be done along with an assessment of digestive fire.
Activity 6-Co Learning (30 Minutes)
Development of lines of treatment: Discuss and develop various lines of treatment based on aspects of *Suvai, Gunam, Veeriyam, and Vibagam,* and categorize them as curable and incurable types.
Activity 7: Presentation. (15 Minutes)
At the end of the session, based on the presentation, personalized feedback on students' observation and diagnostic accuracy should be given.

Practical Training 9.10 : Diagnosis of *Vaai puttru Noi.*

Total Activity hours- 2 hours
Teachers overview
The teacher clearly outlines the objectives of the practical session. A brief introduction to the importance of the diagnosis of a patient should be detailed. Either original cases or scenarios, or case videos may be used.
Activity 1- Case-Based Learning/Demonstration Bedside. (15 Minutes)
The teacher demonstrates how to use Siddha Diagnostic Tools to assess the case through Case Studies / Skill Labs in IPD/OPD Settings and make outcome assessment at the end of each student activity, and discuss them during debriefing sessions.
Activity 2- Inquiry-Based learning. (15 Minutes)
History Taking and performance of diagnostic Techniques: Students should take patient histories, focusing on the onset, duration, and pattern of disease and associated symptoms. Students should assess cases through Siddha diagnostic tools.
Activity 3-Record the documents. (15 Minutes)
Instruct students to document the examination of patients through the prescribed Case Sheet, which contains siddha and modern concepts in a structured format. Prognosis of the cases may be assessed by the student through any of the diagnostic/prognostic tools with the guidance of the teacher.
Activity 4- Case Diagnosis. (15 Minutes)
Interpret findings with Trihumoral vitiation and arrive at a provisional diagnosis
Activity 5- Discussion. (15 Minutes)
Small group discussions on the tri-humoral vitiation, which is peculiar to the presented case, and their clinical significance should be done along with an assessment of digestive fire.
Activity 6-Co Learning (30 Minutes)

Development of lines of treatment: Discuss and develop various lines of treatment based on aspects of *Suvai, Gunam, Veeriyam, and Vibagam,* and categorize them as curable and incurable types.
Activity 7: Presentation. (15 Minutes)
At the end of the session, based on the presentation, personalized feedback on students' observation and diagnostic accuracy should be given.

Experiential learning Activity

Experiential-Learning 9.1 : *Mandai Noi* decoded with pathological conditions.

Total Activity hours: 3 hours
Activity 1: Library Session (30 minutes)
Exploration of Classical Texts
Each PG Student must search the *Para Raasa Segaram Sira roga Nidhaanam, Naagamuni Thalai Noi Vaidhiyam, Agathiyar Thalai Noi Maruthuvam,* and other Siddha Classical texts about classifications of *Mandai Noi* and gather the relevant concepts.
Activity 2: Peer learning/Team-based learning (1 hour)
Decryption of Siddha poetry
Decode the Siddha poetry for each and every verse of classifications of *Mandai Noi* with corresponding modern pathologic conditions.
Activity 3:Discussion (1 hour)
Conducting Interaction
Facilitate an interaction for PG Students that provides insights through assessment findings. Submit assessment findings to the department. Each group must document a minimum of 5 comparisons.
Activity 4:Presentation (30 minutes)
Evaluation and Feedback
The activity performance will be evaluated by the faculty, and constructive feedback to students on their observations and reasoning.

Experiential-Learning 9.2 : Siddha and Pharmacogenomics interpretation in diagnosis of *Mandai Vali.*

Total Activity hours: 3 hours
Activity 1: Case-Based Learning (30 minutes)
Treatment Protocol Assessment
Each PG Student should observe the various treatment protocols for different types of *Thega Ilakkanam* patients, in particular type of *Mandai Vali* (Headache) patient in OPD/IPD.

Activity 2: Team-Based learning (30 minutes)
Comparative analysis of Medications
It should be observed which set of medicine shows the best result for that particular *Thega Ilakkanam* of *Mandai Vali* (Headache) patient.
Activity 3: Inquiry-based learning (30 minutes)
Interpretation with Pharmacogenomics
Each PG Student must interpret with Pharmacogenomics of their treatment protocols.
Activity 4: Peer-assisted learning (30 minutes)
Enhancing Prescription choice skill
The outcome must be enumerated as a comprehensive analysis on the appropriate choice of prescription of a good set of treatment*(agamaruthuvam,puramaruthuvam)* which suits to that particular type of *Thega Ilakkanam.*
Activity 5:Discussion, Presentation (1 hour)
Conducting a Class Presentation
With this outcome, the prescribed line of treatment based on *Suvai, Gunam,* and *Veeriyam* can be framed. It enables the prescription of the potential line of treatment grounded in the system's underlying principles. Each PG Student must conduct a Class Presentation and discuss their experiential activity findings of the Case Study Analysis. Submit assessment findings to the department. The faculty will provide constructive feedback to Students on their observations and reasoning.

Experiential-Learning 9.3 : *Moolai Noi* Classifications with corresponding pathologic conditions.

Total Activity hours: 2 hours
Activity 1: Library Session (30 minutes)
Exploration of Classical Texts
Students must be divided into small groups by the faculty and search the Siddha classical texts about *Moolai Noi.*
Activity 2: Peer learning/Team-based learning (30 minutes)
Decryption of Siddha poetry
Decode the Siddha poetry for every verse of classifications of *Moolai Noi* with corresponding modern pathologic conditions.
Activity 3:Discussion (30 minutes)
Conducting Interaction
Each PG Student must participate in class interaction and discuss their experiential activity findings. Submit assessment findings to the department. The faculty will provide constructive feedback to Students on their observations and reasoning
Activity 4:Presentation (30 minutes)
Evaluation and Feedback
Each group must document a minimum of 5 comparisons. Provide constructive feedback to Students on their observations and reasoning.

Experiential-Learning 9.4 : Lab Interpretation for *Moolai Vippuruthi.*

Total Activity hours: 3 hours
Activity 1: Case-based learning (30 minutes)
Siddha Parameter Assessment
PG Students must be divided into small groups by the faculty to assess *Moolai Vippuruthi Noi* patients in OPD/IPD. Students must gather the diagnostic analytics for *Moolai Vippuruthi Noi* by assessing Siddha Parameters like *Envagai Thervu, Manikadai Nool, Yaakai Ilakkanam* and any type of diagnostic methodologies mentioned in Siddha Classical Literatures.
Activity 2: Case-based learning (30 minutes)
Modern Lab parameter assessment
For the same patient, the modern lab parameters are collected from OPD/IPD patients of *Moolai Vippuruthi* for the assessment, and also record their Modern anthropometry for the same patients.
Activity 3: Lab Report Interpretaton (30 minutes)
Developing interpretation skills
For a *Moolai Vippuruthi Noi* patient, a PG Student must analyse the presence of any positive findings of Siddha Diagnostic parameters such as *Envagai Thervu, Manikadai Nool, Yaakai Ilakkanam*, and any type of diagnostic methodologies that are similar in the recorded patients. If any similarities can be interpreted with Biochemistry values or Biomarkers or any positive Modern lab investigation, they must be noted.
Activity 4: Discussion/Peer Learning (1 hour)
Conducting Class Discussion
For the particular grouped case, compile the compilation of findings of Siddha and the Modern Lab investigation results. This outcome must be constituted as an ideal pattern format of lab test interpretation in terms of Siddha principles, along with any similar findings noted with Modern anthropometry and thega ilakkanam of the affected patient, is documented simultaneously. Conduct a Class Discussion about the diagnostic analytics assessment findings by organizing the collected information and submitting the findings to the department.
Activity 5: Presentation (30 minutes)
Evaluation and Feedback
The activity performance will be evaluated by the faculty and provide constructive feedback to students on their observations and reasoning.

Experiential-Learning 9.5 : Ocular diagnostic tools for assessment of various ocular Diseases.

Total Activity hours: 2 hours
Activity 1: Library Session/Journal Club (30 minutes)
Exploration of Resources
Each PG Student should explore various Ophthalmology text books, web sources and journals and collect information about recent Ocular diagnostic tools employed in assessing various ocular Diseases.
Activity 2: Peer-Assisted Learning (30 minutes)
Insight into Ocular diagnostic tools
Each Student must understand how various Ocular diagnostic tools help to diagnose various ocular pathology along with their mechanism.
Activity 3: Presentation (30 minutes)
Conducting Class Presentation
Each PG Student must conduct a Class Presentation and discuss about their experiential activity findings.
Activity 4: Discussion (30 minutes)
Evaluation and Feedback
Submit assessment findings to the department. Faculties will provide constructive feedback to Students on their observations and reasoning.

Experiential-Learning 9.6 : Vizhi neer parisodhanai with metabolomics and thega Ilakkanam.

Total Activity hours: 2 hours
Activity 1: Library Session (30 minutes)
Metabolomics in Diagnostic Analytics
Each PG Student should understand about role of Metabolomics as diagnostic analytical tool.
Activity 2: Peer-Assisted Learning (30 minutes)
Application of Metabolomics in Ophthalmology
Each Student must understand how metabolomics can be applicable in assessing the ophthalmic pathologies.
Activity 3: Lab Report Interpretation (30 minutes)
Vizhi Neer Parisodhanai and *thega ilakkanam* Interpretation
Integrate and correlate Metabolomic ophthalmic diagnosis with Siddha *Vizhi Neer Parisodhanai* and *thega ilakkanam.*
Activity 4: Presentation (30 minutes)
Conducting Class Presentation
Each PG Student must conduct a Class Presentation and discuss about their experiential activity findings. Submit assessment findings to the department. Faculties will provide constructive feedback to Students on their observations and reasoning.

Experiential-Learning 9.7 : Observe the Myopia Biomarkers,Myopia in *Yaakai ilakkanam.*

Total Activity hours: 2 hours
Activity 1: Case-Based Learning (30 minutes)
Myopia Biomarker Assessment
Each PG Student should observe Myopia patients in OPD/IPD and assess their Myopia Biomarkers
Activity 2: Case Diagnosis (30 minutes)
Categorization according to Yaakkai
For the same patients, assess their *Yaakai Ilakkanam* and group them according to their observed *Yaakkai* type also predict which type of *yakkai* get more onset of Myopia.
Activity 3: Team-Based Learning (30 minutes)
Interpretation skill
Integrate and correlate Myopia Biomarkers and *Yaakai ilakkanam* findings. The outcome must interpret range of myopia biomarker values prevalent in Myopia patients of different types of *Yaakai* and also interpret which type of *yakkai* gets more prevalance to Myopia.
Activity 4: Presentation (30 minutes)
Conducting Class Presentation
Each PG Student must conduct a Class Presentation and discuss about their experiential activity findings. Submit assessment findings to the department. Faculties will provide constructive feedback to Students on their observations and reasoning.

Experiential-Learning 9.8 : Lab Interpretation for *Sevi Mandham ,(Hard of hearing),Kathiraichel* (Tinnitus) .

Total Activity hours: 2 hours
Activity 1: Case-Based Learning (30 minutes)
Siddha Parameter assessment
PG Students must be divided into small groups by faculties to assess *Sevi Mandham ,(Hard of hearing),Kathirichel* (Tinnitus) patients in OPD/IPD. Students must gather the diagnostic analytics for *Sevi Mandham,(Hard of hearing), Kathiraichel* (Tinnitus) by assessing Siddha Parameters like *Ennvagai Thervu, Manikkadai Nool, Yaakai Ilakkanam* and any type of diagnostic methodologies mentioned in Siddha Classical Literatures.
Activity 2: Case-Based learning (30 minutes)
Modern Lab parameter assessment
For the same patient, the modern lab parameters such as Audiometry, tympanometry or balance test of ear are collected from OPD/IPD patient of *Sevi Mandham (Hard of hearing),Kathiraichel* (Tinnitus) for the assessment.

Activity 3: Lab Report Interpretation (30 minutes)
Developing interpretation skill
For a *Sevi Mandham,(Hard of hearing),Kathirichel* (Tinnitus) patient, PG Student must analyse the presence of any positive findings of Siddha Diagnostic parameters such as *Ennvagai Thervu, Manikkadai Nool, Yaakai Ilakkanam* and any type of diagnostic methodologies which are seen similar in the recorded patients. If any similarities can be interpreted with Audiometry, tympanometry or balance test of ear or any positive Modern lab investigation, they must be noted. Integrate and correlate Modern Lab Investigations and *Yaakai ilakkanam* findings. The outcome must interpret range of Modern Lab parameter values prevalent in *Sevi Mandham* (tinnitus) patients of different types of *Yaakai.*
Activity 4: Discussion/Peer Learning (30 minutes)
Conducting Class Discussion
For the particular grouped case, do the compilation of findings of Siddha and Modern Lab investigation results. This outcome must be constituted as ideal pattern format of lab test interpretation in terms of Siddha principles. Conduct Class Discussion about the diagnostic analytics assessment findings by organizing the collected information and submit the findings to the department.The activity performance will be evaluated by the faculty and provide constructive feedback to students on their observations and reasoning.

Experiential-Learning 9.9 : Siddha and Pharmacogenomics interpretation in diagnosis of *Sevi Mandham.*

Total Activity hours: 2 hours
Activity 1: Case-Based Learning (30 minutes)
Treatment Protocol Assessment
Each PG Student should observe the various treatment protocols for different types of *Thega Ilakkanam* patients in *Sevi Mandham* patient in OPD/IPD
Activity 2: Team-Based Learning (30 minutes)
Comparative analysis of Medications
It should be observed that which set of medicine*(agamaruthuvam/puramaruthuvam)* shows best result for that particular *Thega Ilakkanam* of *Sevi Mandham* patient.
Activity 3: Inquiry-Based Learning (30 minutes)
Interpretation with Pharmacogenomics
Each PG Student must interpret with Pharmacogenomics of their treatment protocols.
Activity 4: Peer-Assisted Learning (15 minutes)
Enhancing Prescription choice skill
The outcome must be enumerated as comprehensive analysis on appropriate choice of prescription of good set of internal medicines and external medicines which suits to that particular type of *Thega Ilakkanam.*
Activity 5: Discussion, Presentation (15 minutes)
Conducting Class Presentation

With this outcome, prescribed line of treatment based on *Suvai*, *Gunam* and *Veeriyam* can be framed. It enables prescription of the potential line of treatment grounded in the system's underlying principles. Each PG Student must conduct a Class Presentation and discuss about their experiential activity findings of Case Study Analysis. Submit assessment findings to the department. Faculties will provide constructive feedback to Students on their observations and reasoning.

Experiential-Learning 9.10 : Siddha and Pharmacogenomics interpretation in diagnosis of *Peenisam.*

Total Activity hours: 2 hours
Activity 1: Case-Based Learning (30 minutes)
Treatment Protocol Assessment
Each PG Student should observe the various treatment protocols for different types of *Thega Ilakkanam* patients in particular type of *Peenisam* patient in OPD/IPD.
Activity 2: Team-Based Learning (30 minutes)
Comparative analysis of Medications
It should be observed that which set of medicine *(agamaruthuvam/puramaruthuvam)* shows best result for that particular *Thega Ilakkanam* of *Peenisam* patient.
Activity 3: Inquiry-Based Learning (30 minutes)
Interpretation with Pharmacogenomics
Each PG Student must interpret with Pharmacogenomics of their treatment protocols.
Activity 4: Peer-Assisted Learning (15 minutes)
Enhancing Prescription choice skill
The outcome must be enumerated as comprehensive analysis on appropriate choice of prescription of good set of internal medicines and external medicines which suits to that particular type of *Thega Ilakkanam.*
Activity 5: Discussion, Presentation (15 minutes)
Conducting Class Presentation
With this outcome, prescribed line of treatment based on *Suvai*, *Gunam* and *Veeriyam* can be framed. It enables prescription of the potential line of treatment grounded in the system's underlying principles. Each PG Student must conduct a Class Presentation and discuss about their experiential activity findings of Case Study Analysis. Submit assessment findings to the department. Faculties will provide constructive feedback to Students on their observations and reasoning.

Experiential-Learning 9.11 : Staging of Dental pathology in accordance with y*aakai Ilakkanam.*

Total Activity hours: 2 hours
Activity 1: Case-Based Learning, X-Ray Identification (30 minutes)
Modern parameter Assessment
Each PG Student should observe Dental pathology patients in OPD/IPD and assess their Modern Anthropometry measurements and Radiographic imagings

Activity 2: Team-Based Learning (30 minutes)
Categorization according to *Yaakkai*
For the same patients, assess their *Yaakai Ilakkanam* and group them according to their observed *Yaakkai* type.
Activity 3: Peer-Assisted Learning (30 minutes)
Interpretation skill
Integrate and correlate Modern Anthropometry measurements & Radiographic imaging results and *Yaakai ilakkanam* interpretations. The outcome must interpret range of Anthropometry measurements & Radiographic values prevalent in Dental pathology patients of different types of *Yaakai* and can also document which type of thegis are more prevalant to different pathological conditions of teeth disorders.
Activity 4: Presentation (30 minutes)
Conducting Class Presentation
Each PG Student must conduct a Class Presentation and discuss about their experiential activity findings. Submit assessment findings to the department. Faculties will provide constructive feedback to Students on their observations and reasoning.

Experiential-Learning 9.12 : Diagnosis of vaineer parisodhanai with Salivary pH .

Total Activity hours: 2 hours
Activity 1: Case-Based Learning (30 minutes)
Siddha Vaai Neer Assessment
Each PG Student should observe patients in OPD/IPD and perform Vaai neer Parisodhanai to them.
Activity 2: Case-Based Learning (30 minutes)
Assessing Salivary pH
For the same patients, assess their Salivary pH and analyse their disease manifestations.
Activity 3: Lab Report Interpretation (30 minutes)
Interpretation skill
Integrate and correlate Vaai neer Parisodhanai findings and Salivary pH interpretations. The outcome must interpret range of Salivary pH values prevalent in various diseases of patients. Assess the correlation of mortality prediction and Salivary pH and consistency and also asses longivity prediction for the patient who undergoes yogam with salivary biomarkers.
Activity 4: Discussion (30 minutes)
Conducting Class Presentation
Each PG Student must conduct a Class Presentation and discuss about their experiential activity findings. Submit assessment findings to the department. Faculties will provide constructive feedback to Students on their observations and reasoning.

Modular Assessment	
Assessment method	**Hour**
Instructions: Conduct a structured Modular assessment. The assessment will be for 50 marks. Keep a structured marking pattern. Use different assessment methods in each module for the semester. Keep a record of the structured pattern used for assessment. Calculate the Modular grade point as per Table 6 Choose any of the below assessment for 50 marks. Interpret the findings of given at least 5 different diagnostic modalities such as X-ray, USG, CT Scan, MRI, Venogram, Arteriogram etc., postulate the possible differential diagnosis and confined diagnosis for 50 marks Or Total Marks: 50 / Time Duration: 4 Hours 1.SAQ AND LAQ ASSESSMENT Total Marks: 20 | Duration: 1 hour 30 minutes ASSESSMENT STRUCTURE General Instructions: Answer THREE questions in total Question 1 is long answer question(10 marks) Question 2,3 is short answer question(5 marks each). 2.OBJECTIVE STRUCTURED CLINICAL EXAMINATION (OSCE) Mark Distribution: 20 marks Duration:1 hour 30 min Clinical Examinations of patients through Yakkai, aga karuvigal, Pura karuvigal (3 marks) Udal Thaathukkal, ennvagai thervu (5 marks) Manikkadai Nool (1mark) Derangement of Mukkutram (2 marks) Mukkutra Verupadu (2 marks) Prescription of the line of treatment based on mukkutram, suvai and gunam,veeriam and based on other underlying siddha principles (5 marks) Noi Kanippu (1 mark) Theerum Theera Nilai (1 mark) VIVA VOCE EXAMINATION (5 Marks) -Time-30 minutes Assessment Structure:	4

Foster a deeper understanding of the underlying mechanisms of the particular disease to inform clinical decision-making and able to interpret the variations of differential diagnosis and Marking Distribution: Knowledge and Understanding (2 marks) Detailed pathological knowledge Understanding of Siddha Diagnostic tools and their application Clinical Application (1 mark) Differential Diagnosis Clinical scenarios Radiological interpretation Communication Skills (2 marks) Clarity of expression Use of precise terminology Ability to explain complex concepts RECORD KEEPING (5 Marks) Time : 30 minutes Assessment Criteria: Clinical Assessments (4 marks) Profound Disease Interpretation Analysis with analogous modern terminologies Radiological integration Written Presentation Skills (1 mark) Innovative Ideas Clarity of Concepts or Any practical in converted form can be taken for assessment. (25 marks) and Any experiential, such as portfolios / reflections / presentations can be taken as an assessment. (25 marks)	

Module 10 : Puttru Noi Nithaanam (Neoplastic Diseases)

Module Learning Objectives

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

Describe the *Noi karanam*(Etiology), *Noi enn*(Classifications) and Theerum,theera nilai(Curable and incurable conditions) of *Utchi Noi, Moolai Noi, Kannoigal, Sevi Noi, Mooku Noi, Vaai Noi, Naaku Noi and Pal Noi.*
Interpret Siddha disease classifications and Siddha diagnostic tools with modern diagnosis and modern diagnostic parameters.
Create Diagnostic paradigms to diagnose diseases of Puttru *Noi Nithaanam.*
Apply the differential diagnosis of diseases of Puttru *Noi Nithaanam.*
Design the line of treatment based on *Mukkutram, Suvai, Gunam.*

M 10 Unit 1 Vippuruthi Noi (7 types) (Pathological Masses)

10.1.1. *Vatha Vippuruthi*
10.1.2. *Pitha Vippuruthi*
10.1.3. *Setma Vippuruthi*
10.1.4. *Sandhu Vippuruthi*
10.1.5. *Oodu Vippuruthi*
10.1.6. *Karba Vippuruthi*
10.1.7. *Kuvalai Vippuruthi*

References: 1,2,3,5,6,7,8,14,15,16,17,18,19,21,22,23,24,25,30,39,40,42,43,45,46,47,48,49,50,51,52,53,54,55,56,57,58,59,60,65,67,68,73,74,75,76,77,83

3A	3B	3C	3D	3E	3F	3G
CO1,CO2	Analyse about the *Iyal*(definition), *Veru Peyargal*(synonyms), *Noi karanam*(Etiology), *Noi enn*(types), *Mukkutra verupadu, Naadi Nadai* and *Theeram,theera nilai* (curable & incurable conditions) of *Vippuruthi Noi.*	6	Lecture	CAN	Knows-how	L&PPT
CO2,CO4	Perform the examination of patient through *Yaakai, udal Thathukkal, Ennvagai Thervu, Manikkadai Nool, Mukkutram* and prescribe the line of treatment based on *Mukkutram, Suvai, Gunam and* infer the *Theerum Theera Nilai of Karba Vippuruthi* .	6	Practical Training 10.1	PSY-ADT	Shows-how	CBL,PER ,CD,IBL, DIS

CO2,CO4	Perform the examination of patient through *Yaakai, udal Thathukkal, Ennvagai Thervu, Manikkadai Nool, Mukkutram* and prescribe the line of treatment based on *Mukkutram, Suvai, Gunam and* infer the *Theerum Theera Nilai of Ratha Vippuruthi* .	6	Practical Training 10.2	PSY-ADT	Shows-how	DIS,D-BED,IBL,CD,PER
CO6	Integrate analogous comparison of classifications of *Vippuruthi Noi* from various Classical texts with different types of Tumours and malignancy.	2	Experiential-Learning 10.1	AFT-SET	Knows-how	DIS,PL,LS,PER
CO6,CO8	Initiate a diagnostic correlation for a particular type of cancer *(Vippuruthi Noi)* in a specific kind of *Yaakkai Ilakkanam* and integrate it with Genetic sequence mutations.	3	Experiential-Learning 10.2	PSY-ORG	Does	TBL,LRI,CBL,DIS
CO8	Construct the Siddha Lab Interpretation for *Vippuruthi Noi* patients in OPD/IPD through assessing modern diagnostic parameters.	3	Experiential-Learning 10.3	AFT-CHR	Knows-how	PL,PER,CBL,DIS,LRI
CO8	Conduct a class presentation to explore Circulating Tumour DNA and tumour mutation burden.	2	Experiential-Learning 10.4	AFT-CHR	Does	L_VC,PER,LRI,TBL,DIS
CO1	Arrange a class interaction about the role of Next-generation sequencing in Haematological Malignancy.	2	Experiential-Learning 10.5	AFT-CHR	Does	SY,LS,JC
CO1	Perform the pharmacogenomic analysis with various combinations of Siddha medicines for the treatment of *vippuruthi noi* patients with different *yakkai ilakkanam* and determine which set of treatment *(agamaruthuvam/puramaruthuvam)* is most suitable for each *Thegi* type for optimal treatment outcomes.	3	Experiential-Learning 10.6	AFT-CHR	Does	IBL,CBL,PAL,TBL,PER
CO1	Perform the pharmacogenomic analysis with various combinations of Siddha medicines for the treatment of a *Puttru noi* patients with different *yakkai ilakkanam* and determine which set of treatment *(agamaruthuvam/puramaruthuvam)* is most suitable for each *Thegi* type for optimal treatment outcomes.	3	Experiential-Learning 10.7	AFT-CHR	Does	PAL,TBL,DIS,CBL,PER

M 10 Unit 2 Puttru and its sub types (Diseases of Tumourous Conditions)

10.2.1. *Mandai Puttru*
10.2.2. *Anda Puttru*
10.2.3. *Kanna Puttru*
10.2.4. *Kudal Puttru*
10.2.5. *Yoni Puttru*
10.2.6. *Kann Puttru*
10.2.7. T*hondai Puttru*
10.2.8. *Naasi Puttru*
10.2.9. *Linga Puttru*
10.2.10. *Karuppai Puttru*
10.2.11. *Thol Puttru*
10.2.12. *Kalleeral Puttru*
10.2.13. *Marbaha Puttru*
10.2.14. *Purasthakola Puttru*

References:
1,2,3,5,6,7,8,14,15,16,17,18,19,21,22,23,24,25,26,30,33,36,37,38,39,40,41,42,43,45,46,47,48,49,50,51,52,53,54,55,56,57,58,67,68,69,70,71,72,73,74,76,77,78,82,85,90,91,92,93,94

3A	3B	3C	3D	3E	3F	3G
CO1,CO2	Describe about the *Iyal(Definition), Veru Peyargal(Synonyms), Noi karanam*(Etiology), *Noi enn*(types), *Mukkutra verupadu, Naadi Nadai and Theerum,theera nilai* (curable & incurable conditions) of *Kanna Putru, Purasthakola Putru, Aasana vaai Putru, Nuraiyeeral Putru,kalleral putru,kukki putru and Moola putru.*	4	Lecture	CAN	Knows-how	L&PPT
CO6,CO8	Perform the examination of patient through *Yaakai, udal Thathukkal, Ennvagai Thervu, Manikkadai Nool, Mukkutram* and prescribe the line of treatment based on *Mukkutram, Suvai, Gunam* and infer the *Theerum Theera Nilai* of *Marbu Puttru.*	4	Practical Training 10.3	PSY-ADT	Shows-how	D-BED,CBL,CD,C_L,IBL

CO6,CO8	Compare the *Puttru* classifications with analogous symptoms of Various Tumours.	2	Experiential-Learning 10.8	AFT-SET	Does	LS,PL,PER,TBL,DIS
CO6	Formulate a *Pancha Patchi* Chart for interpreting *Puttru Noi* in OPD/IPD patients.	2	Experiential-Learning 10.9	AFT-SET	Knows-how	CBL,RLE,C_L,CD,DIS
CO6	Justify the prediction of *Maruthuva Jothidam* for *Puttru Noi* patients.	2	Experiential-Learning 10.10	AFT-CHR	Does	PBL,SDL,CBL,PER,IBL
CO6,CO8	Construct the Siddha way of Lab interpretation for *Puttru Noi* patients in OP/IP through assessing Siddha and Modern parameters.	2	Experiential-Learning 10.11	PSY-ORG	Does	PER,LRI,CBL,DIS,PL
CO4,CO6	Perform the examination of patient through *Yaakai, udal Thathukkal, Ennvagai Thervu, Manikkadai Nool, Mukkutram* and prescribe the line of treatment based on *Mukkutram, Suvai, Gunam* and infer the *Theerum Theera Nilai* of *Pursatha kola Puttru.*	4	Practical Training 10.4	PSY-GUD	Shows-how	DIS,IBL,CD,C_L,CBL

Practical Training Activity

Practical Training 10.1 : Diagnosis of *Karba Vippuruthi.*

Total Activity hours- 6 hours
Teachers overview
The teacher clearly outlines the objectives of the practical session. A brief introduction to the importance of the diagnosis of a patient should be detailed. Either original cases or scenarios, or case videos may be used.
Activity 1- Case-Based Learning/Demonstration Bedside. (45 Minutes)
The teacher demonstrates how to use Siddha Diagnostic Tools to assess the case through Case Studies / Skill Labs in IPD/OPD Settings and make outcome assessment at the end of each student activity, and discuss them during debriefing sessions.
Activity 2- Inquiry-Based learning. (45 Minutes)
History Taking and performance of diagnostic Techniques: Students should take patient histories, focusing on the onset, duration, and pattern of disease and associated symptoms. Students should assess cases through Siddha diagnostic tools.

Activity 3-Record the documents. (60 Minutes)
Instruct students to document the examination of patients through the prescribed Case Sheet, which contains siddha and modern concepts in a structured format. Prognosis of the cases may be assessed by the student through any of the diagnostic/prognostic tools with the guidance of the teacher.
Activity 4- Case Diagnosis. (60 Minutes)
Interpret findings with Trihumoral vitiation and arrive at a provisional diagnosis
Activity 5- Discussion. (45 Minutes)
Small group discussions on the tri-humoral vitiation, which is peculiar to the presented case, and their clinical significance should be done along with an assessment of digestive fire.
Activity 6-Co Learning (60 Minutes)
Development of lines of treatment: Discuss and develop various lines of treatment based on aspects of Suvai, Gunam, Veeriyam, and Vibagam, and categorize them as curable and incurable types.
Activity 7: Presentation. (45 Minutes)
At the end of the session, based on the presentation, personalized feedback on students' observation and diagnostic accuracy should be given.

Practical Training 10.2 : Diagnosis of *Ratha Vippuruthi.*

Total Activity hours- 6 hours
Teachers overview
The teacher clearly outlines the objectives of the practical session. A brief introduction to the importance of the diagnosis of a patient should be detailed. Either original cases or scenarios, or case videos may be used.
Activity 1- Case-Based Learning/Demonstration Bedside. (45 Minutes)
The teacher demonstrates how to use Siddha Diagnostic Tools to assess the case through Case Studies / Skill Labs in IPD/OPD Settings and make outcome assessment at the end of each student activity, and discuss them during debriefing sessions.
Activity 2- Inquiry-Based learning. (45 Minutes)
History Taking and performance of diagnostic Techniques: Students should take patient histories, focusing on the onset, duration, and pattern of disease and associated symptoms. Students should assess cases through Siddha diagnostic tools.
Activity 3-Record the documents. (60 Minutes)
Instruct students to document the examination of patients through the prescribed Case Sheet, which contains siddha and modern concepts in a structured format. Prognosis of the cases may be assessed by the student through any of the diagnostic/prognostic tools with the guidance of the teacher.
Activity 4- Case Diagnosis. (60 Minutes)
Interpret findings with Trihumoral vitiation and arrive at a provisional diagnosis
Activity 5- Discussion. (45 Minutes)
Small group discussions on the tri-humoral vitiation, which is peculiar to the presented case, and their clinical significance should be done along with an assessment of

digestive fire.
Activity 6-Co Learning (60 Minutes)
Development of lines of treatment: Discuss and develop various lines of treatment based on aspects of Suvai, Gunam, Veeriyam, and Vibagam, and categorize them as curable and incurable types.
Activity 7: Presentation. (45 Minutes)
At the end of the session, based on the presentation, personalized feedback on students' observation and diagnostic accuracy should be given.

Practical Training 10.3 : Diagnosis of *Marbu Puttru.*

Total Activity hours- 4 hours
Teachers overview
The teacher clearly outlines the objectives of the practical session. A brief introduction to the importance of the diagnosis of a patient should be detailed. Either original cases or scenarios, or case videos may be used.
Activity 1- Case-Based Learning/Demonstration Bedside. (30 Minutes)
The teacher demonstrates how to use Siddha Diagnostic Tools to assess the case through Case Studies / Skill Labs in IPD/OPD Settings and make outcome assessment at the end of each student activity, and discuss them during debriefing sessions.
Activity 2- Inquiry-Based learning. (30 Minutes)
History Taking and performance of diagnostic Techniques: Students should take patient histories, focusing on the onset, duration, and pattern of disease and associated symptoms. Students should assess cases through Siddha diagnostic tools.
Activity 3-Record the documents. (30 Minutes)
Instruct students to document the examination of patients through the prescribed Case Sheet, which contains siddha and modern concepts in a structured format. Prognosis of the cases may be assessed by the student through any of the diagnostic/prognostic tools with the guidance of the teacher.
Activity 4- Case Diagnosis. (30 Minutes)
Interpret findings with Trihumoral vitiation and arrive at a provisional diagnosis
Activity 5- Discussion. (30 Minutes)
Small group discussions on the tri-humoral vitiation, which is peculiar to the presented case, and their clinical significance should be done along with an assessment of digestive fire
. Activity 6-Co Learning (60 Minutes)
Development of lines of treatment: Discuss and develop various lines of treatment based on aspects of Suvai, Gunam, Veeriyam, and Vibagam, and categorize them as curable and incurable types.
Activity 7: Presentation. (30 Minutes)
At the end of the session, based on the presentation, personalized feedback on students' observation and diagnostic accuracy should be given.

Practical Training 10.4 : Diagnos*is of Purastha kola Puttru* .

Total Activity hours- 4 hours
Teachers overview
The teacher clearly outlines the objectives of the practical session. A brief introduction to the importance of the diagnosis of a patient should be detailed. Either original cases or scenarios, or case videos may be used.
Activity 1- Case-Based Learning/Demonstration Bedside. (30 Minutes)
The teacher demonstrates how to use Siddha Diagnostic Tools to assess the case through Case Studies / Skill Labs in IPD/OPD Settings and make outcome assessment at the end of each student activity, and discuss them during debriefing sessions.
Activity 2- Inquiry-Based learning. (30 Minutes)
History Taking and performance of diagnostic Techniques: Students should take patient histories, focusing on the onset, duration, and pattern of disease and associated symptoms. Students should assess cases through Siddha diagnostic tools.
Activity 3-Record the documents. (30 Minutes)
Instruct students to document the examination of patients through the prescribed Case Sheet, which contains siddha and modern concepts in a structured format. Prognosis of the cases may be assessed by the student through any of the diagnostic/prognostic tools with the guidance of the teacher.
Activity 4- Case Diagnosis. (30 Minutes)
Interpret findings with Trihumoral vitiation and arrive at a provisional diagnosis
Activity 5- Discussion. (30 Minutes)
Small group discussions on the tri-humoral vitiation, which is peculiar to the presented case, and their clinical significance should be done along with an assessment of digestive fire.
Activity 6-Co Learning (60 Minutes)
Development of lines of treatment: Discuss and develop various lines of treatment based on aspects of *Suvai, Gunam, Veeriyam, and Vibagam,* and categorize them as curable and incurable types.
Activity 7: Presentation. (30 Minutes)
At the end of the session, based on the presentation, personalized feedback on students' observation and diagnostic accuracy should be given.

Experiential learning Activity

Experiential-Learning 10.1 : *Vippuruthi Noi* and Tumour types.

Total Activity hours: 2 hours
Activity 1: Library Session (30 minutes)
Exploration of Classical Texts

Students must be divided into small groups by faculties and search the Siddha classical texts about *Vippuruthi Noi.*
Activity 2: Peer Learning/ Team-Based Learning (30 minutes)
Decryption of Siddha poetry
Decode the Siddha poetry for each and every versus of classifications of *Vippuruthi Noi* with corresponding modern pathologic conditions.
Activity 3: Discussion (30 minutes)
Conducting Group Discussion
Facilitate a group discussion that insights through assessment findings. Submit assessment findings to the department. Each group must document minimum of 5 comparisons.
Activity 4: Presentation (30 minutes)
Evaluation and Feedback
The activity performance will be evaluated by the faculty and provide constructive feedback to students on their observations and reasoning.

Experiential-Learning 10.2 : *Yakkai Ilakkanam* and Genetic sequence mutation in *Vippuruthi Noi.*

Total Activity hours: 3 hours
Activity 1: Case-Based Learning (1 hour)
Siddha Genome Diagnostic skill
Students must be divided into small groups by faculties and assess the *Yakkai Ilakkanam* of a particular type of cancer *(Vippuruthi Noi)* patient in OP/ IP.
Activity 2: Lab Report Interpretation (1 hour)
Modern genomic Analysis
Analyse the Genetic Sequence mutations and other modern diagnostic parameters for that *Vippuruthi Noi* patient. Interpret the correlation of Siddha Genomics and Genetic sequence mutations.
Activity 3: Discussion (1 hour)
Conducting Group Discussion
Students should experience their observation on predominantly affected Cancer cases in a particular type of *Thega Ilakkanam* patients. Facilitate a group discussion that insights through assessment findings. Submit assessment findings to the department. Each group must document about minimum of 5 patients. Provide constructive feedback to Students on their observations and reasoning.

Experiential-Learning 10.3 : Role of Next-generation sequencing in Haematological Malignancy.

Total Activity hours : 2 hours
Activity 1: Library Session/Journal Club (1 hour)
Exploration from resources

Each PG Student must gather information about role of Next-generation sequencing in Haematological Malignancy from various search engines.
Activity 2: Symposium (1 hour)
Conducting Symposium
Conduct a Symposium the collected information and Submit the findings to the department.The activity performance will be evaluated by the faculty and provide constructive feedback to Students on their observations and reasoning.

Experiential-Learning 10.4 : Lab Interpretation for *Vippuruthi Noi*.

Total Activity hours: 3 hours
Activity 1: Case-Based Learning (30 minutes)
Siddha Parameter assessment
PG Students must be divided into small groups by faculties to assess various types of *Vippuruthi Noi* patients in OPD/IPD. Students must gather the diagnostic analytics for various types of *Vippuruthi Noi* by assessing Siddha Parameters like *Ennvagai Thervu, Manikkadai Nool, Yaakai Ilakkanam* and any type of diagnostic methodologies mentioned in Siddha Classical Literatures.
Activity 2: Case-Based Learning (30 minutes)
Modern Lab parameter assessment
For the same patient, the modern lab parameters are collected from OPD/IPD patient of a particular type of *Vippuruthi Noi* for the assessment.
Activity 3: Lab Report Interpretation (30 minutes)
Developing interpretation skill
For a particular cancer case (Ex: Breast Cancer, Prostate cancer or any type of Malignancy), PG Student must analyse the presence of any positivefindings of Siddha Diagnostic parameters such as *Ennvagai Thervu, Manikkadai Nool, Yaakai Ilakkanam* and any type of diagnostic methodologies which are seen similar in the recorded patients. If any similarities can be interpreted with Biochemistry values or Biomarkers or any positive Modern lab investigation, they must be noted.
Activity 4: Discussion/Peer Learning (1 hour)
Conducting Class Discussion
For the particular grouped case, do the compilation of findings of Siddha and Modern Lab investigation results. This outcome must be constituted as ideal pattern format of lab test interpretation in terms of Siddha principles. Conduct Class Discussion about the diagnostic analytics assessment findings by organizing the collected information and submit the findings to the department.
Activity 5: Presentation (30 minutes)
Evaluation and Feedback
The activity performance will be evaluated by the faculty and provide constructive feedback to students on their observations and reasoning.

Experiential-Learning 10.5 : Circulating Tumour DNA and tumour mutation burden.

Total Activity hours: 2 hours
Activity 1: Library Session (30 minutes)
Exploration of resources
Each PG Student must gather information about Circulating Tumour DNA and tumour mutation burden from various search engines.
Activity 2: Team-Based Learning (30 minutes)
Integration of Diagnostic Tools
Integrate the importance of these diagnostic tools in assessing *Puttru Noi.*
Activity 3:Discussion/Presentation (1 hour)
Conducting a Class Presentation
Conduct a Class Presentation about the assessment findings by organizing the collected information and submitting the findings to the department. The activity performance will be evaluated by the faculty, and constructive feedback to Students on their observations and reasoning.

Experiential-Learning 10.6 : Siddha and Pharmaco genomics interpretation in diagnosis of *Vippuruthi Noi.*

Total Activity hours: 3 hours
Activity 1: Case-Based Learning (30 minutes)
Treatment Protocol Assessment
Each PG Student should observe the various treatment protocols for different types of *Thega Ilakkanam* patients in particular type of *Vippuruthi Noi* patient in OPD/IPD.
Activity 2: Team-Based Learning (30 minutes)
Comparative analysis of Medications
It should be observed that which set of medicine shows best result for that particular *Thega Ilakkanam* of *Vippuruthi Noi* patient.
Activity 3: Inquiry-Based Learning (30 minutes)
Interpretation with Pharmacogenomics
Each PG Student must interpret with Pharmacogenomics of their treatment protocols.
Activity 4:Peer-Assisted Learning (30 minutes)
Enhancing Prescription choice skill
The outcome must be enumerated as comprehensive analysis on appropriate choice of prescription of good set of treatment*(agamaruthuvam,puramaruthuvam)* which suits to that particular type of *Thega Ilakkanam.*
Activity 5: Discussion, Presentation (1 hour)
Conducting Class Presentation
With this outcome, prescribed line of treatment based on *Suvai, Gunam* and *Veeriyam* can be framed. It enables prescription of the potential line of treatment grounded in the system's underlying principles. Each PG Student must conduct a Class Presentation and discuss about their experiential activity findings of Case Study Analysis. Submit

assessment findings to the department. Faculties will provide constructive feedback to Students on their observations and reasoning.

Experiential-Learning 10.7 : Siddha and Pharmacogenomics interpretation in diagnosis of *Puttru noi.*

Total Activity hour : 3 hours
Activity 1: Case-Based Learning (30 minutes)
Treatment Protocol Assessment
Each PG Student should observe the various treatment protocols for different types of *Thega Ilakkanam* patients in particular type of *Puttru noi* patient in OPD/IPD.
Activity 2: Team-Based Learning (30 minutes)
Comparative analysis of Medications
It should be observed that which set of medicine shows best result for that particular *Thega Ilakkanam* of *Puttru noi* patient.
Activity 3: Inquiry-Based Learning (30 minutes)
Interpretation with Pharmacogenomics
Each PG Student must interpret with Pharmacogenomics of their treatment protocols.
Activity 4: Peer-Assisted Learning (30 minutes)
Enhancing Prescription choice skill
The outcome must be enumerated as comprehensive analysis on appropriate choice of prescription of good set of treatment*(agamaruthuvam,puramaruthuvam)* which suits to that particular type of *Thega Ilakkanam.*
Activity 5: Discussion, Presentation (1 hour)
Conducting Class Presentation
With this outcome, prescribed line of treatment based on *Suvai*, *Gunam* and *Veeriyam* can be framed. It enables prescription of the potential line of treatment grounded in the system's underlying principles. Each PG Student must conduct a Class Presentation and discuss about their experiential activity findings of Case Study Analysis. Submit assessment findings to the department. Faculties will provide constructive feedback to Students on their observations and reasoning.

Experiential-Learning 10.8 : *Puttru Noi* Classifications and Tumour types an analogus study.

Total Activity hours: 2 hours
Activity 1: Library Session(30 minutes)
Exploration of Classical Texts
Students must be divided into small groups by faculties and search the Siddha classical texts about *Puttru Noi.*
Activity 2: Peer Learning/ Team-Based Learning (30 minutes)
Decryption of Siddha poetry
Decode the Siddha poetry for each and every versus of classifications of *Puttru Noi* with corresponding modern pathologic conditions.

Activity 3: Discussion (30 minutes)
Conducting Class interaction
Each PG Student must participate in class interaction and discuss about their experiential activity findings. Submit assessment findings to the department. Faculties will provide constructive feedback to Students on their observations and reasoning.
Activity 4: Presentation (30 minutes)
Evaluation and Feedback
Submit assessment findings to the department. Each group must document minimum of 5 comparisons. Provide constructive feedback to Students on their observations and reasoning.

Experiential-Learning 10.9 : *Pancha Patchi* Interpretation for *Puttru Noi.*

Total Activity hours : 2 hours
Activity 1: Case-Based Learning (30 minutes)
Each PG Student must observe the time of entry of *Puttru Noi* patient in OPD. With the prior insight upskilling of PG Student in *Pancha Panchi* chart interpretation, each PG Student should be able to assess the *Pancha Patchi* character of the *Puttru Noi* patient.
Activity 2: Case Diagnosis (30 minutes)
Pancha Patchi correlation in Clinical Diagnostics
On the basis of *Pancha Bootha Patchi's* Status, PG Students must be proficient in determining the affected *Bootham*, severity, prognosis and treatment response of patients.
Activity 3: Inquiry-Based Learning (30 minutes)
Clinical Assessment Skill
Minimum of 10 *Puttru Noi* patients in OPD must be included in a trial with regular follow up and assess the severity, prognosis and treatment response of the recorded patients and calculate the *Pancha patchi and Bootha* character.
Activity 4: Co-Learning/Real Life Experiance (30 minutes)
Conducting Class Interaction
Each PG Student must participate in class interaction and discuss about their experiential activity findings as Case Presentation. Submit assessment findings to the department. Faculties will provide constructive feedback to Students on their observations and reasoning.

Experiential-Learning 10.10 : *Maruthuva Jothidam* interpretation for *Puttru Noi.*

Total Activity Hours: 2 hours
Activity 1: Self-Directed Learning (30 minutes)
Clinical Assessment skill
With the prior insight expertise of PG Student in *Maruthuva Jothidam* interpretation, each PG Student should be able to assess the *Maruthuva Jothidam* based disease

prediction of the *Putru Noi* patient. Each PG Student must observe the time of entry of *Putru Noi* patient in OPD/ IPD.
Activity 2: Case-Based Learning (30minutes)
Maruthuva Jothidam Prediction
After acquiring Volunteer consent from the *Puttru Noi* patient, assess the 5 - 10 *Puttru Noi* patients in OPD/ IPD for Medical astrology disease prediction.
Activity 3: Inquiry-Based Learning (15 minutes)
Analysis of Planet's position in Horoscope
Each PG Student must predict the ailments of patient through assessing the position of affected planet in their Horoscope.
Activity 4: Peer-Assisted Learning (15 minutes)
Prescription of *Pancha Bootha* Theory line of treatment
On the basis of *Pancha bootha* Theory, PG Student should be able to prescribe the line of treatment after peer assessment of disease and the planet's characteristics.
Activity 5: Discussion, Presentation (30 minutes)
Each PG Student must conduct a Class Presentation and discuss about their experiential activity findings of Case Based Learning. Submit assessment findings to the department. Faculties will provide constructive feedback to Students on their observations and reasoning.

Experiential-Learning 10.11 : Lab Interpretation for *Puttru Noi*.

Total Activity hours: 2 hours
Activity 1: Case-Based Learning (30 minutes)
Siddha Parameter assessment
PG Students must be divided into small groups by faculties to assess various types of *Puttru Noi* patients in OPD/IPD. Students must gather the diagnostic analytics for various types of Puttru Noi by assessing Siddha Parameters like *Ennvagai Thervu, Manikkadai Nool, Yaakai Ilakkanam* and any type of diagnostic methodologies mentioned in Siddha Classical Literatures.
Activity 2: Case-Based Learning (30 minutes)
Modern Lab parameter assessment
For the same patient, the modern lab parameters are collected from OPD/IPD patient of a particular type of *Puttru Noi* for the assessment.
Activity 3: Lab Report Interpretation (30 minutes)
Developing interpretation skill
For a particular cancer case (Ex: Breast Cancer, Prostate cancer or any type of cancer), PG Student must analyse the presence of any positive findings of Siddha Diagnostic parameters such as *Ennvagai Thervu, Manikkadai Nool, Yaakai Ilakkanam* and any type of diagnostic methodologies which are seen similar in the recorded patients. If any similarities can be interpreted with Biochemistry values or Biomarkers or any positive Modern lab investigation, they must be noted.
Activity 4: Discussion/Peer Learning (15 minutes)
Conducting Class Discussion
For the particular grouped case, do the compilation of findings of Siddha and Modern Lab investigation results. This outcome must be constituted as ideal pattern format of

lab test interpretation in terms of Siddha principles. Conduct Class Discussion about the diagnostic analytics assessment findings by organizing the collected information and submit the findings to the department.
Activity 5: Presentation (15 minutes)
Evaluation and Feedback
The activity performance will be evaluated by the faculty and provide constructive feedback to students on their observations and reasoning.

Modular Assessment

Assessment method	**Hour**
Instructions: Conduct a structured Modular assessment. The assessment will be for 50 marks. Keep a structured marking pattern. Use different assessment methods in each module for the semester. Keep a record of the structured pattern used for assessment. Calculate the Modular grade point as per Table 6 Choose any of the below assessment for 50 marks. Interpret the findings of given at least 5 different diagnostic modalities such as X-ray, USG, CT Scan, MRI, Venogram, Arteriogram etc., postulate the possible differential diagnosis and confined diagnosis for 50 marks Or Total Marks: 50 / Time Duration: 4 Hours 1.SAQ AND LAQ ASSESSMENT Total Marks: 20 | Duration: 1 hour 30 minutes ASSESSMENT STRUCTURE General Instructions: Answer THREE questions in total Question 1 is long answer question(10 marks) Question 2,3 is short answer question(5 marks each). 2.OBJECTIVE STRUCTURED CLINICAL EXAMINATION (OSCE) Mark Distribution: 20 marks Duration:1 hour 30 min Clinical Examinations of patients through Yakkai, aga karuvigal, Pura karuvigal (3 marks) Udal Thaathukkal, ennvagai thervu (5 marks) Manikkadai Nool (1mark) Derangement of Mukkutram (2 marks) Mukkutra Verupadu (2 marks)	4

Prescription of the line of treatment based on mukkutram, suvai and gunam,veeriam and based on other underlying siddha principles (5 marks)
Noi Kanippu (1 mark)
Theerum Theera Nilai (1 mark)
VIVA VOCE EXAMINATION (5 Marks) -Time-30 minutes
Assessment Structure:
Foster a deeper understanding of the underlying mechanisms of the particular disease to inform clinical decision-making and able to interpret the variations of differential diagnosis and
Marking Distribution:
Knowledge and Understanding (2 marks)
Detailed pathological knowledge
Understanding of Siddha Diagnostic tools and their application
Clinical Application (1 mark)
Differential Diagnosis
Clinical scenarios
Radiological interpretation
Communication Skills (2 marks)
Clarity of expression
Use of precise terminology
Ability to explain complex concepts
RECORD KEEPING (5 Marks) Time : 30 minutes
Assessment Criteria:
Clinical Assessments (4 marks)
Profound Disease Interpretation
Analysis with analogous modern terminologies
Radiological integration
Written Presentation Skills (1 mark)
Innovative Ideas
Clarity of Concepts
or
Any practical in converted form can be taken for assessment. (25 marks)
and
Any experiential, such as portfolios / reflections / presentations can be taken as an assessment. (25 marks)

Semester No : 4

Module 11 : Ula Pini Nithaanam (Psychiatric Disorders)

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

Describe the *Noi varum vazhi* (Etiology), *Noienn* (Classifications), *Theerum,theera nilai*(Curable and incurable conditions) of *Kirigai, Valippu Noi, Kudiveri Noi, Mayakka Noi, Biramai Noi, Unmaatham noi, Matha azhivu noi, Matha Noi, Moorchai noi, Abasmaaram noi, Soothiga vatham noi and Vaayu Roga Nithaanam.*
Interpret Siddha disease classifications and Siddha diagnostic tools with modern diagnosis and modern diagnostic parameters.
Create Diagnostic paradigms to diagnose diseases of *Ula Pini Nithaanam.*
Apply the differential diagnosis of diseases of *Ula Pini Nithaanam.*
Design the line of treatment based on *Mukkutram,* Suvai, Gunam for *Ula Pini Nithaanam*.

M 11 Unit 1 Kirigai noi (18 types) (Psychiatric conditions with Insane Activities)

11.1.1. Vatha Kirigai
11.1.2. Pitha Kirigai
11.1.3. Silerpana Kirigai
11.1.4. Anar kirigai
11.1.5. Echil Kirigai
11.1.6. Natha Vindhu Kirigai
11.1.7. Bootha Kirigai
11.1.8. Jala Kirigai
11.1.9. Mohini Kirigai
11.1.10. Kal eri Kirigai
11.1.11. Kumbidu Kirigai
11.1.12. Munangal Kirigai

11.1.13. Anal Kirigai
11.1.14. Maruttu Kirigai
11.1.15. Moodu Kirigai
11.1.16. Valippu Kirigai
11.1.17. Peipidi Kirigai
11.1.18. Neerkudi Kirigai

References: 1,2,3,5,6,7,8,14,15,20,21,22,23,29,35,36,37,38,41,42,43,44,45,66,67,68,86,87,97,100

3A	3B	3C	3D	3E	3F	3G
CO1,CO2	Analyse about the *Iyal(definition), Veru Peyargal(synonyms), Noi karanangal*(Etiology),*Noi enn*(types), *Noikkurigunanagal*(clinical features), *Mukkutra verupadu, Naadi Nadai* and (curable & incurable conditions) of *Kirigal.*	2	Lecture	CAN	Knows-how	L&PPT
CO2,CO4	Perform the examination of patient through *Yaakai, udal Thathukkal, Envagai Thervu, Manikadai Nool, Mukkutram* and prescribe the line of treatment based on *Mukkutram, Suvai, Gunam* & infer the *Theerum Theera Nilai* of *sala kirigai* .	4	Practical Training 11.1	PSY-ADT	Shows-how	PER,IBL, CD,D-BED,CBL
CO6	Integrate the classifications of *Kirigai* with analogous Psychiatric pathologic conditions.	1	Experiential-Learning 11.1	AFT-SET	Knows-how	LS,DIS,PL,TBL,PER
CO6,CO8	Construct the Siddha Lab Interpretation for *Kirigai Noi* patients in OPD/IPD through assessing modern diagnostic parameters.	2	Experiential-Learning 11.2	PSY-ORG	Shows-how	DIS,TBL, PL,LRI,PER
CO1	Perform pharmacogenomics analysis with various combinations of Siddha medicines for the treatment of *Kirigai Noi* patients in OPD/IPD with different *yakkai ilakkanam* and determine which set of medicines is most suitable for each *Thegi* type for optimal treatment outcomes.	3	Experiential-Learning 11.3	AFT-CHR	Knows-how	DIS,PER, TBL,IBL, CBL

M 11 Unit 2 Valippu noi, Kudiveri noi (Seizural Disorders and Alcoholism)

11.2.1. Valippu Noi (5 Types)
11.2.1.1. Kaakkai Valippu
11.2.1.2. Kumara kanda valippu
11.2.1.3. Amara kanda valippu
11.2.1.4. Kurangu valippu
11.2.1.5. Muyal Valippu 11.2.2. Kudiveri Noi

References: 1,2,3,5,6,7,8,14,15,21,22,23,27,35,36,37,38,42,43,46,48,49,66,67,68,74,79,86,87,95,97,100

3A	3B	3C	3D	3E	3F	3G
CO1,CO2	Describe about the Iyal(definition),Noi karanam(Etiology),Noi enn(classifications) and Noikkurigunangal(clinical features) of *Valippu Noi* and *Kudiveri Noi.*	2	Lecture	CAN	Know	L&PPT
CO2,CO4	Perform the examination of patient through *Yaakai, udal Thathukkal, Envagai Thervu, Manikadai Nool, Mukkutram* and prescribe the line of treatment based on *Mukkutram, Suvai, Gunam* & infer the *Theerum Theera Nilai o*f *Valippu Noi* .	2	Practical Training 11.2	PSY-ADT	Shows-how	C_L,DIS, D-BED,IBL,CBL
CO2,CO4	Perform the examination of patient through *Yaakai, udal Thathukkal, Envagai Thervu, Manikadai Nool, Mukkutram* and prescribe the line of treatment based on *Mukkutram, Suvai, Gunam* & infer the *Theerum Theera Nilai* of *Kudiveri Noi* .	2	Practical Training 11.3	PSY-ADT	Shows-how	IBL,D-BED,CBL, C_L,PER
CO6	Construct the Siddha Lab Interpretation for *Valippu Noi* patients in OPD/IPD through assessing modern diagnostic parameters	2	Experiential-Learning 11.4	AFT-SET	Does	PL,PER,LRI,CBL,DIS
CO6,CO8	Perform AUDIT (Alcohol Screening Score) for *Kudiveri Noi* patients in OPD/ IPD to assess the level of risk of alcoholism in different types of *Thegis.*	1	Experiential-Learning 11.5	PSY-ORG	Does	IBL,PER, CBL,DIS
CO1	Perform pharmacogenomics analysis with various combinations of Siddha medicines for the treatment of *Valippu Noi* patients in OPD/IPD with different *yakkai ilakkanam* and determine which set of medicines is most suitable for each *Thegi* type for optimal	3	Experiential-Learning 11.6	AFT-CHR	Knows-how	IBL,TBL, CBL,DIS, PER

	treatment outcomes.					
CO1	Perform the interpretation of 5 EEG findings of *Valippu Noi* patients and correlate with *Thega Ilakkanam* & other Siddha Diagnostic parameters.	1	Experiential-Learning 11.7	AFT-CHR	Knows-how	DIS,LRI,IBL,LS,CBL
CO1,CO8	Observe the *Kudiveri Noi* patients in OPD/IPD and assess their biomarkers of alcohol in urine. Integrate it with Siddha Uroscopic Findings (Neerkuri and neikuri).	1	Experiential-Learning 11.8	AFT-CHR	Knows-how	LRI,DIS,DL,CBL

M 11 Unit 3 Mayakka Noi, Bramai Noi, Unmaatham (Loss of Consciouness,Guidiness,Psycosis)

11.3.1. Mayakka Noi (6 Types)
11.3.1.1. Vali Mayakka Noi
11.3.1.2. Azhal Mayakka Noi
11.3.1.3. Iya Mayakka Noi
11.3.1.4. Mukkutra Mayakka Noi
11.3.1.5. Kuruthi Mayakka Noi
11.3.1.6. Nanju Mayakka Noi 11.3.2. Bramai (3 Types)
11.3.2.1. Vatha Bramai
11.3.2.2. Pitha Bramai
11.3.2.3. Kaba Bramai 11.3.3. Unmattham (6 Types)

References: 1,2,3,5,6,7,14,15,16,17,18,21,23,35,36,37,38,42,43,86,87,97

3A	3B	3C	3D	3E	3F	3G
CO1,CO2	Describe about the Iyal(definition), Noi karanam(Etiology), Noi enn(classifications), Noikkurigunangal(clinical features) and *Mukkutra verupadu* of *Mayakka Noi, Biramai Noi* and *Unmaadham.*	2	Lecture	CAN	Knows-how	L&GD
CO2,CO4	Perform the examination of patient through *Yaakai, udal Thathukkal, Envagai Thervu, Manikadai Nool, Mukkutram* and prescribe the line of treatment based on *Mukkutram, Suvai, Gunam* & infer the*Theerum Theera Nilai* of *Mowna Paithiyam Noi* .	4	Practical Training 11.4	PSY-ADT	Shows-how	PER,IBL,C_L,CBL,DIS

CO6	Integrate the Psychiatry Diagnostic Rating Scales employed in assessing Psychiatric conditions and explore their application in diagnosis of *Ula Pirazhvu Noigal.*	2	Experiential-Learning 11.9	AFT-SET	Does	LS,TBL,LRI,PER
CO6	Perform pharmacogenomics analysis with various combinations of Siddha medicines for the treatment of *Unmaatham/ Biramai Noi* patients in OPD/IPD with different *yakkai ilakkanam* and determine which set of medicines is most suitable for each *Thegi* type for optimal treatment outcomes.	2	Experiential-Learning 11.10	AFT-SET	Does	CBL,IBL,DIS,TBL,PAL

M 11 Unit 4 Matha azhivu noi, Matha noi, Moorchai noi, Abasmaaram, Soothiga Vaatham noi (Dementia,Comatose condition,Hysteria Diseases)

11.4.1. *Matha azhivu noi* (7 Types)
11.4.2. *Matha Noi* (7 Types)
11.4.3. *Moorchai* noi (6 Types)
11.4.4. *Abasmaaram noi*
11.4.5. *Soothiga Vaatham noi*

References: 1,2,3,5,6,7,8,14,15,16,17,18,21,35,36,37,38,42,43,45,86,87,97,100

3A	3B	3C	3D	3E	3F	3G
CO1,CO2	Describe about the Iyal(definition), Noi karanam(Etiology), Noi enn(classifications),Noikkurigunangal(clinical features) and *Mukkutra verupadu* of *Matha Azhivu, Matha Noi, Moorchai, Abasmaaram* and *Soothiga Vaatham.*	2	Lecture	CAN	Knows-how	L&PPT
CO4	Perform the examination of patient through *Yaakai, udal Thathukkal, Envagai Thervu, Manikadai Nool, Mukkutram* and prescribe the line of treatment based on *Mukkutram, Suvai, Gunam* & infer the *Theerum Theera Nilai* of *Soothiga Vaatham* .	4	Practical Training 11.5	PSY-ADT	Shows-how	IBL,C_L,DIS,CBL,D-BED
CO6	Perform pharmacogenomics analysis with various combinations of Siddha medicines for the treatment of *Mathaazhivu/Soothiga vaatham Noi* patients in OPD/IPD with different *yakkai ilakkanam* and determine which set of medicines is most suitable for each *Thegi* type for optimal treatment outcomes.	2	Experiential-Learning 11.11	AFT-SET	Does	

CO6,CO8	Develop a Siddha Diagnostic term for Alzheimer's disease from Siddha Literature poetry decoding and explain about Blood based Biomarker for Alzheimer's disease.	2	Experiential-Learning 11.12	PSY-ORG	Does	

M 11 Unit 5 Vaayu Roga Nithaanam

11.5.1. Pararaasasegaram types:
11.5.1.1. Biramai Vaayu
11.5.1.2. Kirandhi Vaayu
11.5.1.3. Uttina Kirandhi Vaayu
11.5.1.4. Aanandha Vaayu
11.5.1.5. Pitha Vaayu
11.5.1.6. Agora Vaayu
11.5.1.7. Andhara Vaayu
11.5.1.8. Anda Vaayu
11.5.1.9. Pakka Vaayu
11.5.1.10.Boodha Vaayu
11.5.1.11.Vedhaana Vaayu 11.5.2. Other Siddha Text Types
11.5.2.1. Kundala Vaayu
11.5.2.2. Moola Vaayu
11.5.2.3. Kudal Vaayu
11.5.2.4. Aththira Vaayu
11.5.2.5. Aatraamai Vaayu
11.5.2.6. Mandhaakini Vaayu
11.5.2.7. Uratha Vaayu
11.5.2.8. Kendai Vaayu

References: 1,2,3,5,6,7,8,14,15,21,22,32,35,36,37,38,42,43,45,67,68,70,92

3A	3B	3C	3D	3E	3F	3G
CO3	Describe about the classifications and clinical features of *Vaayu Roga Nidhaanam.*	2	Lecture	CAN	Knows-	L&GD

					how	
CO4	Perform the examination of patient through *Yaakai, udal Thathukkal, Envagai Thervu, Manikadai Nool, Mukkutram* and prescribe the line of treatment based on *Mukkutram, Suvai, Gunam* & infer the *Theerum Theera Nilai of Anda Vaayu* (Hernia) .	4	Practical Training 11.6	PSY-ADT	Shows-how	CBL,DIS,D-BED,IBL,CD
CO6	Integrate about the importance of Mental Status Examination by correlating with *Yaakai Ilakkanam.*	2	Experiential-Learning 11.13	AFT-SET	Does	LS,C_L,PER,DIS,PAL
CO6,CO8	Integrate the various classifications of *Vaayu Roga Nidhaanam* from the verses of *Para Raasa Segaram* and compare with analogous pathological conditions.	2	Experiential-Learning 11.14	PSY-ORG	Does	DIS,LS,TBL,PL

Practical Training Activity

Practical Training 11.1 : Diagnosis of Sala kirigai.

Total Activity hours- 4 hours
Teachers overview
The teacher clearly outlines the objectives of the practical session. A brief introduction to the importance of the diagnosis of a patient should be detailed. Either original cases or scenarios, or case videos may be used.
Activity 1- Case-Based Learning/Demonstration Bedside. (30 Minutes)
The teacher demonstrates how to use Siddha Diagnostic Tools to assess the case through Case Studies / Skill Labs in IPD/OPD Settings and make outcome assessment at the end of each student activity, and discuss them during debriefing sessions.
Activity 2- Inquiry-Based learning. (30 Minutes)
History Taking and performance of diagnostic Techniques: Students should take patient histories, focusing on the onset, duration, and pattern of disease and associated symptoms. Students should assess cases through Siddha diagnostic tools.
Activity 3-Record the documents. (30 Minutes)
Instruct students to document the examination of patients through the prescribed Case Sheet, which contains siddha and modern concepts in a structured format. Prognosis of the cases may be assessed by the student through any of the diagnostic/prognostic tools with the guidance of the teacher.
Activity 4- Case Diagnosis. (30 Minutes)
Interpret findings with Trihumoral vitiation and arrive at a provisional diagnosis
Activity 5- Discussion. (30 Minutes)

Small group discussions on the tri-humoral vitiation, which is peculiar to the presented case, and their clinical significance should be done along with an assessment of digestive fire

. Activity 6-Co Learning (60 Minutes)

Development of lines of treatment: Discuss and develop various lines of treatment based on aspects of Suvai, Gunam, Veeriyam, and Vibagam, and categorize them as curable and incurable types.

Activity 7: Presentation. (30 Minutes)

At the end of the session, based on the presentation, personalized feedback on students' observation and diagnostic accuracy should be given.

Practical Training 11.2 : Diagnosis of Valippu Noi.

Total Activity hours- 2 hours

Teachers overview

The teacher clearly outlines the objectives of the practical session. A brief introduction to the importance of the diagnosis of a patient should be detailed. Either original cases or scenarios, or case videos may be used.

Activity 1- Case-Based Learning/Demonstration Bedside. (15 Minutes)

The teacher demonstrates how to use Siddha Diagnostic Tools to assess the case through Case Studies / Skill Labs in IPD/OPD Settings and make outcome assessment at the end of each student activity, and discuss them during debriefing sessions.

Activity 2- Inquiry-Based learning. (15 Minutes)

History Taking and performance of diagnostic Techniques: Students should take patient histories, focusing on the onset, duration, and pattern of disease and associated symptoms. Students should assess cases through Siddha diagnostic tools.

Activity 3-Record the documents. (15 Minutes)

Instruct students to document the examination of patients through the prescribed Case Sheet, which contains siddha and modern concepts in a structured format. Prognosis of the cases may be assessed by the student through any of the diagnostic/prognostic tools with the guidance of the teacher.

Activity 4- Case Diagnosis. (15 Minutes)

Interpret findings with Trihumoral vitiation and arrive at a provisional diagnosis

Activity 5- Discussion. (15 Minutes)

Small group discussions on the tri-humoral vitiation, which is peculiar to the presented case, and their clinical significance should be done along with an assessment of digestive fire.

Activity 6-Co Learning (30 Minutes)

Development of lines of treatment: Discuss and develop various lines of treatment based on aspects of *Suvai, Gunam, Veeriyam, and Vibagam,* and categorize them as curable and incurable types.

Activity 7: Presentation. (15 Minutes)

At the end of the session, based on the presentation, personalized feedback on students' observation and diagnostic accuracy should be given.

Practical Training 11.3 : Diagnosis *of Kudiveri Noi*.

Total Activity hours- 2 hours
Teachers overview
The teacher clearly outlines the objectives of the practical session. A brief introduction to the importance of the diagnosis of a patient should be detailed. Either original cases or scenarios, or case videos may be used.
Activity 1- Case-Based Learning/Demonstration Bedside. (15 Minutes)
The teacher demonstrates how to use Siddha Diagnostic Tools to assess the case through Case Studies / Skill Labs in IPD/OPD Settings and make outcome assessment at the end of each student activity, and discuss them during debriefing sessions.
Activity 2- Inquiry-Based learning. (15 Minutes)
History Taking and performance of diagnostic Techniques: Students should take patient histories, focusing on the onset, duration, and pattern of disease and associated symptoms. Students should assess cases through Siddha diagnostic tools.
Activity 3-Record the documents. (15 Minutes)
Instruct students to document the examination of patients through the prescribed Case Sheet, which contains siddha and modern concepts in a structured format. Prognosis of the cases may be assessed by the student through any of the diagnostic/prognostic tools with the guidance of the teacher.
Activity 4- Case Diagnosis. (15 Minutes)
Interpret findings with Trihumoral vitiation and arrive at a provisional diagnosis
Activity 5- Discussion. (15 Minutes)
Small group discussions on the tri-humoral vitiation, which is peculiar to the presented case, and their clinical significance should be done along with an assessment of digestive fire.
Activity 6-Co Learning (30 Minutes)
Development of lines of treatment: Discuss and develop various lines of treatment based on aspects of *Suvai, Gunam, Veeriyam, and Vibagam,* and categorize them as curable and incurable types.
Activity 7: Presentation. (15 Minutes)
At the end of the session, based on the presentation, personalized feedback on students' observation and diagnostic accuracy should be given.

Practical Training 11.4 : Diagnosis of *Paithiyam Noi.*

Total Activity hours- 4 hours
Teachers overview
The teacher clearly outlines the objectives of the practical session. A brief introduction to the importance of the diagnosis of a patient should be detailed. Either original cases or scenarios, or case videos may be used.
Activity 1- Case-Based Learning/Demonstration Bedside. (30 Minutes)

The teacher demonstrates how to use Siddha Diagnostic Tools to assess the case through Case Studies / Skill Labs in IPD/OPD Settings and make outcome assessment at the end of each student activity, and discuss them during debriefing sessions.
Activity 2- Inquiry-Based learning. (30 Minutes)
History Taking and performance of diagnostic Techniques: Students should take patient histories, focusing on the onset, duration, and pattern of disease and associated symptoms. Students should assess cases through Siddha diagnostic tools.
Activity 3-Record the documents. (30 Minutes)
Instruct students to document the examination of patients through the prescribed Case Sheet, which contains siddha and modern concepts in a structured format. Prognosis of the cases may be assessed by the student through any of the diagnostic/prognostic tools with the guidance of the teacher.
Activity 4- Case Diagnosis. (30 Minutes)
Interpret findings with Trihumoral vitiation and arrive at a provisional diagnosis
Activity 5- Discussion. (30 Minutes)
Small group discussions on the tri-humoral vitiation, which is peculiar to the presented case, and their clinical significance should be done along with an assessment of digestive fire.
Activity 6-Co Learning (60 Minutes)
Development of lines of treatment: Discuss and develop various lines of treatment based on aspects of Suvai, Gunam, Veeriyam, and Vibagam, and categorize them as curable and incurable types.
Activity 7: Presentation. (30 Minutes)
At the end of the session, based on the presentation, personalized feedback on students' observation and diagnostic accuracy should be given.

Practical Training 11.5 : Diagnosis of *Soothiga Vaatham.*

Total Activity hours- 4 hours
Teachers overview
The teacher clearly outlines the objectives of the practical session. A brief introduction to the importance of the diagnosis of a patient should be detailed. Either original cases or scenarios, or case videos may be used.
Activity 1- Case-Based Learning/Demonstration Bedside. (30 Minutes)
The teacher demonstrates how to use Siddha Diagnostic Tools to assess the case through Case Studies / Skill Labs in IPD/OPD Settings and make outcome assessment at the end of each student activity, and discuss them during debriefing sessions.
Activity 2- Inquiry-Based learning. (30 Minutes)
History Taking and performance of diagnostic Techniques: Students should take patient histories, focusing on the onset, duration, and pattern of disease and associated symptoms. Students should assess cases through Siddha diagnostic tools.
Activity 3-Record the documents. (30 Minutes)
Instruct students to document the examination of patients through the prescribed Case Sheet, which contains siddha and modern concepts in a structured format. Prognosis of

the cases may be assessed by the student through any of the diagnostic/prognostic tools with the guidance of the teacher.
Activity 4- Case Diagnosis. (30 Minutes)
Interpret findings with Trihumoral vitiation and arrive at a provisional diagnosis
Activity 5- Discussion. (30 Minutes)
Small group discussions on the tri-humoral vitiation, which is peculiar to the presented case, and their clinical significance should be done along with an assessment of digestive fire.
Activity 6-Co Learning (60 Minutes)
Development of lines of treatment: Discuss and develop various lines of treatment based on aspects of Suvai, Gunam, Veeriyam, and Vibagam, and categorize them as curable and incurable types.
Activity 7: Presentation. (30 Minutes)
At the end of the session, based on the presentation, personalized feedback on students' observation and diagnostic accuracy should be given.

Practical Training 11.6 : Diagnosis of Anda Vaayu(Hernia).

Total Activity hours- 4 hours
Teachers overview
The teacher clearly outlines the objectives of the practical session. A brief introduction to the importance of the diagnosis of a patient should be detailed. Either original cases or scenarios, or case videos may be used.
Activity 1- Case-Based Learning/Demonstration Bedside. (30 Minutes)
The teacher demonstrates how to use Siddha Diagnostic Tools to assess the case through Case Studies / Skill Labs in IPD/OPD Settings and make outcome assessment at the end of each student activity, and discuss them during debriefing sessions.
Activity 2- Inquiry-Based learning. (30 Minutes)
History Taking and performance of diagnostic Techniques: Students should take patient histories, focusing on the onset, duration, and pattern of disease and associated symptoms. Students should assess cases through Siddha diagnostic tools.
Activity 3-Record the documents. (30 Minutes)
Instruct students to document the examination of patients through the prescribed Case Sheet, which contains siddha and modern concepts in a structured format. Prognosis of the cases may be assessed by the student through any of the diagnostic/prognostic tools with the guidance of the teacher.
Activity 4- Case Diagnosis. (30 Minutes)
Interpret findings with Trihumoral vitiation and arrive at a provisional diagnosis
Activity 5- Discussion. (30 Minutes)
Small group discussions on the tri-humoral vitiation, which is peculiar to the presented case, and their clinical significance should be done along with an assessment of digestive fire.
Activity 6-Co Learning (60 Minutes)

Development of lines of treatment: Discuss and develop various lines of treatment based on aspects of Suvai, Gunam, Veeriyam, and Vibagam, and categorize them as curable and incurable types.
Activity 7: Presentation. (30 Minutes)
At the end of the session, based on the presentation, personalized feedback on students' observation and diagnostic accuracy should be given.

Experiential learning Activity

Experiential-Learning 11.1 : Interpretation of *Kirigai* from Classical texts.

Total Activity hours: 1 hour
Activity 1: Library Session (15 minutes)
Exploration of Classical Texts
Each PG Student must search minimum of 2-3 Siddha classical literature about Kirigai Noi and decode the Siddha poetry for each and every versus of classifications of *Kirigai Noi* with corresponding Psychiatric pathologic conditions.
Activity 2: Peer Learning/Team-Based Learning (30 minutes)
Conducting Class Presentation
Each PG Student must conduct a Class Presentation to educate the UG students about the assessment findings by organizing the collected information. This enhances presentation skills and fosters the exchange of knowledge.
Activity 3: Presentation (15 minutes)
Evaluation and Feedback
The activity performance will be evaluated by the faculty and provide constructive feedback to Students on their observations and reasoning.

Experiential-Learning 11.2 :
Lab Interpretation for *Kirigai Noi*.

Total Activity hours: 2 hours
Activity 1: Case-Based Learning (30 minutes)
Siddha Parameter assessment
PG Students must be divided into small groups by faculties to assess various types of *Kirigai Noi* patients in OPD/IPD. Students must gather the diagnostic analytics for various types of *Kirigai Noi* by assessing Siddha Parameters like *Envagai Thervu, Manikadai Nool, Yaakai Ilakkanam* and type of diagnostic methodologies mentioned in Siddha Classical Literatures.
Activity 2: Cased-Based Learning (15 minutes)
Modern Lab parameter assessment

For the same patient, the modern lab parameters are collected from OPD/IPD patient of a particular type of *Kirigai Noi* for the assessment.
Activity 3: Lab Report Interpretation (30 minutes)
Developing interpretation skill
For a particular psychiatric case, PG Student must analyse the presence of any positive findings of Siddha Diagnostic parameters such as *Envagai Thervu, Manikadai Nool, Yaakai Ilakkanam* and any type of diagnostic methodologies which are seen similar in the recorded patients. If any similarities can be interpreted with Biochemistry values or Psychiatric Diagnostic Scales or any positive Modern lab investigation, they must be noted.
Activity 4: Discussion/Peer Learning (30 minutes)
Conducting Class Presentation
For the particular grouped case, do the compilation of findings of Siddha and Modern Lab investigation results. This outcome must be constituted as ideal pattern format of lab test interpretation in terms of Siddha principles. Conduct Class Presentation about the diagnostic analytics assessment findings by organizing the collected information and submit the findings to the department.
Activity 5: Presentation (15 minutes)
Evaluation and Feedback
The activity performance will be evaluated by the faculty and provide constructive feedback to students on their observations and reasoning.

Experiential-Learning 11.3 : Siddha Genomics and Pharmacogenomics Interpretation in Diagnosis of *Kirigai.*

Total Activity hours: 3 hours
Activity 1: Case-Based Learning (30 minutes)
Treatment Protocol Assessment
Each PG Student should observe the various treatment protocols for different types of *Thega Ilakkanam* patients in particular type of *Kirigai Noi* patient in OPD.
Activity 2: Team-Based Learning (30 minutes)
Comparative analysis of Medications
It should be observed that which set of medicine shows best result for that particular *Thega Ilakkanam* of *Kirigai Noi* patient.
Activity 3: Inquiry-Based Learning (30 minutes)
Interpretation with Pharmacogenomics
Each PG Student must interpret with Pharmacogenomics of their treatment protocols.
Activity 4: Peer-Assisted Learning (30 minutes)
Enhancing Prescription choice skill
The outcome must be enumerated as comprehensive diagnostic analysis on appropriate choice of prescription of good set of internal medicines which suits to that particular type of *Thega Ilakkanam.*
Activity 5: Discussion, Presentation (1 hour)
Conducting Class Presentation

With this outcome, prescribed line of treatment based on *Suvai, Gunam* and *Veeriyam* can be framed. It enables prescription of the potential line of treatment grounded in the system's underlying principles. Each PG Student must conduct a Class Presentation and discuss about their experiential activity findings of Case Study Analysis. Submit assessment findings to the department.Faculties will provide constructive feedback to Students on their observations and reasoning.

Experiential-Learning 11.4 : Lab Interpretation for *Valippu Noi*.

Total Activity hours: 2 hours
Activity 1: Case-Based Learning (15 minutes)
Siddha Parameter assessment
PG Students must be divided into small groups by faculties to assess various types of *Valippu Noi* patients in OPD/IPD. Students must gather the diagnostic analytics for various types of *Valippu Noi* by assessing Siddha Parameters like *Envagai Thervu, Manikadai Nool, Yaakai Ilakkanam* and any type of diagnostic methodologies mentioned in Siddha Classical Literatures.
Activity 2: Case-Based Learning (15 minutes)
Modern Lab parameter assessment
For the same patient, the modern lab parameters are collected from OPD/IPD patient of a particular type of *Valippu Noi* for the assessment.
Activity 3: Lab Report Interpretation (30 minutes)
Developing interpretation skill
For a particular psychiatric case, PG Student must analyse the presence of any positive findings of Siddha Diagnostic parameters such as *Envagai Thervu, Manikadai Nool, Yaakai Ilakkanam* and any type of diagnostic methodologies which are seen similar in the recorded patients. If any similarities can be interpreted with Biochemistry values or Psychiatric Diagnostic Scales or any positive Modern lab investigation, they must be noted.
Activity 4: Discussion/Peer Learning (45 minutes)
Conducting Class presentation
For the particular grouped case, do the compilation of findings of Siddha and Modern Lab investigation results. This outcome must be constituted as ideal pattern format of lab test interpretation in terms of Siddha principles. Conduct Class Presentation about the diagnostic analytics assessment findings by organizing the collected information and submit the findings to the department.
Activity 5: Presentation (15 minutes)
Evaluation and Feedback
The activity performance will be evaluated by the faculty and provide constructive feedback to students on their observations and reasoning.

Experiential-Learning 11.5 : AUDIT score & *Yakkai Ilakkanam* Interpretation.

Total Activity hours: 1 hour
Activity 1: Case-Based Learning (15 minutes)
AUDIT Score Assessment
Each PG Student must observe *Kudiveri Noi* patients in OPD / IPD and assess their AUDIT Score.
Activity 2: Inquiry-Based Learning (15 minutes)
Categorization according to *Yaakkai*
For the same patients, assess their Yaakai Ilakkanam and group them according to their observed *Yaakkai* type.
Activity 3: Discussion (15 minutes)
Interpretation skill
Integrate and correlate AUDIT Score and *Yaakai ilakkanam* findings. The outcome must interpret range of AUDIT Score values prevalent in *Kudiveri* patients of different types of *Yaakai* and assessment of the level of risk of alcoholism in different types of *Thegis.*
Activity 4: Presentation (15 minutes)
Conducting Class Presentation
Each PG Student must conduct a Class Presentation and discuss about their experiential activity findings. Submit assessment findings to the department. Faculties will provide constructive feedback to Students on their observations and reasoning.

Experiential-Learning 11.6 : Siddha and Pharmacogenomics interpretation in diagnosis of *valippu.*

Total Activity hours: 3 hour
Activity 1: Case-Based Learning (30 minutes)
Treatment Protocol Assessment
Each PG Student should observe the various treatment protocols for different types of *Thega Ilakkanam* patients in particular type of *Valippu Noi* patient in OPD.
Activity 2: Team-Based Learning (30 minutes)
Comparative analysis of Medications
It should be observed that which set of medicine shows best result for that particular *Thega Ilakkanam* of *Putru Noi* patient.
Activity 3: Inquiry-Based Learning (30 minutes)
Interpretation with Pharmacogenomics
Each PG Student must interpret with Pharmacogenomics of their treatment protocols.
Activity 4: Peer-Assisted Learning (1 hour)
Enhancing Prescription choice skill
The outcome must be enumerated as comprehensive diagnostic analysis on appropriate choice of prescription of good set of internal medicines which suits to that particular type of *Thega Ilakkanam.*

Activity 5: Discussion, Presentation(30 minutes)
Conducting Class Presentation
With this outcome, prescribed line of treatment based on *Suvai, Gunam* and *Veeriyam* can be framed. It enables prescription of the potential line of treatment grounded in the system's underlying principles. Each PG Student must conduct a Class Presentation and discuss about their experiential activity findings of Case Study Analysis. Submit assessment findings to the department. Faculties will provide constructive feedback to Students on their observations and reasoning.

Experiential-Learning 11.7 : EEG Findings of *Valippu Noi* .

Total Activity hours: 1 hour
Activity 1: Lab Report Interpretation (15 minutes)
EEG interpretation skill
Each PG Student must observe *Valippu Noi* patients in OPD and assess their EEG findings.
Activity 2: Case-Based Learning (15 minutes)
Siddha Diagnostic interpretation
For the same patients, assess their *Thega Ilakkanam* & other Siddha Diagnostic parameters.
Activity 3: Inquiry-Based Learning (15 minutes)
Correlation of interpretations
Interpret and correlate EEG findings of *Valippu Noi* patients with their *Yaakai Ilakkanam* & categorize the *Yaakai* types according to EEG diagnostics.
Activity 4: Discussion (15 minutes)
Conducting Interactions
Interpretation of Siddha and Modern Diagnostic parameters must be done. PG Student should conduct Class Interactions about their assessment findings. Submit the assessment to the faculty for evaluation and feedback.

Experiential-Learning 11.8 : Biomarkers of alcohol in urine with Siddha Uroscopic findings.

Total Activity hours: 1 hour
Activity 1: Case-Based Learning (15 minutes)
Alcohol use biomarkers interpretation skill
Each PG Student must observe *Kudiveri Noi* patients in OPD/IPD and assess the biomarkers of alcohol in their urine.
Activity 2: Case-Based Learning (15 minutes)
Siddha Diagnostic interpretation
For the same patients, assess their Siddha Uroscopic Findings *(Neerkuri* and *neikuri)* & other Siddha
Diagnostic parameters.

Activity 3: Lab Report Interpretation (15 minutes)
Correlation of interpretations
Interpret and correlate Alcohol use biomarkers of *Kudiveri Noi* patients with their Siddha Uroscopic Findings *(Neerkuri* and *neikuri)* & categorize the *Neerkuri & neikuri* patterns according to Alcohol use biomarkers.
Activity 4: Discussion (15 minutes)
Conducting Class Presentation
Interpretation of Siddha and Modern Diagnostic parameters must be done. The outcome must explicit the diagnostic protocol approach of *Kudiveri Noi* based on Siddha Uroscopic Findings *(Neerkuri* and *neikuri).* Each PG Student must conduct a Class Presentation to educate the UG students about the assessment findings by organizing the collected information. This enhances presentation skills and fosters the exchange of knowledge.

Experiential-Learning 11.9 : Psychiatry Diagnostic Rating Scales in *Ula Pirazhvu Noigal.*

Total Activity hours: 2 Hours
Activity 1: Library Session (30 minutes)
Exploration of Resources
Each PG Student must explore various search engines and gather information about the Psychiatry Diagnostic Rating Scales.
Activity 2: Lab Report interpretation (30 minutes)
Integration with *Ula Pirazhvu noigal*
The appropriate psychiatry diagnostic rating scale for assessing a particular *Ula Pirazhvu Noi* must be assessed and categorized.
Activity 3: Team-Based learning (30 minutes)
Conducting Debate
PG Students must be divided into small groups by the faculty. Each team should debate the assessment findings.
Activity 4: Presentation (30 minutes)
Evaluation and Feedback
Submit the diagnostic assessment findings to the department. The faculty will provide constructive feedback to Students on their observations and reasoning.

Experiential-Learning 11.10 : Siddha and Pharmacogenomics interpretation in diagnosis of *Unmatham/Biramai noi.*

Total Activity hours: 2 hour
Activity 1: Case-Based Learning (30 minutes)
Treatment Protocol Assessment
Each PG Student should observe the various treatment protocols for different types of *Thega Ilakkanam* patients in particular type of *Unmaatham/ Biramai Noi* patient in OPD.

Activity 2: Team-Based Learning (30 minutes)
Comparative analysis of Medications
It should be observed that which set of medicine shows best result for that particular *Thega Ilakkanam* of *Unmaatham/ Biramai Noi patient.*
Activity 3: Inquiry-Based Learning (15 minutes)
Interpretation with Pharmacogenomics
Each PG Student must interpret with Pharmacogenomics of their treatment protocols.
Activity 4: Peer-Assisted Learning (15 minutes)
Enhancing Prescription choice skill
The outcome must be enumerated as comprehensive diagnostic analysis on appropriate choice of prescription of good set of internal medicines and external medicines which suits to that particular type of *Thega Ilakkanam.*
Activity 5: Discussion, Presentation (30 minutes)
Conducting Class Presentation
With this outcome, prescribed line of treatment based on *Suvai, Gunam and Veeriyam* can be framed. It enables prescription of the potential line of treatment grounded in the system's underlying principles. Each PG Student must conduct a Class Presentation and discuss about their experiential activity findings of Case Study Analysis. Submit assessment findings to the department. Faculties will provide constructive feedback to Students on their observations and reasoning.

Experiential-Learning 11.11 : Siddha and Pharmacogenomics interpretation in diagnosis of *Mathaazhivu and Soothiga vaatham.*

Total Activity hours: 2 hour
Activity 1: Cases-Based Learning (30 minutes)
Treatment Protocol Assessment
Each PG Student should observe the various treatment protocols for different types of *Thega Ilakkanam* patients in particular type of *Mathaazhivu/Soothiga vaatham Noi* patient in OPD.
Activity 2: Team-Based Learning (30 minutes)
Comparative analysis of Medications
It should be observed that which set of medicine shows best result for that particular *Thega Ilakkanam* of *Mathaazhivu/Soothiga vaatham Noi* patient.
Activity 3: Inquiry-Based Learning (30 minutes)
Interpretation with Pharmacogenomics
Each PG Student must interpret with Pharmacogenomics of their treatment protocols.
Activity 4: Peer-Assisted Learning (15 minutes)
Enhancing Prescription choice skill
The outcome must be enumerated as comprehensive diagnostic analysis on appropriate choice of prescription of good set of internal medicines which suits to that particular type of *Thega Ilakkanam.*

Activity 5: Discussion, Presentation (15 minutes)
Conducting Class Presentation
With this outcome, prescribed line of treatment based on *Suvai, Gunam* and *Veeriyam* can be framed. It enables prescription of the potential line of treatment grounded in the system's underlying principles. Each PG Student must conduct a Class Presentation and discuss about their experiential activity findings of Case Study Analysis. Submit assessment findings to the department. Faculties will provide constructive feedback to Students on their observations and reasoning.

Experiential-Learning 11.12 : Blood based Biomarker for Alzheimer's disease.

Total Activity hours: 2 hours
Activity 1: Library Session (30 minutes)
Exploration of resources
Each PG Student must explore various Siddha Classical texts to coin appropriate Siddha Diagnostic term for Alzheimer's disease.
Activity 2: Lab Report Interpretation (45 minutes)
Analytical skill of Blood based Biomarker
Each must gather facts about Blood based Biomarker for Alzheimer's disease and must understand how it helps to diagnose, monitor disease progression and predict the outcome of disease.
Activity 3: Presentation (45 minutes)
Conducting Class Presentation
Each PG Student must conduct a Class Presentation to educate the UG students about the assessment findings by organizing the collected information. This enhances presentation skills and fosters the exchange of knowledge.

Experiential-Learning 11.13 : Mental Status Examination in *Yaakai Ilakkanam.*

Total Activity hours: 2 hours
Activity 1: Library Session (30 minutes)
Exploration of resources
Each PG Student must gather information and facts about Mental Status Examination from various search engines.
Activity 2: Peer-Assisted Learning (15 minutes)
Assessment of *Yaakai Ilakkanam*
Each PG Student must observe about 5-10 *Ula pirazhvu* patients and assess their Mental state through Mental state examination and *Yaakai Ilakkanam.*
Activity 3: Co-Learning (15 minutes)
Scoring Interpretation
Interpret and correlate Mental status scorings and *Yaakai Ilakkanam* & categorize the *Yaakai* types according to scoring levels.

Activity 4: Presentation (45 minutes)
Conducting Class Presentation
The outcome must explicit the diagnostic protocol approach of Mental State assessment based on *Yaakai Ilakkanam.* Each PG Student must conduct a Class Presentation to educate the UG students about the assessment findings by organizing the collected information. This enhances presentation skills and fosters the exchange of knowledge.
Activity 5: Discussion (15 minutes)
Evaluation and Feedback
The activity performance will be evaluated by the faculty and provide constructive feedback to Students on their observations and reasoning.

Experiential-Learning 11.14 : *Vaayu Roga Nidhaanam* with pathologic conditions.

Total Activity hours: 2 hours
Activity 1: Library Session (30 minutes)
Exploration of Classical Texts
Each PG Student must search the *Para Raasa Segaram* and other Siddha classical texts about classifications *Vaayu Roga Nidhaanam* and gather the relevant concepts.
Activity 2: Peer Learning/Team-Based Learning (30 minutes)
Diagnostic and Clinical Reasoning Skill
Each PG Student should create fascinating creative writing about classifications of *Vaayu Roga Nidhaanam* with analogous pathologic conditions.
Activity 3: Discussion (30 minutes)
Creating Compilation
Submit the diagnostic assessment findings in form of compilation to the department.
Activity 4: Presentation (30 minutes)
Evaluation and Feedback
The activity performance will be evaluated by the faculty and provide constructive feedback to students on their observations and reasoning.

Modular Assessment

Assessment method	**Hour**
Instructions: Conduct a structured Modular assessment. The assessment will be for 50 marks. Keep a structured marking pattern. Use different assessment methods in each module for the semester. Keep a record of the structured pattern used for assessment. Calculate the Modular grade point as per Table 6 Choose any of the below assessment for 50 marks. Interpret the findings of given at least 5 different diagnostic modalities such as X-ray, USG, CT Scan, MRI, Venogram, Arteriogram etc., postulate the possible differential diagnosis and confined diagnosis for 50 marks	4

Or
Total Marks: 50 / Time Duration: 4 Hours
1.SAQ AND LAQ ASSESSMENT
Total Marks: 20 | Duration: 1 hour 30 minutes
ASSESSMENT STRUCTURE
General Instructions:
Answer THREE questions in total
Question 1 is long answer question(10 marks)
Question 2,3 is short answer question(5 marks each).
2.OBJECTIVE STRUCTURED CLINICAL EXAMINATION (OSCE) Mark Distribution: 20 marks
Duration:1 hour 30 min
Clinical Examinations of patients through
Yakkai, aga karuvigal, Pura karuvigal (3 marks)
Udal Thaathukkal, ennvagai thervu (5 marks)
Manikkadai Nool (1mark)
Derangement of Mukkutram (2 marks)
Mukkutra Verupadu (2 marks)
Prescription of the line of treatment based on mukkutram, suvai and gunam,veeriam and based on other underlying siddha principles (5 marks)
Noi Kanippu (1 mark)
Theerum Theera Nilai (1 mark)
VIVA VOCE EXAMINATION (5 Marks) -Time-30 minutes
Assessment Structure:
Foster a deeper understanding of the underlying mechanisms of the particular disease to inform clinical decision-making and able to interpret the variations of differential diagnosis and
Marking Distribution:
Knowledge and Understanding (2 marks)
Detailed pathological knowledge
Understanding of Siddha Diagnostic tools and their application
Clinical Application (1 mark)
Differential Diagnosis
Clinical scenarios
Radiological interpretation

Communication Skills (2 marks)
Clarity of expression
Use of precise terminology
Ability to explain complex concepts
RECORD KEEPING (5 Marks) Time : 30 minutes
Assessment Criteria:
Clinical Assessments (4 marks)
Profound Disease Interpretation
Analysis with analogous modern terminologies
Radiological integration
Written Presentation Skills (1 mark)
Innovative Ideas
Clarity of Concepts
or
Any practical in converted form can be taken for assessment. (25 marks)
and
Any experiential, such as portfolios / reflections / presentations can be taken as an assessment. (25 marks)

Module 12 : Mega Noi Nithaanam (Genito-Urinary Diseases)

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

Describe the *Noi enn*(Etiology), *Noi enn*(Classifications) and *Theerum,theera nilai*(Curable and incurable conditions) of *Kalladaippu noi, Neeradaippu noi, Neerkattu noi, Chottu Neer noi, Neerchurukku noi, Vellai noi (Biramiyam), Mega Neer noi (20 Types), Neerizhivu noi, Theli Neer noi, Venneer noi,Kaamiya noi,Mega noi Kattigal*.
Interpret Siddha disease classifications and Siddha diagnostic tools with modern diagnosis and modern diagnostic parameters.
Create Diagnostic paradigms to diagnose diseases of *Mega Noi Nithaanam.*
Apply the differential diagnosis of diseases of *Mega Noi Nithaanam.*
Design the line of treatment based on *Mukkutram,* Suvai, Gunam for *Mega Noi Nithaanam.*

M 12 Unit 1 Kalladaippu noi, Neeradaippu noi, Sathaiadaippu noi, Neerkattu noi (Nephro calcinosis,Prostatomegaly,Obstructive urinary diseases)

12.1.1. Kalladaippu Noi - 4 types
12.1.1.1.Vali kalladaippu
12.1.1.2.Azhal kalladaippu
12.1.1.3.Iya kalladaippu
12.1.1.4.Mukkutra kalladaippu 12.1.2. Neeradaippu Noi

12.1.3. Sathaiyadaippu Noi 12.1.4. Neerkattu Noi 12.1.5. Kaamiya Noi

References: 1,2,3,5,6,7,8,14,15,16,17,19,21,22,24,40,42,43,45,46,48,53,54,55,67,68,73,74,76,77,94

3A	3B	3C	3D	3E	3F	3G
CO3	Describe about the *Iyal*, Synonyms, Etiology, classifications, Clinical Features, *Mukkutra verupadu, Naadi Nadai* and curable & incurable conditions of *Kalladaippu, Neeradaippu, Neerkattu* and *Sathaiadaippu and Kaamiya noi.*	3	Lecture	CAN	Knows-how	L&PPT
CO2,CO4	Perform the examination of patient through *Yaakai, udal Thathukkal, Envagai Thervu, Manikadai Nool, Mukkutram* and prescribe the line of treatment based on *Mukkutram, Suvai, Gunam* & infer the *Theerum Theera Nilai* of *Kalladaippu* .	3	Practical Training 12.1	PSY-ADT	Shows-how	IBL,PER, C_L,CBL ,D-BED
CO2,CO4	Perform the examination of patient through *Yaakai, udal Thathukkal, Envagai Thervu, Manikadai Nool, Mukkutram* and prescribe the line of treatment based on *Mukkutram, Suvai, Gunam* & infer the *Theerum Theera Nilai* of *Sathaiadaippu* (Prostatomegaly) in OPD/IPD.	3	Practical Training 12.2	PSY-ADT	Shows-how	DIS,PER, IBL,CD,C BL
CO6	Integrate about the comprehensive morpho-constitutional analysis of Urinary Stones and analyse which thegi reoccurance of calculi persists frequently.	1	Experiential-Learning 12. 1	AFT-SET	Does	IBL,JC,P ER,LRI
CO6	Carry out an interpretation of Urine colour observations in various clinical pathologic	1	Experiential-	AFT-SET	Does	LRI,CBL,

	conditions along with Siddha Uroscopic findings *(Neerkuri & Neikuri).*		Learning 12.2			C_L,TBL
CO6	Construct the Siddha way of Lab interpretation for *Sathaiadaippu Noi* patients in OPD/IPD through assessing Siddha and Modern parameters.	2	Experiential-Learning 12.3	PSY-ORG	Does	DIS,CD,PER,LRI,PL
CO6	Perform pharmacogenomic analysis with various combinations of Siddha medicines for the treatment of *Kallaidaippu* patients with different *yakkai ilakkanam* and determine which set of medicines is most suitable for each *Thegi* type for optimal treatment outcomes.	3	Experiential-Learning 12.4	AFT-SET	Does	PER,PAL,IBL,LRI,CBL

M 12 Unit 2 Chottuneer noi, Neerchurukku noi, Vellai noi (Biramiyam) (Neurogenic bladder, Urethral pain syndrome, Urogenital conditions causing gleet)

12.2.1 Chottu Neer-2 types
12.2.1.1 Siriyavarkaluku kaanum chottu neer kuridgunangal
12.2.1.2. Periyavarkalukku kaanum chottuneer kurigunangal 12.2.2.Neerchurukku noi – 4types
12.2.2.1. Vali neerchurukku
12.2.2.2. Azhal neerchurukku
12.2.2.3. Iya neerchurukku
12.2.2.4. Mega neerchurukku 12.2.3. Vellai noi (Bramiyam)-21 types
12.2.3.1. Vali vellai noi
12.2.3.2. Azhal vellai noi
12.2.3.3. Iya vellai noi
12.2.3.4. Vali azhal vellai noi
12.2.3.5. Azhal iya vellai noi
12.2.3.6. Mukkutra vellai noi
12.2.3.7. Katti vellai noi
12.2.3.8. Neer vellai noi
12.2.3.9. Thandhi vellai noi
12.2.3.10. Seezh vellai noi
12.2.3.11. Ozhukku vellai noi

12.2.3.12. Manjal vellai noi
12.2.3.13. Neerkattu vellai
12.2.3.14. Karappan vellai
12.2.3.15. Kal vellai
12.2.3.16. Thandhu vellai
12.2.3.17. Neechu vellai
12.2.3.18. Vali vellai
12.2.3.19. Thaen vellai
12.2.3.20. Pun vellai
12.2.3.21 kuruthi vellai

References: 1,2,3,5,6,7,8,14,15,16,17,18,19,21,22,40,42,43,45,48,53,54,55,94

3A	3B	3C	3D	3E	3F	3G
CO1,CO2	Describe about the *Iyal, Veru Peyargal,* Etiology, Classifications, Clinical features, *Mukkutra verupadu, Naadi Nadai* and curable & incurable conditions of *Chottu Neer, Neer Churukku* and *Vellai.*	2	Lecture	CAN	Knows-how	L&PPT
CO2,CO4	Conduct the examination of patient through *Yaakai, udal Thathukkal, Envagai Thervu, Manikadai Nool, Mukkutram* and prescribe the line of treatment based on *Mukkutram, Suvai, Gunam* & infer the *Theerum Theera Nilai* of *Chottu Neer* (Atonic Bladder).	2	Practical Training 12.3	PSY-ADT	Shows-how	CBL,D-BED,DIS,C_L,IBL
CO2,CO4	Conduct the examination of patient through *Yaakai, udal Thathukkal, Envagai Thervu, Manikadai Nool, Mukkutram* and prescribe the line of treatment based on *Mukkutram, Suvai, Gunam* & infer the *Theerum Theera Nilai* of *Neer Churukku* (Urinary incontinence) .	2	Practical Training 12.4	PSY-ADT	Shows-how	PER,DIS,IBL,CBL,C_L
CO6	Perform pharmacogenomic analysis with various combinations of Siddha medicines for the treatment of *Chottu Neer* (Atonic Bladder) patients with different *yakkai ilakkanam* and determine which set of medicines is most suitable for each *Thegi* type for optimal treatment outcomes.	3	Experiential-Learning 12.5	AFT-SET	Does	PAL,DIS,CBL,TBL,PER
CO6	Integrate the *Chottu Neer and Neer Churukku* with various types of Bladder	3	Experiential-	AFT-SET	Does	PER,LRI,

	dysfunction.		Learning 12.6			TBL,DIS

M 12 Unit 3 Meganeer noi(20 types), Neerizhivu noi (Diabetes)

Meganeer noi - 20 types

12.3.1. Vali kuttram Meganeer noi – 4 types

12.3.1.1. Nei mana neer

12.3.1.2. Pasu mana neer

12.3.1.3. Seezh neer

12.3.1.4. Sadhai neer

12.3.2. Azhal kuttra Meganeer noi -6 types

12.3.2.1. Yaanai kozhuppu mana neer

12.3.2.2. Kattrazhai mana neer

12.3.2.3. Chunna mana neer

12.3.2.4. Inippu megam

12.3.2.5. Palingu neer

12.3.2.6. Muyal kuruthi neer

12.3.3. Iya kuttra Meganeer noi – 10 types

12.3.3.1. Iya neer

12.3.3.2. Thooimai neer\ Thelineer

12.3.3.3. Mulai neer

12.3.3.4. Ila neer

12.3.3.5. Kal neer

12.3.3.6. Venneer

12.3.3.7. Kazhu neer

12.3.3.8. Thaen neer

12.3.3.9. Uppu neer

12.3.3.10. Kavichi neer 12.3.4.Neerizhivu Noi \ Madhumeham Noi

References: 1,2,3,5,6,7,8,14,15,16,17,18,21,22,40,42,43,45,48,53,54,55,94

3A	3B	3C	3D	3E	3F	3G
CO1,CO2	Analyse about the *Iyal, Veru Peyargal,* Etiology, classifications, clinical features, *Mukkutra verupadu, Naadi Nadai* and curable and incurable conditions of *Mega Neer and Neerizhivu.*	3	Lecture	CAN	Knows-how	L&GD
CO2,CO4	Perform the examination of patient through *Yaakai, udal Thathukkal, Ennvagai Thervu, Manikkadai Nool, Mukkutram* and prescribe the line of treatment based on *Mukkutram, Suvai, Gunam* and infer the *Theerum Theera Nilai* of *Chunna mana Neer* .	3	Practical Training 12.5	PSY-ADT	Shows-how	DIS,PER, D-BED,C_L,CD
CO2,CO4	Perform the examination of patient through *Yaakai, udal Thathukkal, Ennvagai Thervu, Manikkadai Nool, Mukkutram* and prescribe the line of treatment based on *Mukkutram, Suvai, Gunam and* infer the *Theerum Theera Nilai of Neerizhivu* .	3	Practical Training 12.6	PSY-ADT	Shows-how	C_L,CBL ,DIS,PER ,D-BED
CO6	Perform pharmacogenomic analysis with various combinations of Siddha medicines for the treatment of *Neerizhivu Noi* patients with different *yakkai ilakkanam* and determine which set of medicines is most suitable for each *Thegi* type for optimal treatment outcomes.	3	Experiential-Learning 12.7	AFT-SET	Does	TBL,DIS, IBL,PER, CBL
CO6	Construct the Siddha way of Lab interpretation for *Neerizhivu Noi* patients in OPD/IPD through assessing Siddha and Modern parameters.	3	Experiential-Learning 12.8	PSY-SET	Does	LRI,PER, CBL,PL, DSN
CO6,CO8	Observe the patients with Acute Kidney Disease (AKD) and Chronic kidney Disease (CKD) in OPD/IPD and assess their Siddha and Modern Lab parameters and Modern Anthropometry measurements for all siddha diagnostic interpretation.	2	Experiential-Learning 12.9	PSY-ORG	Does	DIS,CBL, PER,LRI

M 12 Unit 4 Meganoi Kattigal (10 types) (Carbuncles/Lumps,Urine admixed urogenital discharge, Low specific gravity Urine)

12.4 .1 Mega kattigal 10 types
12.4.1.1 Kadugu pilavai
12.4.1.2 Kadalai pilavai
12.4.1.3 Nilapoosani pilavai

12.4.1.4 Katti pilavai
12.4.1.5 Madakku pilavai
12.4.1.6 Aamaiyottu pilavai
12.4.1.7 Peichurai pilavai
12.4.1.8 Koon pilavai
12.4.1.9 Valaikkan katti
12.4.1.10 Koottu pilavai 12.4.2 48 types of pilavai according to Agastheesar pilavai noi nithanam 12.4.3 Venneer 12.4.3 Theli neer

References: 1,2,3,4,5,6,7,8,10,14,15,16,17,18,21,22,40,42,43,45,47,48,53,54,55,94

3A	3B	3C	3D	3E	3F	3G
CO1,CO2	Describe about the *Iyal*(definition), *Veru Peyargal*(synonyms), *Noi kaaranam* (Etiology), *Noi enn*(Classifications), *Noikkurigunangal*(Clinical features), and *Theerum,theera nilai* (curable and incurable conditions) of *Theli Neer, Venneer* and *Mega Kattigal.*	1	Lecture	CAN	Knows-how	L&GD
CO1,CO2	Descibe the *Pilavai noigal* according to *Agatheesar pilavai Nithanam.*	1	Lecture	CC	Knows-how	L&PPT
CO2,CO4	Perform the examination of patient through *Yaakai, udal Thathukkal, Ennvagai Thervu, Manikkadai Nool, Mukkutram* and prescribe the line of treatment based on *Mukkutram, Suvai, Gunam* and infer the *Theerum Theera Nilai* of *Mega kattigal /pilavaigal.*	4	Practical Training 12.7	PSY-ADT	Shows-how	C_L,CD, DIS,PER, IBL
CO6	Observe the specific gravity of Urine in patients of OPD/IPD and integrate the results with Siddha Uroscopic findings *(Neerkuri* and *Neikuri)* and compare the relavant increase and decrease of specific gravity disorders with siddha uroscopy analysis and interpret with siddha uroscopy findings.	3	Experiential-Learning 12. 10	PSY-GUD	Does	DIS,TBL, LRI,CBL, PER
CO6,CO8	Integrate about the ICD -10 Carbuncle code employed in assessing Carbuncle affected sites and also correlate with *Mega neer kattigal.*	2	Experiential-Learning 12. 11	AFT-REC	Does	PER,LRI, LS

Practical Training Activity

Practical Training 12.1 : Diagnosis of *Kalladaippu*.

Total Activity hours- 3 hours
Teachers overview
The teacher clearly outlines the objectives of the practical session. A brief introduction to the importance of the diagnosis of a patient should be detailed. Either original cases or scenarios, or case videos may be used.
Activity 1- Case-Based Learning/Demonstration Bedside. (15 Minutes)
The teacher demonstrates how to use Siddha Diagnostic Tools to assess the case through Case Studies / Skill Labs in IPD/OPD Settings and make outcome assessment at the end of each student activity, and discuss them during debriefing sessions.
Activity 2- Inquiry-Based learning. (30 Minutes)
History Taking and performance of diagnostic Techniques: Students should take patient histories, focusing on the onset, duration, and pattern of disease and associated symptoms. Students should assess cases through Siddha diagnostic tools.
Activity 3-Record the documents. (15 Minutes)
Instruct students to document the examination of patients through the prescribed Case Sheet, which contains siddha and modern concepts in a structured format. Prognosis of the cases may be assessed by the student through any of the diagnostic/prognostic tools with the guidance of the teacher.
Activity 4- Case Diagnosis. (30 Minutes)
Interpret findings with Trihumoral vitiation and arrive at a provisional diagnosis
Activity 5- Discussion. (30 Minutes)
Small group discussions on the tri-humoral vitiation, which is peculiar to the presented case, and their clinical significance should be done along with an assessment of digestive fire.
Activity 6-Co Learning (30 Minutes)
Development of lines of treatment: Discuss and develop various lines of treatment based on aspects of *Suvai, Gunam, Veeriyam, and Vibagam,* and categorize them as curable and incurable types.
Activity 7: Presentation. (30 Minutes)
At the end of the session, based on the presentation, personalized feedback on students' observation and diagnostic accuracy should be given.

Practical Training 12.2 : Diagnosis of *Sathaiadaippu*(Prostatomegaly).

Total Activity hours- 3 hours
Teachers overview
The teacher clearly outlines the objectives of the practical session. A brief introduction to the importance of the diagnosis of a patient should be detailed. Either original cases or scenarios, or case videos may be used.

Activity 1- Case-Based Learning/Demonstration Bedside. (15 Minutes)
The teacher demonstrates how to use Siddha Diagnostic Tools to assess the case through Case Studies / Skill Labs in IPD/OPD Settings and make outcome assessment at the end of each student activity, and discuss them during debriefing sessions.
Activity 2- Inquiry-Based learning. (30 Minutes)
History Taking and performance of diagnostic Techniques: Students should take patient histories, focusing on the onset, duration, and pattern of disease and associated symptoms. Students should assess cases through Siddha diagnostic tools.
Activity 3-Record the documents. (15 Minutes)
Instruct students to document the examination of patients through the prescribed Case Sheet, which contains siddha and modern concepts in a structured format. Prognosis of the cases may be assessed by the student through any of the diagnostic/prognostic tools with the guidance of the teacher.
Activity 4- Case Diagnosis. (30 Minutes)
Interpret findings with Trihumoral vitiation and arrive at a provisional diagnosis
Activity 5- Discussion. (30 Minutes)
Small group discussions on the tri-humoral vitiation, which is peculiar to the presented case, and their clinical significance should be done along with an assessment of digestive fire.
Activity 6-Co Learning (30 Minutes)
Development of lines of treatment: Discuss and develop various lines of treatment based on aspects of *Suvai, Gunam, Veeriyam, and Vibagam,* and categorize them as curable and incurable types.
Activity 7: Presentation. (30 Minutes)
At the end of the session, based on the presentation, personalized feedback on students' observation and diagnostic accuracy should be given.

Practical Training 12.3 : Diagnosis of *Chottu Neer*(Atonic Bladder).

Total Activity hours- 2 hours
Teachers overview
The teacher clearly outlines the objectives of the practical session. A brief introduction to the importance of the diagnosis of a patient should be detailed. Either original cases or scenarios, or case videos may be used.
Activity 1- Case-Based Learning/Demonstration Bedside. (15 Minutes)
The teacher demonstrates how to use Siddha Diagnostic Tools to assess the case through Case Studies / Skill Labs in IPD/OPD Settings and make outcome assessment at the end of each student activity, and discuss them during debriefing sessions.
Activity 2- Inquiry-Based learning. (15 Minutes)
History Taking and performance of diagnostic Techniques: Students should take patient histories, focusing on the onset, duration, and pattern of disease and associated symptoms. Students should assess cases through Siddha diagnostic tools.
Activity 3-Record the documents. (15 Minutes)

Instruct students to document the examination of patients through the prescribed Case Sheet, which contains siddha and modern concepts in a structured format. Prognosis of the cases may be assessed by the student through any of the diagnostic/prognostic tools with the guidance of the teacher.
Activity 4- Case Diagnosis. (15 Minutes)
Interpret findings with Trihumoral vitiation and arrive at a provisional diagnosis
Activity 5- Discussion. (15 Minutes)
Small group discussions on the tri-humoral vitiation, which is peculiar to the presented case, and their clinical significance should be done along with an assessment of digestive fire.
Activity 6-Co Learning (30 Minutes)
Development of lines of treatment: Discuss and develop various lines of treatment based on aspects of *Suvai, Gunam, Veeriyam, and Vibagam*, and categorize them as curable and incurable types.
Activity 7: Presentation. (15 Minutes)
At the end of the session, based on the presentation, personalized feedback on students' observation and diagnostic accuracy should be given.

Practical Training 12.4 : Diagnosis of *Neer Churukku*(Urinary incontinence).

Total Activity hours- 2 hours
Teachers overview
The teacher clearly outlines the objectives of the practical session. A brief introduction to the importance of the diagnosis of a patient should be detailed. Either original cases or scenarios, or case videos may be used.
Activity 1- Case-Based Learning/Demonstration Bedside. (15 Minutes)
The teacher demonstrates how to use Siddha Diagnostic Tools to assess the case through Case Studies / Skill Labs in IPD/OPD Settings and make outcome assessment at the end of each student activity, and discuss them during debriefing sessions.
Activity 2- Inquiry-Based learning. (15 Minutes)
History Taking and performance of diagnostic Techniques: Students should take patient histories, focusing on the onset, duration, and pattern of disease and associated symptoms. Students should assess cases through Siddha diagnostic tools.
Activity 3-Record the documents. (15 Minutes)
Instruct students to document the examination of patients through the prescribed Case Sheet, which contains siddha and modern concepts in a structured format. Prognosis of the cases may be assessed by the student through any of the diagnostic/prognostic tools with the guidance of the teacher.
Activity 4- Case Diagnosis. (15 Minutes)
Interpret findings with Trihumoral vitiation and arrive at a provisional diagnosis
Activity 5- Discussion. (15 Minutes)
Small group discussions on the tri-humoral vitiation, which is peculiar to the presented case, and their clinical significance should be done along with an assessment of digestive fire.

Activity 6-Co Learning (30 Minutes)
Development of lines of treatment: Discuss and develop various lines of treatment based on aspects of *Suvai, Gunam, Veeriyam, and Vibagam*, and categorize them as curable and incurable types.
Activity 7: Presentation. (15 Minutes)
At the end of the session, based on the presentation, personalized feedback on students' observation and diagnostic accuracy should be given.

Practical Training 12.5 : *Diagnosis of Chunna mana Neer*.

Total Activity hours- 3 hours
Teachers overview
The teacher clearly outlines the objectives of the practical session. A brief introduction to the importance of the diagnosis of a patient should be detailed. Either original cases or scenarios, or case videos may be used.
Activity 1- Case-Based Learning/Demonstration Bedside. (15 Minutes)
The teacher demonstrates how to use Siddha Diagnostic Tools to assess the case through Case Studies / Skill Labs in IPD/OPD Settings and make outcome assessment at the end of each student activity, and discuss them during debriefing sessions.
Activity 2- Inquiry-Based learning. (30 Minutes)
History Taking and performance of diagnostic Techniques: Students should take patient histories, focusing on the onset, duration, and pattern of disease and associated symptoms. Students should assess cases through Siddha diagnostic tools.
Activity 3-Record the documents. (15 Minutes)
Instruct students to document the examination of patients through the prescribed Case Sheet, which contains siddha and modern concepts in a structured format. Prognosis of the cases may be assessed by the student through any of the diagnostic/prognostic tools with the guidance of the teacher.
Activity 4- Case Diagnosis. (30 Minutes)
Interpret findings with Trihumoral vitiation and arrive at a provisional diagnosis
Activity 5- Discussion. (30 Minutes)
Small group discussions on the tri-humoral vitiation, which is peculiar to the presented case, and their clinical significance should be done along with an assessment of digestive fire.
Activity 6-Co Learning (30 Minutes)
Development of lines of treatment: Discuss and develop various lines of treatment based on aspects of *Suvai, Gunam, Veeriyam, and Vibagam*, and categorize them as curable and incurable types.
Activity 7: Presentation. (30 Minutes)
At the end of the session, based on the presentation, personalized feedback on students' observation and diagnostic accuracy should be given.

Practical Training 12.6 : *Diagnosis of Neerizhivu.*

Total Activity hours- 3 hours
Teachers overview
The teacher clearly outlines the objectives of the practical session. A brief introduction to the importance of the diagnosis of a patient should be detailed. Either original cases or scenarios, or case videos may be used.
Activity 1- Case-Based Learning/Demonstration Bedside. (15 Minutes)
The teacher demonstrates how to use Siddha Diagnostic Tools to assess the case through Case Studies / Skill Labs in IPD/OPD Settings and make outcome assessment at the end of each student activity, and discuss them during debriefing sessions.
Activity 2- Inquiry-Based learning. (30 Minutes)
History Taking and performance of diagnostic Techniques: Students should take patient histories, focusing on the onset, duration, and pattern of disease and associated symptoms. Students should assess cases through Siddha diagnostic tools.
Activity 3-Record the documents. (15 Minutes)
Instruct students to document the examination of patients through the prescribed Case Sheet, which contains siddha and modern concepts in a structured format. Prognosis of the cases may be assessed by the student through any of the diagnostic/prognostic tools with the guidance of the teacher.
Activity 4- Case Diagnosis. (30 Minutes)
Interpret findings with Trihumoral vitiation and arrive at a provisional diagnosis
Activity 5- Discussion. (30 Minutes)
Small group discussions on the tri-humoral vitiation, which is peculiar to the presented case, and their clinical significance should be done along with an assessment of digestive fire.
Activity 6-Co Learning (30 Minutes)
Development of lines of treatment: Discuss and develop various lines of treatment based on aspects of *Suvai, Gunam, Veeriyam, and Vibagam,* and categorize them as curable and incurable types.
Activity 7: Presentation. (30 Minutes)
At the end of the session, based on the presentation, personalized feedback on students' observation and diagnostic accuracy should be given.

Practical Training 12.7 : *Diagnosis of Mega kattigal / Pilavaigal.*

Total Activity hours- 4 hours
Teachers overview
The teacher clearly outlines the objectives of the practical session. A brief introduction to the importance of the diagnosis of a patient should be detailed. Either original cases or scenarios, or case videos may be used.

Activity 1- Case-Based Learning/Demonstration Bedside. (30 Minutes)
The teacher demonstrates how to use Siddha Diagnostic Tools to assess the case through Case Studies / Skill Labs in IPD/OPD Settings and make outcome assessment at the end of each student activity, and discuss them during debriefing sessions.
Activity 2- Inquiry-Based learning. (30 Minutes)
History Taking and performance of diagnostic Techniques: Students should take patient histories, focusing on the onset, duration, and pattern of disease and associated symptoms. Students should assess cases through Siddha diagnostic tools.
Activity 3-Record the documents. (30 Minutes)
Instruct students to document the examination of patients through the prescribed Case Sheet, which contains siddha and modern concepts in a structured format. Prognosis of the cases may be assessed by the student through any of the diagnostic/prognostic tools with the guidance of the teacher.
Activity 4- Case Diagnosis. (30 Minutes)
Interpret findings with Trihumoral vitiation and arrive at a provisional diagnosis
Activity 5- Discussion. (30 Minutes)
Small group discussions on the tri-humoral vitiation, which is peculiar to the presented case, and their clinical significance should be done along with an assessment of digestive fire.
Activity 6-Co Learning (60 Minutes)
Development of lines of treatment: Discuss and develop various lines of treatment based on aspects of Suvai, Gunam, Veeriyam, and Vibagam, and categorize them as curable and incurable types.
Activity 7: Presentation. (30 Minutes)
At the end of the session, based on the presentation, personalized feedback on students' observation and diagnostic accuracy should be given.

Experiential learning Activity

Experiential-Learning 12.1 : Morpho-constitutional analysis of Urinary Stones.

Total Activity hours : 1 hour
Activity 1: Journal Club (30 minutes)
Exploration of Resources
Each PG Student must search various resources, journals about Morpho-constitutional analysis of Urinary Stones and gather the relevant concepts and also observe the patients in OPD/IPD who are more recurrently affected from Kalladaippu and classify which thegi turns quick response to medicines.
Activity 2: Inquiry-Based Learning (15 minutes)
Creation of Creative Writing
Each student should create fascinating creative writing about Morpho-constitutional analysis of Urinary Stones and yakkai analysis in Kalladaippu.
Activity 3: Presentation (15 minutes)

Evaluation and Feedback
Submit the diagnostic assessment findings to the department. Faculties will provide constructive feedback to Students on their observations and reasoning.

Experiential-Learning 12.2 : Urine color observations & Siddha Uroscopic findings.

Total Activity hours: 1 hour
Activity 1: Team-Based Learning (15 minutes)
Exploration about Urine colour analysis
Students must be divided into small groups by faculties and must gather information about various clinical pathologic conditions exhibiting urine color changes.
Activity 2: Case-Based Learning (30 minutes)
Siddha Uroscopic Assessment
Categorize and integrate Modern Urine Color Analysis disease interpretations with Siddha uroscopic Assessments in accordance with our Classical texts.
Activity 3: Co-Learning (15 minutes)
Conducting Debate
Each team should conduct debate about their experiential activity findings. The outcome should correlate an abnormal variation in urine & Siddha Uroscopic manifestations with various clinical pathologic conditions. Submit the assessment to the faculty for evaluation and feedback.

Experiential-Learning 12.3 : Lab Interpretation for *Sathaiadaippu Noi*.

Total Activity hours: 2 hours
Activity 1: Case-Based Learning(30 minutes)
Siddha Parameter assessment
PG Student must be divided into small groups by faculties to assess *Sathaiadaippu Noi* patients in OPD/IPD. Students must gather the diagnostic analytics for *Sathaiadaippu Noi* by assessing Siddha Parameters like *Envagai Thervu, Manikadai Nool, Yaakai Ilakkanam* and any type of diagnostic methodologies mentioned in Siddha Classical Literatures.
Activity 2: Case-Based Learning (30 minutes)
Modern Lab parameter assessment
For the same patient, the modern lab parameters are collected from OPD/IPD patient of *Sathaiadaippu Noi* for the assessment.
Activity 3: Lab Report Interpretation (30 minutes)
Developing interpretation skill
For a *Sathaiadaippu Noi* patient, PG Student must analyse the presence of any positive findings of Siddha Diagnostic parameters such as *Envagai Thervu, Manikadai Nool, Yaakai Ilakkanam* and any type of diagnostic methodologies which are seen similar in the recorded patients. If any similarities can be interpreted with Biochemistry values or Biomarkers or any positive Modern lab investigation, they must be noted.

Activity 4: Discussion/Peer Learning (15 minutes)
Conducting Class Discussion
For the particular grouped case, do the compilation of findings of Siddha and Modern Lab investigation results. This outcome must be constituted as ideal pattern format of lab test interpretation in terms of Siddha principles. Conduct Class Discussion about the diagnostic analytics assessment findings by organizing the collected information and submit the findings to the department.
Activity 5: Presentation (15 minutes)
Evaluation and Feedback
The activity performance will be evaluated by the faculty and provide constructive feedback to students on their observations and reasoning.

Experiential-Learning 12.4 : Siddha and Pharmacogenomics Interpretation in diagnosis of kalladaippu.

Total Activity hours: 3 hours
Activity 1: Case-Based Learning (30 minutes)
Treatment Protocol Assessment
Each PG Student should observe the various treatment protocols for different types of *Thega Ilakkanam* patients in particular type of *Kallaidaippu* patient in OPD.
Activity 2: Team-Based Learning (30 minutes)
Comparative analysis of Medications
It should be observed that which set of medicine shows best result for that particular *Thega Ilakkanam* of *Kallaidaippu* patient.
Activity 3: Inquiry-Based Learning (30 minutes)
Interpretation with Pharmacogenomics
Each PG Student must interpret with Pharmacogenomics of their treatment protocols.
Activity 4: Peer-assisted Learning (30 minutes)
Enhancing Prescription choice skill
The outcome must be enumerated as comprehensive diagnostic analysis on appropriate choice of prescription of good set of Internal medicines and External medicines which suits to that particular type of *Thega Ilakkanam.*
Activity 5: Discussion, Presentation (1 hour)
Conducting Class Presentation
With this outcome, prescribed line of treatment based on *Suvai*, *Gunam* and *Veeriyam* can be framed. It enables prescription of the potential line of treatment grounded in the system's underlying principles. Each PG Student must conduct a Class Presentation and discuss about their experiential activity findings of Case Study Analysis. Submit assessment findings to the department. Faculties will provide constructive feedback to Students on their observations and reasoning.

Experiential-Learning 12.5 : Siddha and Pharmacogenomics interpretation in diagnosis of *ChottuNeer*.

Total Activity hours: 3 hours
Activity 1: Case-Based Learning (30 minutes)
Treatment Protocol Assessment
Each PG Student should observe the various treatment protocols for different types of *Thega Ilakkanam* patients in particular type of *Chottu Neer* (Atonic Bladder) patient in OPD.
Activity 2: Team-Based Learning (30 minutes)
Comparative analysis of Medications
It should be observed that which set of medicine shows best result for that particular *Thega Ilakkanam* of *Chottu Neer* (Atonic Bladder) patient.
Activity 3: Inquiry-Based Learning (30 minutes)
Interpretation with Pharmacogenomics
Each PG Student must interpret with Pharmacogenomics of their treatment protocols.
Activity 4: Peer-Assisted Learning (30 minutes)
Enhancing Prescription choice skill
The outcome must be enumerated as comprehensive diagnostic analysis on appropriate choice of prescription of good set of internal medicines which suits to that particular type of *Thega Ilakkanam.*
Activity 5: Discussion, Presentation (1 hour)
Conducting Class Presentation
With this outcome, prescribed line of treatment based on *Suvai, Gunam* and *Veeriyam* can be framed. It enables prescription of the potential line of treatment grounded in the system's underlying principles. Each PG Student must conduct a Class Presentation and discuss about their experiential activity findings of Case Study Analysis. Submit assessment findings to the department. Faculties will provide constructive feedback to Students on their observations and reasoning.

Experiential-Learning 12.6 : *Chottu Neer and Neer Surukku* with various types of Bladder dysfunction.

Total Activity hours: 3 hours
Activity 1: Team-Based Learning (30 minutes)
Exploration of Resources
Students must be divided into small groups by faculties and explore various search engines about types of Bladder dysfunction.
Activity 2: Lab Report Interpretation (30 minutes)
Integration Skill
Correlate types of Bladder dysfunction with *Chottu Neer & Neer Churukku* and interpret their Siddha and Modern Lab parameters.
Activity 3: Discussion (1 hour)
Conducting Class interaction

Each PG Student must participate in class interaction and discuss about their experiential activity findings. Submit assessment findings to the department. Faculties will provide constructive feedback to Students on their observations and reasoning.
Activity 4: Presentation (30 minutes)
Evaluation and Feedback
Submit assessment findings to the department. Each group must document minimum of 5 comparisons. Provide constructive feedback to Students on their observations and reasoning.

Experiential-Learning 12.7 : Siddha and Pharmacogenomics interpretation in diagnosis of *Neerizhivu.*

Total Activity hours: 3 hours
Activity 1: Case-Based Learning (30 minutes)
Treatment Protocol Assessment
Each PG Student should observe the various treatment protocols for different types of *Thega Ilakkanam* patients in particular type of *Neerizhivu Noi* patient in OPD.
Activity 2: Team-Based Learning (30 minutes)
Comparative analysis of Medications
It should be observed that which set of medicine shows best result for that particular *Thega Ilakkanam* of *Neerizhivu Noi* patient.
Activity 3: Inquiry-Based Learning (30 minutes)
Interpretation with Pharmacogenomics
Each PG Student must interpret with Pharmacogenomics of their treatment protocols.
Activity 4: Peer-Assisted Learning (30 minutes)
Enhancing Prescription choice skill
The outcome must be enumerated as comprehensive diagnostic analysis on appropriate choice of prescription of good set of internal medicines which suits to that particular type of *Thega Ilakkanam.*
Activity 5: Discussion, Presentation (1 hour)
Conducting Class Presentation
With this outcome, prescribed line of treatment based on *Suvai, Gunam and Veeriyam* can be framed. It enables prescription of the potential line of treatment grounded in the system's underlying principles. Each PG Student must conduct a Class Presentation and discuss about their experiential activity findings of Case Study Analysis. Submit assessment findings to the department. Faculties will provide constructive feedback to Students on their observations and reasoning.

Experiential-Learning 12.8 : Lab Interpretation for *Neerizhivu Noi*.

Total Activity hours: 3 hours
Activity 1: Case-Based Learning (30 minutes)

Siddha Parameter assessment
PG Student must be divided into small groups by faculties to assess *Neerizhivu Noi* patients in OPD/IPD. Students must gather the diagnostic analytics for *Neerizhivu Noi* by assessing Siddha Parameters like *Ennvagai Thervu, Manikkadai Nool, Yaakai Ilakkanam* and any type of diagnostic methodologies mentioned in Siddha Classical Literatures.
Activity 2: Case-Based Learning (30 minutes)
Modern Lab parameter assessment
For the same patient, the modern lab parameters are collected from OPD/IPD patient of *Neerizhivu Noi* for the assessment.
Activity 3: Lab Report Interpretation (30 minutes)
Developing interpretation skill
For a Neerizhivu Noi patient, PG Student must analyse the presence of any positive findings of Siddha Diagnostic parameters such as *Envagai Thervu, Manikadai Nool, Yaakai Ilakkanam* and any type of diagnostic methodologies which are seen similar in the recorded patients. If any similarities can be interpreted with Biochemistry values or Biomarkers or any positive Modern lab investigation, they must be noted.
Activity 4: Discussion/Peer Learning (1 hour)
Conducting Class Discussion
For the particular grouped case, do the compilation of findings of Siddha and Modern Lab investigation results. This outcome must be constituted as ideal pattern format of lab test interpretation in terms of Siddha principles. Conduct Class Discussion about the diagnostic analytics assessment findings by organizing the collected information and submit the findings to the department.
Activity 5: Presentation (30 minutes)
Evaluation and Feedback
The activity performance will be evaluated by the faculty and provide constructive feedback to students on their observations and reasoning.

Experiential-Learning 12.9 : Lab Interpretations for Acute Kidney Disease (AKD) and Chronic kidney Disease (CKD).

Total Activity hours: 2 hours
Activity 1: Case-Based Learning (30 minutes)
Modern parameter Assessment
Each PG Student should observe Acute Kidney Disease (AKD) and Chronic kidney Disease (CKD) patients in OPD/IPD and assess their Siddha Lab parameters and *Yaakai Ilakkanam.*
Activity 2: Case-Based Learning (30 minutes)
Modern Lab Parameters Assessment
For the same patients, assess their Modern Lab parameters and Modern Anthropometry measurements.
Activity 3: Lab Report Interpretation (30 minutes)
Interpretation skill

Integrate and correlate Modern Anthropometry measurements & Modern Lab parameters and Siddha Lab parameters interpretations and try to conclude to which *yakkai illakanam* patients the incidence of CKD/AKD is most prevalent.
Activity 4: Presentation (30 minutes)
Conducting Class Presentation
Each PG Student must conduct a Class Presentation and discuss about their experiential activity findings. Submit assessment findings to the department. Faculties will provide constructive feedback to Students on their observations and reasoning.

Experiential-Learning 12.10 : ICD- 10 codes for carbuncle.

Total Activity hours :2 hours
Activity 1: Library Session (30 minutes)
Exploration of Resources
Each PG Student must explore through various search engines and gather information about ICD 10 Carbuncle code.
Activity 2: Lab report Interpretation (1 hour)
Conducting Interaction session
PG Student must conduct interaction session about the assessment findings.
Activity 3: Presentation (30 minutes)
Evaluation and Feedback
Submit the diagnostic assessment findings to the department. Faculties will provide constructive feedback to Students on their observations and reasoning.

Experiential-Learning 12.11 : Specific Gravity of Urine and Siddha Uroscopy.

Total Activity hours: 3 hours
Activity 1: Case-Based Learning (30 minutes)
Assessing specific gravity of Urine
For the sample patients or samples received from diagnostic zone of opd and Ipd, assess their Specific Gravity of urine and analyse their disease manifestations with their specific gravity increase or decrease level of the patient can be the suitable sample.
Activity 2: Team-Based Learning (30 minutes)
Siddha uroscopic Assessment
Perform Siddha Uroscopic examination *(Neerkuri* and *Neikuri)* to the sampled patient with the increase or decrease specific gravity correlate the result with modern diagnosis,interptret the siddha diagnosis and siddha lab interpretation can be observed on trial with repeated samples.
Activity 3: Discussion (30 minutes)

Interpretation skill
Integrate and correlate Siddha Uroscopic examination *(Neerkur*i and *Neikuri)* and Specific Gravity of urine interpretations. The outcome must interpret range of Specific Gravity of urine values prevalent in various diseases of patients.
Activity 4: Presentation (1 hour)
Conducting Class Presentation
Each PG Student must conduct a Class Presentation and discuss about their experiential activity findings.

Modular Assessment

Assessment method	**Hour**
Instructions: Conduct a structured Modular assessment. The assessment will be for 50 marks. Keep a structured marking pattern. Use different assessment methods in each module for the semester. Keep a record of the structured pattern used for assessment. Calculate the Modular grade point as per Table 6 Choose any of the below assessment for 50 marks. Interpret the findings of given at least 5 different diagnostic modalities such as X-ray, USG, CT Scan, MRI, Venogram, Arteriogram etc., postulate the possible differential diagnosis and confined diagnosis for 50 marks Or Total Marks: 50 / Time Duration: 4 Hours 1.SAQ AND LAQ ASSESSMENT Total Marks: 20 | Duration: 1 hour 30 minutes ASSESSMENT STRUCTURE General Instructions: Answer THREE questions in total Question 1 is long answer question(10 marks) Question 2,3 is short answer question(5 marks each). 2.OBJECTIVE STRUCTURED CLINICAL EXAMINATION (OSCE) Mark Distribution: 20 marks Duration:1 hour 30 min Clinical Examinations of patients through Yakkai, aga karuvigal, Pura karuvigal (3 marks) Udal Thaathukkal, ennvagai thervu (5 marks) Manikkadai Nool (1mark) Derangement of Mukkutram (2 marks)	4

Mukkutra Verupadu (2 marks) Prescription of the line of treatment based on mukkutram, suvai and gunam,veeriam and based on other underlying siddha principles (5 marks) Noi Kanippu (1 mark) Theerum Theera Nilai (1 mark) VIVA VOCE EXAMINATION (5 Marks) -Time-30 minutes Assessment Structure: Foster a deeper understanding of the underlying mechanisms of the particular disease to inform clinical decision-making and able to interpret the variations of differential diagnosis and Marking Distribution: Knowledge and Understanding (2 marks) Detailed pathological knowledge Understanding of Siddha Diagnostic tools and their application Clinical Application (1 mark) Differential Diagnosis Clinical scenarios Radiological interpretation Communication Skills (2 marks) Clarity of expression Use of precise terminology Ability to explain complex concepts RECORD KEEPING (5 Marks) Time : 30 minutes Assessment Criteria: Clinical Assessments (4 marks) Profound Disease Interpretation Analysis with analogous modern terminologies Radiological integration Written Presentation Skills (1 mark) Innovative Ideas Clarity of Concepts or Any practical in converted form can be taken for assessment. (25 marks) and		

Any experiential, such as portfolios / reflections / presentations can be taken as an assessment. (25 marks)

Semester No : 5

Module 13 : Magalir and Aadavar Noi Nithaanam (Gynaecological and Andrological Diseases)

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

Describe the etiology, classifications and curable and incurable conditions of *Aann kuri Noigal, Penkuri Noigal, Pooputhadai, Soothagavali, Kongai Noigal, Vellai paduthal/Yoni kasivu, Perumbadu, Pirappu Uruppugalil Thabitham, Punarchi Noigal, Yoni Rogangal, Van kazhalaigal, Maravai kattigal and Neerkumizh kazhalaigal.*
Interpret Siddha disease classifications and Siddha diagnostic tools with modern diagnosis and modern diagnostic parameters.
Create Diagnostic paradigms to diagnose diseases of *Magalir* and *Aadavar Noi Nithaanam.*
Apply the differential diagnosis of diseases of *Magalir and Aadavar Noi Nithaanam.*
Design the line of treatment for *Magalir* and *Aadavar Noi Nithaanam* based on *Mukkutram,* Suvai, Gunam.

M 13 Unit 1 Aann Kuri noigal (23 types) and Penkuri Noigal (21 types) (Penile Diseases,Diseases of Vulva)

13.1.1. Aann Kuri Noigal
13.1.1.1. Korukku Noi
13.1.1.2. Siru Mulai
13.1.1.3. Kadugu Koppulam
13.1.1.4. Veeral Koppulam
13.1.1.5. Ilandhai kaai katti
13.1.1.6. Venmega Pun
13.1.1.7. Eri pun
13.1.1.8. Siru koppula pun
13.1.1.9. Thamaraikkai thadippu

13.1.1.10. Varisai pun
13.1.1.11. Kari Pun
13.1.1.12. Karpun
13.1.1.13. Pilappu pun
13.1.1.14. Thol Thadai pun
13.1.1.15. Nerukku Kirandhi
13.1.1.16. Thimirkuri Noi
13.1.1.17. Thulai Pun
13.1.1.18. Thol Azhi Pun
13.1.1.19. Oon azhi Pun
13.1.1.20. Sennira Koppulam
13.1.1.21. Oon Nira katti
13.1.1.22. Paravu Katti Pun
13.1.1.23. Karumarul thiratchi Pun 13.1.2. Penkuri Noigal
13.1.2.1. Vali Kuyya Noi
13.1.2.2. Azhal Kuyya Noi
13.1.2.3. Iya Kuyya Noi
13.1.2.4. Mukkutra Kuyya Noi
13.1.2.5. Nurai Kuruthi Kuyya Noi
13.1.2.6. Thunpuruthum Kuyya Noi
13.1.2.7. Kuruthi ozhukku Kuyya Noi
13.1.2.8. Vethuppu Kuyya Noi
13.1.2.9. Soolai Kuyya Noi
13.1.2.10. Soombal Kuyya Noi
13.1.2.11. Kozhai Kuyya Noi
13.1.2.12. Erichal Kuyya Noi
13.1.2.13. Vadithal Kuyya Noi
13.1.2.14. Parukkum Kuyya Noi
13.1.2.15. Ali Kuyya Noi
13.1.2.16. Perkuri Punarchi Kuyya Noi
13.1.2.17. Ilai Surukkum Kuyya Noi
13.1.2.18. Porundha Punarchi Kuyya Noi

13.1.2.19. Nun Puzhu Kuyya Noi
13.1.2.20. Maraikkai Kuyya Noi
13.1.2.21. Panmurai punarchi Kuyya Noi

References: 1,2,3,4,5,7,8,14,15,16,17,18,21,24,30,40,42,43,45,48,53,54,55,76,77,85

3A	3B	3C	3D	3E	3F	3G
CO1,CO2	Describe about the *Iyal, Veru Peyargal,* Etiology, types, *Mukkutra verupadu, Naadi Nadai* and curable and incurable conditions of *Aann Kuri Noigal.*	1	Lecture	CAN	Knows-how	L&PPT
CO1,CO2	Analyse about the *Iyal, Veru Peyargal,* Etiology, types, *Mukkutra verupadu, Naadi Nadai* and curable and incurable conditions of *Penkuri Noigal.*	1	Lecture	CAN	Knows-how	L&GD
CO2,CO4	Conduct the examination of patient through *Yaakai, udal Thathukkal, Ennvagai Thervu, Manikkadai Nool, Mukkutram* and prescribe the line of treatment based on *Mukkutram, Suvai, Gunam and* infer the *Theerum, Theera Nilai of Penkuri Noi* eg.Bicornuate Uterus .	4	Practical Training 13.1	PSY-ADT	Shows-how	IBL,CD, D-BED,CBL,PER
CO2,CO4	Integrate the classifications of *Aan Kuri Noigal* and *Penkuri Noigal* with analogous pathologic conditions of Andrology and Gynaecology	3	Experiential-Learning 13. 1	AFT-SET	Does	PL,TBL, DIS,LS
CO6,CO8	Perform pharmacogenomics analysis with various combinations of Siddha medicines for the treatment of *Aan Kuri Noi / Pen Kuri Noi* patients in OPD/IPD with different *yakkai ilakkanam* and determine which set of medicines is most suitable for each *Thegi* type for optimal treatment outcomes.	3	Experiential-Learning 13. 2	PSY-ORG	Does	PER,DIS, TBL,IBL, CBL

M 13 Unit 2 Pooputhadai,Soothagavali, Kongai Noigal (Ammenorrhea,Dysmenorrhea,Diseases of Breast)

13.2.1. Pooputhadai (2 Types)
13.2.1.1. Sugarana soothaga thadai
13.2.1.2. Kugarana Soothaga thadai 13.2.2. Soothagavali (2 Types)
13.2.1.1. Aga Soothaga vali

13.2.1.2. Pura Soothaga vali 13.2.3. Kongai Noigal

References: 1,2,3,4,5,6,7,8,14,15,16,17,18,19,21,25,29,30,39,40,42,43,45,48,53,54,55,73,74,75,84

3A	3B	3C	3D	3E	3F	3G
CO1,CO2	Analyse about the *Iyal, Veru Peyargal,* Etiology, types, *Mukkutra verupadu, Naadi Nadai* and curable & incurable conditions of *Pooputhadai* and *Soothaga vali.*	2	Lecture	CAN	Knows-how	L&GD
CO1,CO2	Describe about the *Iyal, Veru Peyargal,* Etiology, types, *Mukkutra verupadu, Naadi Nadai* and curable & incurable conditions of *Kongai Noigal.*	1	Lecture	CAN	Knows-how	L&PPT
CO2,CO4	Perform the examination of patient through *Yaakai, udal Thathukkal, Ennvagai Thervu, Manikkadai Nool, Mukkutram* and prescribe the line of treatment based on *Mukkutram, Suvai, Gunam* and infer the *Theerum, Theera Nilai* of *Pooputhadai* .	2	Practical Training 13.2	PSY-ADT	Shows-how	IBL,C_L, CBL,DIS, PER
CO2,CO4	Perform the examination of patient through *Yaakai, udal Thathukkal, Ennvagai Thervu, Manikkadai Nool, Mukkutram* and prescribe the line of treatment based on *Mukkutram, Suvai, Gunam* and infer the *Theerum Theera Nilai* of *Soothagavali* .	2	Practical Training 13.3	PSY-ADT	Shows-how	C_L,CBL ,IBL,D-BED,PER
CO2,CO4	Perform the examination of patient through *Yaakai, udal Thathukkal, Ennvagai Thervu, Manikkadai Nool, Mukkutram* and prescribe the line of treatment based on *Mukkutram, Suvai, Gunam and* infer the *Theerum, Theera Nilai* of *Kongai Noigal.*	2	Practical Training 13.4	PSY-ADT	Shows-how	DIS,CBL, CD,IBL,P ER
CO6	Construct the Siddha Lab Interpretation for *Pooputhadai* patients in OPD/IPD through assessing modern diagnostic parameters	3	Experiential-Learning 13. 3	AFT-SET	Does	PER,CBL ,PL,LRI, DIS
CO6	Construct the Siddha Lab Interpretation for *Kongai Noi* patients in OPD/IPD through assessing modern diagnostic parameters	2	Experiential-Learning 13. 4	AFT-SET	Does	PL,CBL, LRI,PER, DIS
CO6,CO8	Perform pharmacogenomics analysis with various combinations of Siddha medicines for the treatment of *Pooputhadai* patients in OPD/IPD with different *yakkai ilakkanam* and determine which set of medicines is most suitable for each *Thegi* type for optimal	2	Experiential-Learning 13. 5	PSY-ORG	Does	IBL,PER, DIS,CBL, PAL

	treatment outcomes.					

M 13 Unit 3 Yonikkasivu noigal :1.Vellai paduthal, Perumbadu (Leucorrhoea, Abnormal uterine bleeding)

13.3.1. Yonikkasivu Noigal 13.3.1.1 Vellai paduthal (5 Types) 13.3.2. Perumpadu (4 Types) 13.3.2.1. Vatha Perumbadu
13.3.2.2. Pitha Perumbadu
13.3.2.3. Sethuma Perumbadu
13.3.2.4. Thondha Perumbadu

References: 1,2,3,4,5,6,7,8,14,15,16,17,18,19,21,25,29,30,39,40,42,43,45,48,53,54,55,73,74,75

3A	3B	3C	3D	3E	3F	3G
CO1,CO2	Analyse about the Veru Peyargal, Etiology, Types, Signs and symptoms , curable and incurable conditions of *Perumpaadu, Vellai Paduthal/Yoni Kasivu* .	2	Lecture	CAN	Knows-how	L&PPT
CO2,CO4	Perform the examination of patient through *Yaakai, udal Thathukkal, Ennvagai Thervu, Manikkadai Nool, Mukkutram* and prescribe the line of treatment based on *Mukkutram, Suvai, Gunam* and infer the *Theerum, Theera Nilai* of *Perumpaadu* .	2	Practical Training 13.5	PSY-ADT	Shows-how	C_L,CD, D-BED,CBL,PER
CO2,CO4	Perform the examination of patient through *Yaakai, udal Thathukkal, Ennvagai Thervu, Manikkadai Nool, Mukkutram* and prescribe the line of treatment based on *Mukkutram, Suvai, Gunam* and infer the *Theerum, Theera Nilai* of *Vellai Paduthal / Yoni Kasivu* .	2	Practical Training 13.6	PSY-ADT	Shows-how	PER,CBL ,CD,D-BED,DIS
CO6	Justify the prediction of *Maruthuva Jothidam* for *Perumpaadu and Soothaga thadai* patient in OPD/IPD.	3	Experiential-Learning 13.6	AFT-SET	Does	PAL,SDL ,CBL,DIS ,PER
CO6	Perform pharmacogenomics analysis with various combinations of Siddha medicines for the treatment of *Vellai Noi* patients in OPD/IPD with different *yakkai ilakkanam* and determine which set of medicines is most suitable for each *Thegi* type for optimal treatment outcomes.	3	Experiential-Learning 13.7	PSY-ORG	Does	DSN,IBL, CBL,TBL ,PL

M 13 Unit 4 Pirappu Uruppugalil Thabitham, Punarchi noigal, Yoni Rogangal - magalir korrukku noi,magalir vellai noi (Pelvic Inflammatory

disease,Dyspareunia,Syphilitic Chancre,Leucorrhoea,Diseases of Female genital tract)

13.4.1. Pirappu uruppugalil Thabitham
13.4.1.1. Agal Thabitham
13.4.1.2. Yoni Thabitham
13.4.1.3. Yoni Agal Thabitham
13.4.1.4. Yoni Vandhai Thabitham 13.4.2. Punarchi noigal 13.4.3. Magalir Korukku Noi 13.4.4. Magalir Vellai Noi
13.4.4.1 Yoni Rogangal - 20 Types

References: 1,2,3,4,5,6,7,8,14,15,16,17,18,19,25,29,39,40,42,43,45,48,53,54,55,73,74,75,90

3A	3B	3C	3D	3E	3F	3G
CO1,CO2	Describe about the Etiology, Types, Signs and symptoms of *Pirappu Uruppugalil Thambitham, Punarchi Noigal and Yoni Rogangal.*	1	Lecture	CAN	Knows-how	L&GD
CO2,CO4	Perform the examination of patient through *Yaakai, udal Thathukkal, Ennvagai Thervu, Manikkadai Nool, Mukkutram* and prescribe the line of treatment based on *Mukkutram, Suvai, Gunam* and infer the *Theerum,Theera Nilai* of *Yoni Thabitham* (Cervicitis) .	2	Practical Training 13.7	PSY-ADT	Shows-how	C_L,D-BED,CD,DIS,CBL
CO6	Compare the *Pirappu Uruppugalil Thambitham* with various types of pathologic inflammatory conditions of External genitalia	1	Experiential-Learning 13.8	AFT-SET	Does	DIS,TBL,LS,PER,PL
CO6,CO8	Compare the diffrent types of *Yoni Rogangal* with various types of analogus Pathological conditions.	2	Experiential-Learning 13.9	PSY-ORG	Does	DIS,PER,LS,TBL,PL

M 13 Unit 5 Van kazhalaigal, Maravai kattigal, Neerkumizh kazhalaigal (Benign and Malignant Tumours and cyst)

13.5.1. Van kazhalaigal
13.5.1.1. Thasai Vankazhalai
13.5.1.2. Kaambu Kazhalai
13.5.1.3. Karuppai Putru 13.5.2. Maravai kattigal

13.5.2.1. Nan Maravai Kattigal
13.5.2.2. Nanju Maravai Kattigal 13.5.3. Neerkumizh kazhalaigal

References: 1,2,3,4,5,6,7,8,14,15,16,17,18,19,25,29,39,40,42,43,45,48,53,54,55,73,74,75,79

3A	3B	3C	3D	3E	3F	3G
CO1,CO2	Analyse about *Van Kazhalaigal, Maravai Kattigal* and *Neerkumizh Kazhalaigal.*	2	Lecture	CAN	Knows-how	L&PPT
CO2,CO4	Perform the examination of patient through *Yaakai, udal Thathukkal, Ennvagai Thervu, Manikkadai Nool, Mukkutram* and prescribe the line of treatment based on *Mukkutram, Suvai, Gunam* and infer the *Theerum,Theera Nilai* of *Karuppai Katti* (Uterine Fibroids) .	2	Practical Training 13.8	PSY-ADT	Shows-how	C_L,D-BED,CD,DIS,CBL
CO2,CO4	Perform the examination of patient through *Yaakai, udal Thathukkal, Ennvagai Thervu, Manikkadai Nool, Mukkutram* and prescribe the line of treatment based on *Mukkutram, Suvai, Gunam* and infer the *Theerum, Theera Nilai* of *Sinaippai Neerkatti* .	2	Practical Training 13.9	PSY-ADT	Shows-how	CD,IBL, D-BED,C_L,DIS
CO6	Compare the signs and symptoms of *Van Kazhalaigal* and *Maravai Kattigal* with analogous types of Tumour pathology.	2	Experiential-Learning 13. 10	AFT-SET	Does	
CO6	Construct the Siddha Lab Interpretation for *Van Kazhalaigal* and *Maravai Kattigal* patients in OPD/IPD through assessing modern diagnostic parameters	2	Experiential-Learning 13. 11	PSY-ORG	Does	PL,SIM,LRI,DIS,PER

Practical Training Activity

Practical Training 13.1 : Diagnosis of *Penkuri Noi eg.* Bicornuate Uterus

Total Activity hours- 4 hours
Teachers overview
The teacher clearly outlines the objectives of the practical session. A brief introduction to the importance of the diagnosis of a patient should be detailed. Either original cases or scenarios, or case videos may be used.
Activity 1- Case-Based Learning/Demonstration Bedside. (30 Minutes)

The teacher demonstrates how to use Siddha Diagnostic Tools to assess the case through Case Studies / Skill Labs in IPD/OPD Settings and make outcome assessment at the end of each student activity, and discuss them during debriefing sessions.
Activity 2- Inquiry-Based learning. (30 Minutes)
History Taking and performance of diagnostic Techniques: Students should take patient histories, focusing on the onset, duration, and pattern of disease and associated symptoms. Students should assess cases through Siddha diagnostic tools.
Activity 3-Record the documents. (30 Minutes)
Instruct students to document the examination of patients through the prescribed Case Sheet, which contains siddha and modern concepts in a structured format. Prognosis of the cases may be assessed by the student through any of the diagnostic/prognostic tools with the guidance of the teacher.
Activity 4- Case Diagnosis. (30 Minutes)
Interpret findings with Trihumoral vitiation and arrive at a provisional diagnosis
Activity 5- Discussion. (30 Minutes)
Small group discussions on the tri-humoral vitiation, which is peculiar to the presented case, and their clinical significance should be done along with an assessment of digestive fire.
Activity 6-Co Learning (60 Minutes)
Development of lines of treatment: Discuss and develop various lines of treatment based on aspects of Suvai, Gunam, Veeriyam, and Vibagam, and categorize them as curable and incurable types.
Activity 7: Presentation. (30 Minutes)
At the end of the session, based on the presentation, personalized feedback on students' observation and diagnostic accuracy should be given.

Practical Training 13.2 : Diagnosis of *Pooputhadai*.

Total Activity hours- 2 hours
Teachers overview
The teacher clearly outlines the objectives of the practical session. A brief introduction to the importance of the diagnosis of a patient should be detailed. Either original cases or scenarios, or case videos may be used.
Activity 1- Case-Based Learning/Demonstration Bedside. (15 Minutes)
The teacher demonstrates how to use Siddha Diagnostic Tools to assess the case through Case Studies / Skill Labs in IPD/OPD Settings and make outcome assessment at the end of each student activity, and discuss them during debriefing sessions.
Activity 2- Inquiry-Based learning. (15 Minutes)
History Taking and performance of diagnostic Techniques: Students should take patient histories, focusing on the onset, duration, and pattern of disease and associated symptoms. Students should assess cases through Siddha diagnostic tools.
Activity 3-Record the documents. (15 Minutes)

Instruct students to document the examination of patients through the prescribed Case Sheet, which contains siddha and modern concepts in a structured format. Prognosis of the cases may be assessed by the student through any of the diagnostic/prognostic tools with the guidance of the teacher.
Activity 4- Case Diagnosis. (15 Minutes)
Interpret findings with Trihumoral vitiation and arrive at a provisional diagnosis
Activity 5- Discussion. (15 Minutes)
Small group discussions on the tri-humoral vitiation, which is peculiar to the presented case, and their clinical significance should be done along with an assessment of digestive fire.
Activity 6-Co Learning (30 Minutes)
Development of lines of treatment: Discuss and develop various lines of treatment based on aspects of *Suvai, Gunam, Veeriyam, and Vibagam*, and categorize them as curable and incurable types.
Activity 7: Presentation. (15 Minutes)
At the end of the session, based on the presentation, personalized feedback on students' observation and diagnostic accuracy should be given.

Practical Training 13.3 : Diagnosis of *Soothagavali* .

Total Activity hours- 2 hours
Teachers overview
The teacher clearly outlines the objectives of the practical session. A brief introduction to the importance of the diagnosis of a patient should be detailed. Either original cases or scenarios, or case videos may be used.
Activity 1- Case-Based Learning/Demonstration Bedside. (15 Minutes)
The teacher demonstrates how to use Siddha Diagnostic Tools to assess the case through Case Studies / Skill Labs in IPD/OPD Settings and make outcome assessment at the end of each student activity, and discuss them during debriefing sessions.
Activity 2- Inquiry-Based learning. (15 Minutes)
History Taking and performance of diagnostic Techniques: Students should take patient histories, focusing on the onset, duration, and pattern of disease and associated symptoms. Students should assess cases through Siddha diagnostic tools.
Activity 3-Record the documents. (15 Minutes)
Instruct students to document the examination of patients through the prescribed Case Sheet, which contains siddha and modern concepts in a structured format. Prognosis of the cases may be assessed by the student through any of the diagnostic/prognostic tools with the guidance of the teacher.
Activity 4- Case Diagnosis. (15 Minutes)
Interpret findings with Trihumoral vitiation and arrive at a provisional diagnosis
Activity 5- Discussion. (15 Minutes)
Small group discussions on the tri-humoral vitiation, which is peculiar to the presented case, and their clinical significance should be done along with an assessment of

digestive fire.
Activity 6-Co Learning (30 Minutes)
Development of lines of treatment: Discuss and develop various lines of treatment based on aspects of *Suvai, Gunam, Veeriyam, and Vibagam*, and categorize them as curable and incurable types.
Activity 7: Presentation. (15 Minutes)
At the end of the session, based on the presentation, personalized feedback on students' observation and diagnostic accuracy should be given.

Practical Training 13.4 : Diagnosis of *Kongai Nogal.*

Total Activity hours- 2 hours
Teachers overview
The teacher clearly outlines the objectives of the practical session. A brief introduction to the importance of the diagnosis of a patient should be detailed. Either original cases or scenarios, or case videos may be used.
Activity 1- Case-Based Learning/Demonstration Bedside. (15 Minutes)
The teacher demonstrates how to use Siddha Diagnostic Tools to assess the case through Case Studies / Skill Labs in IPD/OPD Settings and make outcome assessment at the end of each student activity, and discuss them during debriefing sessions.
Activity 2- Inquiry-Based learning. (15 Minutes)
History Taking and performance of diagnostic Techniques: Students should take patient histories, focusing on the onset, duration, and pattern of disease and associated symptoms. Students should assess cases through Siddha diagnostic tools.
Activity 3-Record the documents. (15 Minutes)
Instruct students to document the examination of patients through the prescribed Case Sheet, which contains siddha and modern concepts in a structured format. Prognosis of the cases may be assessed by the student through any of the diagnostic/prognostic tools with the guidance of the teacher.
Activity 4- Case Diagnosis. (15 Minutes)
Interpret findings with Trihumoral vitiation and arrive at a provisional diagnosis
Activity 5- Discussion. (15 Minutes)
Small group discussions on the tri-humoral vitiation, which is peculiar to the presented case, and their clinical significance should be done along with an assessment of digestive fire.
Activity 6-Co Learning (30 Minutes)
Development of lines of treatment: Discuss and develop various lines of treatment based on aspects of *Suvai, Gunam, Veeriyam, and Vibagam*, and categorize them as curable and incurable types.
Activity 7: Presentation. (15 Minutes)
At the end of the session, based on the presentation, personalized feedback on students' observation and diagnostic accuracy should be given.

Practical Training 13.5 : Diagnosis of *Perumbadu*.

Total Activity hours- 2 hours
Teachers overview
The teacher clearly outlines the objectives of the practical session. A brief introduction to the importance of the diagnosis of a patient should be detailed. Either original cases or scenarios, or case videos may be used.
Activity 1- Case-Based Learning/Demonstration Bedside. (15 Minutes)
The teacher demonstrates how to use Siddha Diagnostic Tools to assess the case through Case Studies / Skill Labs in IPD/OPD Settings and make outcome assessment at the end of each student activity, and discuss them during debriefing sessions.
Activity 2- Inquiry-Based learning. (15 Minutes)
History Taking and performance of diagnostic Techniques: Students should take patient histories, focusing on the onset, duration, and pattern of disease and associated symptoms. Students should assess cases through Siddha diagnostic tools.
Activity 3-Record the documents. (15 Minutes)
Instruct students to document the examination of patients through the prescribed Case Sheet, which contains siddha and modern concepts in a structured format. Prognosis of the cases may be assessed by the student through any of the diagnostic/prognostic tools with the guidance of the teacher.
Activity 4- Case Diagnosis. (15 Minutes)
Interpret findings with Trihumoral vitiation and arrive at a provisional diagnosis
Activity 5- Discussion. (15 Minutes)
Small group discussions on the tri-humoral vitiation, which is peculiar to the presented case, and their clinical significance should be done along with an assessment of digestive fire.
Activity 6-Co Learning (30 Minutes)
Development of lines of treatment: Discuss and develop various lines of treatment based on aspects of *Suvai, Gunam, Veeriyam, and Vibagam,* and categorize them as curable and incurable types.
Activity 7: Presentation. (15 Minutes)
At the end of the session, based on the presentation, personalized feedback on students' observation and diagnostic accuracy should be given.

Practical Training 13.6 : Diagnosis of *Vellai Paduthal / Yoni Kasivu* .

Total Activity hours- 2 hours
Teachers overview
The teacher clearly outlines the objectives of the practical session. A brief introduction to the importance of the diagnosis of a patient should be detailed. Either original cases or scenarios, or case videos may be used.

Activity 1- Case-Based Learning/Demonstration Bedside. (15 Minutes)
The teacher demonstrates how to use Siddha Diagnostic Tools to assess the case through Case Studies / Skill Labs in IPD/OPD Settings and make outcome assessment at the end of each student activity, and discuss them during debriefing sessions.
Activity 2- Inquiry-Based learning. (15 Minutes)
History Taking and performance of diagnostic Techniques: Students should take patient histories, focusing on the onset, duration, and pattern of disease and associated symptoms. Students should assess cases through Siddha diagnostic tools.
Activity 3-Record the documents. (15 Minutes)
Instruct students to document the examination of patients through the prescribed Case Sheet, which contains siddha and modern concepts in a structured format. Prognosis of the cases may be assessed by the student through any of the diagnostic/prognostic tools with the guidance of the teacher.
Activity 4- Case Diagnosis. (15 Minutes)
Interpret findings with Trihumoral vitiation and arrive at a provisional diagnosis
Activity 5- Discussion. (15 Minutes)
Small group discussions on the tri-humoral vitiation, which is peculiar to the presented case, and their clinical significance should be done along with an assessment of digestive fire.
Activity 6-Co Learning (30 Minutes)
Development of lines of treatment: Discuss and develop various lines of treatment based on aspects of *Suvai, Gunam, Veeriyam, and Vibagam,* and categorize them as curable and incurable types.
Activity 7: Presentation. (15 Minutes)
At the end of the session, based on the presentation, personalized feedback on students' observation and diagnostic accuracy should be given.

Practical Training 13.7 : Diagnosis of *Yoni Thabidham* (Cervicitis).

Total Activity hours- 2 hours
Teachers overview
The teacher clearly outlines the objectives of the practical session. A brief introduction to the importance of the diagnosis of a patient should be detailed. Either original cases or scenarios, or case videos may be used.
Activity 1- Case-Based Learning/Demonstration Bedside. (15 Minutes)
The teacher demonstrates how to use Siddha Diagnostic Tools to assess the case through Case Studies / Skill Labs in IPD/OPD Settings and make outcome assessment at the end of each student activity, and discuss them during debriefing sessions.
Activity 2- Inquiry-Based learning. (15 Minutes)
History Taking and performance of diagnostic Techniques: Students should take patient histories, focusing on the onset, duration, and pattern of disease and associated symptoms. Students should assess cases through Siddha diagnostic tools.
Activity 3-Record the documents. (15 Minutes)

Instruct students to document the examination of patients through the prescribed Case Sheet, which contains siddha and modern concepts in a structured format. Prognosis of the cases may be assessed by the student through any of the diagnostic/prognostic tools with the guidance of the teacher.
Activity 4- Case Diagnosis. (15 Minutes)
Interpret findings with Trihumoral vitiation and arrive at a provisional diagnosis
Activity 5- Discussion. (15 Minutes)
Small group discussions on the tri-humoral vitiation, which is peculiar to the presented case, and their clinical significance should be done along with an assessment of digestive fire.
Activity 6-Co Learning (30 Minutes)
Development of lines of treatment: Discuss and develop various lines of treatment based on aspects of *Suvai, Gunam, Veeriyam, and Vibagam*, and categorize them as curable and incurable types.
Activity 7: Presentation. (15 Minutes)
At the end of the session, based on the presentation, personalized feedback on students' observation and diagnostic accuracy should be given.

Practical Training 13.8 : Diagnosis of *Karuppai Katti* (Uterine Fibroids).

Total Activity hours- 2 hours
Teachers overview
The teacher clearly outlines the objectives of the practical session. A brief introduction to the importance of the diagnosis of a patient should be detailed. Either original cases or scenarios, or case videos may be used.
Activity 1- Case-Based Learning/Demonstration Bedside. (15 Minutes)
The teacher demonstrates how to use Siddha Diagnostic Tools to assess the case through Case Studies / Skill Labs in IPD/OPD Settings and make outcome assessment at the end of each student activity, and discuss them during debriefing sessions.
Activity 2- Inquiry-Based learning. (15 Minutes)
History Taking and performance of diagnostic Techniques: Students should take patient histories, focusing on the onset, duration, and pattern of disease and associated symptoms. Students should assess cases through Siddha diagnostic tools.
Activity 3-Record the documents. (15 Minutes)
Instruct students to document the examination of patients through the prescribed Case Sheet, which contains siddha and modern concepts in a structured format. Prognosis of the cases may be assessed by the student through any of the diagnostic/prognostic tools with the guidance of the teacher.
Activity 4- Case Diagnosis. (15 Minutes)
Interpret findings with Trihumoral vitiation and arrive at a provisional diagnosis
Activity 5- Discussion. (15 Minutes)
Small group discussions on the tri-humoral vitiation, which is peculiar to the presented case, and their clinical significance should be done along with an assessment of digestive fire.

Activity 6-Co Learning (30 Minutes)
Development of lines of treatment: Discuss and develop various lines of treatment based on aspects of *Suvai, Gunam, Veeriyam, and Vibagam*, and categorize them as curable and incurable types.
Activity 7: Presentation. (15 Minutes)
At the end of the session, based on the presentation, personalized feedback on students' observation and diagnostic accuracy should be given.

Practical Training 13.9 : Diagnosis of *Sinaippai Neerkatti* .

Total Activity hours- 2 hours
Teachers overview
The teacher clearly outlines the objectives of the practical session. A brief introduction to the importance of the diagnosis of a patient should be detailed. Either original cases or scenarios, or case videos may be used.
Activity 1- Case-Based Learning/Demonstration Bedside. (15 Minutes)
The teacher demonstrates how to use Siddha Diagnostic Tools to assess the case through Case Studies / Skill Labs in IPD/OPD Settings and make outcome assessment at the end of each student activity, and discuss them during debriefing sessions.
Activity 2- Inquiry-Based learning. (15 Minutes)
History Taking and performance of diagnostic Techniques: Students should take patient histories, focusing on the onset, duration, and pattern of disease and associated symptoms. Students should assess cases through Siddha diagnostic tools.
Activity 3-Record the documents. (15 Minutes)
Instruct students to document the examination of patients through the prescribed Case Sheet, which contains siddha and modern concepts in a structured format. Prognosis of the cases may be assessed by the student through any of the diagnostic/prognostic tools with the guidance of the teacher.
Activity 4- Case Diagnosis. (15 Minutes)
Interpret findings with Trihumoral vitiation and arrive at a provisional diagnosis
Activity 5- Discussion. (15 Minutes)
Small group discussions on the tri-humoral vitiation, which is peculiar to the presented case, and their clinical significance should be done along with an assessment of digestive fire.
Activity 6-Co Learning (30 Minutes)
Development of lines of treatment: Discuss and develop various lines of treatment based on aspects of *Suvai, Gunam, Veeriyam, and Vibagam*, and categorize them as curable and incurable types.
Activity 7: Presentation. (15 Minutes)
At the end of the session, based on the presentation, personalized feedback on students' observation and diagnostic accuracy should be given.

Experiential learning Activity

Experiential-Learning 13.1 : *Aan Kuri Noigal* & *Penkuri Noigal* with pathology conditions

Total Activity Hours: 3 hours
Activity 1: Library Sessio (1 hour)
Exploration of Classical Texts
Students must be divided into small groups by faculties and search the Siddha classical texts about *Aan Kuri Noigal* and *Penkuri Noigal.*
Activity 2: Peer Learning/Team-Based Learning (30 minutes)
Decryption of Siddha poetry
Decode the Siddha poetry for each and every versus of classifications of *Aan Kuri Noigal* and *Penkuri Noigal* with corresponding modern pathologic conditions.
Activity 3: Discussion (1 hour)
Chart Making
Each team should create attractive visual chart making about the analogous comparative pathologic conditions for various classifications of *Aan Kuri Noigal* and *Penkuri Noigal* that enables a deeper understanding of the topic
Activity 4: Presentation (30 minutes)
Evaluation and Feedback
Submit assessment findings to the department. Each group must document minimum of 5 comparisons. Provide constructive feedback to Students on their observations and reasoning.

Experiential-Learning 13.2 : Siddha and Pharmacogenomics interpretation in diagnosis of Kuri noigal.

Total Activity hours: 3 hours
Activity 1: Case-based Learning (30 minutes)
Treatment Protocol Assessment
Each PG Student should observe the various treatment protocols for different types of *Thega Ilakkanam* patients in particular type of *Aan Kuri Noi / Pen Kuri Noi* patient in OPD/IPD.
Activity 2: Team-Based Learning (30 minutes)
Comparative analysis of Medications
It should be observed that which set of medicine shows best result for that particular *Thega Ilakkanam* of *Aan Kuri Noi / Pen Kuri Noi* patient.
Activity 3: Inquiry-Based Learning (30 minutes)
Interpretation with Pharmacogenomics
Each PG Student must interpret with Pharmacogenomics of their treatment protocols.

Activity 4: Peer-assisted Learning (30 minutes)
Enhancing Prescription choice skill
The outcome must be enumerated as comprehensive diagnostic analysis on appropriate choice of prescription of good set of internal medicines and external medicines which suits to that particular type of *Thega Ilakkanam.*
Activity 5: Discussion, Presentation (1 hour)
Conducting Class Presentation
With this outcome, prescribed line of treatment based on *Suvai, Gunam and Veeriyam* can be framed. It enables prescription of the potential line of treatment grounded in the system's underlying principles. Each PG Student must conduct a Class Presentation and discuss about their experiential activity findings of Case Study Analysis. Submit assessment findings to the department. Faculties will provide constructive feedback to Students on their observations and reasoning.

Experiential-Learning 13.3 : Lab Interpretation for *Pooputhadai* .

Total Activity hours: 2 hours
Activity 1: Case-Based Learning (30 minutes)
Siddha Parameter assessment
PG Students must be divided into small groups by faculties to assess various types of *Pooputhadai* patients in OPD/IPD. Students must gather the diagnostic analytics for various types of *Pooputhadai* by assessing Siddha Parameters like *Envagai Thervu, Manikadai Nool, Yaakai Ilakkanam* and any type of diagnostic methodologies mentioned in Siddha Classical Literatures.
Activity 2: Case-Based Learning (15 minutes)
Modern Lab parameter assessment
For the same patient, the modern lab parameters are collected from OPD/IPD patient of a particular type of *Pooputhadai* for the assessment.
Activity 3: Lab Report Interpretation (30 minutes)
Developing interpretation skill
PG Student must analyse the presence of any positive findings of Siddha Diagnostic parameters such as *Envagai Thervu, Manikadai Nool, Yaakai Ilakkanam* and any type of diagnostic methodologies which are seen similar in the recorded patients. If any similarities can be interpreted with Biochemistry values or any positive Modern lab investigation, they must be noted.
Activity 4: Discussion/Peer Learning (30 minutes)
Conducting Class Presentation
For the particular grouped case, do the compilation of findings of Siddha and Modern Lab investigation results. This outcome must be constituted as ideal pattern format of lab test interpretation in terms of Siddha principles. Conduct Class Presentation about the diagnostic analytics assessment findings by organizing the collected information and submit the findings to the department.
Activity 5: Presentation (15 minutes)

Evaluation and Feedback
The activity performance will be evaluated by the faculty and provide constructive feedback to students on their observations and reasoning.

Experiential-Learning 13.4 : Lab Interpretation for *Kongai Noi.*

Total Activity hours: 2 hours
Activity 1: Case-Based Learning (30 minutes)
Siddha Parameter assessment
PG Students must be divided into small groups by faculties to assess various types of *Kongai Noi* patients in OPD/IPD. Students must gather the diagnostic analytics for various types of *Kongai Noi* by assessing Siddha Parameters like *Envagai Thervu, Manikadai Nool, Yaakai Ilakkanam* and any type of diagnostic methodologies mentioned in Siddha Classical Literatures.
Activity 2: Case-Based Learning (15 minutes)
Modern Lab parameter assessment
For the same patient, the modern lab parameters are collected from OPD/IPD patient of a particular type of *Kongai Noi* for the assessment.
Activity 3: Lab report Interpretation (30 minutes)
Developing interpretation skill
PG Student must analyse the presence of any positive findings of Siddha Diagnostic parameters such as *Envagai Thervu, Manikadai Nool, Yaakai Ilakkanam* and any type of diagnostic methodologies which are seen similar in the recorded patients. If any similarities can be interpreted with Biochemistry values or any positive Modern lab investigation, they must be noted.
Activity 4: Discussion/Peer Learning (30 minutes)
Conducting Class Presentation
For the particular grouped case, do the compilation of findings of Siddha and Modern Lab investigation results. This outcome must be constituted as ideal pattern format of lab test interpretation in terms of Siddha principles. Conduct Class Presentation about the diagnostic analytics assessment findings by organizing the collected information and submit the findings to the department.
Activity 5: Presentation (15 minutes)
Evaluation and Feedback
The activity performance will be evaluated by the faculty and provide constructive feedback to students on their observations and reasoning.

Experiential-Learning 13.5 : Siddha and Pharmacogenomics interpretation in diagnosis of *Pooputhadai.*

Total Activity hours: 3 hours
Activity 1: Case-Based learning (30 minutes)
Treatment Protocol Assessment

Each PG Student should observe the various treatment protocols for different types of *Thega Ilakkanam* patients in particular type of *Pooputhadai* patient in OPD/IPD
Activity 2: Team-Based Learning (30 minutes)
Comparative analysis of Medications
It should be observed that which set of medicine shows best result for that particular *Thega Ilakkanam* of *Pooputhadai* patient.
Activity 3: Inquiry-based Learning (30 minutes)
Interpretation with Pharmacogenomics
Each PG Student must interpret with Pharmacogenomics of their treatment protocols.
Activity 4: Peer-Assisted Learning (30 minutes)
Enhancing Prescription choice skill
The outcome must be enumerated as comprehensive diagnostic analysis on appropriate choice of prescription of good set of internal medicines which suits to that particular type of *Thega Ilakkanam.*
Activity 5: Discussion, Presentation (1 hour)
Conducting Class Presentation
With this outcome, prescribed line of treatment based on *Suvai, Gunam and Veeriyam* can be framed. It enables prescription of the potential line of treatment grounded in the system's underlying principles. Each PG Student must conduct a Class Presentation and discuss about their experiential activity findings of Case Study Analysis. Submit assessment findings to the department. Faculties will provide constructive feedback to Students on their observations and reasoning.

Experiential-Learning 13.6 : *Maruthuva Jothidam* in *Perumpaadu and Soothaga Thadai.*

Total Activity Hours: 3 hours
Activity 1: Self-Directed Learning(30 minutes)
Clinical Assessment skill
With the prior insight expertise of PG Student in *Maruthuva Jothidam* interpretation, each PG Student should be able to assess the *Maruthuva Jothidam* based disease prediction of the *Perumpaadu* patient.
Activity 2: Case-Based Learning (30minutes)
Maruthuva Jothidam Prediction
After acquiring Volunteer consent from the *Perumpaadu* patient, assess the 5 - 10 *Perumpaadu* patients or Soothaga Thadai patients in OPD/ IPD for Medical astrology disease prediction.
Activity 3: Inquiry-Based Learning (15 minutes)
Analysis of Planet's position in Horoscope
Each PG Student must predict the ailments of patient through assessing the position of affected planet in their Horoscope.
Activity 4: Peer-Assisted Learning (15 minutes)
Prescription of Pancha Bootha Theory line of treatment

On the basis of *Pancha bootha* Theory, PG Student should be able to prescribe the line of treatment after peer assessment of disease and the planet's characteristics.
Activity 5: Discussion (1 hour)
Conducting Class Presentation
Each PG Student must conduct a Class Presentation and discuss about their experiential activity findings of Case Based Learning. Submit assessment findings to the department.
Activity 6: Presentation (30 minutes)
Evaluation and Feedback
The activity performance will be evaluated by the faculty and provide constructive feedback to students on their observations and reasoning.

Experiential-Learning 13.7 : Siddha and Pharmacogenomics interpretation in diagnosis of *Vellai noi.*

Total Activity hours: 3 hours
Activity 1: Case-Based Learning (30 minutes)
Treatment Protocol Assessment
Each PG Student should observe the various treatment protocols for different types of *Thega Ilakkanam* patients in particular type of *Vellai Noi* patient in OPD/IPD
Activity 2: Team-Based Learning (30 minutes)
Comparative analysis of Medications
It should be observed that which set of medicine shows best result for that particular *Thega Ilakkanam* of *Vellai Noi* patient.
Activity 3: Inquiry-Based Learning (30 minutes)
Interpretation with Pharmacogenomics
Each PG Student must interpret with Pharmacogenomics of their treatment protocols.
Activity 4: Peer-Assisted Learning (30 minutes)
Enhancing Prescription choice skill
The outcome must be enumerated as comprehensive diagnostic analysis on appropriate choice of prescription of good set of internal medicines and external medicines which suits to that particular type of *Thega Ilakkanam.*
Activity 5: Discussion, Presentation (1 hour)
Conducting Class Presentation
With this outcome, prescribed line of treatment based on *Suvai, Gunam* and *Veeriyam* can be framed. It enables prescription of the potential line of treatment grounded in the system's underlying principles. Each PG Student must conduct a Class Presentation and discuss about their experiential activity findings of Case Study Analysis. Submit assessment findings to the department. Faculties will provide constructive feedback to Students on their observations and reasoning.

Experiential-Learning 13.8 : *Pirappu Uruppugalil Thambitham* in various pathological conditions..

Total Activity Hours: 1 hours
Activity 1: Library Session (15 minutes)
Exploration of Classical Texts
Students must be divided into small groups by faculties and search the Siddha classical texts about *Pirappu Uruppugalil Thambitham.*
Activity 2: Peer Learning/ Team-Based Learning (15 minutes)
Decryption of Siddha poetry
Decode the Siddha poetry for each and every versus of classifications of *Pirappu Uruppugalil Thambitham* with inflammatory conditions of External genitalia.
Activity 3: Discussion (15 minutes)
Conducting Interaction Session
Facilitate a group discussion that insights through assessment findings. Submit assessment findings to the department. Each group must document minimum of 5 comparisons.
Activity 4: Presentation (15 minutes)
Evaluation and Feedback
The activity performance will be evaluated by the faculty and provide constructive feedback to students on their observations and reasoning.

Experiential-Learning 13.9 : *Yoni Rogangal* types in modern pathological conditions.

Total Activity Hours: 2 hours
Activity 1:Library Session (30 minutes)
Exploration of Classical Texts
Students must be divided into small groups by faculty and search the Siddha classical texts about *Pirappu Uruppugalil Thambitham.*
Activity 2:Peer Learning / Team-Based Learning (30 minutes)
Decryption of Siddha poetry
Decode the Siddha poetry for every verse of classifications of *Pirappu Uruppugalil Thambitham* with inflammatory conditions of the External genitalia.
Activity 3:Discussion (30 minutes)
Conducting an Interaction Session
Facilitate a group discussion that draws insights through assessment findings. Submit assessment findings to the department. Each group must document a minimum of 5 comparisons.
Activity 4:Presentaion (30 minutes)
Evaluation and Feedback
The activity performance will be evaluated by the faculty, and constructive feedback will be provided to students based on their observations and reasoning.

Experiential-Learning 13.10 : *Van Kazhalaigal* and *Maravai Kattigal* with Tumour pathology

Total Activity Hours: 2 Hours
Activity 1: Team-Based Learning (30 minutes)
Collective Team Work
Students must be divided into small groups by faculties and must gather about the *Van Kazhalaigal* and *Maravai Kattigal* with analogous types of Tumour pathology.
Activity 2: Inquiry-Based Learning (1 hour)
Conducting Debate
Each team should debate about the assessment findings. Submit the diagnostic assessment findings to the department. Faculties will provide constructive feedback to Students on their observations and reasoning.
Activity 3: Presentation (30 minutes)
Assessment evaluation
The activity performance will be evaluated by the faculty. Faculties will provide constructive feedback to Students on their observations and reasoning.

Experiential-Learning 13.11 : Lab Interpretation for *Van Kazhalaigal* and *Maravai Kattigal* .

Total Activity hours: 2 hours
Activity 1: Case-Based Learning (30 minutes)
Siddha Parameter Assessment
PG Students must be divided into small groups by faculty to assess various types of *Van Kazhalaigal* and *Maravai Kattigal* patients in OPD/IPD. Students must gather the diagnostic analytics for various types of *Van Kazhalaigal* and *Maravai Kattigal* by assessing Siddha Parameters like *Ennvagai Thervu, Manikkadai Nool, Yaakai Ilakkanam* and any type of diagnostic methodologies mentioned in Siddha Classical Literatures.
Activity 2: Case-Based Learning (15 minutes)
Modern Lab parameter assessment
For the same patient, the modern lab parameters are collected from OPD/IPD patient of a particular type of *Van Kazhalaigal* and *Maravai Kattigal* for the assessment.
Activity 3: Lab Report Interpretation (30 minutes)
Developing interpretation skills
PG Student must analyse the presence of any positive findings of Siddha Diagnostic parameters such as *Ennvagai Thervu, Manikkadai Nool, Yaakai Ilakkanam* and any type of diagnostic methodologies which are seen similar in the recorded patients. If any similarities can be interpreted with Biochemistry values or any positive Modern lab investigation, they must be noted.
Activity 4: Discussion/Peer Learning (30 minutes)
Conducting a Class Presentation
For the particular grouped case, do the compilation of findings of Siddha and Modern Lab investigation results. This outcome must be constituted as an ideal pattern format of lab test interpretation in terms of Siddha principles. Conduct a Class Presentation about the diagnostic analytics assessment findings by organizing the collected

information and submitting the findings to the department.
Activity 5: Presentation (15 minutes)
Evaluation and Feedback
The activity performance will be evaluated by the faculty, and constructive feedback will be provided to students based on their observations and reasoning.

Modular Assessment

Assessment method	**Hour**
Instructions: Conduct a structured Modular assessment. The assessment will be for 50 marks. Keep a structured marking pattern. Use different assessment methods in each module for the semester. Keep a record of the structured pattern used for assessment. Calculate the Modular grade point as per Table 6 Choose any of the below assessment for 50 marks. Interpret the findings of given at least 5 different diagnostic modalities such as X-ray, USG, CT Scan, MRI, Venogram, Arteriogram etc., postulate the possible differential diagnosis and confined diagnosis for 50 marks Or Total Marks: 50 / Time Duration: 4 Hours 1.SAQ AND LAQ ASSESSMENT Total Marks: 20 | Duration: 1 hour 30 minutes ASSESSMENT STRUCTURE General Instructions: Answer THREE questions in total Question 1 is long answer question(10 marks) Question 2,3 is short answer question(5 marks each). 2.OBJECTIVE STRUCTURED CLINICAL EXAMINATION (OSCE) Mark Distribution: 20 marks Duration:1 hour 30 min Clinical Examinations of patients through Yakkai, aga karuvigal, Pura karuvigal (3 marks) Udal Thaathukkal, ennvagai thervu (5 marks) Manikkadai Nool (1mark) Derangement of Mukkutram (2 marks) Mukkutra Verupadu (2 marks) Prescription of the line of treatment based on mukkutram, suvai and gunam,veeriam and based on other underlying siddha principles (5 marks)	4

Noi Kanippu (1 mark) Theerum Theera Nilai (1 mark) VIVA VOCE EXAMINATION (5 Marks) -Time-30 minutes Assessment Structure: Foster a deeper understanding of the underlying mechanisms of the particular disease to inform clinical decision-making and able to interpret the variations of differential diagnosis and Marking Distribution: Knowledge and Understanding (2 marks) Detailed pathological knowledge Understanding of Siddha Diagnostic tools and their application Clinical Application (1 mark) Differential Diagnosis Clinical scenarios Radiological interpretation Communication Skills (2 marks) Clarity of expression Use of precise terminology Ability to explain complex concepts RECORD KEEPING (5 Marks) Time : 30 minutes Assessment Criteria: Clinical Assessments (4 marks) Profound Disease Interpretation Analysis with analogous modern terminologies Radiological integration Written Presentation Skills (1 mark) Innovative Ideas Clarity of Concepts or Any practical in converted form can be taken for assessment. (25 marks) and Any experiential, such as portfolios / reflections / presentations can be taken as an assessment. (25 marks)	

Module 14 : Maladu And Karba Noi Nidhaanam (Reproductive Diseases)

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

Describe the etiology, classifications and curable and incurable conditions of *Aann Maladu, Pen Maladu, Sool vanthi, Sool vali, Sool valippu, Karuchchithaivu, Pura Karuppai Sool, Pirasava pinkala noigal and Karba Rogangal.*
Interpret Siddha disease classifications and Siddha diagnostic tools with modern diagnosis and modern diagnostic parameters.
Create Diagnostic paradigms to diagnose diseases of *Maladu and Karba Noi Nithaanam*.
Apply the differential diagnosis of diseases of *Maladu and Karba Noi Nithaanam.*
Design the line of treatment for *Maladu and Karba Noi Nithaanam* based on Mukkutram, Suvai, Gunam.

M 14 Unit 1 Maladu noi

14.1.1. Aann Maladu 14.1.2. Pen Maladu
14.1.2.1. Sutha Maladu
14.1.2.2. Kathali Maladu
14.1.2.3. Kaaka Maladu
14.1.2.4. Kanma Maladu

References: 1,2,3,4,5,7,8,14,15,16,17,18,21,25,29,39,40,42,43,45,48,53,54,55,73,74,75,76,77,84,85,90

3A	3B	3C	3D	3E	3F	3G
CO5	Analyse about the *Iyal, Veru Peyargal,* Etiology, types, *Mukkutra verupadu, Naadi Nadai* and curable & incurable conditions of *Aan Maladu* and *Pen Maladu* according to *yugi* concepts and describe the etiology of *karukuzhi vayu,suroonidha vayu,udira vayu,Ratha kunma vayu,Soodhaga vayu,aadhi maladu,mari karbam,alikumbham,adhi pindam* concepts in *Agathisar Ariviyar sinthamani* .	2	Lecture	CAN	Knows-how	L&PPT

CO5	Perform the examination of patient through *Yaakai, udal Thathukkal, Ennvagai Thervu, Manikkadai Nool, Mukkutram* and prescribe the line of treatment based on *Mukkutram, Suvai, Gunam* and infer the *Theerum,Theera Nilai* of *Aan Maladu* .	2	Practical Training 14.1	PSY-ADT	Shows-how	IBL,CD,PER,DIS,C_L
CO5	Perform the examination of patient through *Yaakai, udal Thathukkal, Ennvagai Thervu, Manikkadai Nool, Mukkutram* and prescribe the line of treatment based on *Mukkutram, Suvai, Gunam* and infer the *Theerum,Theera Nilai* of *Pen Maladu* .	2	Practical Training 14.2	PSY-ADT	Shows-how	PER,IBL,D-BED,C_L,DIS
CO6	Construct the Siddha Lab Interpretation for *Aan Maladu* patients in OPD/IPD through assessing modern diagnostic parameters corelate with *Maruthuva Jothidam* chart interpretations.	2	Experiential-Learning 14.1	AFT-SET	Knows-how	LRI,DIS,PER,PL,CBL
CO6	Construct the Siddha Lab Interpretation for *Pen Maladu* patients in OPD/IPD through assessing modern diagnostic parameters and corelate with *Maruthuva Johidam* chart interpretations.	2	Experiential-Learning 14.2	AFT-REC	Knows-how	LRI,PL,PER,DIS,CBL
CO6	Perform pharmacogenomics analysis with various combinations of Siddha medicines for the treatment of *Aan Maladu* or *Pen Maladu* patients in OPD/IPD with different *yakkai ilakkanam* and determine which set of medicines *(agamaruthuvam,puramaruthuvam)* is most suitable for each *Thegi* type for optimal treatment outcomes and also interpret with which*Thegi* is more prone to infertility .	2	Experiential-Learning 14.3	PSY-ORG	Does	TBL,DIS,PER,CBL,IBL

M 14 Unit 2 Sool vanthi,Sool vali,Sool valippu(Hyper emisis gravidarum,Pre Eclampsia,Eclampsia)

14.2.1. *Sool vanthi*
14.2.2. *Sool vali*
14.2.3. *Sool valippu*

References: 1,2,3,4,5,6,7,8,14,15,16,17,18,21,25,29,39,40,42,43,45,48,53,54,55,73,74,75

3A	3B	3C	3D	3E	3F	3G
CO5	Describe about etiology, classifications and Signs and symptoms of *Sool Vaanthi, Sool Vali* and *Sool Valippu.*	2	Lecture	CAN	Knows-how	L&GD

CO5	Perform the examination of patient through *Yaakai, udal Thathukkal, Ennvagai Thervu, Manikkadai Nool, Mukkutram* and prescribe the line of treatment based on *Mukkutram, Suvai, Gunam* and infer the *Theerum, Theera Nilai* of *Sool Vanthi*.	2	Practical Training 14.3	PSY-ADT	Shows-how	C_L,CBL,DIS,PER,IBL
CO5	Perform the examination of patient through *Yaakai, udal Thathukkal, Ennvagai Thervu, Manikkadai Nool, Mukkutram* and prescribe the line of treatment based on *Mukkutram, Suvai, Gunam* and infer the *Theerum,Theera Nilai* of *Sool Valippu* (Eclampsia) .	2	Practical Training 14.4	PSY-ADT	Shows-how	IBL,D-BED,DIS,CBL,PER
CO6	Observe Second trimester Gestational women in OPD/IPD to assess their *Naadi* patterns. Integrate it with interpretations of USG findings and also asses and corelate underlying pathalogy if any through Siddha and Modern diagnostic parameteres.	3	Experiential-Learning 14.4	AFT-REC	Knows-how	CBL,PL,DIS,PER,LRI
CO6	Observe Third trimester Gestational women in OPD/IPD to assess their *Naadi* patterns. Integrate it with interpretations of USG findings and also asses and corelate underlying pathalogy if any through Siddha and Modern diagnostic parameteres.	3	Experiential-Learning 14.5	AFT-CHR	Knows-how	PL,DIS,LRI,CBL,PER

M 14 Unit 3 Karuchchithaivu,Pura karuppai sool,Pirasava pinkaala noigal,Karba Rogangal(Abortions,Ectopic pregnancy,Post natal diseases,uterine Disorders)

14.3.1. Karuchchithaivu 14.3.2. Pura karuppai sool 14.3.3. Pirasava pinkaala noigal 14.3.4. Karba Rogangal

14.3.4.1. Akkrama Soothagam
14.3.4.2. Karba Soolai
14.3.4.3. Thoora Soolai
14.3.4.4. Raththa Soolai
14.3.4.5. Karai soolai
14.3.4.6. Karba Kirani
14.3.4.7. Karba Puzhu
14.3.4.8. Karba Vippuruthi
14.3.4.9. Karba Vayu
14.3.4.10. Karba Suram
14.3.4.11. Anda soolai
14.3.4.12. Karba suronitham
14.3.4.13. Karba Kirumi

14.3.4.14 Nithamba soolai

References: 1,2,3,4,5,6,7,8,14,15,16,17,18,19,25,29,39,40,42,43,45,48,53,54,55,73,74,75,84,90

3A	3B	3C	3D	3E	3F	3G
CO3	Describe about etiology, classifications and Signs and symptoms of *Karuchchithaivu, Pura Karuppai Sool* and *Pirasava Pinkala Noigal* and describe the etiology of *tharuna pirasavam,azhukku pirasavam,asaathiya pirasavam,mooda karpam according to concepts in Agathisar Ariviyar sinthamani* .	2	Lecture	CAN	Knows-how	L&GD
CO3	Analyse about the *Iyal, Veru Peyargal,* Etiology, types, *Mukkutra verupadu, Naadi Nadai* and curable & incurable conditions of *Karba Rogangal* and describe the *swasa serpam,sura serpam,suronidha serpam,sudar kaayam,ratha kaayam,sura kaayam,Ilaippu kayam,suronidha savaru kalam,Ilam pillai vadham,soothaga vaadham,oodhu vaadham,boogini vaadham,karukuzhi vaadham,nithamba vadham,maladu paithiyam,suronidha paithiyam* concepts in *Agathisar Ariviyar sinthamani* .	2	Lecture	CAN	Knows-how	L&GD
CO1	Analyse about the etiology for *kaaruvaliyum kaalam,kaaranam , adaiyaalam ,suronidha pittham,swasa pittham,eri pittham,visha pitham,shaya pittham,seetha pitham,visha paandu,karba kaamalai,visha sogai and sool magodharam.*	2	Lecture	CAN	Knows-how	L&GD
CO4	Perform the examination of patient through *Yaakai, udal Thathukkal, Ennvagai Thervu, Manikkadai Nool, Mukkutram* and prescribe the line of treatment based on *Mukkutram, Suvai, Gunam* and infer the *Theerum, Theera Nilai* of *Karuchchithaivu* .	4	Practical Training 14.5	PSY-ADT	Shows-how	CD,IBL,CBL,C_L, DIS
CO3,CO4	Perform the examination of patient through *Yaakai, udal Thathukkal, Ennvagai Thervu, Manikkadai Nool, Mukkutram* and prescribe the line of treatment based on *Mukkutram, Suvai, Gunam* and infer the *Theerum, Theera Nilai* of *Pura Karuppai Sool* .	4	Practical Training 14.6	PSY-ADT	Shows-how	PER,CBL,D-BED, CD,DIS
CO3,CO4	Perform the examination of patient through *Yaakai, udal Thathukkal, Ennvagai Thervu, Manikkadai Nool, Mukkutram* and prescribe the line of treatment based on *Mukkutram, Suvai, Gunam* and infer the *Theerum,Theera Nilai* of *Thoora Soolai /Nithamba Soolai* .	4	Practical Training 14.7	PSY-ADT	Shows-how	CD,PER, D-BED,IBL,CBL

CO6	Integrate the various classifications of *Karuchithaivu* by decoding the verses of *Agasthiyar Ariviyar Sinthamani* (*karuvaliyum kaalam,karuvaliyum kaaranam*) and compare with various pathological conditions.	4	Experiential-Learning 14.6	AFT-SET	Does	DIS,LS,PL,TBL,PER
CO6	Formulate a *Pancha Patchi* Chart for interpreting *Karuchithaivu* in OPD/IPD patients	4	Experiential-Learning 14.7	AFT-VAL	Knows-how	IBL,CBL,CD,PER,C_L
CO6,CO8	Justify the prediction of *Maruthuva Jothidam* for *Karuchithaivu* patient attending OPD/IPD.	2	Experiential-Learning 14.8	AFT-SET	Knows-how	PAL,IBL,PER,SDL,CBL
CO6	Construct the Siddha way of Lab interpretation for *Karuchithaivu* patients in OPD/IPD through assessing Siddha and Modern parameters	2	Experiential-Learning 14.9	AFT-CHR	Knows-how	LRI,CBL,PER,PL,DIS
CO6,CO8	Construct the Siddha way of Lab interpretation for *Akkrama Soothagam* patients in OPD/IPD through assessing Siddha and Modern parameters prefarably with USG findings.	2	Experiential-Learning 14.10	PSY-ORG	Does	PER,PL,DIS,LRI,CBL

Practical Training Activity

Practical Training 14.1 : *Diagnosis of Aan Maladu* .

Total Activity hours- 2 hours
Teachers overview
The teacher clearly outlines the objectives of the practical session. A brief introduction to the importance of the diagnosis of a patient should be detailed. Either original cases or scenarios, or case videos may be used.
Activity 1- Case-Based Learning/Demonstration Bedside. (15 Minutes)
The teacher demonstrates how to use Siddha Diagnostic Tools to assess the case through Case Studies / Skill Labs in IPD/OPD Settings and make outcome assessment at the end of each student activity, and discuss them during debriefing sessions.
Activity 2- Inquiry-Based learning. (15 Minutes)
History Taking and performance of diagnostic Techniques: Students should take patient histories, focusing on the onset, duration, and pattern of disease and associated

symptoms. Students should assess cases through Siddha diagnostic tools.
Activity 3-Record the documents. (15 Minutes)
Instruct students to document the examination of patients through the prescribed Case Sheet, which contains siddha and modern concepts in a structured format. Prognosis of the cases may be assessed by the student through any of the diagnostic/prognostic tools with the guidance of the teacher.
Activity 4- Case Diagnosis. (15 Minutes)
Interpret findings with Trihumoral vitiation and arrive at a provisional diagnosis
Activity 5- Discussion. (15 Minutes)
Small group discussions on the tri-humoral vitiation, which is peculiar to the presented case, and their clinical significance should be done along with an assessment of digestive fire.
Activity 6-Co Learning (30 Minutes)
Development of lines of treatment: Discuss and develop various lines of treatment based on aspects of *Suvai, Gunam, Veeriyam, and Vibagam,* and categorize them as curable and incurable types.
Activity 7: Presentation. (15 Minutes)
At the end of the session, based on the presentation, personalized feedback on students' observation and diagnostic accuracy should be given.

Practical Training 14.2 : Diagnosis of *Pen Maladu*.

Total Activity hours- 2 hours
Teachers overview
The teacher clearly outlines the objectives of the practical session. A brief introduction to the importance of the diagnosis of a patient should be detailed. Either original cases or scenarios, or case videos may be used.
Activity 1- Case-Based Learning/Demonstration Bedside. (15 Minutes)
The teacher demonstrates how to use Siddha Diagnostic Tools to assess the case through Case Studies / Skill Labs in IPD/OPD Settings and make outcome assessment at the end of each student activity, and discuss them during debriefing sessions.
Activity 2- Inquiry-Based learning. (15 Minutes)
History Taking and performance of diagnostic Techniques: Students should take patient histories, focusing on the onset, duration, and pattern of disease and associated symptoms. Students should assess cases through Siddha diagnostic tools.
Activity 3-Record the documents. (15 Minutes)
Instruct students to document the examination of patients through the prescribed Case Sheet, which contains siddha and modern concepts in a structured format. Prognosis of the cases may be assessed by the student through any of the diagnostic/prognostic tools with the guidance of the teacher.
Activity 4- Case Diagnosis. (15 Minutes)
Interpret findings with Trihumoral vitiation and arrive at a provisional diagnosis
Activity 5- Discussion. (15 Minutes)

Small group discussions on the tri-humoral vitiation, which is peculiar to the presented case, and their clinical significance should be done along with an assessment of digestive fire.
Activity 6-Co Learning (30 Minutes)
Development of lines of treatment: Discuss and develop various lines of treatment based on aspects of *Suvai, Gunam, Veeriyam, and Vibagam*, and categorize them as curable and incurable types.
Activity 7: Presentation. (15 Minutes)
At the end of the session, based on the presentation, personalized feedback on students' observation and diagnostic accuracy should be given.

Practical Training 14.3 : *Diagnosis of Sool Vanthi* .

Total Activity hours- 2 hours
Teachers overview
The teacher clearly outlines the objectives of the practical session. A brief introduction to the importance of the diagnosis of a patient should be detailed. Either original cases or scenarios, or case videos may be used.
Activity 1- Case-Based Learning/Demonstration Bedside. (15 Minutes)
The teacher demonstrates how to use Siddha Diagnostic Tools to assess the case through Case Studies / Skill Labs in IPD/OPD Settings and make outcome assessment at the end of each student activity, and discuss them during debriefing sessions.
Activity 2- Inquiry-Based learning. (15 Minutes)
History Taking and performance of diagnostic Techniques: Students should take patient histories, focusing on the onset, duration, and pattern of disease and associated symptoms. Students should assess cases through Siddha diagnostic tools.
Activity 3-Record the documents. (15 Minutes)
Instruct students to document the examination of patients through the prescribed Case Sheet, which contains siddha and modern concepts in a structured format. Prognosis of the cases may be assessed by the student through any of the diagnostic/prognostic tools with the guidance of the teacher.
Activity 4- Case Diagnosis. (15 Minutes)
Interpret findings with Trihumoral vitiation and arrive at a provisional diagnosis
Activity 5- Discussion. (15 Minutes)
Small group discussions on the tri-humoral vitiation, which is peculiar to the presented case, and their clinical significance should be done along with an assessment of digestive fire.
Activity 6-Co Learning (30 Minutes)
Development of lines of treatment: Discuss and develop various lines of treatment based on aspects of *Suvai, Gunam, Veeriyam, and Vibagam*, and categorize them as curable and incurable types.
Activity 7: Presentation. (15 Minutes)

At the end of the session, based on the presentation, personalized feedback on students' observation and diagnostic accuracy should be given.

Practical Training 14.4 : Diagnosis of *Sool Valippu*(Eclampsia).

Total Activity hours- 2 hours
Teachers overview
The teacher clearly outlines the objectives of the practical session. A brief introduction to the importance of the diagnosis of a patient should be detailed. Either original cases or scenarios, or case videos may be used.
Activity 1- Case-Based Learning/Demonstration Bedside. (15 Minutes)
The teacher demonstrates how to use Siddha Diagnostic Tools to assess the case through Case Studies / Skill Labs in IPD/OPD Settings and make outcome assessment at the end of each student activity, and discuss them during debriefing sessions.
Activity 2- Inquiry-Based learning. (15 Minutes)
History Taking and performance of diagnostic Techniques: Students should take patient histories, focusing on the onset, duration, and pattern of disease and associated symptoms. Students should assess cases through Siddha diagnostic tools.
Activity 3-Record the documents. (15 Minutes)
Instruct students to document the examination of patients through the prescribed Case Sheet, which contains siddha and modern concepts in a structured format. Prognosis of the cases may be assessed by the student through any of the diagnostic/prognostic tools with the guidance of the teacher.
Activity 4- Case Diagnosis. (15 Minutes)
Interpret findings with Trihumoral vitiation and arrive at a provisional diagnosis
Activity 5- Discussion. (15 Minutes)
Small group discussions on the tri-humoral vitiation, which is peculiar to the presented case, and their clinical significance should be done along with an assessment of digestive fire.
Activity 6-Co Learning (30 Minutes)
Development of lines of treatment: Discuss and develop various lines of treatment based on aspects of *Suvai, Gunam, Veeriyam, and Vibagam,* and categorize them as curable and incurable types.
Activity 7: Presentation. (15 Minutes)
At the end of the session, based on the presentation, personalized feedback on students' observation and diagnostic accuracy should be given.

Practical Training 14.5 : Diagnosis of *Karuchthaivu*.

Total Activity hours- 4 hours
Teachers overview
The teacher clearly outlines the objectives of the practical session. A brief introduction to the importance of the diagnosis of a patient should be detailed. Either original

cases or scenarios, or case videos may be used.
Activity 1- Case-Based Learning/Demonstration Bedside. (30 Minutes)
The teacher demonstrates how to use Siddha Diagnostic Tools to assess the case through Case Studies / Skill Labs in IPD/OPD Settings and make outcome assessment at the end of each student activity, and discuss them during debriefing sessions.
Activity 2- Inquiry-Based learning. (30 Minutes)
History Taking and performance of diagnostic Techniques: Students should take patient histories, focusing on the onset, duration, and pattern of disease and associated symptoms. Students should assess cases through Siddha diagnostic tools.
Activity 3-Record the documents. (30 Minutes)
Instruct students to document the examination of patients through the prescribed Case Sheet, which contains siddha and modern concepts in a structured format. Prognosis of the cases may be assessed by the student through any of the diagnostic/prognostic tools with the guidance of the teacher.
Activity 4- Case Diagnosis. (30 Minutes)
Interpret findings with Trihumoral vitiation and arrive at a provisional diagnosis
Activity 5- Discussion. (30 Minutes)
Small group discussions on the tri-humoral vitiation, which is peculiar to the presented case, and their clinical significance should be done along with an assessment of digestive fire.
Activity 6-Co Learning (60 Minutes)
Development of lines of treatment: Discuss and develop various lines of treatment based on aspects of Suvai, Gunam, Veeriyam, and Vibagam, and categorize them as curable and incurable types.
Activity 7: Presentation. (30 Minutes)
At the end of the session, based on the presentation, personalized feedback on students' observation and diagnostic accuracy should be given.

Practical Training 14.6 : *Diagnosis of Pura karuppaSool* .

Total Activity hours- 4 hours
Teachers overview
The teacher clearly outlines the objectives of the practical session. A brief introduction to the importance of the diagnosis of a patient should be detailed. Either original cases or scenarios, or case videos may be used.
Activity 1- Case-Based Learning/Demonstration Bedside. (30 Minutes)
The teacher demonstrates how to use Siddha Diagnostic Tools to assess the case through Case Studies / Skill Labs in IPD/OPD Settings and make outcome assessment at the end of each student activity, and discuss them during debriefing sessions.
Activity 2- Inquiry-Based learning. (30 Minutes)
History Taking and performance of diagnostic Techniques: Students should take patient histories, focusing on the onset, duration, and pattern of disease and associated symptoms. Students should assess cases through Siddha diagnostic tools.

Activity 3-Record the documents. (30 Minutes)
Instruct students to document the examination of patients through the prescribed Case Sheet, which contains siddha and modern concepts in a structured format. Prognosis of the cases may be assessed by the student through any of the diagnostic/prognostic tools with the guidance of the teacher.
Activity 4- Case Diagnosis. (30 Minutes)
Interpret findings with Trihumoral vitiation and arrive at a provisional diagnosis
Activity 5- Discussion. (30 Minutes)
Small group discussions on the tri-humoral vitiation, which is peculiar to the presented case, and their clinical significance should be done along with an assessment of digestive fire.
Activity 6-Co Learning (60 Minutes)
Development of lines of treatment: Discuss and develop various lines of treatment based on aspects of Suvai, Gunam, Veeriyam, and Vibagam, and categorize them as curable and incurable types.
Activity 7: Presentation. (30 Minutes)
At the end of the session, based on the presentation, personalized feedback on students' observation and diagnostic accuracy should be given.

Practical Training 14.7 : Diagnosis of *Thoora Soolai* /*Nithamba Soolai* .

Total Activity hours- 4 hours
Teachers overview
The teacher clearly outlines the objectives of the practical session. A brief introduction to the importance of the diagnosis of a patient should be detailed. Either original cases or scenarios, or case videos may be used.
Activity 1- Case-Based Learning/Demonstration Bedside. (30 Minutes)
The teacher demonstrates how to use Siddha Diagnostic Tools to assess the case through Case Studies / Skill Labs in IPD/OPD Settings and make outcome assessment at the end of each student activity, and discuss them during debriefing sessions.
Activity 2- Inquiry-Based learning. (30 Minutes)
History Taking and performance of diagnostic Techniques: Students should take patient histories, focusing on the onset, duration, and pattern of disease and associated symptoms. Students should assess cases through Siddha diagnostic tools.
Activity 3-Record the documents. (30 Minutes)
Instruct students to document the examination of patients through the prescribed Case Sheet, which contains siddha and modern concepts in a structured format. Prognosis of the cases may be assessed by the student through any of the diagnostic/prognostic tools with the guidance of the teacher.
Activity 4- Case Diagnosis. (30 Minutes)
Interpret findings with Trihumoral vitiation and arrive at a provisional diagnosis
Activity 5- Discussion. (30 Minutes)
Small group discussions on the tri-humoral vitiation, which is peculiar to the presented case, and their clinical significance should be done along with an assessment of

digestive fire.
Activity 6-Co Learning (60 Minutes)
Development of lines of treatment: Discuss and develop various lines of treatment based on aspects of Suvai, Gunam, Veeriyam, and Vibagam, and categorize them as curable and incurable types.
Activity 7: Presentation. (30 Minutes)
At the end of the session, based on the presentation, personalized feedback on students' observation and diagnostic accuracy should be given.

Experiential learning Activity

Experiential-Learning 14.1 : Lab Interpretation for *Aan Maladu* .

Total Activity hours: 2 hours
Activity 1: Case-Based Learning (30 minutes)
Siddha Parameter assessment
PG Student must be divided into small groups by faculties to assess various types of *Aan Maladu* patients in OPD/IPD. Students must gather the diagnostic analytics for various types of *Aan Maladu* by assessing Siddha Parameters like *Envagai Thervu, Manikadai Nool, Yaakai Ilakkanam* and any type of diagnostic methodologies mentioned in Siddha Classical Literatures corelate with *Maruthuva Jothidam* chart interpretations.
Activity 2:Case-Based Learning (15 minutes)
Modern Lab parameter assessment
For the same patient, the modern lab parameters are collected from OPD/IPD patient of a particular type of *Aan Maladu* for the assessment.
Activity 3:Lab Report Interpretation (30 minutes)
Developing interpretation skill
PG Student must analyse the presence of any positive findings of Siddha Diagnostic parameters such as *Envagai Thervu, Manikadai Nool, Yaakai Ilakkanam* and any type of diagnostic methodologies which are seen similar in the recorded patients. If any similarities can be interpreted with Biochemistry values or Semen Analysis or any positive Modern lab investigation, they must be noted.
Activity 4: Discussion/Peer Learning (30 minutes)
Conducting Class Presentation
For the particular grouped case, do the compilation of findings of Siddha and Modern Lab investigation results. This outcome must be constituted as ideal pattern format of lab test interpretation in terms of Siddha principles. Conduct Class Presentation about the diagnostic analytics assessment findings by organizing the collected information and submit the findings to the department.
Activity 5:Presentation (15 minutes)
Evaluation and Feedback

The activity performance will be evaluated by the faculty and provide constructive feedback to students on their observations and reasoning.

Experiential-Learning 14.2 : Lab Interpretation for *Pen Maladu* .

Total Activity hours: 2 hours
Activity 1: Case-Based Learning (30 minutes)
Siddha Parameter assessment
PG Student must be divided into small groups by faculties to assess various types of *Pen Maladu* patients in OPD/IPD. Students must gather the diagnostic analytics for various types of *Pen Maladu* by assessing Siddha Parameters like *Envagai Thervu, Manikadai Nool, Yaakai Ilakkanam* and any type of diagnostic methodologies mentioned in Siddha Classical Literatures and corelate with *Maruthuva Jothidam* chart interpretations.
Activity 2: Case-Based Learning (15 minutes)
Modern Lab parameter assessment
For the same patient, the modern lab parameters are collected from OPD/IPD patient of a particular type of *Pen Maladu* for the assessment.
Activity 3: Lab Report Interpretation (30 minutes)
Developing interpretation skill
PG Student must analyse the presence of any positive findings of Siddha Diagnostic parameters such as *Envagai Thervu, Manikadai Nool, Yaakai Ilakkanam* and any type of diagnostic methodologies which are seen similar in the recorded patients. If any similarities can be interpreted with Biochemistry values or any positive Modern lab investigation, they must be noted.
Activity 4: Discussion/Peer Learning (30 minutes)
Conducting Class Presentation
For the particular grouped case, do the compilation of findings of Siddha and Modern Lab investigation results. This outcome must be constituted as ideal pattern format of lab test interpretation in terms of Siddha principles. Conduct Class Presentation about the diagnostic analytics assessment findings by organizing the collected information and submit the findings to the department.
Activity 5: Presentation (15 minutes)
Evaluation and Feedback
The activity performance will be evaluated by the faculty and provide constructive feedback to students on their observations and reasoning.

Experiential-Learning 14.3 : Siddha and Pharmacogenomics interpretation in diagnosis of Maldu.

Total Activity hours: 2 hours
Activity 1: Case-Based Learning (30 minutes)
Treatment Protocol Assessment
Each PG Student should observe the various treatment protocols for different types of *Thega Ilakkanam* patients in particular type of *Aan Maladu* or *Pen Maladu* patient in

OPD.
Activity 2: Team-Based Learning (30 minutes)
Comparative analysis of Medications
It should be observed that which set of medicine shows best result for that particular *Thega Ilakkanam* of *Aan Maladu* or *Pen Maladu* patient.
Activity 3: Inquiry-Based Learning (30 minutes)
Interpretation with Pharmacogenomics
Each PG Student must interpret with Pharmacogenomics of their treatment protocols.
Activity 4: Peer-Assisted Learning (15 minutes)
Enhancing Prescription choice skill
The outcome must be enumerated as comprehensive diagnostic analysis on appropriate choice of prescription of good set of *(agamaruthuvam,puramaruthuvam)* medicines which suits to that particular type of *Thega Ilakkanam.*
Activity 5: Discussion, Presentation (15 minutes)
Conducting Class Presentation
With this outcome, prescribed line of treatment based on *Suvai, Gunam and Veeriyam* can be framed. It enables prescription of the potential line of treatment grounded in the system's underlying principles,and also try to conclude which type of dhegis are more prone to infertility and who responce to medicine fater can be interpreted from the data collected. Each PG Student must conduct a Class Presentation and discuss about their experiential activity findings of Case Study Analysis. Submit assessment findings to the department. Faculties will provide constructive feedback to Students on their observations and reasoning.

Experiential-Learning 14.4 : *Naadi* Interpretation for gestational woman of Second trimester.

Total Activity hours: 3 hours
Activity 1: Case-Based Learning (30 minutes)
Siddha Parameter assessment
PG Student must be divided into small groups by faculties to assess Second trimester Gestational women in OPD/IPD. Students must assess their *naadi* patterns regularly at the commencement and end of each month of second trimester.
Activity 2: Case-Based Learning (30 minutes)
Modern Lab parameter assessment
For the same Gestational women, the modern lab parameters such as USG findings or biochemistry investigations are collected for the assessment.
Activity 3: Lab Report Interpretation (30 minutes)
Developing interpretation skill
Integrate and correlate Modern Lab Investigations and Siddha *Naadi* patterns observed. The outcome must interpret USG findings of each month of gestatinal period with *Naadi* patterns in them. What kind of *Naadi* patterns are most commonly observed in particular Gestational month mus be noted and also asses aand corelate underlying pathalogy if any through siddha and modern diagnostic parameteres.

Activity 4:Discussion/Peer Learning (1 hour)
Conducting Class Interaction
Conduct Class Interaction about the diagnostic analytics assessment findings by organizing the collected information and submit the findings to the department.
Activity 5: Presentation (30 minutes)
Evaluation and Feedback
The activity performance will be evaluated by the faculty and provide constructive feedback to students on their observations and reasoning.

Experiential-Learning 14.5 : *Naadi* Interpretation for gestational woman of third trimester.

Total Activity hours: 3 hours
Activity 1: Case-Based Learning (30 minutes)
Library Session
Siddha Parameter assessment
PG Students must be divided into small groups by faculties to assess Third trimester Gestational women in OPD/IPD. Students must assess their *naadi* patterns regularly at the commencement and end of each month of Third trimester.
Activity 2: Case-Based Learning (30 minutes)
Peer Learning/Team-Based Learning
Modern Lab parameter assessment
For the same Gestational women, the modern lab parameters such as USG findings or biochemistry investigations are collected for the assessment.
Activity 3: Lab Report Interpretation (30 minutes)
Developing interpretation skill
Integrate and correlate Modern Lab Investigations and Siddha Naadi patterns observed. The outcome must interpret USG findings of each month of gestational period with *Naadi* patterns in them. What kind of *Naadi* patterns are most commonly observed in particular Gestational month must be noted and also asses and correlate underlying pathology if any through siddha and modern diagnostic parameters.
Activity 4: Discussion/Peer Learning (1 hour)
Conducting Class Interaction
Conduct Class Interaction about the diagnostic analytics assessment findings by organizing the collected information and submit the findings to the department.
Activity 5: Presentation (30 minutes)
Evaluation and Feedback
The activity performance will be evaluated by the faculty and provide constructive feedback to students on their observations and reasoning.

Experiential-Learning 14.6 : *Karuchidaivu* with various pathological conditions.

Total Activity hours: (2 hours)
Activity 1: Library Session (30 minutes)
Exploration of Classical Texts
Students must be divided into small groups by faculties and search the Siddha classical texts,decoding the verses of *Agasthiyar Ariviyar Sinthamani (karuvaliyum kaalam,karuvaliyum kaaranam)* and compare with various pathological conditions about *Karuchithaivu.*
Activity 2: Peer Learning/Team-Based Learning (30 minutes)
Decryption of Siddha poetry
Decode the Siddha poetry for each and every versus of classifications of *Karuchithaivu* with corresponding pathologic conditions.
Activity 3: Discussion (30 minutes)
Conducting Interaction Session
Facilitate a Interaction session that insights through assessment findings. Submit assessment findings to the department. Each group must document minimum of 5 comparisons.
Activity 4: Presentation (30 minutes)
Evaluation and Feedback
The activity performance will be evaluated by the faculty and provide constructive feedback to students on their observations and reasoning.

Experiential-Learning 14.7 : *Pancha Patchi* analysis of *Karuchithaivu.*

Total Activity hours: 3 hours
Activity 1: Case-Based Learning (30 minutes)
Pancha Patchi interpretation
Each PG Student must observe the time of entry of *Karuchithaivu* patient in OPD / IPD. With the prior insight upskilling of PG Student in *Pancha Panchi* chart interpretation, each PG Student should be able to assess the *Pancha Patchi* character of the *Karuchithaivu* patient.
Activity 2: Case Diagnosis (30 minutes)
Panchi Patchhi correlation in Clinical Diagnostics
On the basis of *Pancha Bootha Patchi'*s Status, PG Student must be proficient in determining the affected *Bootham*, severity, prognosis and treatment response of patients.
Activity 3: Inquiry-Based Learning (30 minutes)
Clinical Assessment Skill
Minimum of 10 *Karuchithaivu* patients in OPD/IPD must be included in a trial with regular follow up and assess the severity, prognosis and treatment response of the recorded patients and calculate the *Pancha Bootha patchi* character.
Activity 4: Co-Learning (1 hour)
Conducting Class Interaction

Each PG Student must participate in class interaction and discuss about their experiential activity findings as Case Presentation. Submit assessment findings to the department.
Activity 5: Presentation (30 minutes)
Evaluation and Feedback
The activity performance will be evaluated by the faculty and provide constructive feedback to students on their observations and reasoning.

Experiential-Learning 14.8 : *Maruthuva Jothidam* in *Karuchithaivu*

Total Activity Hours: 3 hours
Activity 1: Self-Directed Learning (30 minutes)
Clinical Assessment skill
With the prior insight expertise of PG Student in *Maruthuva Jothidam* interpretation, each PG Student should be able to assess the *Maruthuva Jothidam* based disease prediction of the *Karuchithaivu* patient.
Activity 2: Case-Based Learning (30minutes)
Maruthuva Jothidam Prediction
After acquiring Volunteer consent from the *Karuchithaivu* patient, assess the 5 - 10 *Karuchithaivu* patients in OPD/ IPD for Medical astrology disease prediction.
Activity 3: Inquiry-Based Learning (30 minutes)
Analysis of Planet's position in Horoscope
Each PG Student must predict the ailments of patient through assessing the position of affected planet in their Horoscope.
Activity 4: Peer-Assisted Learning (30 minutes)
Prescription of Pancha Bootha Theory line of treatment
On the basis of *Pancha bootha* Theory, PG Student should be able to prescribe the line of treatment after peer assessment of disease and the planet's characteristics.
Activity 5: Presentation (1 hour)
Conducting Class Presentation
Each PG Student must conduct a Class Presentation and discuss about their experiential activity findings of Case Based Learning. Submit assessment findings to the department.

Experiential-Learning 14.9 : Lab Interpretation for *Karuchithaivu* .

Total Activity hours: 3 hours
Activity 1: Case-Based Learning (30 minutes)
Siddha Parameter assessment
PG Student must be divided into small groups by faculties to assess *Karuchithaivu* patients in OPD/IPD. Students must gather the diagnostic analytics for *Karuchithaivu* by

assessing Siddha Parameters like *Envagai Thervu, Manikadai Nool, Yaakai Ilakkanam* and any type of diagnostic methodologies mentioned in Siddha Classical Literatures.
Activity 2: Case-Based Learning (30 minutes)
Modern Lab parameter assessment
For the same patient, the modern lab parameters are collected from OPD/IPD patient of *Karuchithaivu* for the assessment.
Activity 3: Lab Report interpretation (30 minutes)
Developing interpretation skill
PG Student must analyse the presence of any positive findings of Siddha Diagnostic parameters such as *Ennvagai Thervu, Manikkadai Nool, Yaakai Ilakkanam* and any type of diagnostic methodologies which are seen similar in the recorded patients. If any similarities can be interpreted with Biochemistry values or Biomarkers or any positive Modern lab investigation, they must be noted.
Activity 4: Discussion/Peer Learning (1 hour)
Conducting Class Interaction
For the particular grouped case, do the compilation of findings of Siddha and Modern Lab investigation results. This outcome must be constituted as ideal pattern format of lab test interpretation in terms of Siddha principles. Conduct Class Interaction about the diagnostic analytics assessment findings by organizing the collected information and submit the findings to the department.
Activity 5: Presentation (30 minutes)
Evaluation and Feedback
The activity performance will be evaluated by the faculty and provide constructive feedback to students on their observations and reasoning.

Experiential-Learning 14.10 : Lab Interpretation for *Akkrama Soothagam (*Anovulary cycle*)* .

Total Activity hours: 2 hours
Activity 1: Case-Based Learning (30 minutes)
Siddha Parameter assessment
PG Student must be divided into small groups by faculties to assess *Akkrama Soothagam* patients in OPD/IPD. Students must gather the diagnostic analytics for Akkarama Soothagam by assessing Siddha Parameters like *Ennvagai Thervu, Manikkadai Nool, Yaakai Ilakkanam* and any type of diagnostic methodologies mentioned in Siddha Classical Literatures.
Activity 2: Case-Based Learning (30 minutes)
Modern Lab parameter assessment
For the same patient, the modern lab parameters are collected from OPD/IPD patient of *Akrama Soothagam* for the assessment.
Activity 3: Lab Report Interpretation (30 minutes)
Developing interpretation skill
PG Student must analyse the presence of any positive findings of Siddha Diagnostic parameters such as *Ennvagai Thervu, Manikkadai Nool, Yaakai Ilakkanam* and any type of diagnostic methodologies which are seen similar in the recorded patients. If any similarities can be interpreted with Biochemistry values or Biomarkers or any positive

Modern lab investigation, they must be noted.
Activity 4: Discussion/Peer Learning (15 minutes)
Conducting Class Interaction
For the particular grouped case, do the compilation of findings of Siddha and Modern Lab investigation results. This outcome must be constituted as ideal pattern format of lab test interpretation in terms of Siddha principles. Conduct Class Interaction about the diagnostic analytics assessment findings by organizing the collected information and submit the findings to the department.
Activity 5: Presentation (15 minutes)
Evaluation and Feedback
The activity performance will be evaluated by the faculty and provide constructive feedback to students on their observations and reasoning.

Modular Assessment

Assessment method	**Hour**
Instructions: Conduct a structured Modular assessment. The assessment will be for 50 marks. Keep a structured marking pattern. Use different assessment methods in each module for the semester. Keep a record of the structured pattern used for assessment. Calculate the Modular grade point as per Table 6 Choose any of the below assessment for 50 marks. Interpret the findings of given at least 5 different diagnostic modalities such as X-ray, USG, CT Scan, MRI, Venogram, Arteriogram etc., postulate the possible differential diagnosis and confined diagnosis for 50 marks Or Total Marks: 50 / Time Duration: 4 Hours 1.SAQ AND LAQ ASSESSMENT Total Marks: 20 | Duration: 1 hour 30 minutes ASSESSMENT STRUCTURE General Instructions: Answer THREE questions in total Question 1 is long answer question(10 marks) Question 2,3 is short answer question(5 marks each). 2.OBJECTIVE STRUCTURED CLINICAL EXAMINATION (OSCE) Mark Distribution: 20 marks Duration:1 hour 30 min Clinical Examinations of patients through	4

Yakkai, aga karuvigal, Pura karuvigal (3 marks) Udal Thaathukkal, ennvagai thervu (5 marks) Manikkadai Nool (1mark) Derangement of Mukkutram (2 marks) Mukkutra Verupadu (2 marks) Prescription of the line of treatment based on mukkutram, suvai and gunam,veeriam and based on other underlying siddha principles (5 marks) Noi Kanippu (1 mark) Theerum Theera Nilai (1 mark) VIVA VOCE EXAMINATION (5 Marks) -Time-30 minutes Assessment Structure: Foster a deeper understanding of the underlying mechanisms of the particular disease to inform clinical decision-making and able to interpret the variations of differential diagnosis and Marking Distribution: Knowledge and Understanding (2 marks) Detailed pathological knowledge Understanding of Siddha Diagnostic tools and their application Clinical Application (1 mark) Differential Diagnosis Clinical scenarios Radiological interpretation Communication Skills (2 marks) Clarity of expression Use of precise terminology Ability to explain complex concepts RECORD KEEPING (5 Marks) Time : 30 minutes Assessment Criteria: Clinical Assessments (4 marks) Profound Disease Interpretation Analysis with analogous modern terminologies Radiological integration Written Presentation Skills (1 mark) Innovative Ideas		

Clarity of Concepts
or
Any practical in converted form can be taken for assessment. (25 marks)
and
Any experiential, such as portfolios / reflections / presentations can be taken as an assessment. (25 marks)

Semester No : 6

Module 15 : Baalar Roga Nithaanam (Paediatric Diseases)

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

Describe the etiology, classifications and curable and incurable conditions of *Karuvil thondrum noigal, Balavaatham, Thasai vaatham, Sirakkamba vaatham, Ilam Pillai vaatham, Thodam, Maantham, Kanam, Kakkuvan, Kaasam, Thondai adaippan, Karappan, Akkaram, Sura noi, Sanni noi, Oothal noi, Kaamalai noi,Kudal kirumigal, Kazhichal noi, kudal yetram,Kutham Adithalal noi.*
Interpret Siddha disease classifications and Siddha diagnostic tools with modern diagnosis and modern diagnostic parameters.
Create Diagnostic paradigms to diagnose diseases of *Baalar Roga Nithaanam.*
Apply the differential diagnosis of diseases of *Baalar Roga Nithaanam.*
Design the line of treatment for *Baalar Roga Nithaanam* based on *Mukkutram,* Suvai, Gunam.

M 15 Unit 1 Karuvil thondrum noigal, Balavaatham, Thasaivaatham, Sirakkamba vaatham, Ilam Pillai vaatham, Thodam, Maantham noigal (Congenital Diseases,Myopathy,Autism Spectrum Disorders,Polio myelitis)

15.1.1 Karuvil thondrum noigal 15.1.2 Balavaatham 15.1.3 Thasai vaatham/ Mel moochchu vatham 15.1.4 Sirakkamba vaatham 15.1.5 Ilam Pillai vaatham 15.1.6 Thodam (25 Types)
15.1.6.1. Aann Patchi Thodam
15.1.6.2. Pen Patchi Thodam
15.1.6.3. Malattu Patchi Thodam

15.1.6.4. Ali Patchi Thodam
15.1.6.5. Paravai Thodam
15.1.6.6. Veengu Pul Thodam
15.1.6.7. Thoongu Pul thodam
15.1.6.8. Vilaakoli Kan Pul Thodam
15.1.6.9. Vengan Pul Thodam
15.1.6.10. Karudakan Pul Thodam
15.1.6.11. Sengan Pul Thodam
15.1.6.12. Varatpul Thodam
15.1.6.13. Pei kan Thodam
15.1.6.14. Andhai Pul Thodam
15.1.6.15. Neerpul Thodam
15.1.6.16. Etchi Thodam
15.1.6.17. Echil Thodam
15.1.6.18. Pen Thodam
15.1.6.19. Muttu thodam
15.1.6.20. Kulisa Thodam
15.1.6.21. Kulitha pen Kanda Thodam
15.1.6.22. Kulithaval edutha Thodam
15.1.6.23. Karbam Azhintha Thodam
15.1.6.24. Aan Thodam
15.1.6.25. Therai Thodam 15.1.7 Maantham (21 Types)
15.1.7.1. Vali Maantham
15.1.7.2. Azhal Maantham
15.1.7.3. Iya Maantham
15.1.7.4. Vida Maantham
15.1.7.5. Por Maantham
15.1.7.6. Vaalai Maantham
15.1.7.7. Sura Maantham
15.1.7.8. Neer Maantham
15.1.7.9. Seriyaa Maantham
15.1.7.10. Kattu Maantham

15.1.7.11. Paal Maantham
15.1.7.12. Eri Maantham
15.1.7.13. Thulai Maantham
15.1.7.14. Thalai Maantham
15.1.7.15. Kana Maantham
15.1.7.16. Vali Maantham
15.1.7.17. Suzhi Maantham
15.1.7.18. Mukku Maantham
15.1.7.19. Sanni Maantham
15.1.7.20. Oothu Maantham
15.1.7.21. Veeka Maantham

References: 1,2,3,4,5,6,7,8,14,15,16,17,18,21,27,29,33,42,43,45,48,53,54,55,80,81

3A	3B	3C	3D	3E	3F	3G
CO1,CO2	Describe about etiology, classifications and Signs and symptoms of *Karuvil Thondrum Noigal, Bala Vatham, Mael moochu Vatham* and *Sirakamba Vatham.*	2	Lecture	CAN	Knows-how	L&GD
CO1,CO2	Describe about Iyal,noi varum vali,classifications, Signs and symptoms, curable and incurable conditions of *Thodam* and *Maantham.*	2	Lecture	CAN	Knows-how	L&PPT
CO2,CO4	Perform the examination of patient through *Yaakai, udal Thathukkal, Ennvagai Thervu, Manikkadai Nool, Mukkutram* and prescribe the line of treatment based on *Mukkutram, Suvai, Gunam* and infer the *Theerum,Theera Nilai* of *Mael moochu Vatham* (Muscular Dystrophy) .	2	Practical Training 15.1	PSY-ADT	Shows-how	PER,DIS, C_L,CD, D-BED
CO2,CO4	Perform the examination of patient through *Yaakai, udal Thathukkal, Ennvagai Thervu, Manikkadai Nool, Mukkutram* and prescribe the line of treatment based on *Mukkutram, Suvai, Gunam* and infer the *Theerum, Theera Nilai* of Sirakkamba Vatham (Cerebral Palsy) .	2	Practical Training 15.2	PSY-ADT	Shows-how	CD,C_L, CBL,D-BED,IBL
CO2,CO4	Perform the examination of patient through *Yaakai, udal Thathukkal, Ennvagai Thervu, Manikkadai Nool, Mukkutram* and prescribe the line of treatment based on *Mukkutram,*	2	Practical Training 15.3	PSY-ADT	Shows-how	CD,CBL,IBL,D-

	Suvai, Gunam and infer the *Theerum, Theera Nilai* of *Paal Maantham* (Lactose Intolerance) .					BED,PER
CO2,CO4	Perform the examination of patient through *Yaakai, udal Thathukkal, Ennvagai Thervu, Manikkadai Nool, Mukkutram* and prescribe the line of treatment based on *Mukkutram, Suvai, Gunam* and infer the *Theerum, Theera Nilai* of *Seriya Maantham* .	2	Practical Training 15.4	PSY-ADT	Shows-how	IBL,CBL, CD,C_L, PER
CO6	Construct the Siddha way of Lab interpretation for *Thasai Vatham patients* in OPD/IPD through assessing Siddha and Modern parameters	3	Experiential-Learning 15. 1	AFT-VAL	Does	DIS,PER, CBL,LRI, PL
CO6	Construct the Siddha way of Lab interpretation for *Sirakamba Vatham* patients in OPD/IPD through assessing Siddha and Modern parameters	3	Experiential-Learning 15. 2	PSY-ORG	Does	LS,LRI,P ER,IBL,C D
CO6	Perform pharmacogenomic analysis with various combinations of Siddha medicines for the treatment of *Thasai Vatham* patients with different yakkai ilakkanam and determine which set of medicines(agamaruthuvam,puramaruthuvam) is most suitable for each Thegi type for optimal treatment outcomes.	3	Experiential-Learning 15. 3	PSY-GUD	Does	CBL,PER ,DIS,TBL ,PAL
CO6	Perform pharmacogenomic analysis with various combinations of Siddha medicines for the treatment of *Sirakamba Vatham* patients with different *yakkai ilakkanam* and determine which set of medicines (*agamaruthuvam,puramaruthuvam*) is most suitable for each *Thegi* type for optimal treatment outcomes.	2	Experiential-Learning 15. 4	PSY-GUD	Does	PAL,PER ,CBL,DS N,TBL

M 15 Unit 2 Kanam, Kakkuvan, Kaasam, Thondai adaippan, Lasuna Thaabidham (Primary complex,Whooping cough,Diphtheria/Croup, Tonsilitis)

15.2.1. Kanam (24 Types)
15.2.1.1. Vali Kanam
15.2.1.2. Azhal Kanam
15.2.1.3. Iya Kanam
15.2.1.4. Maandha Kanam
15.2.1.5. Neer Kanam
15.2.1.6. Pirali Kanam

15.2.1.7. Sooli Kanam
15.2.1.8. Suzhi Kanam
15.2.1.9. Maha Kanam
15.2.1.10. Oothu Kanam
15.2.1.11. Varal Kanam
15.2.1.12. Kothippu Kanam
15.2.1.13. Veeka Kanam
15.2.1.14. Pira Kanam
15.2.1.15. Andhaga Kanam
15.2.1.16. Mandhaara Kanam
15.2.1.17. Eri kanam
15.2.1.18. Neeraama Kanam
15.2.1.19. Aama Kanam
15.2.1.20. Mukku Kanam
15.2.1.21. Moola Kanam
15.2.1.22. Peraama Kanam
15.2.1.23. Raththa Kanam
15.2.1.24. Singi Maantha Kanam 15.2.2. Kakkuvaan 15.2.3. Kaasam 15.2.4. Thondai Adaippan 15.2.5. Lasuna Thaabidham

References: 1,2,3,4,5,6,7,8,14,15,16,17,18,27,29,33,42,43,45,53,54,55,80,81,90

3A	3B	3C	3D	3E	3F	3G
CO1,CO2	Describe about the *Iyal,* varumvali , Etiology, Classifications, Clinical features and curable and incurable conditions of *Kanam, Kakkuvan, Kaasam, Thondai Adaippan* and *Lasuna Thaabidham.*	2	Lecture	CAN	Knows-how	L&PPT
CO2,CO4	Perform the examination of patient through *Yaakai, udal Thathukkal, Ennvagai Thervu, Manikkadai Nool, Mukkutram* and prescribe the line of treatment based on *Mukkutram, Suvai, Gunam* and infer the *Theerum Theera Nilai* of *Aama Kanam* .	2	Practical Training 15.5	PSY-ADT	Shows-how	CBL,D-BED,C_L,PER,CD
CO2,CO4	Perform the examination of patient through *Yaakai, udal Thathukkal, Ennvagai Thervu, Manikkadai Nool, Mukkutram* and prescribe the line of treatment based on *Mukkutram,*	2	Practical Training 15.6	PSY-ORG	Shows-how	C_L,PER,DIS,D-

	Suvai, Gunam and infer the *Theerum, Theera Nilai* of *Lasuna Thaabidham* .					BED,IBL
CO6	Compare the classifications of *Kanam* with analogous Pediatric pathologic conditions.	3	Experiential-Learning 15.5	AFT-SET	Does	LS,DIS,PER,TBL,PL
CO6,CO8	Perform pharmacogenomic analysis with various combinations of Siddha medicines for the treatment of *Lasuna Thabitham* patients with different yakkai ilakkanam and determine which set of medicines (agamaruthuvam,puramaruthuvam) is most suitable for each Thegi type for optimal treatment outcomes.	3	Experiential-Learning 15.6	PSY-GUD	Does	PAL,CBL,IBL,PER,DIS

M 15 Unit 3 Karappan noi, Akkaram, Suram Noi, Sanni Noi (Eczematous dermatological conditions,Apthous ulcers,Oral ulcers,Febrile illness,Apoplexy conditions)

15.3.1. *Karappan Noi* (18 Types) 15.3.1.1. *Vali Karappan* 15.3.1.2. *Azhal Karappan* 15.3.1.3. *Iya Karappan* 15.3.1.4. *Ari Karappan* 15.3.1.5. *Oothu Karappan* 15.3.1.6. *Soolai Karappan* 15.3.1.7. *Vedi Karappan* 15.3.1.8. *Mandai karappan* 15.3.1.9. *Pori Karappan* 15.3.1.10.*Sattai Karappan* 15.3.1.11.*Oodu Karappan* 15.3.1.12. *Karungarappan 1*5.3.1.13. *Sengarappan* 15.3.1.14. *Kolli Karappan* 15.3.1.15. *Thoda Karappan* 15.3.1.16. *Vali Karappan* 15.3.1.17. *Varal Karappan* 15.3.1.18. *Veengu Karappan* 15.3.2. *Akkaram* (8 Types) 15.3.2.1. *Sooli Akkaram* 15.3.2.2. *Neethi Akkaram* 15.3.2.3. *Sothi Akkaram* 15.3.2.4. *Veezhi Akkaram* 15.3.2.5. *Kundi Akkaram* 15.3.2.6. *Kabaali Akkaram* 15.3.2.7. *Kumari Akkaram* 15.3.2.8. *Ul Akkaram* 15.3.3. *Suram Noi* (20 Types) 15.3.4. *Sanni Noi* (9 Types)

References: 1,2,3,4,5,6,7,8,14,15,16,17,18,21,27,29,33,42,43,45,48,53,54,55,71,72,80,81,90

3A	3B	3C	3D	3E	3F	3G
CO1,CO2	Describe about the *Iyal,* varum vali, Etiology, Classifications, Clinical features and curable and incurable conditions of about *Karappan, Akkaram, Suram, Sanni.*	2	Lecture	CAN	Knows-how	L&GD
CO2,CO4	Perform the examination of patient through *Yaakai, udal Thathukkal, Ennvagai Thervu, Mankikadai Nool, Mukkutram* and prescribe the line of treatment based on *Mukkutram, Suvai, Gunam* and infer the *Theerum, Theera Nilai* of *Bala Karappan*.	2	Practical Training 15.7	PSY-ADT	Shows-how	CD,CBL,D-BED,C_L,IBL
CO2,CO4	Perform the examination of patient through *Yaakai, udal Thathukkal, Ennvagai Thervu, Manikkadai Nool, Mukkutram* and prescribe the line of treatment based on *Mukkutram,*	1	Practical Training 15.8	PSY-ADT	Shows-how	PER,C_L,IBL,D-

	Suvai, Gunam and infer the *Theerum, Theera Nilai* of *Akkaram*					BED,DIS
CO2,CO4	Perform the examination of patient through *Yaakai, udal Thathukkal, Ennvagai Thervu, Manikkadai Nool, Mukkutram* and prescribe the line of treatment based on *Mukkutram, Suvai, Gunam* and infer the *Theerum, Theera Nilai* of *Suram* .	1	Practical Training 15.9	PSY-ADT	Shows-how	CD,DIS,CBL,IBL
CO6	Construct the Siddha way of Lab interpretation for *Bala Karappan* patients in OPD/IPD through assessing Siddha and Modern parameters	3	Experiential-Learning 15.7	PSY-GUD	Does	PL,PER,DL,CBL,LRI
CO2,CO4	Perform pharmacogenomic analysis with various combinations of Siddha medicines for the treatment of *Bala Karappan* patients with different *yakkai ilakkanam* and determine which set of medicines *(agamaruthuvam,puramaruthuvam)* is most suitable for each *Thegi* type for optimal treatment outcomes.	3	Experiential-Learning 15.8	AFT-SET	Does	TBL,PAL,PER,IBL,DIS

M 15 Unit 4 Oothal Noi, Kaamalai Noi,Kudal kirumi Noigal, Kazhichal Noi, Kudal Yetram,Kutham Adithalal Noi (Oedema/Plethora/Anasarca):(Apathy/Jaundice/Reduced libido):(Worm infestations):(Diarrhral conditions):(Instenal Herniation/Obstruction/Volvulus conditions)

15.4.1. Oothal Noi 15.4.2. Kaamalai Noi 15.4.3. Kudal kirumi Noigal
15.4.3.1. MasaraiPuzhuNoi
15.4.3.2. KeeriPoochi
15.4.3.3. Naaga poochi 15.4.4. Kazhichal Noi 15.4.5. Kudalyetram 15.4.6. Kutham adithalal Noi

References: 1,2,3,4,5,6,7,8,14,15,16,17,18,27,29,34,42,43,45,48,50,51,53,54,55,80,81

3A	3B	3C	3D	3E	3F	3G
CO1,CO2	Describe about the Etiology, Onset, Classifications, Clinical features and Curable and incurable conditions of *Oothal, Kaamalai, Kudal Kirumigal,Kudal Pithukkam, Kudal yetrum,Kazhichal* and *Kutham Adithalal.*	2	Lecture	CAN	Knows-how	L_VC
CO2,CO4	Perform the examination of patient through *Yaakai, udal Thathukkal, Ennvagai Thervu, Manikkadai Nool, Mukkutram* and prescribe the line of treatment based on *Mukkutram, Suvai, Gunam* and infer the *Theerum, Theera Nilai* of *Kudal Kirumigal.*	2	Practical Training 15.10	PSY-ADT	Shows-how	PER,C_L,IBL,D-BED,DIS

CO2,CO4	Perform the examination of patient through *Yaakai, udal Thathukkal, Ennvagai Thervu, Manikkadai Nool, Mukkutram* and prescribe the line of treatment based on *Mukkutram, Suvai, Gunam* and infer the *Theerum, Theera Nilai* of *Kutham Adithalal*.	2	Practical Training 15.1 1	PSY-ADT	Shows-how	DIS,PER, CBL,D-BED,C_L
CO6	Compare the classifications of Kudal Kirumigal with analogous types of worm Infestations with corresponding Pediatric pathologic worm Infestation conditions.	1	Experiential-Learning 15. 9	AFT-SET	Does	TBL,DIS, PER,PL
CO6,CO8	Integrate the recent diagnostic screening methods of Neonatal Jaundice with Siddha Diagnostic tools.	1	Experiential-Learning 15. 10	PSY-GUD	Does	CBL,DIS, JC,LS,PE R
CO6	Construct the Siddha way of Lab interpretation for *Kudal Kirumigal / Kudal Pithukkam / Kutham Adithalal* patients in OPD/IPD through assessing Siddha and Modern parameters	1	Experiential-Learning 15. 11	PSY-MEC	Does	LRI,CBL, PER,PL

Practical Training Activity

Practical Training 15.1 : Diagnosis of *Mael moochu Vatham* (Muscular Dystrophy).

Total Activity hours- 2 hours
Teachers overview
The teacher clearly outlines the objectives of the practical session. A brief introduction to the importance of the diagnosis of a patient should be detailed. Either original cases or scenarios, or case videos may be used.
Activity 1- Case-Based Learning/Demonstration Bedside. (15 Minutes)
The teacher demonstrates how to use Siddha Diagnostic Tools to assess the case through Case Studies / Skill Labs in IPD/OPD Settings and make outcome assessment at the end of each student activity, and discuss them during debriefing sessions.
Activity 2- Inquiry-Based learning. (15 Minutes)
History Taking and performance of diagnostic Techniques: Students should take patient histories, focusing on the onset, duration, and pattern of disease and associated symptoms. Students should assess cases through Siddha diagnostic tools.
Activity 3-Record the documents. (15 Minutes)
Instruct students to document the examination of patients through the prescribed Case Sheet, which contains siddha and modern concepts in a structured format. Prognosis of the cases may be assessed by the student through any of the diagnostic/prognostic tools with the guidance of the teacher.
Activity 4- Case Diagnosis. (15 Minutes)

Interpret findings with Trihumoral vitiation and arrive at a provisional diagnosis
Activity 5- Discussion. (15 Minutes)
Small group discussions on the tri-humoral vitiation, which is peculiar to the presented case, and their clinical significance should be done along with an assessment of digestive fire.
Activity 6-Co Learning (30 Minutes)
Development of lines of treatment: Discuss and develop various lines of treatment based on aspects of *Suvai, Gunam, Veeriyam, and Vibagam*, and categorize them as curable and incurable types.
Activity 7: Presentation. (15 Minutes)
At the end of the session, based on the presentation, personalized feedback on students' observation and diagnostic accuracy should be given.

Practical Training 15.2 : Diagnosis of *Sirakkamba Vatham*(Cerebral Palsy).

Total Activity hours- 2 hours
Teachers overview
The teacher clearly outlines the objectives of the practical session. A brief introduction to the importance of the diagnosis of a patient should be detailed. Either original cases or scenarios, or case videos may be used.
Activity 1- Case-Based Learning/Demonstration Bedside. (15 Minutes)
The teacher demonstrates how to use Siddha Diagnostic Tools to assess the case through Case Studies / Skill Labs in IPD/OPD Settings and make outcome assessment at the end of each student activity, and discuss them during debriefing sessions.
Activity 2- Inquiry-Based learning. (15 Minutes)
History Taking and performance of diagnostic Techniques: Students should take patient histories, focusing on the onset, duration, and pattern of disease and associated symptoms. Students should assess cases through Siddha diagnostic tools.
Activity 3-Record the documents. (15 Minutes)
Instruct students to document the examination of patients through the prescribed Case Sheet, which contains siddha and modern concepts in a structured format. Prognosis of the cases may be assessed by the student through any of the diagnostic/prognostic tools with the guidance of the teacher.
Activity 4- Case Diagnosis. (15 Minutes)
Interpret findings with Trihumoral vitiation and arrive at a provisional diagnosis
Activity 5- Discussion. (15 Minutes)
Small group discussions on the tri-humoral vitiation, which is peculiar to the presented case, and their clinical significance should be done along with an assessment of digestive fire.
Activity 6-Co Learning (30 Minutes)
Development of lines of treatment: Discuss and develop various lines of treatment based on aspects of Suvai, Gunam, Veeriyam, and Vibagam, and categorize them as curable and incurable types.

Activity 7: Presentation. (15 Minutes)
At the end of the session, based on the presentation, personalized feedback on students' observation and diagnostic accuracy should be given.

Practical Training 15.3 : Diagnosis of *Paal Maantham* (Lactose Intolerance) .

Total Activity hours- 2 hours
Teachers overview
The teacher clearly outlines the objectives of the practical session. A brief introduction to the importance of the diagnosis of a patient should be detailed. Either original cases or scenarios, or case videos may be used.
Activity 1- Case-Based Learning/Demonstration Bedside. (15 Minutes)
The teacher demonstrates how to use Siddha Diagnostic Tools to assess the case through Case Studies / Skill Labs in IPD/OPD Settings and make outcome assessment at the end of each student activity, and discuss them during debriefing sessions.
Activity 2- Inquiry-Based learning. (15 Minutes)
History Taking and performance of diagnostic Techniques: Students should take patient histories, focusing on the onset, duration, and pattern of disease and associated symptoms. Students should assess cases through Siddha diagnostic tools.
Activity 3-Record the documents. (15 Minutes)
Instruct students to document the examination of patients through the prescribed Case Sheet, which contains siddha and modern concepts in a structured format. Prognosis of the cases may be assessed by the student through any of the diagnostic/prognostic tools with the guidance of the teacher.
Activity 4- Case Diagnosis. (15 Minutes)
Interpret findings with Trihumoral vitiation and arrive at a provisional diagnosis
Activity 5- Discussion. (15 Minutes)
Small group discussions on the tri-humoral vitiation, which is peculiar to the presented case, and their clinical significance should be done along with an assessment of digestive fire.
Activity 6-Co Learning (30 Minutes)
Development of lines of treatment: Discuss and develop various lines of treatment based on aspects of *Suvai, Gunam, Veeriyam, and Vibagam*, and categorize them as curable and incurable types.
Activity 7: Presentation. (15 Minutes)
At the end of the session, based on the presentation, personalized feedback on students' observation and diagnostic accuracy should be given.

Practical Training 15.4 : Diagnosis of *Seriya Maantham.*

Total Activity hours- 2 hours
Teachers overview

The teacher clearly outlines the objectives of the practical session. A brief introduction to the importance of the diagnosis of a patient should be detailed. Either original cases or scenarios, or case videos may be used.

Activity 1- Case-Based Learning/Demonstration Bedside. (15 Minutes)

The teacher demonstrates how to use Siddha Diagnostic Tools to assess the case through Case Studies / Skill Labs in IPD/OPD Settings and make outcome assessment at the end of each student activity, and discuss them during debriefing sessions.

Activity 2- Inquiry-Based learning. (15 Minutes)

History Taking and performance of diagnostic Techniques: Students should take patient histories, focusing on the onset, duration, and pattern of disease and associated symptoms. Students should assess cases through Siddha diagnostic tools.

Activity 3-Record the documents. (15 Minutes)

Instruct students to document the examination of patients through the prescribed Case Sheet, which contains siddha and modern concepts in a structured format. Prognosis of the cases may be assessed by the student through any of the diagnostic/prognostic tools with the guidance of the teacher.

Activity 4- Case Diagnosis. (15 Minutes)

Interpret findings with Trihumoral vitiation and arrive at a provisional diagnosis

Activity 5- Discussion. (15 Minutes)

Small group discussions on the tri-humoral vitiation, which is peculiar to the presented case, and their clinical significance should be done along with an assessment of digestive fire.

Activity 6-Co Learning (30 Minutes)

Development of lines of treatment: Discuss and develop various lines of treatment based on aspects of *Suvai, Gunam, Veeriyam, and Vibagam*, and categorize them as curable and incurable types.

Activity 7: Presentation. (15 Minutes)

At the end of the session, based on the presentation, personalized feedback on students' observation and diagnostic accuracy should be given.

Practical Training 15.5 : Diagnosis of *Aama Kanam* .

Total Activity hours- 2 hours

Teachers overview

The teacher clearly outlines the objectives of the practical session. A brief introduction to the importance of the diagnosis of a patient should be detailed. Either original cases or scenarios, or case videos may be used.

Activity 1- Case-Based Learning/Demonstration Bedside. (15 Minutes)

The teacher demonstrates how to use Siddha Diagnostic Tools to assess the case through Case Studies / Skill Labs in IPD/OPD Settings and make outcome assessment at the end of each student activity, and discuss them during debriefing sessions.

Activity 2- Inquiry-Based learning. (15 Minutes)

History Taking and performance of diagnostic Techniques: Students should take patient histories, focusing on the onset, duration, and pattern of disease and associated

symptoms. Students should assess cases through Siddha diagnostic tools.
Activity 3-Record the documents. (15 Minutes)
Instruct students to document the examination of patients through the prescribed Case Sheet, which contains siddha and modern concepts in a structured format. Prognosis of the cases may be assessed by the student through any of the diagnostic/prognostic tools with the guidance of the teacher.
Activity 4- Case Diagnosis. (15 Minutes)
Interpret findings with Trihumoral vitiation and arrive at a provisional diagnosis
Activity 5- Discussion. (15 Minutes)
Small group discussions on the tri-humoral vitiation, which is peculiar to the presented case, and their clinical significance should be done along with an assessment of digestive fire.
Activity 6-Co Learning (30 Minutes)
Development of lines of treatment: Discuss and develop various lines of treatment based on aspects of *Suvai, Gunam, Veeriyam, and Vibagam,* and categorize them as curable and incurable types.
Activity 7: Presentation. (15 Minutes)
At the end of the session, based on the presentation, personalized feedback on students' observation and diagnostic accuracy should be given.

Practical Training 15.6 : Diagnosis of *Lasuna Thaabidham* .

Total Activity hours- 2 hours
Teachers overview
The teacher clearly outlines the objectives of the practical session. A brief introduction to the importance of the diagnosis of a patient should be detailed. Either original cases or scenarios, or case videos may be used.
Activity 1- Case-Based Learning/Demonstration Bedside. (15 Minutes)
The teacher demonstrates how to use Siddha Diagnostic Tools to assess the case through Case Studies / Skill Labs in IPD/OPD Settings and make outcome assessment at the end of each student activity, and discuss them during debriefing sessions.
Activity 2- Inquiry-Based learning. (15 Minutes)
History Taking and performance of diagnostic Techniques: Students should take patient histories, focusing on the onset, duration, and pattern of disease and associated symptoms. Students should assess cases through Siddha diagnostic tools.
Activity 3-Record the documents. (15 Minutes)
Instruct students to document the examination of patients through the prescribed Case Sheet, which contains siddha and modern concepts in a structured format. Prognosis of the cases may be assessed by the student through any of the diagnostic/prognostic tools with the guidance of the teacher.
Activity 4- Case Diagnosis. (15 Minutes)
Interpret findings with Trihumoral vitiation and arrive at a provisional diagnosis
Activity 5- Discussion. (15 Minutes)

Small group discussions on the tri-humoral vitiation, which is peculiar to the presented case, and their clinical significance should be done along with an assessment of digestive fire.
Activity 6-Co Learning (30 Minutes)
Development of lines of treatment: Discuss and develop various lines of treatment based on aspects of *Suvai, Gunam, Veeriyam, and Vibagam,* and categorize them as curable and incurable types.
Activity 7: Presentation. (15 Minutes)
At the end of the session, based on the presentation, personalized feedback on students' observation and diagnostic accuracy should be given.

Practical Training 15.7 : Diagnosis of *Bala Karappan* .

Total Activity hours- 2 hours
Teachers overview
The teacher clearly outlines the objectives of the practical session. A brief introduction to the importance of the diagnosis of a patient should be detailed. Either original cases or scenarios, or case videos may be used.
Activity 1- Case-Based Learning/Demonstration Bedside. (15 Minutes)
The teacher demonstrates how to use Siddha Diagnostic Tools to assess the case through Case Studies / Skill Labs in IPD/OPD Settings and make outcome assessment at the end of each student activity, and discuss them during debriefing sessions.
Activity 2- Inquiry-Based learning. (15 Minutes)
History Taking and performance of diagnostic Techniques: Students should take patient histories, focusing on the onset, duration, and pattern of disease and associated symptoms. Students should assess cases through Siddha diagnostic tools.
Activity 3-Record the documents. (15 Minutes)
Instruct students to document the examination of patients through the prescribed Case Sheet, which contains siddha and modern concepts in a structured format. Prognosis of the cases may be assessed by the student through any of the diagnostic/prognostic tools with the guidance of the teacher.
Activity 4- Case Diagnosis. (15 Minutes)
Interpret findings with Trihumoral vitiation and arrive at a provisional diagnosis
Activity 5- Discussion. (15 Minutes)
Small group discussions on the tri-humoral vitiation, which is peculiar to the presented case, and their clinical significance should be done along with an assessment of digestive fire.
Activity 6-Co Learning (30 Minutes)
Development of lines of treatment: Discuss and develop various lines of treatment based on aspects of *Suvai, Gunam, Veeriyam, and Vibagam,* and categorize them as curable and incurable types.
Activity 7: Presentation. (15 Minutes)
At the end of the session, based on the presentation, personalized feedback on students' observation and diagnostic accuracy should be given.

Practical Training 15.8 : Diagnosis of *Akkaram*(Malnutrition).

Total Activity hours- 1 hours
Teachers overview
The teacher clearly outlines the objectives of the practical session. A brief introduction to the importance of the diagnosis of a patient should be detailed. Either original cases or scenarios, or case videos may be used.
Activity 1- Case-Based Learning/Demonstration Bedside. (5 Minutes)
The teacher demonstrates how to use Siddha Diagnostic Tools to assess the case through Case Studies / Skill Labs in IPD/OPD Settings and make outcome assessment at the end of each student activity, and discuss them during debriefing sessions.
Activity 2- Inquiry-Based learning. (10 Minutes)
History Taking and performance of diagnostic Techniques: Students should take patient histories, focusing on the onset, duration, and pattern of disease and associated symptoms. Students should assess cases through Siddha diagnostic tools.
Activity 3-Record the documents. (10 Minutes)
Instruct students to document the examination of patients through the prescribed Case Sheet, which contains siddha and modern concepts in a structured format. Prognosis of the cases may be assessed by the student through any of the diagnostic/prognostic tools with the guidance of the teacher.
Activity 4- Case Diagnosis. (5 Minutes)
Interpret findings with Trihumoral vitiation and arrive at a provisional diagnosis
Activity 5- Discussion. (10 Minutes)
Small group discussions on the tri-humoral vitiation, which is peculiar to the presented case, and their clinical significance should be done along with an assessment of digestive fire.
Activity 6-Co Learning (10 Minutes)
Development of lines of treatment: Discuss and develop various lines of treatment based on aspects of *Suvai, Gunam, Veeriyam, and Vibagam,* and categorize them as curable and incurable types.
Activity 7: Presentation. (10 Minutes)
At the end of the session, based on the presentation, personalized feedback on students' observation and diagnostic accuracy should be given.

Practical Training 15.9 : Diagnosis of *Suram* .

Total Activity hours- 1 hours
Teachers overview
The teacher clearly outlines the objectives of the practical session. A brief introduction to the importance of the diagnosis of a patient should be detailed. Either original cases or scenarios, or case videos may be used.
Activity 1- Case-Based Learning/Demonstration Bedside. (5 Minutes)

The teacher demonstrates how to use Siddha Diagnostic Tools to assess the case through Case Studies / Skill Labs in IPD/OPD Settings and make outcome assessment at the end of each student activity, and discuss them during debriefing sessions.
Activity 2- Inquiry-Based learning. (10 Minutes)
History Taking and performance of diagnostic Techniques: Students should take patient histories, focusing on the onset, duration, and pattern of disease and associated symptoms. Students should assess cases through Siddha diagnostic tools.
Activity 3-Record the documents. (10 Minutes)
Instruct students to document the examination of patients through the prescribed Case Sheet, which contains siddha and modern concepts in a structured format. Prognosis of the cases may be assessed by the student through any of the diagnostic/prognostic tools with the guidance of the teacher.
Activity 4- Case Diagnosis. (5 Minutes)
Interpret findings with Trihumoral vitiation and arrive at a provisional diagnosis
Activity 5- Discussion. (10 Minutes)
Small group discussions on the tri-humoral vitiation, which is peculiar to the presented case, and their clinical significance should be done along with an assessment of digestive fire.
Activity 6-Co Learning (10 Minutes)
Development of lines of treatment: Discuss and develop various lines of treatment based on aspects of *Suvai, Gunam, Veeriyam, and Vibagam*, and categorize them as curable and incurable types.
Activity 7: Presentation. (10 Minutes)
At the end of the session, based on the presentation, personalized feedback on students' observation and diagnostic accuracy should be given.

Practical Training 15.10 : Diagnosis of *Kudal kirumigal* .

Total Activity hours- 2 hours
Teachers overview
The teacher clearly outlines the objectives of the practical session. A brief introduction to the importance of the diagnosis of a patient should be detailed. Either original cases or scenarios, or case videos may be used.
Activity 1- Case-Based Learning/Demonstration Bedside. (15 Minutes)
The teacher demonstrates how to use Siddha Diagnostic Tools to assess the case through Case Studies / Skill Labs in IPD/OPD Settings and make outcome assessment at the end of each student activity, and discuss them during debriefing sessions.
Activity 2- Inquiry-Based learning. (15 Minutes)
History Taking and performance of diagnostic Techniques: Students should take patient histories, focusing on the onset, duration, and pattern of disease and associated symptoms. Students should assess cases through Siddha diagnostic tools.
Activity 3-Record the documents. (15 Minutes)
Instruct students to document the examination of patients through the prescribed Case Sheet, which contains siddha and modern concepts in a structured format. Prognosis of

the cases may be assessed by the student through any of the diagnostic/prognostic tools with the guidance of the teacher.
Activity 4- Case Diagnosis. (15 Minutes)
Interpret findings with Trihumoral vitiation and arrive at a provisional diagnosis
Activity 5- Discussion. (15 Minutes)
Small group discussions on the tri-humoral vitiation, which is peculiar to the presented case, and their clinical significance should be done along with an assessment of digestive fire.
Activity 6-Co Learning (30 Minutes)
Development of lines of treatment: Discuss and develop various lines of treatment based on aspects of *Suvai, Gunam, Veeriyam, and Vibagam,* and categorize them as curable and incurable types.
Activity 7: Presentation. (15 Minutes)
At the end of the session, based on the presentation, personalized feedback on students' observation and diagnostic accuracy should be given.

Practical Training 15.11 : Diagnosis of *Kutham Adithalal* .

Total Activity hours- 2 hours
Teachers overview
The teacher clearly outlines the objectives of the practical session. A brief introduction to the importance of the diagnosis of a patient should be detailed. Either original cases or scenarios, or case videos may be used.
Activity 1- Case-Based Learning/Demonstration Bedside. (15 Minutes)
The teacher demonstrates how to use Siddha Diagnostic Tools to assess the case through Case Studies / Skill Labs in IPD/OPD Settings and make outcome assessment at the end of each student activity, and discuss them during debriefing sessions.
Activity 2- Inquiry-Based learning. (15 Minutes)
History Taking and performance of diagnostic Techniques: Students should take patient histories, focusing on the onset, duration, and pattern of disease and associated symptoms. Students should assess cases through Siddha diagnostic tools.
Activity 3-Record the documents. (15 Minutes)
Instruct students to document the examination of patients through the prescribed Case Sheet, which contains siddha and modern concepts in a structured format. Prognosis of the cases may be assessed by the student through any of the diagnostic/prognostic tools with the guidance of the teacher.
Activity 4- Case Diagnosis. (15 Minutes)
Interpret findings with Trihumoral vitiation and arrive at a provisional diagnosis
Activity 5- Discussion. (15 Minutes)
Small group discussions on the tri-humoral vitiation, which is peculiar to the presented case, and their clinical significance should be done along with an assessment of digestive fire.

Activity 6-Co Learning (30 Minutes)
Development of lines of treatment: Discuss and develop various lines of treatment based on aspects of *Suvai, Gunam, Veeriyam, and Vibagam*, and categorize them as curable and incurable types.
Activity 7: Presentation. (15 Minutes)
At the end of the session, based on the presentation, personalized feedback on students' observation and diagnostic accuracy should be given.

Experiential learning Activity

Experiential-Learning 15.1 : Lab Interpretation for *Thasai Vatham.*

Total Activity hours: 3 hours
Activity 1: Case-Based Learning (30 minutes)
Siddha Parameter assessment
PG Student must be divided into small groups by faculties to assess *Thasai Vatham* patients in OPD/IPD. Students must gather the diagnostic analytics for Thasai Vatham by assessing Siddha Parameters like *Envagai Thervu, Manikadai Nool, Yaakai Ilakkanam* and any type of diagnostic methodologies mentioned in Siddha Classical Literatures.
Activity 2: Case-Based Learning (30 minutes)
Modern Lab parameter assessment
For the same patient, the modern lab parameters are collected from OPD/IPD patient of *Thasai Vatham* for the assessment.
Activity 3: Lab Report Interpretation (30 minutes)
Developing interpretation skill
PG Student must analyse the presence of any positive findings of Siddha Diagnostic parameters such as *Envagai Thervu, Manikadai Nool, Yaakai Ilakkanam* and any type of diagnostic methodologies which are seen similar in the recorded patients. If any similarities can be interpreted with Biochemistry values or Biomarkers or any positive Modern lab investigation, they must be noted.
Activity 4: Discussion/Peer Learning(1 hour)
Conducting Class Presentation
For the particular grouped case, do the compilation of findings of Siddha and Modern Lab investigation results. This outcome must be constituted as ideal pattern format of lab test interpretation in terms of Siddha principles. Conduct Class Discussion about the diagnostic analytics assessment findings by organizing the collected information and submit the findings to the department.
Activity 5: Presentation (30 minutes)
Evaluation and Feedback
The activity performance will be evaluated by the faculty and provide constructive feedback to students on their observations and reasoning.

Experiential-Learning 15.2 : Lab Interpretation for Sirakamba Vatham.

Total Activity hours: 3 hours
Activity 1: Case-Based Learning (30 minutes)
Siddha Parameter Assessment
PG Student must be divided into small groups by faculties to assess *Sirakamba Vatham* patients in OPD/IPD. Students must gather the diagnostic analytics for *Sirakamba Vatham* by assessing Siddha Parameters like *Ennvagai Thervu, Manikkadai Nool, Yaakai Ilakkanam* and any type of diagnostic methodologies mentioned in Siddha Classical Literatures.
Activity 2: Case-Based Learning (30 minutes)
Modern Lab parameter assessment
For the same patient, the modern lab parameters are collected from OPD/IPD patient of *Sirakamba Vatham* for the assessment.
Activity 3: lab Report Interpretation (30 minutes)
Developing interpretation skill
PG Student must analyse the presence of any positive findings of Siddha Diagnostic parameters such as *Ennvagai Thervu, Manikkadai Nool, Yaakai Ilakkanam* and any type of diagnostic methodologies which are seen similar in the recorded patients. If any similarities can be interpreted with Biochemistry values or Biomarkers or any positive Modern lab investigation, they must be noted.
Activity 4: Discussion/Peer Learning (1 hour)
Conducting Class Interaction
For the particular grouped case, do the compilation of findings of Siddha and Modern Lab investigation results. This outcome must be constituted as ideal pattern format of lab test interpretation in terms of Siddha principles. Conduct Class Discussion about the diagnostic analytics assessment findings by organizing the collected information and submit the findings to the department.
Activity 5: Presentation (30 minutes)
Evaluation and Feedback
The activity performance will be evaluated by the faculty and provide constructive feedback to students on their observations and reasoning.

Experiential-Learning 15.3 : Siddha and Pharmacogenomics interpretation in diagnosis of *Thasai vadham.*

Total Activity hour : 3 hours
Activity 1: Treatment Protocol Assessment (30 minutes)
Each PG Student should observe the various treatment protocols for different types of Thega Ilakkanam patients in particular type of Thasai Vatham patient in OPD.
Activity 2: Comparative analysis of Medications (30 minutes)
It should be observed that which set of medicine (agamaruthuvam,puramaruthuvam)shows best result for that particular Thega Ilakkanam of Thasai Vatham patient.
Activity 3: Interpretation with Pharmacogenomics (30 minutes)

Each PG Student must interpret with Pharmacogenomics of their treatment protocols.
Activity 4: Enhancing Prescription choice skill (30 minutes)
The outcome must be enumerated as comprehensive diagnostic analysis on appropriate choice of prescription of good set of Internal medicines and External medicines which suits to that particular type of Thega Ilakkanam.
Activity 5: Conducting Class Presentation (1 hour)
With this outcome, prescribed line of treatment based on Suvai, Gunam and Veeriyam can be framed. It enables prescription of the potential line of treatment grounded in the system's underlying principles. Each PG Student must conduct a Class Presentation and discuss about their experiential activity findings of Case Study Analysis. Submit assessment findings to the department. Faculties will provide constructive feedback to Students on their observations and reasoning

Experiential-Learning 15.4 : Siddha and Pharmacogenomics interpretation in diagnosis of *Sirakamba vadham*.

Total Activity hours: 2 hours
Activity 1: Case-Based Learning(30 minutes)
Treatment Protocol Assessment
Each PG Student should observe the various treatment protocols for different types of *Thega Ilakkanam* patients in particular type of *Sirakamba Vatham* patient in OPD.
Activity 2: Team-Based Learning (30 minutes)
Comparative analysis of Medications
It should be observed that which set of medicine *(agamaruthuvam,puramaruthuvam)* shows best result for that particular *Thega Ilakkanam* of *Sirakamba Vatham* patient.
Activity 3: Inquiry-Based Learning (30 minutes)
Interpretation with Pharmacogenomics
Each PG Student must interpret with Pharmacogenomics of their treatment protocols.
Activity 4: Peer-Assisted Learning (15 minutes)
Enhancing Prescription choice skill
The outcome must be enumerated as comprehensive diagnostic analysis on appropriate choice of prescription of good set of Internal medicines and External medicines which suits to that particular type of *Thega Ilakkanam.*
Activity 5: Discussion, Presentation (15 minutes)
Conducting Class Presentation
With this outcome, prescribed line of treatment based on *Suvai, Gunam and Veeriyam* can be framed. It enables prescription of the potential line of treatment grounded in the system's underlying principles. Each PG Student must conduct a Class Presentation and discuss about their experiential activity findings of Case Study Analysis. Submit assessment findings to the department. Faculties will provide constructive feedback to Students on their observations and reasoning.

Experiential-Learning 15.5 : *Kanam* with Pediatric pathologic conditions

Total Activity hours: (3 hours)
Activity 1: Library Session (30 minutes)
Exploration of Classical Texts
Students must be divided into small groups by faculties and search the Siddha classical texts about *Kanam types.*
Activity 2: Peer-Learning/Team Based Learning(1 hour)
Decryption of Siddha poetry
Decode the Siddha poetry for each and every versus of classifications of *Kanam* types with corresponding Pediatric pathologic conditions.
Activity 3: Discussion (1 hour)
Conducting Interaction Session
Facilitate an Interaction session that insights through assessment findings. Submit assessment findings to the department. Each group must document minimum of 5 comparisons.
Activity 4: Presentation (30 minutes)
Evaluation and Feedback
The activity performance will be evaluated by the faculty and provide constructive feedback to students on their observations and reasoning.

Experiential-Learning 15.6 : Siddha and Pharmacogenomics interpretation in diagnosis of *Lasuna Thabitham.*

Total Activity hours: 3 hours
Activity 1: Case-Based Learning (30 minutes)
Treatment Protocol Assessment
Each PG Student should observe the various treatment protocols for different types of Thega Ilakkanam patients in particular type of Lasuna Thabitham patient in OPD.
Activity 2: Team-Based Learning (30 minutes)
Comparative analysis of Medications
It should be observed that which set of medicine (agamaruthuvam,puramaruthuvam) shows best result for that particular Thega Ilakkanam of Lasuna Thabitham patient.
Activity 3: Inquiry-Based Learning (30 minutes)
Interpretation with Pharmacogenomics
Each PG Student must interpret with Pharmacogenomics of their treatment protocols.
Activity 4: Peer-assisted Learning (30 minutes)
Enhancing Prescription choice skill
The outcome must be enumerated as comprehensive diagnostic analysis on appropriate choice of prescription of good set of Internal medicines and External medicines which suits to that particular type of Thega Ilakkanam.
Activity 5: Discussion, Presentation (1 hour)

Conducting Class Presentation
With this outcome, prescribed line of treatment based on Suvai, Gunam and Veeriyam can be framed. It enables prescription of the potential line of treatment grounded in the system's underlying principles. Each PG Student must conduct a Class Presentation and discuss about their experiential activity findings of Case Study Analysis. Submit assessment findings to the department. Faculties will provide constructive feedback to Students on their observations and reasoning.

Experiential-Learning 15.7 : Lab Interpretation for *Bala Karappan.*

Total Activity hours: 3 hours
Activity 1: Case-Based Learning (30 minutes)
Treatment Protocol Assessment
Each PG Student should observe the various treatment protocols for different types of *Thega Ilakkanam* patients in particular type of *Bala Karappan* patient in OPD.
Activity 2: Case-Based Learning (30 minutes)
Comparative analysis of Medications
It should be observed that which set of medicine(*agamaruthuvam,puramaruthuvam)* shows best result for that particular *Thega Ilakkanam* of *Bala Karappan* patient.
Activity 3: Lab Report Interpretation (30 minutes)
Interpretation with Pharmacogenomics
Each PG Student must interpret with Pharmacogenomics of their treatment protocols.
Activity 4: Discussion/Peer Learning (30 minutes)
Enhancing Prescription choice skill
The outcome must be enumerated as comprehensive diagnostic analysis on appropriate choice of prescription of good set of Internal medicines and External medicines which suits to that particular type of *Thega Ilakkanam.*
Activity 5: Presentation (1 hour)
Conducting Class Presentation
With this outcome, prescribed line of treatment based on *Suvai, Gunam and Veeriyam* can be framed. It enables prescription of the potential line of treatment grounded in the system's underlying principles. Each PG Student must conduct a Class Presentation and discuss about their experiential activity findings of Case Study Analysis. Submit assessment findings to the department. Faculties will provide constructive feedback to Students on their observations and reasoning.

Experiential-Learning 15.8 : Siddha and Pharmacogenomics interpretation in diagnosis of *Bala Karappan* .

Total Activity hours: 3 hours
Activity 1:Case-Based Learning (30 minutes)
Treatment Protocol Assessment

Each PG Student should observe the various treatment protocols for different types of *Thega Ilakkanam* patients in particular type of *Bala Karappan* patient in OPD.
Activity 2: Team-Based Learning (30 minutes)
Comparative analysis of Medications
It should be observed that which set of medicine(*agamaruthuvam,puramaruthuvam)* shows best result for that particular *Thega Ilakkanam* of *Bala Karappan* patient.
Activity 3: Inquiry-Based Learning (30 minutes)
Interpretation with Pharmacogenomics
Each PG Student must interpret with Pharmacogenomics of their treatment protocols.
Activity 4: Peer-assisted Learning (30 minutes)
Enhancing Prescription choice skill
The outcome must be enumerated as comprehensive diagnostic analysis on appropriate choice of prescription of good set of Internal medicines and External medicines which suits to that particular type of *Thega Ilakkanam.*
Activity 5: Discussion, Presentation (1 hour)
Conducting Class Presentation
With this outcome, prescribed line of treatment based on *Suvai, Gunam and Veeriyam* can be framed. It enables prescription of the potential line of treatment grounded in the system's underlying principles. Each PG Student must conduct a Class Presentation and discuss about their experiential activity findings of Case Study Analysis. Submit assessment findings to the department. Faculties will provide constructive feedback to Students on their observations and reasoning.

Experiential-Learning 15.9 : *Kudal Kirumigal* with Pediatric pathologic worm Infestation conditions.

Total Activity hours : (1 hour)
Activity 1: Library Session (15 minutes)
Exploration of Classical Texts
Students must be divided into small groups by faculties and search the Siddha classical texts about classifications of *Kudal Kirumigal.*
Activity 2: Peer Learning/ Team –Based Learning(15 minutes)
Decryption of Siddha poetry
Decode the Siddha poetry for each and every versus of classifications of *Kudal Kirumigal* with corresponding Pediatric pathologic worm Infestations conditions.
Activity 3: Discussion (15 minutes)
Conducting Interaction Session
Facilitate an Interaction session that insights through assessment findings. Submit assessment findings to the department. Each group must document minimum of 5 comparisons.
Activity 4: Presentation (15 minutes)
Evaluation and Feedback
The activity performance will be evaluated by the faculty and provide constructive feedback to students on their observations and reasoning.

Experiential-Learning 15.10 : Diagnostic screening methods of Neonatal Jaundice.

Total Activity hours: 1 hour
Activity 1: Journal Club/Library session (15 minutes)
Jaundice diagnostic screening
Each PG Student must collect information about recent diagnostic screening methods of Neonatal Jaundice from Texts, Web sources or journals.
Activity 2: Case-Based Learning (15 minutes)
Siddha Diagnostic interpretation
Elaborate the *Thega Ilakkanam* and other Siddha Diagnostic parameters of Neonatal jaundice condition and compare the *Thega Niram* and prognosis in a Neonatal care unit with prior permission.
Activity 3: Lab Report Interpretation (15 minutes)
Correlation of interpretations
Interpret and correlate recent diagnostic screening methods of Neonatal Jaundice with Siddha diagnostic interpretations.
Activity 4: Presentation (15 minutes)
Conducting Interactions
Interpretation of Siddha and Modern Diagnostic parameters must be done. PG Student should conduct Class Interactions about their assessment findings. Submit the assessment to the faculty for evaluation and feedback.

Experiential-Learning 15.11 : Lab Interpretation for *Kudal Kirumigal /Kudal Pithukkam / Kutham Adithalal* .

Total Activity hours: 1 hour
Activity 1: Case-Based Learning(15 minutes)
Siddha Parameter assessment
PG Student must be divided into small groups by faculties to assess *Kudal Kirumigal/Kudal Pithukkam / Kutham Adithalal* patients in OPD/IPD. Students must gather the diagnostic analytics for *Kudal Kirumigal/Kudal Pithukkam / Kutham Adithalal* by assessing Siddha Parameters like *Ennvagai Thervu, Manikkadai Nool, Yaakai Ilakkanam* and any type of diagnostic methodologies mentioned in Siddha Classical Literatures.
Activity 2: Case-Based Learning (15 minutes)
Modern Lab parameter assessment
For the same patient, the modern lab parameters are collected from OPD/IPD patient of *Kudal Kirumigal/Kutham Adithalal* for the assessment.
Activity 3: Lab Report Interpretation (10 minutes)
Developing interpretation skill
PG Student must analyse the presence of any positive findings of Siddha Diagnostic parameters such as Ennvagai *Thervu, Manikkadai Nool, Yaakai Ilakkanam* and any type of diagnostic methodologies which are seen similar in the recorded patients. If any similarities can be interpreted with Biochemistry values or Biomarkers or any positive

Modern lab investigation, they must be noted.
Activity 4:Discussion/Peer Learning (10 minutes)
Conducting Class Presententation
For the particular grouped case, do the compilation of findings of Siddha and Modern Lab investigation results. This outcome must be constituted as ideal pattern format of lab test interpretation in terms of Siddha principles. Conduct Class Discussion about the diagnostic analytics assessment findings by organizing the collected information and submit the findings to the department.
Activity 5: Presentation (10 minutes)
Evaluation and Feedback
The activity performance will be evaluated by the faculty and provide constructive feedback to students on their observations and reasoning.

Modular Assessment

Assessment method	**Hour**
Instructions: Conduct a structured Modular assessment. The assessment will be for 50 marks. Keep a structured marking pattern. Use different assessment methods in each module for the semester. Keep a record of the structured pattern used for assessment. Calculate the Modular grade point as per Table 6 Choose any of the below assessment for 50 marks. Interpret the findings of given at least 5 different diagnostic modalities such as X-ray, USG, CT Scan, MRI, Venogram, Arteriogram etc., postulate the possible differential diagnosis and confined diagnosis for 50 marks Or Total Marks: 50 / Time Duration: 4 Hours 1.SAQ AND LAQ ASSESSMENT Total Marks: 20 | Duration: 1 hour 30 minutes ASSESSMENT STRUCTURE General Instructions: Answer THREE questions in total Question 1 is long answer question(10 marks) Question 2,3 is short answer question(5 marks each). 2.OBJECTIVE STRUCTURED CLINICAL EXAMINATION (OSCE) Mark Distribution: 20 marks Duration:1 hour 30 min Clinical Examinations of patients through Yakkai, aga karuvigal, Pura karuvigal (3 marks)	4

Udal Thaathukkal, ennvagai thervu (5 marks) Manikkadai Nool (1mark) Derangement of Mukkutram (2 marks) Mukkutra Verupadu (2 marks) Prescription of the line of treatment based on mukkutram, suvai and gunam,veeriam and based on other underlying siddha principles (5 marks) Noi Kanippu (1 mark) Theerum Theera Nilai (1 mark) VIVA VOCE EXAMINATION (5 Marks) -Time-30 minutes Assessment Structure: Foster a deeper understanding of the underlying mechanisms of the particular disease to inform clinical decision-making and able to interpret the variations of differential diagnosis and Marking Distribution: Knowledge and Understanding (2 marks) Detailed pathological knowledge Understanding of Siddha Diagnostic tools and their application Clinical Application (1 mark) Differential Diagnosis Clinical scenarios Radiological interpretation Communication Skills (2 marks) Clarity of expression Use of precise terminology Ability to explain complex concepts RECORD KEEPING (5 Marks) Time : 30 minutes Assessment Criteria: Clinical Assessments (4 marks) Profound Disease Interpretation Analysis with analogous modern terminologies Radiological integration Written Presentation Skills (1 mark) Innovative Ideas Clarity of Concepts		

or
Any practical in converted form can be taken for assessment. (25 marks)
and
Any experiential, such as portfolios / reflections / presentations can be taken as an assessment. (25 marks)

Module 16 : Thol Noi Nithaanam (Dermatological Diseases)

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

Describe the etiology, classifications and curable and incurable conditions of *Kutta Noi, Kalanjagapadai / Sethil uthir Noi, Karappan, Venkuttam, Kirandhi, Kaduvan, Katti/Kazhalai and Naga chuttru.*
Interpret Siddha disease classifications and Siddha diagnostic tools with modern diagnosis and modern diagnostic parameters.
Create Diagnostic paradigms to diagnose diseases of *Thol Noi Nithaanam.*
Apply the differential diagnosis of diseases of *Thol Noi Nithaanam.*
Design the line of treatment based on *Mukkutram,* Suvai, Gunam for *Thol Noi Nithaanam.*

M 16 Unit 1 Kutta Noi, Kalanjagapadai / Sethil uthir Noi (Dermatological conditions/Leprosy:Psoriasis)

16.1.1. Kuttam Noi (18 types)
16.1.1.1. Kabala kuttam
16.1.1.2. Atthikai kuttam
16.1.1.3 Mandala kuttam
16.1.1.4. Sori kuttam
16.1.1.5 Nakku kuttam
16.1.1.6. Vedippu kuttam
16.1.1.7. Thimir kuttam
16.1.1.8. Yaanai Thol kuttam
16.1.1.9. Pandri Thol kuttam

16.1.1.10. Pudai kuttam
16.1.1.11. Thadippu kuttam
16.1.1.12. Koozhangar kuttam
16.1.1.13. Poorai kuttam
16.1.1.14. Padar Thamarai kuttam
16.1.1.15. Eri Koppala kuttam
16.1.1.16. Sirangu kuttam
16.1.1.17. Pilappu kuttam
16.1.1.18. Kaaga kuttam. 16.1.2. Kuttam (kuttra alavaga - 7 types)
16.1.3 Kaalanjaga padai/Sedhil uthir Noi

References: 1,2,3,4,5,6,7,8,14,15,16,17,18,19,21,22,23,34,42,43,45,48,53,54,55,71,72,90,91

3A	3B	3C	3D	3E	3F	3G
CO6	Describe about the *Iyal, Veru Peyargal,* Etiology, types, *Mukkutra verupadu, Naadi Nadai* and curable and incurable conditions of *Kutta Noi.*	2	Lecture	CAN	Knows-how	L&GD
CO3	Analyse about the *Iyal, Peyar kaaranam,* Etiology, types, *Mukkutra verupadu, Naadi Nadai* and curable and incurable conditions of *Kalanjagapadai / Sethil Uthir Noi and have to corelate with Modern pathological conditions.*	2	Lecture	CAN	Knows-how	L_VC
CO2	Perform the examination of patient through *Yaakai, udal Thathukkal, Ennvagai Thervu, Manikkadai Nool, Mukkutram* and prescribe the line of treatment based on *Mukkutram, Suvai, Gunam* and infer the *Theerum, Theera Nilai* of *Padar thamarai.*	4	Practical Training 16.1	PSY-ADT	Shows-how	CBL,IBL, CD,DIS,C_L
CO4	Perform the examination of patient through *Yaakai, udal Thathukkal, Ennvagai Thervu, Manikkadai Nool, Mukkutram* and prescribe the line of treatment based on *Mukkutram, Suvai, Gunam* and infer the *Theerum, Theera Nilai* of *Kalanjagapadai*.	4	Practical Training 16.2	PSY-ADT	Shows-how	CD,PER, C_L,CBL ,IBL
CO4	Interpret a comparison between the signs and symptoms of *Kutta Noi* types and *Kalanjagapadai/Sethil Uthir Noi* types with corresponding dermatological pathology.	2	Experiential-Learning 16. 1	AFT-SET	Does	TBL,DIS, PL,LS

CO6	Construct the Siddha Lab Interpretation for *Kutta Noi* patients in OPD/IPD through assessing modern diagnostic parameters and also asses the prevalance of which thegi type is more prone to relapse and remission.	3	Experiential-Learning 16.2	PSY-GUD	Does	CBL,LRI, PER
CO6,CO8	Perform pharmacogenomic analysis with various combinations of Siddha medicines for the treatment of *Kalanjagapadai* patients with different yakkai ilakkanam and determine which set of medicines*(agamaruthuvam /puramaruthuvam)* is most suitable for each Thegi type for optimal treatment outcomes.	3	Experiential-Learning 16.3	PSY-ORG	Does	PER,TBL ,DIS,IBL, CBL
CO6,CO8	Formulate a Pancha Patchi Chart for interpreting *Kutta Noi* in OPD/IPD patients	2	Experiential-Learning 16.4	PSY-ORG	Does	PER,IBL, TBL,CBL ,DIS

M 16 Unit 2 Karappan Noi, Venkuttam Noi, Kirandhi Noi (Eczema ,Leucoderma,Nodular lesions)

16.2.1. Karappan Noi (7 Types)
16.2.1.1. Vatha Karappan
16.2.1.2. Pitha Karappan
16.2.1.3. Kaba Karappan
16.2.1.4. Kanda Karappan
16.2.1.5. Varatchi Karappan
16.2.1.6. Thimirvatha Karappan
16.2.1.7. Kabala Karappan 16.2.2. Venkuttam Noi (4 types)
16.2.2.1. Vatha Venkuttam
16.2.2.2. Pitha Venkuttam
16.2.2.3. Kaba Venkuttam
16.2.2.4. Mega Venkuttam 16.2.3. Kirandhi Noi

References: 1,2,3,4,5,6,7,8,10,14,15,16,17,18,19,21,23,24,25,42,43,45,48,53,54,55,71,72,90,91

3A	3B	3C	3D	3E	3F	3G
CO1,CO2	Analyse about the *Iyal, Veru Peyargal,* Etiology, types, *Mukkutra verupadu, Naadi*	2	Lecture	CAN	Knows-	L&PPT

	Nadai and curable & incurable conditions of *Karappan.*				how	
CO1,CO2	Describe about the *Iyal, Veru Peyargal,* Etiology, types, *Mukkutra verupadu, Naadi Nadai* and curable & incurable conditions of *Venkuttam.*	1	Lecture	CAN	Knows-how	L&GD
CO1,CO2	Analyse about the *Iyal, Veru Peyargal,* Etiology, types, *Mukkutra verupadu, Naadi Nadai* and curable and incurable conditions of *Kirandhi Noi.*	1	Lecture	CAN	Knows-how	L&PPT
CO2,CO4	Perform the examination of patient through *Yaakai, udal Thathukkal, Ennvagai Thervu, Manikkadai Nool, Mukkutram* and prescribe the line of treatment based on *Mukkutram, Suvai, Gunam* and infer the *Theerum, Theera Nilai* of *Karappan.*	3	Practical Training 16.3	PSY-ADT	Shows-how	D-BED,DIS,CBL,PER,C_L
CO2,CO4	Perform the examination of patient through *Yaakai, udal Thathukkal, Ennvagai Thervu, Manikkadai Nool, Mukkutram* and prescribe the line of treatment based on *Mukkutram, Suvai, Gunam* and infer the *Theerum, Theera Nila*i of *Venkuttam.*	3	Practical Training 16.4	PSY-ADT	Shows-how	D-BED,CBL
CO2,CO4	Perform the examination of patient through *Yaakai, udal Thathukkal, Ennvagai Thervu, Manikkadai Nool, Mukkutram* and prescribe the line of treatment based on *Mukkutram, Suvai, Gunam* and infer the *Theerum, Theera Nilai* of *Kirandhi noi*.	2	Practical Training 16.5	PSY-ADT	Shows-how	D-BED,PER,CBL,IBL,CD
CO6	Perform the pharmacogenomic analysis with various combinations of Siddha medicines for the treatment of *Karappan* patients with different yakkai ilakkanam and determine which set of medicines*(agamaruthuvam /puramaruthuvam)* is most suitable for each *Thegi* type for optimal treatment outcomes and infer the most prone thegis with relapse and remission.	3	Experiential-Learning 16.5	PSY-GUD	Does	TBL,CBL,PER,DIS,PAL
CO6	Integrate the concepts and types of *Kirandhi* mentioned in Siddha Classical Dictionary,other siddha classical texts and interpret with modern pathological diseases.	2	Experiential-Learning 16.6	AFT-SET	Does	LS,PL,TBL,DIS
CO7,CO8	Construct the Siddha way of Lab interpretation for *Karappan* patients in OPD/IPD through assessing Siddha and Modern parameters	3	Experiential-Learning 16.7	PSY-ORG	Does	CBL,DIS,PER,TBL,PL
CO6	Integrate the dermatological Scales employed in assessing *Karappan Noi* (Eczema)	2	Experiential-	PSY-	Does	DIS,SIM,

			Learning 16.8	ORG		PER,JC,CBL
CO6,CO8	Perform pharmacogenomic analysis with various combinations of Siddha medicines for the treatment of *Venkuttam* patients with different yakkai ilakkanam and determine which set of medicines(agamaruthuvam,puramaruthuvam) is most suitable for each Thegi type for optimal treatment outcomes.	3	Experiential-Learning 16.9	PSY-ORG	Does	PER,PAL,IBL,DIS,CBL

M 16 Unit 3 Kaduvan Noi, Katti/Kazhalai, Naga chuttru, Puzhuvettu (Lichen planus/Impetigo,Boils/Lumps,Felon,Alopecia areata)

16.3.1. Kaduvan 16.3.2. Katti/Kazhalai
16.3.2.1. Vali Katti
16.3.2.2. Azhal Katti
16.3.2.3. Iya Katti
16.3.2.4. Irukutra Mukkutra Kalappu Katti
16.3.2.5. Kuruthi Katti
16.3.2.6. Adipaduthalal erpadum Katti 16.3.3. Naga chuttru 16.3.4. Puzhuvettu

References: 1,2,3,4,5,6,7,8,11,14,15,16,17,18,19,21,23,24,34,42,43,45,48,53,54,55,71,72,90,91

3A	3B	3C	3D	3E	3F	3G
CO5	Describe about the Etiology, types and curable and incurable conditions about *Kaduvan* and *Katti / Kazhalai.*	1	Lecture	CAN	Knows-how	L&GD
CO5	Analyse the etiology,noi varum vali, mukktra verupadu of *Naga Chuttru* and *Puzhuvettu.*	1	Lecture	CAN	Knows-how	L&PPT
CO5	Perform the examination of patient through *Yaakai, udal Thathukkal, Ennvagai Thervu, Manikkadai Nool, Mukkutram* and prescribe the line of treatment based on *Mukkutram, Suvai, Gunam* and infer the *Theerum, Theera Nilai* of Puzhuvettu.	2	Practical Training 16.6	PSY-ADT	Shows-how	PER,C_L,D-BED,CBL,DIS
CO5,CO7	Perform the examination of patient through *Yaakai, udal Thathukkal, Envagai Thervu, Manikadai Nool, Mukkutram* and prescribe the line of treatment based on *Mukkutram,*	2	Practical Training 16.7	PSY-ADT	Shows-how	D-BED,IBL,CBL,

	Suvai, Gunam & infer the *Theerum, Theera Nilai* of *Katti/Kazhalai*.					PER,CD
CO6,CO8	Perform the pharmacogenomic analysis with various combinations of Siddha medicines for the treatment of *Puzhuvettu* patients with different yakkai ilakkanam and determine which set of medicines(agamaruthuvam,puramaruthuvam) is most suitable for each Thegi type for optimal treatment outcomes.	3	Experiential-Learning 16.10	PSY-ORG	Does	CBL,PER,PAL,IBL,TBL

Practical Training Activity

Practical Training 16.1 : Diagnosis of *Padarthamarai* .

Total Activity hours- 4 hours
Teachers overview
The teacher clearly outlines the objectives of the practical session. A brief introduction to the importance of the diagnosis of a patient should be detailed. Either original cases or scenarios, or case videos may be used.
Activity 1- Case-Based Learning/Demonstration Bedside. (30 Minutes)
The teacher demonstrates how to use Siddha Diagnostic Tools to assess the case through Case Studies / Skill Labs in IPD/OPD Settings and make outcome assessment at the end of each student activity, and discuss them during debriefing sessions.
Activity 2- Inquiry-Based learning. (30 Minutes)
History Taking and performance of diagnostic Techniques: Students should take patient histories, focusing on the onset, duration, and pattern of disease and associated symptoms. Students should assess cases through Siddha diagnostic tools.
Activity 3-Record the documents. (30 Minutes)
Instruct students to document the examination of patients through the prescribed Case Sheet, which contains siddha and modern concepts in a structured format. Prognosis of the cases may be assessed by the student through any of the diagnostic/prognostic tools with the guidance of the teacher.
Activity 4- Case Diagnosis. (30 Minutes)
Interpret findings with Trihumoral vitiation and arrive at a provisional diagnosis
Activity 5- Discussion. (30 Minutes)
Small group discussions on the tri-humoral vitiation, which is peculiar to the presented case, and their clinical significance should be done along with an assessment of digestive fire.
Activity 6-Co Learning (60 Minutes)
Development of lines of treatment: Discuss and develop various lines of treatment based on aspects of Suvai, Gunam, Veeriyam, and Vibagam, and categorize them as curable and incurable types.
Activity 7: Presentation. (30 Minutes)

At the end of the session, based on the presentation, personalized feedback on students' observation and diagnostic accuracy should be given.

Practical Training 16.2 : Diagnosis of *Kalanjagapadai* .

Total Activity hours- 4 hours
Teachers overview
The teacher clearly outlines the objectives of the practical session. A brief introduction to the importance of the diagnosis of a patient should be detailed. Either original cases or scenarios, or case videos may be used.
Activity 1- Case-Based Learning/Demonstration Bedside. (30 Minutes)
The teacher demonstrates how to use Siddha Diagnostic Tools to assess the case through Case Studies / Skill Labs in IPD/OPD Settings and make outcome assessment at the end of each student activity, and discuss them during debriefing sessions.
Activity 2- Inquiry-Based learning. (30 Minutes)
History Taking and performance of diagnostic Techniques: Students should take patient histories, focusing on the onset, duration, and pattern of disease and associated symptoms. Students should assess cases through Siddha diagnostic tools.
Activity 3-Record the documents. (30 Minutes)
Instruct students to document the examination of patients through the prescribed Case Sheet, which contains siddha and modern concepts in a structured format. Prognosis of the cases may be assessed by the student through any of the diagnostic/prognostic tools with the guidance of the teacher.
Activity 4- Case Diagnosis. (30 Minutes)
Interpret findings with Trihumoral vitiation and arrive at a provisional diagnosis
Activity 5- Discussion. (30 Minutes)
Small group discussions on the tri-humoral vitiation, which is peculiar to the presented case, and their clinical significance should be done along with an assessment of digestive fire.
Activity 6-Co Learning (60 Minutes)
Development of lines of treatment: Discuss and develop various lines of treatment based on aspects of Suvai, Gunam, Veeriyam, and Vibagam, and categorize them as curable and incurable types.
Activity 7: Presentation. (30 Minutes)
At the end of the session, based on the presentation, personalized feedback on students' observation and diagnostic accuracy should be given.

Practical Training 16.3 : Diagnosis of *Karappan* .

Total Activity hours- 3 hours
Teachers overview
The teacher clearly outlines the objectives of the practical session. A brief introduction to the importance of the diagnosis of a patient should be detailed. Either original

cases or scenarios, or case videos may be used.
Activity 1- Case-Based Learning/Demonstration Bedside. (15 Minutes)
The teacher demonstrates how to use Siddha Diagnostic Tools to assess the case through Case Studies / Skill Labs in IPD/OPD Settings and make outcome assessment at the end of each student activity, and discuss them during debriefing sessions.
Activity 2- Inquiry-Based learning. (30 Minutes)
History Taking and performance of diagnostic Techniques: Students should take patient histories, focusing on the onset, duration, and pattern of disease and associated symptoms. Students should assess cases through Siddha diagnostic tools.
Activity 3-Record the documents. (15 Minutes)
Instruct students to document the examination of patients through the prescribed Case Sheet, which contains siddha and modern concepts in a structured format. Prognosis of the cases may be assessed by the student through any of the diagnostic/prognostic tools with the guidance of the teacher.
Activity 4- Case Diagnosis. (30 Minutes)
Interpret findings with Trihumoral vitiation and arrive at a provisional diagnosis
Activity 5- Discussion. (30 Minutes)
Small group discussions on the tri-humoral vitiation, which is peculiar to the presented case, and their clinical significance should be done along with an assessment of digestive fire.
Activity 6-Co Learning (30 Minutes)
Development of lines of treatment: Discuss and develop various lines of treatment based on aspects of *Suvai, Gunam, Veeriyam, and Vibagam,* and categorize them as curable and incurable types.
Activity 7: Presentation. (30 Minutes)
At the end of the session, based on the presentation, personalized feedback on students' observation and diagnostic accuracy should be given.

Practical Training 16.4 : Diagnosis of*Venkuttam* .

Total Activity hours- 3 hours
Teachers overview
The teacher clearly outlines the objectives of the practical session. A brief introduction to the importance of the diagnosis of a patient should be detailed. Either original cases or scenarios, or case videos may be used.
Activity 1- Case-Based Learning/Demonstration Bedside. (15 Minutes)
The teacher demonstrates how to use Siddha Diagnostic Tools to assess the case through Case Studies / Skill Labs in IPD/OPD Settings and make outcome assessment at the end of each student activity, and discuss them during debriefing sessions.
Activity 2- Inquiry-Based learning. (30 Minutes)
History Taking and performance of diagnostic Techniques: Students should take patient histories, focusing on the onset, duration, and pattern of disease and associated symptoms. Students should assess cases through Siddha diagnostic tools.

Activity 3-Record the documents. (15 Minutes)
Instruct students to document the examination of patients through the prescribed Case Sheet, which contains siddha and modern concepts in a structured format. Prognosis of the cases may be assessed by the student through any of the diagnostic/prognostic tools with the guidance of the teacher.
Activity 4- Case Diagnosis. (30 Minutes)
Interpret findings with Trihumoral vitiation and arrive at a provisional diagnosis
Activity 5- Discussion. (30 Minutes)
Small group discussions on the tri-humoral vitiation, which is peculiar to the presented case, and their clinical significance should be done along with an assessment of digestive fire.
Activity 6-Co Learning (30 Minutes)
Development of lines of treatment: Discuss and develop various lines of treatment based on aspects of *Suvai, Gunam, Veeriyam, and Vibagam,* and categorize them as curable and incurable types.
Activity 7: Presentation. (30 Minutes)
At the end of the session, based on the presentation, personalized feedback on students' observation and diagnostic accuracy should be given.

Practical Training 16.5 : Diagnosis of *Kirandhi* .

Duration of Activity- 2 hours
The teacher clearly outlines the objectives of the practical session. A brief introduction on importance of diagnosis including digestive fire status of a patient should be detailed. Either original cases or scenario or case videos may be used.
Activity 1- Teacher should demonstrate how to use Siddha Diagnostic Tools to assess the case through Case Studies / Skill Labs in IPD/OPD Settings and make outcome assessment at the end of each student activity and discuss them during debriefing sessions.
Activity 2- History Taking and performance of diagnostic techniques (15 Minutes)
Students should take patient histories, focusing on the onset, duration, and pattern of disease and associated symptoms.Students should assess cases through Siddha diagnostic tools.
Activity 3-Record the documents (15 Minutes)
Instruct students to document the examination of patients through prescribed Case Sheet which contains siddha and modern concepts in structured format. Prognosis of the cases may be assessed by the student through any of the diagnostic/prognostic tools with guidance of teacher.
Activity 4- Interpret findings with Trihumoral vitiation and arrive at provisional diagnosis (30 Minutes)
Activity 5- Small group discussions on the Tri humoral vitiation which is peculiar to the presented case and their clinical significance should be done along with assessment of digestive fire. (15 Minutes)
Activity 6- Development of line of treatment (30 Minutes)
Discuss and develop various lines of treatment based on aspects of *Suvai, Gunam, Veeriyam, Vibagam* and state its curable and incurable types.
Activity 7: At the end of the session, personalised feedback on students' observation and diagnostic accuracy should be given. (15 Minutes)

Practical Training 16.6 : Diagnosis of *Puzhuvettu* .

Total Activity hours- 2 hours
Teachers overview
The teacher clearly outlines the objectives of the practical session. A brief introduction to the importance of the diagnosis of a patient should be detailed. Either original cases or scenarios, or case videos may be used.
Activity 1- Case-Based Learning/Demonstration Bedside. (15 Minutes)
The teacher demonstrates how to use Siddha Diagnostic Tools to assess the case through Case Studies / Skill Labs in IPD/OPD Settings and make outcome assessment at the end of each student activity, and discuss them during debriefing sessions.
Activity 2- Inquiry-Based learning. (15 Minutes)
History Taking and performance of diagnostic Techniques: Students should take patient histories, focusing on the onset, duration, and pattern of disease and associated symptoms. Students should assess cases through Siddha diagnostic tools.
Activity 3-Record the documents. (15 Minutes)
Instruct students to document the examination of patients through the prescribed Case Sheet, which contains siddha and modern concepts in a structured format. Prognosis of the cases may be assessed by the student through any of the diagnostic/prognostic tools with the guidance of the teacher.
Activity 4- Case Diagnosis. (15 Minutes)
Interpret findings with Trihumoral vitiation and arrive at a provisional diagnosis
Activity 5- Discussion. (15 Minutes)
Small group discussions on the tri-humoral vitiation, which is peculiar to the presented case, and their clinical significance should be done along with an assessment of digestive fire.
Activity 6-Co Learning (30 Minutes)
Development of lines of treatment: Discuss and develop various lines of treatment based on aspects of *Suvai, Gunam, Veeriyam, and Vibagam,* and categorize them as curable and incurable types.
Activity 7: Presentation. (15 Minutes)
At the end of the session, based on the presentation, personalized feedback on students' observation and diagnostic accuracy should be given.

Practical Training 16.7 : Diagnosis of *Katti/Kazhalai*.

Total Activity hours- 2 hours

Teachers overview
The teacher clearly outlines the objectives of the practical session. A brief introduction to the importance of the diagnosis of a patient should be detailed. Either original cases or scenarios, or case videos may be used.
Activity 1- Case-Based Learning/Demonstration Bedside. (15 Minutes)
The teacher demonstrates how to use Siddha Diagnostic Tools to assess the case through Case Studies / Skill Labs in IPD/OPD Settings and make outcome assessment at the end of each student activity, and discuss them during debriefing sessions.
Activity 2- Inquiry-Based learning. (15 Minutes)
History Taking and performance of diagnostic Techniques: Students should take patient histories, focusing on the onset, duration, and pattern of disease and associated symptoms. Students should assess cases through Siddha diagnostic tools.
Activity 3-Record the documents. (15 Minutes)
Instruct students to document the examination of patients through the prescribed Case Sheet, which contains siddha and modern concepts in a structured format. Prognosis of the cases may be assessed by the student through any of the diagnostic/prognostic tools with the guidance of the teacher.
Activity 4- Case Diagnosis. (15 Minutes)
Interpret findings with Trihumoral vitiation and arrive at a provisional diagnosis
Activity 5- Discussion. (15 Minutes)
Small group discussions on the tri-humoral vitiation, which is peculiar to the presented case, and their clinical significance should be done along with an assessment of digestive fire.
Activity 6-Co Learning (30 Minutes)
Development of lines of treatment: Discuss and develop various lines of treatment based on aspects of *Suvai, Gunam, Veeriyam, and Vibagam,* and categorize them as curable and incurable types.
Activity 7: Presentation. (15 Minutes)
At the end of the session, based on the presentation, personalized feedback on students' observation and diagnostic accuracy should be given.

Experiential learning Activity

Experiential-Learning 16.1 : *Kutta Noi* and *Kalanjagapadai/Sethil Uthir Noi* types with dermatological pathology

Total Activity hours: (2 hours)
Activity 1: Library Session (30 minutes)
Exploration of Classical Texts
Students must be divided into small groups by faculties and search the various Siddha classical texts about *Kutta Noi* types and *Kalanjagapadai/Sethil Uthir Noi.*
Activity 2: Peer Learning/Team-Based Learning (30 minutes)
Decryption of Siddha poetry

Decode the Siddha poetry for each and every versus of classifications of *Kutta Noi* types and *Kalanjagapadai/Sethil Uthir Noi* with corresponding dermatological pathologic conditions.
Activity 3: Discussion (30 minutes)
Conducting Interaction Session
Facilitate a Interaction session that insights through assessment findings. Submit assessment findings to the department. Each group must document minimum of 5 comparisons.
Activity 4: Presentation (30 minutes)
Evaluation and Feedback
The activity performance will be evaluated by the faculty and provide constructive feedback to students on their observations and reasoning.

Experiential-Learning 16.2 : Lab Interpretation for *Kutta Noi* .

Total Activity hours: 3 hours
Activity 1: Case-Based Learning (30 minutes)
Siddha Parameter assessment
PG Student must be divided into small groups by faculties to assess various types of *Kutta Noi* patients in OPD/IPD. Students must gather the diagnostic analytics for various types of *Kutta Noi* by assessing Siddha Parameters like *Ennvagai Thervu, Manikkadai Nool, Yaakai Ilakkanam* and any type of diagnostic methodologies mentioned in Siddha Classical Literatures.
Activity 2: Case-Based Learning (30 minutes)
Modern Lab parameter assessment
For the same patient, the modern lab parameters are collected from OPD/IPD patient of a particular type of *Kutta Noi* for the assessment.
Activity 3: Lab Report Interpretation (30 minutes)
Developing interpretation skill
For a particular *Kutta Noi* case, PG Student must analyse the presence of any positive findings of Siddha Diagnostic parameters such as *Ennvagai Thervu, Manikkadai Nool, Yaakai Ilakkanam* and any type of diagnostic methodologies which are seen similar in the recorded patients. If any similarities can be interpreted with Biochemistry values or Biomarkers or any positive Modern lab investigation, they must be noted and also asses the prevalance of which thegi type is more prone to relapse and remission.
Activity 4: Discussion/Peer Learning (1 hour)
Conducting Class Interaction
For the particular grouped case, do the compilation of findings of Siddha and Modern Lab investigation results. This outcome must be constituted as ideal pattern format of lab test interpretation in terms of Siddha principles and meanwhile asses the possible *thegi* who get relapse and remission and Conduct Class Interaction about the diagnostic analytics assessment findings by organizing the collected information and submit the findings to the department.
Activity 5: Presentation (30 minutes)
Evaluation and Feedback

The activity performance will be evaluated by the faculty and provide constructive feedback to students on their observations and reasoning.

Experiential-Learning 16.3 : Siddha and Pharmacogenomics interpretation in diagnosis of *Kalanjagapadai Noi.*

Total Activity hours: 3 hours
Activity 1: Case-Based Learning (30 minutes)
Treatment Protocol Assessment
Each PG Student should observe the various treatment protocols for different types of *Thega Ilakkanam* patients in particular type of *Kalanjagapadai* patient in OPD.
Activity 2: Team-Based Learning (30 minutes)
Comparative analysis of Medications
It should be observed the which set of medicine shows best result for that particular *Thega Ilakkanam* of *Kalanjagapadai* patient.
Activity 3: Inquiry-Based Learning (30 minutes)
Interpretation with Pharmacogenomics
Each PG Student must interpret with Pharmacogenomics of their treatment protocols.
Activity 4: Peer-Assisted Learning (30 minutes)
Enhancing Prescription choice skill
The outcome must be enumerated as a comprehensive analysis on the appropriate choice of prescription of a good set of internal medicines and external medicines that suit to that particular type of *Thega Ilakkanam.*
Activity 5: Discussion, Presentation (1 hour)
Conducting Class Presentation
With this outcome, a prescribed line of treatment based on *Suvai, Gunam, and Veeriyam* can be framed. It enables prescription of the potential line of treatment grounded in the system's underlying principles. Each PG Student must conduct a Class Presentation and discuss about their experiential activity findings of Case Study Analysis. Submit assessment findings to the department. The faculty will provide constructive feedback to Students on their observations and reasoning.

Experiential-Learning 16.4 : Pancha Patchi for *Kutta Noi*

Total Activity hours: 2 hours
Activity 1: Inquiry-Based Learning (30 minutes)
Pancha Patchi interpretation
Each PG Student must observe the time of entry of *Kutta Noi* patients in OPD. With the prior insight upskilling of PG Students in *Pancha Panchi* chart interpretation, each PG Student should be able to assess the *Pancha Patchi* character of the *Kutta Noi* patient.
Activity 2: Case Diagnosis (30 minutes)
Panchi Patchi correlation in Clinical Diagnostics

Based on Pancha Patchi's Status, PG Student must be proficient in determining the affected *Bootham*, severity, prognosis, and treatment response of patients.
Activity 3: Case Diagnosis (30 minutes)
Clinical Assessment Skill
A trial with regular follow-ups must include a minimum of 10 *Kutta Noi* patients in OPD. The trial must assess the severity, prognosis, and treatment response of the recorded patients and calculate the *Pancha patchi* character.
Activity 4: Discussion, Presentation(30 minutes)
Conducting Class Interaction
Each PG Student must participate in class interaction and discuss their experiential activity findings as Case Presentation. Submit assessment findings to the department. The faculty will provide constructive feedback to Students on their observations and reasoning.

Experiential-Learning 16.5 : Siddha and Pharmacogenomics interpretation in diagnosis of *Karappan Noi,*

Total Activity hours: 3 hours
Activity 1: Case-Based Learning (30 minutes)
Treatment Protocol Assessment
Each PG Student should observe the various treatment protocols for different types of *Thega Ilakkanam* patients in particular type of *Karappan* patient in OPD.
Activity 2: Team-Based Learning (30 minutes)
Comparative analysis of Medications
It should be observed that which set of medicine shows best result for that particular *Thega Ilakkanam* of *Karappan* patient.
Activity 3: Inquiry-Based Learning (30 minutes)
Interpretation with Pharmacogenomics
Each PGStudent must interpret with Pharmacogenomics of their treatment protocols.
Activity 4: peer-Assisted Learning (30 minutes)
Enhancing Prescription choice skill
The outcome must be enumerated as a comprehensive diagnostic analysis on the appropriate choice of prescription of a good set of medicines *(agamaruthuvam /puramaruthuvam) that* suits to that particular type of *Thega Ilakkanam.*
Activity 5: Discussion, Presentation (1 hour)
Conducting Class Presentation
With this outcome, a prescribed line of treatment based on *Suvai, Gunam, and Veeriyam* can be framed. It enables prescription of the potential line of treatment grounded in the system's underlying principles. Each PG Student must conduct a Class Presentation and discuss their experiential activity findings of the Case Study Analysis. Submit assessment findings to the department. The faculty will provide constructive feedback to Students on their observations and reasoning.

Experiential-Learning 16.6 : *Kirandhi* types with modern concepts.

Total Activity hours: (2 hours)
Activity 1: Library Session (30 minutes)
Exploration of Classical Texts
Students must be divided into small groups by faculties and search the various Siddha classical texts and different *agaradhigal* about classification,*Iyal,peyar karanam* and *etiology,mukkutra verupadu* of Kirandhi *Noi.*
Activity 2: Peer Learning/Team-Based Learning (30 minutes)
Decryption of Siddha poetry,search of Siddha Dictonary
Decode the Siddha poetry for each and every versus of classifications of *Kirandhi Noi* types and with corresponding pathologic conditions.
Activity 3: Discussion (30 minutes)
Conducting Interaction Session
Facilitate a Interaction session that insights through assessment findings. Submit assessment findings to the department. Each group must document minimum of 5 comparisons.
Activity 4: Presentation (30 minutes)
Evaluation and Feedback
The activity performance will be evaluated by the faculty and provide constructive feedback to students on their observations and reasoning.

Experiential-Learning 16.7 : Lab Interpretation for *Karappan* .

Total Activity hours: 3 hours
Activity 1: Case-Based Learning (30 minutes)
Siddha Parameter assessment
PG Student must be divided into small groups by faculties to assess *Karappan* patients in OPD/IPD. Students must gather the diagnostic analytics for *Karappan* by assessing Siddha Parameters like *Envagai Thervu, Manikadai Nool, Yaakai Ilakkanam* and any type of diagnostic methodologies mentioned in Siddha Classical Literatures.
Activity 2: Case-Based Learning (30 minutes)
Modern Lab parameter assessment
For the same patient, the modern lab parameters are collected from OPD/IPD patient of *Karappan* for the assessment.
Activity 3: Lab Report interpretation (30 minutes)
Developing interpretation skill
For a *Karappan* patient, PG Student must analyse the presence of any positive findings of Siddha Diagnostic parameters such as *Envagai Thervu, Manikadai Nool, Yaakai Ilakkanam* and any type of diagnostic methodologies which are seen similar in the recorded patients. If any similarities can be interpreted with Biochemistry values or Biomarkers or any positive Modern lab investigation, they must be noted.
Activity 4: Discussion/Peer Learning (1 hour)

Conducting Class Interaction
For the particular grouped case, do the compilation of findings of Siddha and Modern Lab investigation results. This outcome must be constituted as ideal pattern format of lab test interpretation in terms of Siddha principles. Conduct Class Interaction about the diagnostic analytics assessment findings by organizing the collected information and submit the findings to the department.
Activity 5: Presentation (30 minutes)
Evaluation and Feedback
The activity performance will be evaluated by the faculty and provide constructive feedback to students on their observations and reasoning.

Experiential-Learning 16.8 : Dermatological Scales and *Karappan Noi*

Total Activity hours: 2 hours
Activity 1: Journal Club, Library Session (30 minutes)
Exploration of Resources
Each PG Student must explore through various search engines and gather information about dermatological Scales employed in assessing *Karappan Noi (Eczema)*
Activity 2: Case-Based Learning (30 minutes)
Interpretation Skill based on Rating scales
The appropriate dermatological Scales for assessing a particular *Karappan Noi* must be assessed and categorized and interpret with their *Thega Ilakkanam*.
Activity 3: Discussion (30 minutes)
Conducting Debate
PG students must be divided into small groups by the faculty. Each team should debate the assessment findings.
Activity 4: Presentation (30 minutes)
Evaluation and Feedback
Submit the diagnostic assessment findings to the department. The faculty will provide constructive feedback to Students on their observations and reasoning.

Experiential-Learning 16.9 : Siddha and Pharmacogenomics Interpretation in diagnosis of *Venkuttam.*

Total Activity hours: 3 hours
Activity 1: Case-based Learning (30 minutes)
Treatment Protocol Assessment
Each PG Student should observe the various treatment protocols for different types of *Thega Ilakkanam* patients in particular type of *Venkuttam* patient in OPD.
Activity 2: Team-Based Learning (30 minutes)
Comparative Analysis of Medications
It should be observed which set of medicine shows the best result for that particular Thega Ilakkanam of *Venkuttam* patient.

Activity 3: Inquiry-Based Learning (30 minutes)
Interpretation with Pharmacogenomics
Each PGStudent must interpret with Pharmacogenomics of their treatment protocols.
Activity 4: Peer-Assisted Learning (30 minutes)
Enhancing Prescription choice skill
The outcome must be enumerated as comprehensive diagnostic analysis on appropriate choice of prescription of good set of medicines *(agamaruthuvam,puramaruthuvam)* which suits to that particular type of *Thega Ilakkanam*.
Activity 5: Discussion, Presentation (1 hour)
Conducting Class Presentation
With this outcome, a prescribed line of treatment based on *Suvai, Gunam, and Veeriyam* can be framed. It enables prescription of the potential line of treatment grounded in the system's underlying principles. Each PG Student must conduct a Class Presentation and discuss their experiential activity findings of the Case Study Analysis. Submit assessment findings to the department. The faculty will provide constructive feedback to Students on their observations and reasoning.

Experiential-Learning 16.10 : Siddha and Pharmacogenomics interpretation in diagnosis of *Puzhuvettu*.

Total Activity hours: 3 hours
Activity 1: Case-Based Learning (30 minutes)
Treatment Protocol Assessment
Each PG Student should observe the various treatment protocols for different types of *Thega Ilakkanam* patients in particular type of *Puzhuvettu* patient in OPD.
Activity 2: Team-based Learning (30 minutes)
Comparative analysis of Medications
It should be observed that which set of medicine shows best result for that particular *Thega Ilakkanam* of *Puzhuvettu* patient.
Activity 3: Inquiry-Based Learning (30 minutes)
Interpretation with Pharmacogenomics
Each PG Student must interpret with Pharmacogenomics of their treatment protocols.
Activity 4: Peer-Assisted Learning (30 minutes)
Enhancing Prescription choice skill
The outcome must be enumerated as a comprehensive diagnostic analysis on the appropriate choice of prescription of a good set of internal medicines and external medicines that suit to that particular type of *Thega Ilakkanam*.
Activity 5: Discussion, Presentation (1 hour)
Conducting Class Presentation
With this outcome, a prescribed line of treatment based on *Suvai, Gunam, and Veeriyam* can be framed. It enables prescription of the potential line of treatment grounded in the system's underlying principles. Each PG Student must conduct a Class Presentation and discuss their experiential activity findings of the Case Study Analysis. Submit

assessment findings to the department. The faculty will provide constructive feedback to Students on their observations and reasoning.

Modular Assessment

Assessment method	Hour
Instructions: Conduct a structured Modular assessment. The assessment will be for 50 marks. Keep a structured marking pattern. Use different assessment methods in each module for the semester. Keep a record of the structured pattern used for assessment. Calculate the Modular grade point as per Table 6 Choose any of the below assessment for 50 marks. Interpret the findings of given at least 5 different diagnostic modalities such as X-ray, USG, CT Scan, MRI, Venogram, Arteriogram etc., postulate the possible differential diagnosis and confined diagnosis for 50 marks Or Total Marks: 50 / Time Duration: 4 Hours 1.SAQ AND LAQ ASSESSMENT Total Marks: 20 | Duration: 1 hour 30 minutes ASSESSMENT STRUCTURE General Instructions: Answer THREE questions in total Question 1 is long answer question(10 marks) Question 2,3 is short answer question(5 marks each). 2.OBJECTIVE STRUCTURED CLINICAL EXAMINATION (OSCE) Mark Distribution: 20 marks Duration:1 hour 30 min Clinical Examinations of patients through Yakkai, aga karuvigal, Pura karuvigal (3 marks) Udal Thaathukkal, ennvagai thervu (5 marks) Manikkadai Nool (1mark) Derangement of Mukkutram (2 marks) Mukkutra Verupadu (2 marks) Prescription of the line of treatment based on mukkutram, suvai and gunam,veeriam and based on other underlying siddha principles (5 marks) Noi Kanippu (1 mark) Theerum Theera Nilai (1 mark) VIVA VOCE EXAMINATION (5 Marks) -Time-30 minutes	4

Assessment Structure: Foster a deeper understanding of the underlying mechanisms of the particular disease to inform clinical decision-making and able to interpret the variations of differential diagnosis and Marking Distribution: Knowledge and Understanding (2 marks) Detailed pathological knowledge Understanding of Siddha Diagnostic tools and their application Clinical Application (1 mark) Differential Diagnosis Clinical scenarios Radiological interpretation Communication Skills (2 marks) Clarity of expression Use of precise terminology Ability to explain complex concepts RECORD KEEPING (5 Marks) Time : 30 minutes Assessment Criteria: Clinical Assessments (4 marks) Profound Disease Interpretation Analysis with analogous modern terminologies Radiological integration Written Presentation Skills (1 mark) Innovative Ideas Clarity of Concepts or Any practical in converted form can be taken for assessment. (25 marks) and Any experiential, such as portfolios / reflections / presentations can be taken as an assessment. (25 marks)	

Paper No : 3 RECENT ADVANCES AND APPLIED ASPECTS OF PATHOLOGY INCLUDING IMMUNOPATHOLOGY AND HAEMATOLOGY

Semester No : 3

Module 17 : Applications Of Basic Pathology

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

Analyze and apply the knowledge of mechanisms in cell injury, different patterns of inflammation related to distinct molecular pathways, hemodynamic alterations, genetic abnormalities, neoplasia , nutritional and environmental disorders in precisive diagnosis and research interventions
Demonstrate and interpret the lab diagnosis of cellular responses to stimuli,inflammatory changes,hemodynamic and genetic abnormalities,neoplastic features ,nutritional assessments supporting appropriate diagnosis
Apply the learning of basic pathology in real or simulated environments .

M 17 Unit 1 Cell Injury

17.1.1. Reversible cell injury
17.1,2. Irreversible cell injury
17.1.3. Various forms of cell death
17.1.4. Pathological calcification and gangrene
17.1.5. Cellular adaptations
17.1.6. Intracellular accumulations
17.1.7. Cellular ageing

References: 29,30,33,37,47

3A	3B	3C	3D	3E	3F	3G
CO1,CO2,CO5	Analyze the underlying mechanisms, morphological variations and the clinical	1	Lecture	CAP	Knows-	DIS,BS

,CO7,CO8	significance of cell injury,cellular adaptations,intra cellular accumulations ,cell death and cellular senescence				how	
CO4,CO5,CO6 ,CO7	Interpret the significant gross and microscopical features showing various forms of cellular responses to injury.	5	Practical Training 17.1	PSY-MEC	Shows-how	DIS,LRI, DL
CO1,CO2,CO4 ,CO6,CO8	Analyze the impact of cell injury, cell death, intra cellular accumulations and cellular adaptations in clinical manifestations	3	Experiential-Learning 17. 1	PSY-GUD	Does	PER,LRI, DL,CBL, PL

M 17 Unit 2 Inflammation

17.2.1. Events of inflammation
17.2.2. Chemical mediators of inflammation
17.2.3. Granulomatous inflammation
17.2.4. Repair and regeneration
17.2.5. Wound healing and Healing in bone and specialized tissue

References: 29,30,33,37,47

3A	3B	3C	3D	3E	3F	3G
CO1,CO2,CO5 ,CO7,CO8	Describe and discuss the events,the role of chemical mediators, regulation and the morphological out comes of inflammation and the disorders of leucocytes function in the process of inflammation Analyse the pathogenesis and diagnosis of Tuberculosis, Sarcoidosis, Syphilis and Leprosy Discuss the role of ECM, angiogenesis and growth factors in healing and its complications	1	Lecture	CAP	Knows-how	PL,BS,L &PPT ,L&GD

CO4,CO5,CO6 ,CO7	Demonstrate the features of acute ,chronic and granulatomous inflammation in the histopathological slides and specimens.	3	Practical Training 17.2	PSY-MEC	Shows-how	LRI,DIS, DL
CO1,CO2,CO4 ,CO6,CO8	Develop infographics or short videos explaining the processes of inflammation for undergraduate medical students	2	Experiential-Learning 17. 2	PSY-GUD	Does	PER,DIS, PrBL,LS, PL

M 17 Unit 3 Hemodynamics

17.3.1. Hyperemia, congestion
17.3.2. Thrombosis
17.3.3. Embolism
17.3.4. Infarction
17.3.5. Oedema
17.3.6. Shock

References: 29,30,33,37,47

3A	3B	3C	3D	3E	3F	3G
CO1,CO2,CO5 ,CO7,CO8	Analyze the etiology, pathogenesis, morphological features and clinical effects of edema, thrombosis, infarction ,shock, hyperemia, congestion and hemorrhage.	1	Lecture	CAN	Knows-how	L&PPT ,L&GD
CO4,CO5,CO6 ,CO7	Demonstrate the gross and morphological features of various hemodynamic changes in given specimens and histopathological slides	5	Practical Training 17.3	PSY-MEC	Shows-how	DIS,LRI, DL
CO1,CO2,CO5 ,CO7,CO8	Analyze a patient with vascular symptoms and apply Wells' criteria to assess thrombosis. Analyze patients with oedematous symptoms and document the etiology, risk factors and clinical outcomes.	2	Experiential-Learning 17. 3	PSY-MEC	Does	LRI,D-BED,CBL, Mnt,DIS

M 17 Unit 4 Environmental Disorders

17.4.1. Effects of Tobacco and Alcohol
17.4.2. Effects of environmental pollution-Air, Industrial and Agricultural exposures
17.4.3. Radiation and thermal injuries

References: 29,30,33,37,47

3A	3B	3C	3D	3E	3F	3G
CO1,CO2,CO5 ,CO7,CO8	Discuss the pathological mechanisms, key alterations of the tissues and the clinical impacts due toTobacco smoking and alcohol consumption Air, industrial and agricultural pollutants exposure and Radiation and thermal injury.	1	Lecture	CAP	Knows-how	L&GD,S DL,DIS
CO1,CO5,CO6 ,CO8	Interact with patients who has undergone radiotherapy for cancer and look for any radiation induced clinical effects and document the findings. Analyse the potential risk factors and develepment of diseases due to industrial exposure by industrial visits	3	Experiential-Learning 17. 4	AFT-VAL	Does	FV,PBL,S DL,CBL, TBL

M 17 Unit 5 Nutritional Disorders

17.5.1. Severe and moderate acute malnutrition
17.5.2. Vitamin deficiencies
17.5.3. Obesity

References: 29,30,33,37,47

3A	3B	3C	3D	3E	3F	3G
CO1,CO2,CO5 ,CO7,CO8	Define and describe the etiopathogenesis of World Health Organisation(WHO) classification, clinical features,complications of severe and moderate acute malnutrition Describe the pathophysiology, systemic effects and diagnostic criteria of obesity and analyse the role of obesity in chronic inflammation, insulin resistance and oxidative stress	1	Lecture	CAP	Knows-how	SDL,L&P PT ,PL

CO4,CO5,CO6 ,CO7	Interpret the gross and microscopic features suggesting the diagnosis of malnutrition	2	Practical Training 17.4	PSY-GUD	Knows-how	LRI,DL
CO2,CO6,CO7	Differentiate the underlying (genetic, metabolic,hormonal lifestyle influences) causes of obesity in individuals and document their impact on clinical outcomes	3	Experiential-Learning 17.5	CAP	Does	DIS,LRI, CBL,BS

M 17 Unit 6 Genetic and Immunological Disorders

17.6.1. Chromosomal abnormalities
17.6.2. Single gene mutations-pattern of inheritance
17.6.3. Epigenetic alterations
17.6.4. Mitochondrial abnormalities
17.6.5. Hypersensitivity reactions
17.6.6. Immuno deficiency syndrome
17.6.7. Autoimmune disorders
17.6.8. Amyloidosis
17.6.9. Transplant rejection
17.6.10 Graft versus Host disease

References: 29,30,33,37,47

3A	3B	3C	3D	3E	3F	3G
CO1,CO2,CO5 ,CO7,CO8	Concise the potential effects of mutations on protein function and human traits,inheritance patterns,mendelian disorders,chromosomal abnormalities and clinical outcomes Describe the concept of epigenetics and its role in disease. Appraise the cellular and molecular bases of innate and adaptive immune response. Structure and function of histocompatibility molecules and disease association, Hypersensitivity reactions, Immunodeficiency syndrome, Autoimmune disorders, Amyloidosis ,Transplant rejection	2	Lecture	CAN	Knows-how	L&PPT ,L&GD

	and Graft vs Host Disease					
CO1,CO3,CO4 ,CO6	Interpret the results of karyotyping for the diagnosis of various genetic disorders	2	Experiential-Learning 17. 6	PSY-SET	Shows-how	CBL,LRI
CO1,CO4,CO6 ,CO8	Analyze the pattern of inheritance and the disease progress in patients with genetic disorder and role of genetic databases in clinical diagnostics and research.	4	Experiential-Learning 17. 7	CAP	Does	DIS,CBL, Mnt,BS,S IM

M 17 Unit 7 Neoplasia

17.7.1. Definition, Classification, nomenclature
17.7.2. Microscopical, biological characteristic of neoplasia
17.7.3. Difference between benign and malignant
17.7.4. Molecular basis of cancer
17.7.5. Carcinogens and Mechanism of Carcinogenesis
17.7.6. Tumour immunology
17.7.7. Effects of tumour on the host and paraneoplastic syndromes
17.7.8. Mechanism of invasion and metastasis
17.7.9. Grading and staging of cancer
17.7.10. Lab diagnosis of cancer
17.7.12. Tumour immunology
17.7.13. Paraneoplastic syndromes

References: 29,30,33,37,47

3A	3B	3C	3D	3E	3F	3G
CO1,CO2,CO5 ,CO7,CO8	Analyze the characteristics, molecular basis, carcinogenesis, tumour immunology, mechanism involving invasion and spread , grading and staging, clinical effects and pathological diagnosis of malignant tumours	3	Lecture	CAN	Knows-how	PL,L&PP T

CO4,CO5,CO6 ,CO7	Demonstrate the gross and microscopical features suggesting the diagnosis of malignant cells	5	Practical Training 17.5	PSY-MEC	Shows-how	DL
CO1	Conduct literature review on the epidemiology of cancer and carcinogenesis	7	Experiential-Learning 17.8	PSY-GUD	Shows-how	JC,BS,LS ,DIS,Mnt

Practical Training Activity

Practical Training 17.1 : Histopathological diagnosis of various forms of cell injury.

Duration of Practical: 5 hours
Interpret the significant gross and microscopical features showing various forms of cellular responses to injury.
Step 1 The teacher should clearly state the learning objective to the students (10 mins)
Step 2 Preserved pathological specimens and properly labeled and stained histopathology slides should be provided to the students (5 mins)
Step 3 Teacher will demonstrate the the gross and microscopic pathological features suggesting the diagnosis of following diseases or conditions (1 hr 15 mins)
Cytoplasmic and nuclear changes in reversible and irreversible injury
Features of cell death
Intracellular accumulations
Hypertrophy,hyperplasia, metaplasia,atrophy and dysplasia
Step 4 The students are engaged to perform the gross and microscopical examination and identify the key pathological features of above diseases or conditions and record a structured diagnostic report (1hr 15 mins)
Step 5. Small group discussions on the pathological findings and their clinical significance should be done and recorded (1 hr)
Step 6 Digital images , histopathology atlas and patient case history related to similar disease conditions should be additionally provided for comparison and discussion (1hr)
Step 7 Feedback on students observation and diagnostic accuracy should be given by OSPE method (15mins)

Practical Training 17.2 : Histopathological interpretation of inflammatory features

Duration of Practical : 3 hours
Demonstrate the features of acute,chronic and granulatomous inflammation in the histopathological slides and specimens
Step 1 The teacher should clearly state the learning objective to the students (10 mins)

Step 2 Preserved pathological specimens and properly labeled and stained histopathology slides should be provided to the students (5mins)
Step 3 Teacher will demonstrate the the gross/ microscopic pathological features suggesting the diagnosis of following diseases or conditions (45 mins)
Acute inflammation
Chronic inflammation
Fibrosis
Granuloma
Step 4 The students are engaged to perform the gross/microscopical examination and identify the key pathological features of above diseases or conditions and record a structured diagnostic report(45 mins)
Step 5. Small group discussions on the pathological findings and their clinical significance should be done and recorded(30mins)
Step 6 Digital images,histopathology atlas and patient case history related to similar disease coditions should be additionally provided for comparison and discussion(30 mins)
Step 7 Personalised feedback on students observation and diagnostic accuracy should be given by OSPE method(15 mins)

Practical Training 17.3 : Histopathological analysis of Hemodynamic changes

Duration of Practical: 5 hours
Demonstrate the gross and morphological features of various hemodynamic changes in given specimens and histopathological slides
Step 1 The teacher should clearly state the learning objective to the students (10mins)
Step 2 Preserved pathological specimens and properly labeled and stained histopathology slides should be provided to the students(5 mins)
Step 3 Teacher will demonstrate the the gross/ microscopic pathological features suggesting the diagnosis of following diseases or conditions (1 hr)
Oedema
Thrombosis
Infarction
Hyperemia and congestion
Step 4 The students are engaged to perform the gross/microscopical examination and identify the key pathological features of above diseases or conditions and record a stuctured diagnostic report (90 mins)
Step 5. Small group discussions on the pathological findings and their clinical significance should be done and recorded (1hr)
Step 6 Digital images,histopathology atlas and patient case history related to similar disease coditions should be additionally provided for comparison and discussion (1hr)
Step 7 Personalised feedback on students observation and diagnostic accuracy should be given by OSPE method(15 mins)

Practical Training 17.4 : Histological diagnosis of malnutrition

Duration of Practical: 2 hours
Interpret the gross and microscopic features suggesting the diagnosis of malnutrition and obesity
Step 1 The teacher should clearly state the learning objective to the students (10 min)
Step 2 Preserved pathological specimens/ and properly labeled and stained histopathology slides should be provided to the students(5 min)
Step 3 Teacher will demonstrate the gross/ microscopic pathological features suggesting the diagnosis of following diseases or conditions(30 min)
Rickets
Anorexia nervosa
Marasmus
Step 4 The students are engaged to perform the gross/microscopical examination and identify the key pathological features of above diseases or conditions and develop stuctured diagnostic report (30 min)
Step 5 Small group discussions on the pathological findings and their clinical significance should be done (30min)
Step 6 Digital images,histopathology atlas and patient case history related to similar disease coditions should be additionally provided for comparison and discussion (10 min)
Step 7 Personalised feedback on students observation and diagnostic accuracy should be given by OSPE method (5 min)

Practical Training 17.5 : Histopathological interpretation of benign and malignant cells

Duration of practical: 5 hours
Demonstrate the gross and microscopical features suggesting the diagnosis of malignant cells
Step 1 -The teacher should clearly state the learning objective to the students(10min)
Step 2- Preserved pathological specimens and properly labeled and stained histopathology slides should be provided to the students(5min)
Step 3 -Teacher will demonstrate the gross/ microscopic pathological features suggesting the diagnosis of following diseases or conditions(1 hr)
Benign and malignant tumours
Anaplastic features
Step 4 -The students are engaged to perform the gross/microscopical examination and identify the key pathological features of above diseases or conditions and record a stuctured diagnostic report(90 min)
Step 5- Small group discussions on the pathological findings and their clinical significance should be done and recorded (1hr)
Step 6 -Digital images , histopathology atlas and patient case history related to similar disease coditions should be additionally provided for comparison and discussion (1hr)
Step 7- Personalised feedback on students observation and diagnostic accuracy should be given by OSPE method(15 min).

Experiential learning Activity

Experiential-Learning 17.1 : Exploration of cell responses to etiological factors in clinical scenarios

Duration of activity: 3 hours
Analyze the impact of cell injury, cell death, intra cellular accumulations and cellular adaptations in clinical manifestations
Activity 1: Microscopical Examination and Interpretation of Slides/Reports (1 hour)
Overview of microscopy techniques (light vs. electron microscopy, staining methods (10mins)
Identify morphological features of reversible vs irreversible cell injury (20 mins)
Recognizing lipid, protein, glycogen and pigment deposits (15 min)
Differentiating atrophy, hypertrophy, hyperplasia, metaplasia and dysplasia (15 mins)
Activity 2: Correlation with Clinical Findings (2 hours)
Case-Based Discussions
The students should analyse and document the cellular changes and the clinical manifestations in patients with
Fatty liver (1 case)
Ischaemic stroke (1 case)
Chronic hypertension (1 case)
Benign prostate hyperplasia (1case))
Chronic obstructive pulmonary disease (2cases)
Various types of necrosis (5 cases)
Disorders of apoptosis (3 cases)
Cellular adaptations (5 cases)
Intracellular accumulations (3 cases)
Step 3: Documentation, Discussion and Peer Learning (30 mins)
Documentation and Report Writing : Key elements of histopathology/cytopathology reports
Peer Discussions : Group presentations on selected cases

Experiential-Learning 17.2 : Visual representation of inflammatory processes

Duration of activity: 2 hours
Develop infographics or short videos explaining the processes of inflammation for undergraduate medical students

Activity 1 : Understanding and Planning (1 hour)
Introduction and Review (15 minutes)
Briefly review the key components of the inflammatory process
Emphasize the importance of clear communication in medicine
Brainstorming and topic allotment (20 minutes)
Discuss potential topics for infographics or videos, such as:
Vascular and cellular changes in inflammation
The role of specific cytokines in inflammation
Differences between acute and chronic inflammation
The process of tissue healing
The granulomatous inflammatory process
Encourage students to choose a specific aspect of inflammation to focus on
Each student decides if they will create an infographic or a short video
Research and Storyboarding (25 minutes)
Students begin researching their chosen topic, focusing on accurate and concise information.
They develop a storyboard or outline for their infographic/video, including:
Key messages and visuals.
Text and graphics layout (for infographics)
Script and visual sequence (for videos)
Activity 2: Creation and Presentation (1 hour)
Creation(40 minutes)
Students use their chosen software/platforms to create their infographics or videos.
Instructors circulate to provide guidance and answer questions
Presentations and Discussion (20 minutes)
Each student present their infographic or video to the class.
Facilitate a brief discussion after each presentation, focusing on:
Clarity and accuracy of information.
Effectiveness of visual communication.
Key takeaways from the presentation.
Instructors can provide feedback and point out any areas that require improvement.

Experiential-Learning 17.3 : Clinical analysis of thrombosis with Wells' criteria and Oedema

Duration of activity: 2 hours
Activity 1: Clinical analysis of thrombosis (1 hour)
Step 1- Introduction (15 minutes)
Briefly review DVT, its risk factors, and clinical presentation.
Introduce the Wells' criteria, explaining each component and its significance.
Step 2-Case Presentation (30 minutes):
Present a realistic patient case with vascular symptoms. This could be:
A written case scenario
A simulated patient encounter
A video of a patient interview
The case should include relevant medical history, physical examination findings and presenting symptoms
Ensure the case has enough information to apply the wells'criteria.
Step 3-Wells' Criteria Application (30 minutes):
Have students work individually to apply the Wells' criteria to the presented case.
Guide them through the scoring process, ensuring they understand how to assign points.
Facilitate a discussion on the calculated Wells' score and its interpretation
Step 4-Clinical Reasoning and Discussion (30 minutes)
Discuss the implications of the Wells' score in the context of the patient's overall clinical picture.
Explore the next steps in patient management, including:
Further diagnostic testing
Discuss differential diagnosis.
Step 5-Wrap-up (15 minutes):
Summarize the key learning points.
Emphasize the importance of using clinical prediction rules in conjunction with clinical judgement.
Activity 2 : Clinical analysis of Oedema(1 hour)
Step 1-Case Presentation (20 minutes):
Present a patient case with oedematous symptoms.
The case should include:
Patient demographics (age, sex).
Presenting symptoms

Relevant medical history
Physical examination findings
Basic lab values if applicable
The case should be designed to require the students to think critically about the cause of the edema
Step 2- Etiology and Risk Factor Analysis (30 minutes)
Instruct each student to:
Analyse the patient case and identify the potential etiologies of the edema
Document the risk factors contributing to the edema
Discuss the likely pathological processes causing the edema
Encourage students to consider differential diagnosis
Students can record their findings as structured report
Step 3-Clinical Outcomes and Discussion (10 minutes)
Facilitate a class discussion on the potential clinical outcomes of the edema
Discuss:
Potential complications
The importance of addressing the underlying cause of the edema
Discuss how different causes of edema will have differing treatment plans

Experiential-Learning 17.4 : Radiation and Industrial exposure- Clinical impacts

Duration of activity: 3 hours
Activity 1: Interact with patients who has undergone radiotherapy for cancer and look for any radiation induced clinical effects and document the findings. (Hour 1)
Step 1 - Initial Interaction and History Taking (10 Minutes)
Obtain informed consent for examination and discussion.
Ask about their cancer type, treatment duration and radiotherapy dosage.
Gather details on symptoms they are experiencing
Step 2- Physical Examination and Assessment (15 Minutes)
Look for any post radiation general or systemic manifestations
Assess the severity of the symptoms
Step 3- Documentation and Discussion (20 Minutes)
Record the patient’s history, symptoms and examination findings
Categorize findings as acute, subacute or late effects of radiation

Compare findings with expected radiation-induced side effects
Discuss case documentation protocols (SOAP notes)
Step 4-Group Discussion and Reflection (15 Minutes)
Share and discuss findings with peers.
Identify patterns in symptoms among different patients
Discuss management strategies and possible interventions
Reflect on patient communication and professional conduct
Activity 2. Analyse the potential risk factors and develepment of diseases due to industrial exposure by industrial visits(2 hours)
Step 1- Industrial Site Visit and Observation (30 Minutes)
Identify the type of industry (chemical, textile, metal, mining etc.)
Observe the work environment (air quality, noise levels, protective measures)
Identify potential hazardous materials (chemicals, dust, radiation, heat exposure)
Step 2- Worker Interaction & Health Assessment (30 Minutes)
Interview workers about their daily exposure and protective measures.
Ask about common health complaints
Identify any reported cases of chronic illnesses
Gather information on occupational safety measures and medical checkups
Step 3- Risk Factor Analysis and Disease Correlation (30 Minutes)
Airborne toxins : Risk of lung diseases, cancer
Chemical exposure : Risk of neurological disorders, skin diseases
Noise pollution: Hearing loss, stress-related disorders
Ergonomic hazards: Musculoskeletal disorders, chronic pain
Radiation exposure: Cancer, reproductive disorders
Step 4-Documentation and Discussion (30 mins)
Record key observations and worker-reported symptoms
Compare findings with known industrial disease patterns
Discuss preventive strategies

Experiential-Learning 17.5 : Comprehensive evaluation of obesity causes and their clinical implications

Duration of activity: 3 hours

Differentiate the underlying (genetic, metabolic,hormonal lifestyle influences) causes of obesity in 10 individuals and document their impact on clinical outcomes
Activity 1- Identification of Underlying Causes of Obesity(1 hour)
Genetic Factors (20 min)
Identify genes linked to obesity
Discuss family history and hereditary patterns.
Metabolic Factors (20 min)
Assess basal metabolic rate (BMR) variations among individuals.
Identify metabolic disorders like hypothyroidism
insulin resistance
PCOS.
Hormonal Influences (20 min)
Explore the impact of leptin, ghrelin, insulin, cortisol, thyroid hormones.
Discuss hormonal dysregulation in obesity
Assess endocrine disorders contributing to weight gain.
Activity 2- Lifestyle Influences and Comparative analysis(1 hour)
Lifestyle Factors (30 min)
Identify dietary habits
Assess physical inactivity and sedentary behavior.
Examine the impact of sleep deprivation and stress on weight gain.
Consider socioeconomic factors, cultural influences, and psychological aspects.
Comparative Analysis (30 min)
Differentiate obesity causes based on history, examination and lab tests.
Identify overlapping vs. distinct risk factors for each individual.
Categorize patients based on primary, secondary, or mixed causes of obesity.
Activity 3: Clinical Impact & Documentation (1 hour)
Impact on Clinical Outcomes (30 min)
Document obesity-related complications
Examine psychosocial impacts
Documentation and Discussion (30 min)
Record findings in a structured format (SOAP notes, case reports).
Compare and contrast clinical outcomes based on obesity causes.

Experiential-Learning 17.6 : Karyotype Interpretation for Genetic Disorders Diagnosis

Duration of activity: 2 hours
Activity 1: Understanding & Identifying Chromosomal Abnormalities (1 hour)
Review Karyotyping Basics (20 min)
Identification of Common Numerical Abnormalities (20 min)
Identification of Structural Abnormalities (20 min)
Activity 2: Case Analysis and Clinical Correlation (1 hour)
Interpretation of Patient Karyotypes (30 min)
Analyze provided karyotypes and identify abnormalities.
Determine whether the abnormality is inherited or de novo.
Assess possible phenotypic outcomes and symptoms.
Clinical Implications & Genetic Counseling (30 min)
Correlate karyotype results with disease severity and prognosis.
Discuss reproductive implications.
Guide patients on further genetic testing .

Experiential-Learning 17.7 : Assessment of etiology and inheritance pattern in patients with genetic disorders
Exploration of online genomic databases

Duration of activity : 4 hours
Activity 1. Assessment of etiology and inheritance pattern in patients with genetic disorders (2 hours)
Hour 1: Identifying Inheritance Patterns
Review Basic Modes of Inheritance (20 min)
Pedigree Analysis and Pattern Prediction (20 min)
Introduce 5 case studies of patients with genetic disorders.

Provide relevant clinical information and family histories.
Interpret family pedigrees to determine inheritance patterns.
Identify carrier status, affected individuals, and at-risk relatives.
Differentiate between sporadic vs Inherited cases.
Genetic Testing & Confirmation (20 min)
Role of karyotyping, PCR, sequencing and FISH.
Discuss predictive genetic testing for late-onset disorders .
Consider ethical aspects of genetic screening.
Hour 2: Predicting Disease Progression & Clinical Impact
Disease Progression Based on Genetic Type (30 min)
Prediction of disease progression in
Neurodegenerative disorders
Metabolic disorders
Cancer predisposition genes
Multifactorial conditions
Clinical Management & Prognosis (30 min)
Preventive strategies
Counseling patients on disease risk, prognosis and family planning.
Activity 2. Exploration of online genomic databases(2 hours)
Hour 1: Understanding & Exploring Genetic Databases
Introduction to Genetic Databases (20 min)
Overview of commonly used databases:
Understanding their role in variant interpretation, diagnosis and research.
Hands-on Exploration (20 min)
Access a genetic database
Search for a specific genetic variant or disease
Analyze the clinical significance, inheritance pattern, and associated disorders.
Interpreting Database Results (20 min)
Identify pathogenic vs benign variants.
Correlate findings with patient symptoms and family history.
Understand classification terms
Hour 2: Application in Clinical Diagnostics and Research

Case-Based Analysis in a real or simulated patient case (20 min)
Use a real or simulated patient case with genetic test results.
Cross-check variant findings in genetic databases.
Predict disease risk and discuss potential interventions.
Role in Genomic Research & Future Applications (20 min)
How databases assist in drug discovery, gene therapy, and precision medicine.
Integration of AI and big data in genomic research.
Ethical considerations in genetic data sharing and privacy.
Documentation and discussion(20 mins)
Document the step-by-step procedure of the activity
Database search results.
Variant interpretations.
Gene identification reports.
Class discussion and presentations.

Experiential-Learning 17.8 : Literary review on epidemiology of cancer and carcinogenesis

Duration of activity : 7 hours
Conduct literature review on the epidemiology of cancer and carcinogenesis (7 hours)
Activity1: Collecting Literature (1 hour)
Gather high-quality, peer-reviewed studies on cancer epidemiology and carcinogenesis.
Categories to Focus On:
Global cancer incidence and prevalence by region.
Genetic vs environmental causes of cancer.
Mechanisms of carcinogenesis (initiation, promotion, progression).
Cancer prevention and screening.
Activity 2: Analyzing Patterns (1 hour)
Identify trends and patterns across the collected literature
Review and Annotate on major patterns and gaps in the literature.
Activity 3: Theoretical Framework (1 hour)
Develop a visual concept map / framework connecting epidemiological data and biological mechanisms.
Framework Components:

Descriptive Epidemiology
Analytical Epidemiology
Mechanistic Pathways
Concept Mapping
Connect risk factors to cancer types
Link epidemiological findings to models of carcinogenesis
Activity 4: Hypothesis and Critical Gaps (1 hour)
Formulate hypothesis and identify knowledge gaps for future investigation.
List out 3–5 research questions or hypothesis
Activity 5: Structuring the Literature Review(1 hour)
Organize findings into a coherent literature review with a clear and comprehensive outline.
Outline:
Epidemiology of Cancer
Global patterns and disparities
Incidence by cancer type
Carcinogenesis Mechanisms
Molecular pathways
Multi-stage model of cancer development
Risk Factors
Genetic vs environmental risks
Modifiable vs non-modifiable factors
Future Directions
Gaps in current research
Potential for targeted prevention
Activity 6: Writing the Draft (1 hour)
Write a 2,000–3,000 word literature review draft.
Activity 7: Review and Reflect (1 hour)
Edit the draft for coherence, accuracy, and alignment with learning objectives to get the refined literature review ready for submission.

Modular Assessment

Assessment method	**Hour**

Instructions:Conduct a structured Modular assessment. The assessment will be for 50 marks. Keep a structured marking pattern. Use different assessment methods in each module for the semester. Keep a record of the structured pattern used for assessment. Calculate the Modular grade point as per Table 6 C. CHOOSE ANY OF THE BELOW ASSESSMENT FOR 50 MARKS 1.Topic presentations (10 marks) A.Content Accuracy and Depth (4 Marks) Accurate and relevant information (2 marks) Depth of understanding and explanation (2 marks) B.Organization and Clarity (3 Marks) Logical organization and flow (1 mark) Clear and concise language (1 mark) Effective use of visual aids (1 mark) C.Engagement and Delivery (3 Marks) Eye contact and voice projection (1 mark) Engagement with the audience (1 mark) Time management and professionalism (1 mark) 2. LAQ (10 marks) And 3. SAQ (5 marks) And 4. Histopathology Diagnosis and Interpretation of 3 slides or specimens each carrying 5 marks(15 marks) Key Microscopic Features (2 Marks) Probable Diagnosis (2 Marks) Brief Clinical Correlation (1 Mark) And 5. Objective Structured Clinical Examination (OSCE)(10 marks) Task Completion (6 Marks) Correct sequence of actions (2 marks) Accuracy of performed steps/questions (2 marks) Efficiency and organization (2 marks) Communication Skills (2 Marks) Clarity and conciseness of communication (1 mark) Empathy and rapport building (1 mark)	4

Clinical Reasoning/Interpretation (2 Marks)
Logical reasoning and justification (1 mark)
Appropriate interpretation of findings (1 mark)
Or
Any practical in converted form can be taken for assessment. (25 marks)
and
Any experiential, such as portfolios / reflections / presentations can be taken as an assessment. (25 marks)

Module 18 : Respiratory, Eye and Otolaryngological Diseases

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

Analyse and illustrate the knowledge of various pathological processes in the respiratory system, ophthalmic and otolaryngological diseases
Demonstrate their pathological diagnosis for clinical , research and therapeutic interventions.

M 18 Unit 1 Respiratory Diseases

18.1.1. Chronic bronchitis
18.1.2. Emphysema
18.1.3. Bronchiectasis
18.1.4. Bronchial Asthma
18.1.5. Fibrosing lung diseases
18.1.6. Granulomatous lung diseases
18.1.7. Pulmonary embolism and hypertension
18.1.8. Pulmonary infections
18.1.9. Tumours of lung and pleura

References: 29,30,33,37,47,54

3A	3B	3C	3D	3E	3F	3G
CO1,CO2,CO5	Analyze the role of risk factors,triggers,and inflammatory cells in the in the pathology and diagnosis of Chronic bronchitis, Emphysema, Bronchiectasis, Bronchial asthma Illustrate the pathophysiology ,clinical features and diagnosis of fibrosing , granulomatous and eosinophilic lung diseases Describe the pathogenesis, clinical features and diagnosis of Pulmonary embolism and hypertension	2	Lecture	CAN	Knows-how	BL,L&GD
CO1,CO4,CO7,CO8	Interpret the gross and microscopical features suggesting the diagnosis of Respiratory diseases	10	Practical Training 18.1	PSY-MEC	Shows-how	DIS,LRI,DL
CO1,CO2,CO4,CO7,CO8	Analyze the underlying causes and risk factors of lung diseases Assess the prognosis of Chronic Obstructive Pulmonary Disease patients by BODE index Create a report on future research questions and clinical implications in patient care with respiratory diseases	10	Experiential-Learning 18.1	AFT-RES	Shows-how	DIS,Mnt,PBL,TBL,SDL
CO1,CO2,CO5	Describe the pathogenesis, clinical evolution, diagnostic methods, natural history of pulmonary and extra pulmonary forms, impact of co-infection with HIV and other co-morbids of Tuberculosis Illustrate the pathogenesis, classification, stages,clinical features and diagnosis of Pneumonia symptoms	2	Lecture	CAP	Knows-how	DIS,CBL,L_VC,LRI,BL
CO1,CO2,CO5	Illustrate the etiopathogenesis,classification,clinical features,staging and diagnosis of lung tumours and pleural tumours	1	Lecture	CAP	Knows-how	CBL,DIS,LRI,L,BS

M 18 Unit 2 Ophthalmic Diseases

18.2.1. Refractive errors

18.2.2. Conjunctivitis
18.2.3. Corneal ulceration 18.2.4. Infectious keratitis
18.2.5. Iridocyclitis
18.2.6. Glaucoma
18.2.7. Disorders of uvea
18.2.8. Cataract
18.2.9. Disorders of retina
18.2.10.Diseases of optic nerve

References: 29,30,33,37,46,47

3A	3B	3C	3D	3E	3F	3G
CO1,CO2,CO5 ,CO7,CO8	Analyze the etiology, pathophysiology , clinical manifestations and diagnosis of myopia, hyperopia, astigmatism ,presbyopia and corneal ulceration Describe the etiology, pathophysiology,ocular features, differential diagnosis and complications of Infective keratitis,Conjuctivitis,Uveitis,Optic neutiris,Retinal vascular diseases,Retinal degeneration Discuss the etiology,distinguishing clinical features ,appropriate investigations and complications of glaucoma and cataract Discuss the etiopathogenesis, clinical features staging and diagnosis of eye tumours	3	Lecture	CAN	Knows-how	L&GD,LS
CO1,CO3,CO4 ,CO7,CO8	Interpret the gross and microscopical features suggesting the diagnosis of orbital tumours	4	Practical Training 18.2	PSY-MEC	Shows-how	DIS,DL
CO1,CO6,CO8	Assess the case studies of infectious and autoimmune eye diseases Develop differential diagnosis based on history, clinical findings and imaging in patients with ophthalmic symptoms	8	Experiential-Learning 18.2	CAN	Does	CBL,D-BED,SDL,RLE

M 18 Unit 3 Diseases of Ear, Nose, Throat

18.3.1. Tinnitus
18.3.2. Chronic and non-suppurative otitis media

18.3.3. Epistaxis
18.3.4. Nasal Polyp
18.3.5. Deviated Nasal Septum
18.3.6. Acute and chronic sinusitis
18.3.7. Tonsillitis
18.3.8. Rhinitis

References: 29,30,33,37,47,89,99

3A	3B	3C	3D	3E	3F	3G
CO1,CO2,CO5 ,CO7,CO8	Describe the etiological factors and their impact in the pathogenesis and complications of tinnitus,chronic suppurative otitis media,tonsillitis, rhinitis and sinusitis Discuss the etiology ,pathogenesis, clinical features staging and diagnosis of the tumours of ear,nose,sinuses, nasopharynx and larynx	2	Lecture	CAN	Knows-how	L&PPT
CO1,CO3,CO5 ,CO7,CO8	Interpret the gross and microscopical features suggesting the diagnosis of Ear Nose Throat (ENT) diseases	6	Practical Training 18.3	PSY-ADT	Shows-how	LRI,CBL, DL
CO1,CO4,CO6 ,CO7,CO8	Apply the knowledge of pathophysiology in diagnosis of otolaryngological diseases	8	Experiential-Learning 18. 3	AFT-RES	Shows-how	D-BED,D IS,CBL

Practical Training Activity

Practical Training 18.1 : Histopathological diagnosis of respiratory diseases

Duration of practicals : 10 hours
Interpret the gross and microscopical features suggesting the diagnosis of Respiratory diseases
Step 1- The teacher should clearly state the learning objective to the students(15 min)
Step 2 -Preserved pathological specimens/ and properly labeled and stained histopathology slides should be provided to the students(15 min)

Step 3- Teacher will demonstrate how to
1. Identify the key pathological features

2. Correlate the findings with the given clinical information
3. Formulate differential diagnoses
4. Arrive at most accurate histopathological diagnosis
5. Prepare and document a structured pathological report
6. Choose ancillary testing techniques to confirm the diagnosis when needed
-in the given slides / specimens suggesting the diagnosis of following (2 hrs,, 30min)
Chronic bronchitis , Emphysema , Bronchiectasis, Bronchial asthma, Interstitial lung diseases, Tuberculosis, Pneumonia, Lung tumours Pleural tumours
Step 4- The students should perform the same step wise procedures and document a structured diagnostic report (2 hrs 30 mins)
Step 5- Small group discussions on the pathological findings and their clinical significance should be done (2hrs)
Step 6- Digital images , histopathology atlas and patient case history related to similar disease conditions should be additionally provided for comparison and discussion (2hrs)
Step 7- Personalised feedback on students observation and diagnostic accuracy should be given(30 min)

Practical Training 18.2 : Histopathological diagnosis of orbital tumours

Duration of practical: 4 hours
Interpret the gross and microscopical features suggesting the diagnosis of orbital tumours
Step 1 The teacher should clearly state the learning objective to the students(10min)
Step 2 Preserved pathological specimens/ and properly labeled and stained histopathology slides should be provided to the students(5min)
Step 3
Teacher will demonstrate how to
1. Identify the key pathological features
2. Correlate the findings with the given clinical information
3. Formulate differential diagnoses
4. Arrive at most accurate histopathological diagnosis
5. Prepare and document a structured pathological report
6. Choose ancillary testing techniques to confirm the diagnosis when needed
-in the given slides / specimens suggesting the diagnosis of following diseases or conditions(1hr,)
Optic melanoma
Conjuctival melanoma
Retinoblastoma
Step 4 The students should perform the same step wise procedures and document a structured diagnostic report (1 hr)

Step 5. Small group discussions on the pathological findings and their clinical significance should be done (1hr)
Step 6 Digital images , histopathology atlas and patient case history related to similar disease coditions should be additionally provided for comparison and discussion (30 min)
Step 7 Personalised feedback on students observation and diagnostic accuracy should be given(15 min)

Practical Training 18.3 : Histopathological diagnosis of Ear Nose Throat (ENT) diseases

Total learning hours: 6 hours
Interpret the gross and microscopical features suggesting the diagnosis of Ear Nose Throat (ENT) diseases
Step 1 The teacher should clearly state the learning objective to the students(10min)
Step 2 Preserved pathological specimens/ and properly labeled and stained histopathology slides should be provided to the students(5min)
Step 3
Teacher will demonstrate how to
1. Identify the key pathological features
2. Correlate the findings with the given clinical information
3. Formulate differential diagnoses
4. Arrive at most accurate histopathological diagnosis
5. Prepare and document a structured pathological report
6. Choose ancillary testing techniques to confirm the diagnosis when needed
-in the given slides / specimens suggesting the diagnosis of following diseases or conditions(1 hr, 30min)
Chronic otitis media
Chronic sinusitis
Nasal polyps
Adenoid hyperplasia
Laryngeal carcinoma
Step 4 The students should perform the same step wise procedures and document a structured diagnostic report (1 hr, 30min)
Step 5. Small group discussions on the pathological findings and their clinical significance should be done (1hr, 30 min)
Step 6 Digital images , histopathology atlas and patient case history related to similar disease coditions should be additionally provided for comparison and discussion (1hr,)
Step 7 Personalised feedback on students observation and diagnostic accuracy should be given(15 min)

Experiential learning Activity

Experiential-Learning 18.1 : Clinical analysis of the underlying causes and risk factors of lung diseases
Assessment of Chronic Obstructive Pulmonary Disease (COPD) prognosis by BODE index
Indian Association of Respiratory Care-Webinar participation

Duration of activity: 10 hours
Activity 1. Analyze real or simulated patients with respiratory symptoms and identify the underlying causes or associated risk factors(2 hours)
Step 1-Case Selection and Case analysis (30 minutes)
Presentation of 3-4 real or simulated patient case studies with common respiratory symptoms
Individual analysis of each case for
Presenting symptoms
Relevant medical history
Basic vital signs
Potential risk factors
Step 2- Discuss observations from the case reviews and reflect on the discussions, (30 minutes)
Interactive discussion on
The role of risk factors in respiratory diseases
The preventive strategies.
Step 3- Group Discussion (30 minutes): Collaborate with peers or mentors to discuss observations from the case reviews. Highlight any uncertainties, patterns, or notable findings.
Case-by-Case Review:
Each participant briefly summarizes their key observations and potential diagnoses.
Focus on the symptoms that are the most important.
Highlighting Uncertainties:
Specifically address any points of uncertainty or ambiguity.
Discuss different interpretations of the findings.
Pattern Recognition:
Look for recurring patterns across multiple cases.
Discuss how these patterns might suggest specific underlying conditions or risk factors.

Notable Findings:
Share any particularly interesting or unusual findings.
Discuss the potential significance of these findings.
Risk Factor Analysis:
Discuss the identified risk factors for each case.
Evaluate the relative importance of each risk factor.
Knowledge Sharing:
Mentors share their expertise and insights.
Peers share relevant clinical experiences.
Discuss relevant medical guidelines and research.
Documentation:
Record any key insights, clarifications, or consensus diagnoses.
Step 4- Based on the discussions, identify potential underlying causes and risk factors for each patient's respiratory symptoms . Integrate the identified causes and risk factors with existing medical knowledge. (30 minutes)
Quickly review the compiled list of identified causes and risk factors from the case discussions
Access to reputable medical resources to research how the identified risk factors contribute to the condition.
Step 5- Formulate evidence-based management strategies for each case, addressing both immediate treatment and long-term risk factor modification.Present the management plans to peers or mentors and receive constructive feedback, (30 minutes)
Assign each case to individuals
formulate a plan for immediate symptom relief and stabilization.
Develop strategies to address identified risk factors.
Each individual presents their management plan for their assigned case.
After each presentation, peers and mentors provide constructive feedback.
Documentation: Take notes on the received feedback.
Activity 2. Assess COPD prognosis using the BODE (Body Mass Index (BMI), Obstruction (FEV?), Dyspnea (mMRC), and Exercise Capacity (6MWT).) Index (4 hours)
Understanding the BODE Index (1 hour)
Step 1-Introduction and Component Breakdown (30 minutes):
Brief overview of COPD prognosis and the importance of risk stratification.
Explanation of the BODE index: its components (BMI, FEV?, mMRC, 6MWT), and its purpose.
Discussion of the clinical significance of each component.
Detailed explanation of each component:
Discussion of how to obtain and interpret each measurement.

Step 2- Scoring and Interpretation (30 minutes):
Explanation of the BODE index scoring system.
Interpretation of the total BODE score and its correlation with prognosis.
Discussion of the limitations of the BODE index.
Case Study Analysis and BODE Calculation (90 minutes)
Step 3- Case Presentation (30 minutes):
Present 3-4 simulated patient case studies, each with varying clinical data (BMI, FEV?, mMRC score, 6MWT distance).
Ensure a range of disease severity and risk factors.
Step 4- Individual Calculation (45 minutes):
Participants individually calculate and document the BODE score for each case using the provided data and scoring chart.
Step 5- Group Discussion (15 minutes):
Discuss the calculated BODE scores for each case.
Compare and contrast the prognoses of different patients.
Prognostic Interpretation and Clinical Implications (60 minutes)
Step 6- Prognostic Interpretation (30 minutes):
Discuss the prognostic implications of the calculated BODE scores for each case.
Relate the BODE scores to survival rates and disease progression.
Discuss other factors that affect prognosis that are not included in the BODE index.
Step 7-Clinical Application (30 minutes):
Discuss how the BODE index can be used in clinical practice to:
Guide treatment decisions.
Identify patients at high risk for exacerbations and mortality.
Discuss the use of the BODE index in conjunction with other clinical tools.
Review and Q&A (30 minutes)
Step 8- Summary Review (15 minutes):
Summarize the key points covered in the activity.
Review the components, scoring, and interpretation of the BODE index.
Step 9- Q&A Session (15 minutes):
Address any questions or concerns from participants.
Discuss any challenges or uncertainties encountered during the activity.
Review any other prognostic scoring systems used for COPD.
Activity 3 . IARC Webinar Attendance and Report Submission (4 Hours)

Step 1- Pre-Webinar Preparation (30 minutes)
Review Webinar Details: Carefully review the webinar title, abstract, speaker information, and learning objectives.
Background Research: Conduct brief background research on the webinar topic to gain a foundational understanding. Use reputable medical resources.
Step 2- Active Webinar Attendance (Webinar Duration - 1-2 Hours)
Join the webinar on time and ensure a distraction-free environment.
Take detailed notes, including key concepts, research findings, and clinical applications.
Note any references to key studies or guidelines mentioned by the speaker.
Step 3- Post-Webinar task (60 minutes)
Review Notes: Immediately after the webinar, review your notes and identify key takeaways.
Further Research: Conduct in-depth research on specific topics discussed in the webinar using medical databases and reputable sources.
Critical Analysis: Critically analyze the information presented in the webinar and relate it to existing medical knowledge.
Identify Clinical Implications: Consider the clinical implications of the presented information and how it might impact patient care.
Step 4- Report Writing and Submission (60 Minutes)
Create a comprehensive and well-structured report summarizing the webinar content and your insights.
Report Structure: Organize your report into sections, including:
Introduction (webinar topic, speaker, objectives)
Summary of Webinar Content (key concepts, findings)
Critical Analysis (your insights, research findings)
Clinical Implications (application to patient care)
Conclusion (summary of key takeaways)
References (cited sources)
Proper Citation: Cite all sources using a consistent citation style.
Submission: Submit your report according to the IARC's guidelines.

Experiential-Learning 18.2 : Deep Pathological Knowledge Acquisition Through Ophthalmologist Shadowing
Clinicopathological interpretation of ophthalmic diseases

Duration of activity: 8 hours
Activity 1: Deep Pathological Knowledge Acquisition Through Ophthalmologist Shadowing (4 Hours)
Step 1: Pre-Clinic Preparation and Pathological Review (30 minutes)
Review Common Outpatient Pathologies: Briefly review common ophthalmic pathologies seen in outpatient clinics (e.g., cataracts, glaucoma, macular degeneration, diabetic retinopathy, conjunctivitis). Focus on their pathological mechanisms, clinical manifestations, and diagnostic features.
Prepare a Question List: Create a list of specific questions related to the pathologies you expect to encounter. These questions should focus on pathological processes,

differential diagnoses, and the correlation between clinical findings and underlying pathology.
Familiarize with Instruments: Review the basic functions of commonly used ophthalmic instruments (e.g., slit lamp, ophthalmoscope, tonometer) and their role in identifying pathological changes.
Step 2: Active Observation and Note-Taking (90 minutes)
Observe Patient Encounters: Pay close attention to the ophthalmologist's history taking, examination techniques, and diagnostic reasoning.
Focus on Pathological Findings: Specifically observe and note any pathological findings observed during the examination
Detailed Note-Taking: Take detailed notes on:
Patient history and presenting symptoms.
Ophthalmic examination findings.
The ophthalmologist's diagnostic reasoning and differential diagnoses.
The correlation between clinical findings and underlying pathology.
Any relevant imaging or diagnostic test results.
Note Terminology: Pay close attention to the medical terminology used by the ophthalmologist and note any unfamiliar terms.
Step 3: Interactive Discussion and Knowledge Consolidation (60 minutes)
Ask Targeted Questions: Ask the ophthalmologist the questions you prepared earlier, focusing on the pathological aspects of the cases observed.
Discuss Differential Diagnoses: Discuss the differential diagnoses considered for each case and the rationale behind the final diagnosis.
Clarify Pathological Mechanisms: Seek clarification on the pathological mechanisms underlying the observed clinical findings.
Relate Findings to Textbooks: Relate the observed clinical findings and pathological mechanisms to information from textbooks and online resources.
Discuss Imaging Correlation: If imaging was used, discuss how the imaging findings correlated to the clinical and pathological findings.
Step 4 : Post-Clinic Reflection and Summary (60 minutes)
Summarize Key Pathologies: Summarize the key pathologies observed during the clinic, focusing on their pathological mechanisms, clinical manifestations, and diagnostic features.
Create Case Summaries: Create concise summaries of the most informative cases, highlighting the key pathological findings and diagnostic reasoning.
Reflect on Learning Outcomes: Reflect on your learning outcomes and identify areas where you need further study.
Activity 2.Differential diagnosis development in 4 patients with ophthalmic symptoms(2 hours).
Step 1: Gathering and Interpreting Patient History(30 mins)
Learn to extract key historical details relevant to ophthalmic symptoms.
Group discussion or self-reflection: What historical clues narrow the differential? Write a 2-3 sentence summary of findings.
Step 2: Clinical Examination and Findings(30 mins)
Correlate physical exam findings with ophthalmic pathology.
Link findings to potential diagnoses
Step 3: Integrating Imaging into Diagnosis(30 mins)

Use imaging to refine the differential diagnosis.
Compare imaging results across cases. Draft a table: Symptom ? Finding ? Imaging ? Likely Diagnosis.
Step 4: Synthesizing a Differential Diagnosis(30 mins)
Combine history, examination, and imaging into a prioritized differential.
List 3-5 differential diagnoses per case
Rank diagnoses by likelihood, justifying with evidence
Reflect: What was challenging?Outline one improvement goal
Activity 3.Etiology and prognosis assessment of infectious and autoimmune eye diseases. (2 hours)
Hour 1: Infectious Eye Diseases
Case Study Analysis (30 minutes)
Work through 2-3 case studies of infectious eye diseases.
For each case, identify:
Causative agent
Transmission method
Risk factors
Expected prognosis
Create a concept map showing the relationship between infectious agents and specific eye diseases.
Prognosis Prediction Challenge (15 minutes)
Predict prognosis scenarios based on delayed vs. early diagnosis.
Compare outcomes of prompt treated vs. untreated infection.
Hour 2: Autoimmune Eye Diseases
Case Study 30 minutes)
Activity: Analyze 2 case studies of autoimmune eye diseases.
Task: For each case, identify:
Immune mechanism
Systemic associations
Prognostic factors
Comparative Prognosis Debate (15 minutes)
Debate prognosis differences between infectious and autoimmune causes.
Diagnostic Decision Pathway (15 minutes)
Create a decision tree for distinguishing infectious vs. autoimmune eye diseases.

Experiential-Learning 18.3 : Case based analysis of otolaryngological diseases

Activity 1:Interpret the signs of inflammation ,perforation and discharge in ear diseases and assess the etiological factors and underlying mechanisms in real or simulated patients(3hours)
Step 1: Review of Ear Anatomy and Pathological Signs (1 hour)
Pathological Signs (45 minutes):
Discuss the clinical signs of inflammation ,perforation and discharge .
Relate these signs to specific ear diseases .
Use otoscopic images or videos to illustrate different pathological findings.
Etiological Factors and Mechanisms (15 minutes):
Review the common etiological factors for ear diseases
Discuss the underlying mechanisms of disease development
Step 2: Case Study Analysis and Otoscopic Interpretation (90 minutes)
Case Study Presentation (45 minutes)
Present 3-4 simulated patient case studies, each with varying clinical presentations and otoscopic findings.
Include information on patient history, symptoms, and otoscopic examination results.
Provide otoscopic images or videos for each case.
Case Analysis (45 minutes)
Participants individually analyze each case, focusing on:
Interpreting the otoscopic findings
Identifying the likely etiological factors.
Explaining the underlying mechanisms of disease.
Formulating a differential diagnosis.
Discuss the cases ,comparing interpretations and diagnosis.
Step 3: Clinical Reasoning and Differential Diagnosis (30 minutes)
Differential Diagnosis Discussion (20 minutes):
For each case study, discuss the differential diagnosis considered and the rationale behind each diagnosis.
Focus on how the clinical signs and otoscopic findings support or refute each diagnosis.
Clinical Reasoning Practice (10 minutes)
Practice clinical reasoning by discussing how to approach a patient presenting with specific ear symptoms
Discuss how to differentiate between common ear pathologies.
Activity 2:Distinguish between conductive and sensorineural hearing loss in real patients by observing and documenting the underlying causes and contrast clinical

presentations (4hours)
Step 1: Foundational Knowledge and Otoscopic Examination Review (1 hour)
Conductive vs Sensorineural Hearing Loss (20 minutes)
Discuss the key differences between conductive and sensorineural hearing loss
Review the common causes of each type of hearing loss
Otoscopic Examination Review (25 minutes)
Discuss the otoscopic findings that suggest on conductive hearing loss
Step 2: Tuning Fork Tests and Clinical Observation (90 minutes)
Tuning Fork Tests (30 minutes)
Practice performing Weber and Rinne tuning fork tests.
Discuss the interpretation of tuning fork test results in differentiating conductive and sensorineural hearing loss.
Practice documenting tuning fork results.
Clinical Observation (60 minutes)
Observe patient encounters and pay close attention to patient history, symptoms, and otoscopic findings.
Conduct tuning fork tests and interprets the results.
Part 3: Patient Case Documentation and Audiogram Interpretation (1 hour)
Patient Case Documentation (30 minutes)
Document the clinical presentations, otoscopic findings and tuning fork test results of the patients observed.
Use a standardized patient case template to ensure thorough documentation.
Audiogram Interpretation (30 minutes)
Review the basics of audiogram interpretation.
Analyze audiograms from observed patients or simulated cases.
Distinguish between conductive and sensorineural hearing loss based on audiogram patterns.
Contrast the audiogram results with the otoscopic and tuning fork results.
Step 4: Comparative Analysis and Discussion (30 minutes)
Comparative Analysis (15 minutes)
Compare and contrast the clinical presentations of patients with conductive and sensorineural hearing loss observed during the activity.
Focus on the differences in symptoms, otoscopic findings, tuning fork test results, and audiogram patterns.
Discussion (15 minutes)
Discuss the underlying causes of the observed hearing loss cases.
Relate the clinical presentations to the underlying pathological mechanisms.
Discuss the impact of the different types of hearing loss on patient quality of life.

Activity 3:Observe and document the etiological factors, signs and symptoms of acute and chronic sinusitis in real patients (1 hour)
Step 1: Pre-Observation Preparation (5 minutes)
Review Sinusitis Basics: Quickly review the key etiological factors,signs and symptoms of acute and chronic sinusitis.
Prepare Checklist: Create a simple checklist to guide your observations. Include sections for:
Patient demographics (age, sex)
Etiological factors (if known)
Signs (facial pain/pressure, tenderness, erythema, swelling)
Symptoms (rhinorrhea, congestion, cough, headache, postnasal drip, fever)
Duration of symptoms
Distinguishing features between acute and chronic.
Step 2: Patient Observation (45 minutes)
Observe Patient Encounters: Observe patient encounters . Focus on patients presenting with sinusitis symptoms.
Document Observations: Use your checklist to document the following:
Patient history and presenting symptoms.
Physical examination findings
Potential etiological factors.
Duration of symptoms
Imaging findings.
Pay close attention to any differences in presentation between patients with suspected acute vs chronic sinusitis.
Step 3: Post-Observation Review (10 minutes)
Review Documentation: Quickly review your notes and checklist.
Summarize Key Findings: Briefly summarize the common etiological factors, signs, and symptoms observed.

Modular Assessment

Assessment method	**Hour**
Instructions: Conduct a structured Modular assessment. The assessment will be for 50 marks. Keep a structured marking pattern. Use different assessment methods in each module for the semester. Keep a record of the structured pattern used for assessment. Calculate the Modular grade point as per Table 6 C. CHOOSE ANY OF THE BELOW ASSESSMENT FOR 50 MARKS 1.Topic presentations (10 marks) A.Content Accuracy and Depth (4 Marks)	4

Accurate and relevant information (2 marks)
Depth of understanding and explanation (2 marks)
B.Organization and Clarity (3 Marks)
Logical organization and flow (1 mark)
Clear and concise language (1 mark)
Effective use of visual aids (1 mark)
C.Engagement and Delivery (3 Marks)
Eye contact and voice projection (1 mark)
Engagement with the audience (1 mark)
Time management and professionalism (1 mark)
2. LAQ (10 marks)
And
3. SAQ (5 marks)
And
4. Histopathology Diagnosis and Interpretation of 3 slides or specimens each carrying 5 marks(15 marks)
Key Microscopic Features (2 Marks)
Probable Diagnosis (2 Marks)
Brief Clinical Correlation (1 Mark)
And
5. Objective Structured Clinical Examination (OSCE)(10 marks)
Task Completion (6 Marks)
Correct sequence of actions (2 marks)
Accuracy of performed steps/questions (2 marks)
Efficiency and organization (2 marks)
Communication Skills (2 Marks)
Clarity and conciseness of communication (1 mark)
Empathy and rapport building (1 mark)
Clinical Reasoning/Interpretation (2 Marks)
Logical reasoning and justification (1 mark)
Appropriate interpretation of findings (1 mark)
Or
Any practical in converted form can be taken for assessment. (25 marks)

and
Any experiential, such as portfolios / reflections / presentations can be taken as an assessment. (25 marks)

Semester No : 4

Module 19 : Diseases Of Hematopoietic And Cardio Vascular Diseases

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

Analyze and apply the knowledge of pathophysiological mechanisms in cardio vascular and hematological diseases
Perform and interpret lab diagnostic methods for the appropriate diagnosis, research and therapeutic interventions

M 19 Unit 1 Haematopoeitic Disorders

19.1.1. Microcytic anaemias
19.1.2. Macrocytic anaemias
19.1.3. Hemolytic anaemias
19.1.4. Polycythemia
19.1.5. Leucocytosis,leucopenia
19.1.6. Leukemia
19.1.7. Lymphadenopathy
19.1.8. Lymphoma- Hodgkin's Lymphoma and Non Hodgkin's Lymphoma
19.1.9. Spleenomegaly
19.1.10.Bleeding disorders
19.1.11.Thrombocytopenia
19.1.12.Disseminated Intravascular Coagulation
19.1.13.Hematological manifestations of systemic diseases

References: 24,27,29,30,33,37,47,57

3A	3B	3C	3D	3E	3F	3G
CO1,CO2,CO4,CO5,CO7	Contrast the etiology, investigations,peripheral blood picture and differential diagnosis of microcytic hypochromic anaemia,megaloblastic and non-megaloblastic macrocytic anaemia and various hemolytic anemias Describe the etiology,pathogenesis,classification,clinical features and hematological indices and peripheral blood picture of polycythaemia	2	Lecture	CAN	Knows-how	L&GD,BS,LRI,CBL
CO2,CO3,CO5,CO6,CO7	Describe the etiology,genetics,pathogenesis,classification,clinical features and hematological indices and peripheral blood picture of lymphoid and myeloid neoplasms Summarize the differentiating features of lymphadenitis. Analyse the disorders associated with , and the morphological features of splenomegaly. Describe and discuss the etiology, pathogenesis, complications and diagnosis of bleeding and coagulation disorders Discuss the hematological manifestations of systemic diseases	2	Lecture	CAN	Knows-how	L&PPT,BS,LS
CO1,CO4,CO6,CO7	Interpret the peripheral blood picture in various types of anaemias	8	Practical Training 19.1	PSY-MEC	Shows-how	DL,DIS
CO1,CO4,CO5,CO6,CO7	Interpret peripheral blood smear examination for the diagnosis suggestive of myeloid and lymphoid neoplasms and histopathological examination of Hodgkin’s lymphoma and spleenomegaly	7	Practical Training 19.2	PSY-MEC	Shows-how	DL,L&PPT ,DIS
CO1,CO2,CO3,CO8	Analyze the underlying causes of anaemia in different demographics	5	Experiential-Learning 19.1	CAN	Does	PAL,Mnt
CO1,CO4,CO5	Interpret the peripheral blood smear findings with the symptoms and associated	5	Experiential-	PSY-	Does	Mnt,DIS

	complications for the appropriate diagnosis and prognosis of leukemias in real patients		Learning 19.2	MEC		
CO1	Analyze real or simulated cases to explore the underlying causes, clinical presentation, differential diagnosis and complications of Disseminated Intravascular Coagulation Evaluate the etiology and diagnosis of spleenomagaly in clinical scenarios	6	Experiential-Learning 19.3	CAN	Does	DIS,LRI

M 19 Unit 2 Cardio Vascular System

19.2.1. Heart failure
19.2.2. Congenital heart disease
19.2.3. Ischaemic heart disease
19.2.4. Hypertensive heart disease
19.2.5. Valvular heart disease
19.2.6. Cardiomyopathies

References: 29,30,33,37,47

3A	3B	3C	3D	3E	3F	3G
CO1,CO2,CO5,CO7,CO8	Differentiate the clinical presentations and analyse the significance of diagnostic tests in right and left heart failure Describe the etiology,pathophysiology, clinical presentations and diagnostic tests of cyanotic and acyanotic congenital heart diseases Describe and discuss the epidemiology, risk factors evolution, clinical presentation, complications and diagnosis of atherosclerosis, ischaemic heart disease and acute coronary syndromes Describe the etiology, pathophysiology clinical features ,diagnosis and complications of Rheumatic heart disease including infective endocarditis Assess the etiology, pathophysiology, clinical features ,diagnosis and complications of syphilis on cardio vascular system Appraise the etiology, pathophysiology ,clinical manifestations and diagnosis of target organ damage in hypertension	6	Lecture	CAN	Knows-how	L&PPT , BS,L&GD

CO1,CO4,CO5 ,CO6,CO7	Interpret the gross features suggesting the diagnosis of cardiac diseases.	5	Practical Training 19.3	PSY-MEC	Shows-how	DIS,DL
CO1,CO2,CO5 ,CO6,CO7,CO 8	Analyze clinical cases with pathology focused details in cardiovascular diseases	10	Experiential-Learning 19. 4	AFT-RES	Does	DIS,LRI, CBL

Practical Training Activity

Practical Training 19.1 : Peripheral blood features in anaemia

Duration of practical : 8 hours
Interpret the peripheral blood picture in various types of anaemias
Step 1 -The teacher should clearly state the learning objective to the students (10min)
Step 2 - Properly labeled and stained haematological slides should be provided to the students (5min)
Step 3 -Teacher will demonstrate how to
1. Identify the key pathological features
2. Correlate the findings with the given clinical information
3. Formulate differential diagnoses
4. Arrive at most accurate histopathological diagnosis
5. Prepare and document a structured pathological report
6. Choose ancillary testing techniques to confirm the diagnosis when needed
-in the given slides / specimens suggesting the diagnosis of following diseases or conditions (2 hrs)
Iron deficiency anaemia
Thalassemia
Sideroblastic anaemia
Anaemia of chronic diseases
Megaloblastic anaemia
Aplastic anaemia
Anaemia of acute and chronic blood loss
Hemolytic anaemias
Step 4 The students should perform the same step wise procedures and document a structured diagnostic report (2 hrs)
Step 5. Small group discussions on the pathological findings and their clinical significance should be done (1hr 30min)

Step 6 Digital images , histopathology atlas and patient case history related to similar disease coditions should be additionally provided for comparison and discussion (2hrs)
Step 7 Personalised feedback on students observation and diagnostic accuracy should be given (15 min)

Practical Training 19.2 : Histopathological diagnosis of hematological malignancies and splenomegaly

Duration of practical : 7 hours
Interpret peripheral blood smear examination for the diagnosis suggestive of myeloid and lymphoid neoplasms and histopathological examination of Hodgkin's lymphoma and splenomegaly
Step 1 The teacher should clearly state the learning objective to the students (10min)
Step 2 Preserved pathological specimens/ and properly labeled and stained histopathology slides should be provided to the students (5min)
Step 3 Teacher will demonstrate how to
1. Identify the key pathological features
2. Correlate the findings with the given clinical information
3. Formulate differential diagnoses
4. Arrive at most accurate histopathological diagnosis
5. Prepare and document a structured pathological report
6. Choose ancillary testing techniques to confirm the diagnosis when needed
-in the given slides / specimens suggesting the diagnosis of following diseases or conditions (2 hrs)
Myeloid and lymphoid neoplasms.
Hodgkin's lymphoma
Spleenomegaly
Step 4 The students should perform the same step wise procedures and document a structured diagnostic report (2 hrs)
Step 5. Small group discussions on the pathological findings and their clinical significance should be done (1hr)
Step 6 Digital images , histopathology atlas and patient case history related to similar disease coditions should be additionally provided for comparison and discussion (1hr 30 min)
Step 7 Personalised feedback on students observation and diagnostic accuracy should be given(15 min)

Practical Training 19.3 : Histopathological analysis of cardiac diseases

Duration of Practical: 5 hours
Interpret the gross features suggesting the diagnosis of cardiac diseases.
Step 1 The teacher should clearly state the learning objective to the students (10min)
Step 2 Preserved pathological specimens/ and properly labeled and stained histopathology slides should be provided to the students (5min)
Step 3 Teacher will demonstrate how to
1. Identify the key pathological features
2. Correlate the findings with the given clinical information
3. Formulate differential diagnoses
4. Arrive at most accurate histopathological diagnosis
5. Prepare and document a structured pathological report
6. Choose ancillary testing techniques to confirm the diagnosis when needed
in the given slides / specimens suggesting the diagnosis of following diseases or conditions (1 hr)
Myocardial infarction
Cardiomyopathy
Rheumatic heart disease
Myocarditis
Step 4 The students should perform the same step wise procedures and document a structured diagnostic report (90 min)
Step 5. Small group discussions on the pathological findings and their clinical significance should be done (1hr)
Step 6 Digital images , histopathology atlas and patient case history related to similar disease coditions should be additionally provided for comparison and discussion (1hr)
Step 7 Personalised feedback on students observation and diagnostic accuracy should be given(15 min)

Experiential learning Activity

Experiential-Learning 19.1 : Analysis of etiological factors of anaemia

Duration of activity: 5 hours
Interrogate the individuals of different demographics with signs of anaemia and analyse the underlying causes and discuss the same with the peers (5 hours)
Step 1: Understanding Demographic Variations in Anaemia (1 hour)
Demographic Mapping (20 minutes)
Identify high-risk groups
Create a chart linking demographics to anaemia types
Case Identification Exercise (40 minutes)
Review 3-4 patient profiles across age and socio-economic backgrounds.

Identify signs of anaemia and hypothesize demographic-specific causes.
Step 2: Clinical Interviewing and Symptom Analysis (1 hour)
Develop skills in eliciting relevant histories and recognizing anaemia symptoms.
Simulated/ real patient interviews (40 minutes)
Conduct mock interviews with role-playing patients from different demographics.
Ask targeted questions:Dietary history ,Medical history ,Lifestyle factors
Symptom Pattern Recognition (20 minutes)
Identify and compare symptom patterns variation across patient groups.
Step 3: Laboratory and Diagnostic Interpretation
Analyze diagnostic tests to distinguish different causes of anaemia.
Lab Review Exercise (30 minutes)
Analyze lab reports and interpret common findings:
Diagnostic Flowchart Creation (30 minutes)
Design a decision tree for anaemia workup.
Map patient demographics to appropriate diagnostic tests
Step 4: Analyzing Social and Environmental Causes(1 hour)
Explore how social determinants of health contribute to anaemia.
Community Case Review (30 minutes)
Examine real or simulated community cases.
Identify socio-environmental contributors
Root Cause Analysis (30 minutes)
Conduct a fishbone diagram exercise.
Map causes under categories like biological, social, economic and environmental.
Step 5: Multidisciplinary Case Conference and Prognosis (1 hour)
Integrate findings and propose comprehensive management strategies.
Case Conference Simulation (40 minutes)
Present and discuss findings for diverse patient profiles.
Prognosis Discussion (20 minutes)
Evaluate outcomes based on intervention timing.
Compare prognoses across demographics

Experiential-Learning 19.2 : Case based learning of Leukemia

Total learning hours: 5 hours
Interpret the peripheral blood smear findings with the symptoms and associated complications for the appropriate diagnosis and prognosis of leukemias in real patients (5 hours)
Step 1: Understanding Peripheral Blood Smear Basics (1 hour)
Examine normal peripheral blood smears and compare with abnormal findings in leukemia.
Distinguish acute from chronic leukemias based on blood smear
Identify blasts ,mature but abnormal cells and correlate cell counts.
Step 2: Acute Leukemias (AML vs. ALL) (1 hour)
Differentiate acute myeloid leukemia (AML) and acute lymphoblastic leukemia (ALL).
Recognize abnormal cells and associate with symptoms
Chronic Leukemias (CML vs. CLL)
Interpret chronic myeloid leukemia (CML) and chronic lymphocytic leukemia (CLL).
Detect abnormal cells and associate with symptoms.
Step 3: Complications and Prognostic Markers (1 hour)
Recognize leukemia-related complications and key prognostic indicators.
Step 4: Case-Based Interpretation (1 hour)
Analyze 4 real patient case studies.
Interpret patient blood smears.
Diagnose the leukemia subtype and predict complications.
Match clinical features to laboratory findings.
Step 5: Prognosis and Clinical Decision-Making (1 hour)
Formulate diagnosis-based treatment implications.
Classify leukemia risk factors
Predict treatment responses
Discuss patient outcomes based on molecular markers.
Practice detailed discussion on above documentations in small groups

Experiential-Learning 19.3 : Case based study of bleeding disorders and splenomegaly

Total learning hours: 4 hours
Activity 1. Conduct thorough history taking in real or simulated patients with bleeding symptoms and determine the underlying causes,clinical presentations, differential diagnosis and possible complications. Document and discuss the findings with the peers.(4 hours)

Step 1: Patient Interaction & History-Taking (1 hour)
Perform detailed history-taking on real or simulated patients with bleeding symptoms.
Gather comprehensive bleeding history for each patient.
Step 2: Analyze and Compare Findings (1 hour)
Reflect on the patient histories and identify patterns.
Review and compare patient cases:
Discuss atypical presentations
Develop initial working diagnoses based on the symptom patterns.
Step 3: Build Differential Diagnoses (1 hour)
Formulate differential diagnoses and potential complications.
Organize differential diagnoses and potential systemic impacts.
Step 4: Peer Discussion and Clinical Decision-Making (1 hour)
Discuss cases with peers and refine diagnostic and management plans.
Case Presentation: Share history, findings, and diagnostic thought process.
Peer Feedback: Challenge diagnoses, explore alternative explanations.
Strengthen diagnostic accuracy and decision-making through collaborative learning.
Activity 2. Evaluate the etiology and diagnosis of splenomegaly in clinical scenarios (2 hours)
Step 1: Identify and interpret clinical cases of splenomegaly through patient history and physical examination. (1 hour)
Recognize patterns of splenomegaly presentation across different patient cases.
Step 2: Formulate differential diagnoses, classify underlying causes, and plan diagnostic investigations. (1 hour)
Classify Etiologies
Diagnostic Workup
Peer Discussion
Present clinical scenarios and diagnostic pathways.Refine differential diagnosis through group feedback.

Experiential-Learning 19.4 : Assessment of cardio vascular risk with Framingham Risk Score

Duration of activity :10 hours
Activity 1. Assess the Framingham Risk Score in 10 patients to predict the individual's risk of developing coronary heart disease(3 hours)
Hour 1:
Gather Patient Data (30 mins)
Calculate Framingham Risk Score (30 mins)
Use the Framingham Risk Score algorithm or an online calculator.

Determine the 10-year risk percentage of coronary heart disease (CHD) for each patient.
Hour 2:
Analyze Patterns and Trends (20 mins)
Identify patients with high vs. low CHD risk.
Recognize common risk factors among patients with elevated scores.
Interpret Clinical Implications (20 mins)
Compare patient results to established CHD risk thresholds:
Reflect on how these scores guide treatment
Discuss Limitations (20 mins)
Hour 3:
Develop Patient Action Plans (45 mins)
Propose individualized prevention strategies for patients
Adjust variables to see how scores change.
Feedback & Reflection (15 mins)
Review key insights and areas for improvement.
Activity 2. Explore 3D heart models to study structural valvular defects and cardiomyopthies(3 hours)
Hour 1:
Goal: Directly engage with 3D heart models to visualize anatomical structures and abnormalities.
Explore Normal Heart Anatomy (20 mins)
Study Structural Valvular Defects (20 mins)
Examine 3D models of common valvular abnormalities
Investigate Cardiomyopathies (20 mins)
Identify structural changes in 3D models
Hour 2:
Reflect on differences between normal and diseased heart structures.
Compare Normal vs. Abnormal (30 mins)
Analyze Pathophysiological Impacts (20 mins)
Document Observations (10 mins)
List key visual markers of each defect
Hour 3:
Apply insights to clinical scenarios and predictive thinking.
Link to Clinical Presentations (20 mins)

Simulate Diagnostic Interpretation (20 mins)
Apply Knowledge in Case Scenarios (20 mins)
Diagnose valvular defects and cardiomyopathies using simulated patient data.
Activity 3. Create flowcharts tracking the progression from streptococcal infection to acute rheumatic fever and chronic valvular disease (2 hour)
Hour 1:
Gather information and understand the disease progression through visual exploration.
Study Disease Progression (30 mins)
Step 1: Identify the stages:
Step 2: Trace pathophysiology:
Observe Clinical Manifestations (20 mins)
Sketch Rough Flowcharts (10 mins)
Draft two linked flowcharts:
From Strep Infection ? ARF
From ARF ? Chronic Valvular Disease.
Hour 2:
Finalize clear flowcharts and apply knowledge to clinical scenarios.
Design Detailed Flowcharts (30 mins)
Flowchart 1: Streptococcal Infection to Acute Rheumatic Fever
Flowchart 2: Acute Rheumatic Fever to Chronic Valvular Disease
Validate with Case Examples (20 mins)
Apply flowcharts to sample patient cases:
Review & Optimize (10 mins)
Ensure clarity, accuracy, and logical flow.
Check that the flowcharts capture both pathophysiology and clinical outcomes.
Activity 4. Examine hypertensive heart and kidney specimens to identify left ventricular hypertrophy, renal scarring or arteriolar narrowing(2 hours)
Directly examine the hypertensive heart and kidney specimens.(30 minutes)
Reflective Observation (30 minutes)
Document observations systematically.
Compare findings with normal anatomy
Record specific measurements and unusual features.
Abstract Conceptualization (30 minutes)
Analyze how findings align with pathophysiology.

Consider how these changes contribute to hypertensive complications
Active Experimentation (30 minutes)
Apply learning to interpret other hypertensive cases.
Practice identifying similar patterns in other specimens or images.
Predict clinical consequences from structural changes
Formulate questions for further investigation—What other organ systems are affected by hypertension?

Modular Assessment

Assessment method	**Hour**
Instructions: Conduct a structured Modular assessment. The assessment will be for 50 marks. Keep a structured marking pattern. Use different assessment methods in each module for the semester. Keep a record of the structured pattern used for assessment. Calculate the Modular grade point as per Table 6 C. CHOOSE ANY OF THE BELOW ASSESSMENT FOR 50 MARKS 1.Topic presentations (10 marks) A.Content Accuracy and Depth (4 Marks) Accurate and relevant information (2 marks) Depth of understanding and explanation (2 marks) B. Organization and Clarity (3 Marks) Logical organization and flow (1 mark) Clear and concise language (1 mark) Effective use of visual aids (1 mark) C.Engagement and Delivery (3 Marks) Eye contact and voice projection (1 mark) Engagement with the audience (1 mark) Time management and professionalism (1 mark) 2. LAQ (10 marks) And 3. SAQ (5 marks) And	4

4. Histopathology Diagnosis and Interpretation of 3 slides or specimens each carrying 5 marks(15 marks)
Key Microscopic Features (2 Marks)
Probable Diagnosis (2 Marks)
Brief Clinical Correlation (1 Mark)
And
5. Objective Structured Clinical Examination (OSCE)(10 marks)
Task Completion (6 Marks)
Correct sequence of actions (2 marks)
Accuracy of performed steps/questions (2 marks)
Efficiency and organization (2 marks)
Communication Skills (2 Marks)
Clarity and conciseness of communication (1 mark)
Empathy and rapport building (1 mark)
Clinical Reasoning/Interpretation (2 Marks)
Logical reasoning and justification (1 mark)
Appropriate interpretation of findings (1 mark)
Or
Any practical in converted form can be taken for assessment. (25 marks)
and
Any experiential, such as portfolios / reflections / presentations can be taken as an assessment. (25 marks)

Module 20 : Gastro Intestinal and Hepato Biliary Diseases

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

Analyse and execute the knowledge of pathophysiological processes in gastro intestinal and hepatobiliary diseases, their clinical impact
Perform pathological diagnostic methods for the diagnosis , research ideas evaluation and therapeutic interventions

M 20 Unit 1 Diseases of Upper Gastro Intestinal Tract

20.1.1. Oral ulcers
20.1.2. Oral cancer
20.1.3. Gastritis
20.1.4. Oesophagitis
20.1.5. Peptic ulcer disease
20.1.6. Carcinoma of stomach

References: 29,30,33,35,37,47,92

3A	3B	3C	3D	3E	3F	3G
CO1,CO2,CO5,CO7,CO8	Discuss the etiology ,and diagnosis of oral ulcers and analyse the oral manifestations in systemic diseases Analyze the pathogenesis, clinical features, diagnostic findings and complications of oesophageal varices,reflux oesopaghitis,gastritis and acid peptic disease.	2	Lecture	CAN	Knows-how	L&GD,PBL,L&PPT
CO4,CO5,CO6,CO7	Interpret the gross and microscopic features suggesting the diagnosis of upper gastro intestinal tract diseases	6	Practical Training 20.1	PSY-MEC	Shows-how	DIS,DL
CO1,CO2,CO5,CO7,CO8	Demonstrate the mechanism and pathophysiology of gastric mucosal injury.	3	Experiential-Learning 20.1	PSY-GUD	Does	D,D-M,DIS,BS,SIM

M 20 Unit 2 Diseases of Lower Gastro Intestinal Tract

20.2.1. Ischaemic Bowel Disease
20.2.2. Inflammatory bowel disease
20.2.3. Infective enterocolitis
20.2.4. Causes of Gastro Intestinal bleeding

References: 27,30,33,35,37,47,92

3A	3B	3C	3D	3E	3F	3G
CO1,CO2,CO5,CO7,CO8	Illustrate the pathogenesis, clinical features, and diagnosis of Coeliac disease and Ischaemic bowel disease Distinguish the pathogenesis, clinical features morphological features and diagnosis of Infective enterocolitis Distinguish the pathogenesis, clinical features morphological features and diagnosis of Crohn's and Ulcerative colitis Analyse the epidemiology,classification, pathogenesis, clinical features, staging and diagnostic findings and complications of Colorectal tumours	3	Lecture	CAN	Knows-how	BL,BS,L&GD
CO1,CO2,CO6,CO8	Conduct the gross and microscopic examination of specimens and histopathological slides for features suggesting diagnosis of lower gastro intestinal diseases	4	Practical Training 20.2	PSY-MEC	Shows-how	DL,DIS
CO2,CO5,CO6,CO7	Evaluate the epidemiology and the factors that influence disease progression of IBD by doing data analysis	3	Experiential-Learning 20.2	PSY-MEC	Does	DIS,SDL,CBL,BS

M 20 Unit 3 Tumours of Gastro Intestinal Tract

20.3.1. Carcinoma oesophagus
20.3.2. Carcinoma stomach
20.3.3. Colorectal cancer

References: 29,30,33,35,47,92

3A	3B	3C	3D	3E	3F	3G
CO1,CO2,CO5,CO6	Describe the classification and key molecular alterations of salivary gland tumours Distinguish the clinical features, etiological factors, clinical features, diagnosis and prognosis of oesophageal tumours	2	Lecture	CAN	Knows-how	BS,L&GD,L&PPT

	Distinguish the clinical features, etiological factors, clinical features and diagnosis of adenocarcinoma, lymphoma and stromal tumours of stomach Analyse the epidemiology,classification, pathogenesis, clinical features, staging and diagnostic findings and complications of colorectal cancer					
CO1,CO4,CO5 ,CO6,CO7	Conduct the gross and microscopic examination of specimens for the presence of features suggesting the diagnosis of malignant lesions of oral , oesophageal, gastric and intestinal organs	4	Practical Training 20.3	PSY-MEC	Shows-how	DL,LRI
CO1,CO2,CO6 ,CO7,CO8	Assess the aggressiveness of oral squamous cell carcinoma by Anneroth's Grading System Classify and assess the risk of malignant transformation in precancerous lesions in the oral epithelium based on the degree of architectural and cytological abnormalities. Discuss the role of Vienna classification in the guidance of risk stratification and early cancer detection in patients with Barrett's oesophagus Assess the gastric cancer risk in patients with gastro intestinal symptoms by Operative Link on Gastric Intestinal Mucosa(OLGIM) staging. Assign Aster Coller staging in real or simulated patients of colorectal cancer to assess the clinical significance of each stage in prognosis and treatment planning	6	Experiential-Learning 20.3	PSY-MEC	Does	DIS,CBL

M 20 Unit 4 Hepato Biliary Diseases

20.4.1. Jaundice
20.4.2. Hepatitis
20.4.3. Alcoholic and non alcoholic fatty liver disease
20.4.4. Cirrhosis and portal hypertension
20.4.5. Hepatocellular carcinoma
20.4.6. Cholecystitis
20.4.7. Cholelithiasis
20.4.8. Pancreatitis
20.4.9. Tumours of gall bladder and pancreas

References: 29,30,33,37,47,58

3A	3B	3C	3D	3E	3F	3G
CO1,CO2,CO5,CO6,CO7	Demonstrate knowledge of the pathophysiology in jaundice and their clinical manifestations,complications and consequences Appraise the causes, pathology, clinical manifestation and diagnosis of Alcoholic and non alcoholic fatty liver disease,Hepatitis,Cirrhosis and portal hypertension Describe the etiology, pathogenesis, pathological consequences and diagnosis of cholelithiasis and cholecystitis Describe the etiology, pathogenesis, and pathological consequences and diagnosis of liver,gall bladder and pancreatic tumours	3	Lecture	CAP	Knows-how	CBL,BS,DL
CO1,CO4,CO5,CO6,CO7	Interpret gross and microscopic features suggesting the diagnosis of hepato biliary diseases	6	Practical Training 20.4	PSY-MEC	Shows-how	DIS,DL
CO2,CO5,CO7,CO8	Conduct a comprehensive literary review on the pathology of cholelithiasis	4	Experiential-Learning 20.4	CAP	Does	JC,ML,SDL,DIS,TBL
CO2,CO5,CO6,CO7	Analyze the role of alcohol and its impact in hepatic diseaes	4	Experiential-Learning 20.5	AFT-SET	Does	DIS
CO2,CO3,CO6,CO7	Appraise the pathophysiology, clinical presentation and diagnosis of hepatobiliary diseases and tumours	6	Experiential-Learning 20.6	AFT-SET	Does	FV,PAL

Practical Training Activity

Practical Training 20.1 : Histopathological diagnosis of upper gastro intestinal diseases

Duration of activity : 6 hours
Interpret the gross and microscopic features suggesting the diagnosis of upper gastro intestinal tract diseases
Step 1 The teacher should clearly state the learning objective to the students (10min)

Step 2 Preserved pathological specimens and properly labeled and stained histopathology slides should be provided to the students (5min)
Step 3 Teacher will demonstrate how to
1. Identify the key pathological features
2. Correlate the findings with the given clinical information
3. Formulate differential diagnoses
4. Arrive at most accurate histopathological diagnosis
5. Prepare and document a structured pathological report
6. Choose ancillary testing techniques to confirm the diagnosis when needed
-in the given slides / specimens suggesting the diagnosis of following diseases or conditions (90 mins)
Oral leukoplakia
Oral candidiasis
Gastric esophageal reflux disease
Barrett's esophagus
Oesophageal varices
Gastritis
Gastric ulcer
Gastric polyps
Step 4 The students should perform the same step wise procedures and document a structured diagnostic report (90 min)
Step 5. Small group discussions on the pathological findings and their clinical significance should be done (90 mins)
Step 6 Digital images , histopathology atlas and patient case history related to similar disease coditions should be additionally provided for comparison and discussion (1hr)
Step 7 Personalised feedback on students observation and diagnostic accuracy should be given (15 min)

Practical Training 20.2 : Histopathological diagnosis of lower gastro intestinal diseases

Duration of practical: 4 hours
Conduct the gross and microscopic examination of specimens and histopathological slides for features suggesting diagnosis of lower gastro intestinal diseases
Step 1 The teacher should clearly state the learning objective to the students (10min)
Step 2 Preserved pathological specimens and properly labeled and stained histopathology slides should be provided to the students (5min)
Step 3 Teacher will demonstrate how to
1. Identify the key pathological features
2. Correlate the findings with the given clinical information
3. Formulate differential diagnoses

4. Arrive at most accurate histopathological diagnosis
5. Prepare and document a structured pathological report
6. Choose ancillary testing techniques to confirm the diagnosis when needed
-in the given slides / specimens suggesting the diagnosis of following diseases or conditions (1 hr)
Ischaemic bowel disease
Infective enterocolitis
Crohn's disease
Ulcerative colitis
Colorectal polyps
Colorectal cancer
Step 4 The students should perform the same step wise procedures and document a structured diagnostic report (1hr)
Step 5. Small group discussions on the pathological findings and their clinical significance should be done (1hr)
Step 6 Digital images , histopathology atlas and patient case history related to similar disease coditions should be additionally provided for comparison and discussion (30min)
Step 7 Personalised feedback on students observation and diagnostic accuracy should be given (15 min)

Practical Training 20.3 : Histopathological diagnosis of Gastro intestinal tumours

Total learning hours: 4 hours
Conduct the gross and microscopic examination of specimens for the presence of features suggesting the diagnosis of malignant lesions of oral , oesophageal, gastric and intestinal organs
Step 1 The teacher should clearly state the learning objective to the students (10min)
Step 2 Preserved pathological specimens/ and properly labeled and stained histopathology slides should be provided to the students (5min)
Step 3 Teacher will demonstrate how to
1. Identify the key pathological features
2. Correlate the findings with the given clinical information
3. Formulate differential diagnoses
4. Arrive at most accurate histopathological diagnosis
5. Prepare and document a structured pathological report
6. Choose ancillary testing techniques to confirm the diagnosis when needed
-in the given slides / specimens suggesting the diagnosis of following diseases or conditions (1 hr)
Benign and malignant lesions of oral cavity, oesophagus,stomach,colon and rectum
Step 4 The students should perform the same step wise procedures and document a structured diagnostic report (1hr)

Step 5. Small group discussions on the pathological findings and their clinical significance should be done (1hr)
Step 6 Digital images , histopathology atlas and patient case history related to similar disease coditions should be additionally provided for comparison and discussion (30 min)
Step 7 Personalised feedback on students observation and diagnostic accuracy should be given (15 min)

Practical Training 20.4 : Histopathological analysis of hepatobiliary diseases

Duration of practical: 6 hours
Interpret gross and microscopic features suggesting the diagnosis of hepato biliary diseases
Step 1 The teacher should clearly state the learning objective to the students (10mins)
Step 2 Preserved pathological specimens/ and properly labeled and stained histopathology slides should be provided to the students (5mins)
Step 3 Teacher will demonstrate how to
1. Identify the key pathological features
2. Correlate the findings with the given clinical information
3. Formulate differential diagnoses
4. Arrive at most accurate histopathological diagnosis
5. Prepare and document a structured pathological report
6. Choose ancillary testing techniques to confirm the diagnosis when needed
-in the given slides / specimens suggesting the diagnosis of following diseases or conditions(1hour 30 mins)
Acute viral hepatitis
Chronic viral hepatitis
Auto immune hepatitis
Alcoholic liver disease
Non-alcoholic fatty liver disease
Autoimmune hepatitis
Primary biliary cirrhosis
Primary sclerosing cholangitis
Wilson’s disease
Hereditary haemochromatosis
Cirrhosis
Step 4 The students should perform the same step wise procedures and document a structured diagnostic report (2 hours)
Step 5. Small group discussions on the pathological findings and their clinical significance should be done (1hr)

Step 6 Digital images , histopathology atlas and patient case history related to similar disease coditions should be additionally provided for comparison and discussion (1hr)
Step 7 Personalised feedback on students observation and diagnostic accuracy should be given (15 mins)

Experiential learning Activity

Experiential-Learning 20.1 : Pathophysiological demonstration of gastric mucosal injury

Duration of activity: 3 hours
Create visual demonstration showing the natural protective and injurious factors of gastric mucosa and evaluate the etiological factors that could be prevented or therapeutically intervened. (3 hours)
Step 1: Visualizing the Protective Mechanisms (1 hour)
Interactive Visual Representation
Use digital tools to create a cross-sectional diagram of the stomach wall.
Label and illustrate the protective components:
Discuss how each component contributes to protecting the stomach lining from the harsh acidic environment.
Step 2: Visualizing Injurious Factors (1 hour)
Illustration of Etiological Factors:
illustrate the "Etiological Factors" and their "Mechanism of Injury."
Discussion:
Discuss the consequences of these injurious factors on the gastric mucosa.
Discuss the role of the imbalance of protective and aggressive factors.
Step 3:Visual Summary (1 hour)
Create a final visual representation showing the balance between protective and injurious factors, with arrows indicating how each factor contributes.
This representation would aid in demonstrating the dynamic balance of gastric health.
Review of preventative strategies:
Discussion of the role lifestyle changes, and pharmaceutical interventions, can play in gastric mucosa health.

Experiential-Learning 20.2 : Data analysis of Crohn's and Ulcerative colitis

Duration of activity: 3 hours
Evaluate the epidemiology and the factors that influence disease progression of IBD by doing data analysis (3 hours)
Step 1: Data Exploration and Epidemiology (1 hour)
Introduction and Dataset Overview (10 mins)
Briefly introduce IBD epidemiology and the goals of the activity.
Explain the variables in the provided dataset.
Discuss ethical considerations for handling patient data
Descriptive Statistics and Epidemiological Trends (30 mins)
Participants will use statistical software to calculate:
Distribution of IBD subtypes
Age of onset distribution.
Sex ratio.
Geographical distribution of IBD cases.
Determine the average age of diagnosis, and the most common diagnosis.
Visualize the data using histograms, bar charts, and pie charts.
Interpretation and Discussion (20 mins)
Discuss the observed epidemiological trends.
Relate findings to known IBD epidemiology.
Generate hypotheses about potential risk factors.
Step 2: Factors Influencing Disease Progression (1 hour)
Correlation and Regression Analysis (30 mins)
Participants will perform statistical analyses to explore factors associated with disease progression:
Calculate correlations between variables
Conduct simple linear or logistic regression to identify predictors of outcomes
Stratified Analysis and Subgroup Comparisons (30 mins)
Divide the dataset into subgroups
Compare disease progression and outcomes between subgroups.
Step 3: Interpretation, Discussion, and Presentation (1 hour))
Interpretation and Synthesis (30 mins)
Participants will synthesize their findings and interpret the results in the context of IBD pathogenesis and clinical practice.

Discuss the limitations of the dataset and the analyses performed.
Brainstorm potential further research questions.
Presentation and Group Discussion (30 mins)
Participants will present their key findings and interpretations.
Engage in a group discussion to compare and contrast different perspectives.
Discuss the implications of the findings for IBD management and future research.

Experiential-Learning 20.3 : Critical appraisal of grading and stagings in gastrointestinal malignancies

Duration of activity :6 hours
Activity 1: Assess the aggressiveness of oral squamous cell carcinoma by Anneroth's Grading System (2 Hours)
Step 1: Understanding Anneroth's Grading System (1 hour)
Introduction to Anneroth's Grading System (15 minutes)
Briefly review the importance of grading OSCC for prognostic and treatment purposes.
Introduce Anneroth's Grading System, emphasizing its focus on tumor-host interaction and invasion patterns.
Explain the three parameters assessed:
Degree of differentiation (differentiation score).
Pattern of invasion (invasion score).
Degree of lymphocytic infiltration (lymphocytic infiltration score).
Detailed Review of Grading Criteria (30 minutes)
Thoroughly review the criteria for each parameter, using visual aids (images, diagrams)
Discuss the specific histological features that define each grade within each parameter.
Slide Examination and Criteria Application (15 minutes)
Examine microscopic slides of OSCC, focusing on identifying the features relevant to Anneroth's grading.
Step 2: Case Study Analysis and Risk Assessment (1 hour)
Case Study Presentation (30 minutes)
Present 3-4 simulated patient case studies, each with clinical descriptions and histological findings of OSCC.
Vary the grading of the OSCC in the case studies
Include information about patient risk factors and clinical presentation.
Case Analysis and Risk Assessment (30 minutes)
Participants individually analyze each case, focusing on:
Applying Anneroth's Grading System to determine the differentiation, invasion, and lymphocytic infiltration scores.

Calculating the total Anneroth's score.
Assessing the aggressiveness of the OSCC based on the total score.
Discussing the prognostic implications of the grading.
Discussing the influence of patient risk factors on prognosis.
Discuss the cases as a group, comparing grading assessments and risk assessments.
Discuss how the Anneroth score relates to the TNM staging system.
Discuss how the Anneroth score impacts treatment decisions.
Activity 2 :Document the histopathological features of 10 real patients based on operative link on gastric intestinal mucosa(OLGIM staging) and assess the risk of progression to gastric cancer (2 hours)
Step 1: Understanding OLGIM Staging (1 hour)
Introduction to OLGIM Staging (15 minutes)
Briefly review the importance of identifying and staging gastric atrophy and intestinal metaplasia for gastric cancer risk assessment.
Introduce the OLGIM staging system, emphasizing its focus on the extent and severity of these lesions.
Explain the criteria used for staging
Atrophy scoring (based on the updated Sydney System)
Intestinal metaplasia scoring (based on the updated Sydney System)
OLGIM stage (I-IV, based on the highest score for atrophy or intestinal metaplasia)
Detailed Review of Staging Criteria (30 minutes)
Thoroughly review the criteria for atrophy and intestinal metaplasia scoring, using visual aids (images, diagrams).
Discuss the specific histological features that define each score..
Histopathology Image Analysis (15 minutes)
Examine histopathology images of gastric mucosa with varying degrees of atrophy and intestinal metaplasia.
Practice identifying and scoring these lesions based on the OLGIM criteria.
Step 2: Case Study Analysis and Risk Assessment (60 minutes)
Case Study Presentation (30 minutes)
Present 5 simulated patient case studies, each with clinical descriptions and histopathological findings of gastric mucosa.
Vary the OLGIM stage in the case studies (I-IV).
Include information about patient risk factors (e.g., *H. pylori* infection, family history)
Case Analysis and Risk Assessment (30 minutes)
Participants individually analyze each case, focusing on:
Scoring atrophy and intestinal metaplasia based on histological findings.
Determining the OLGIM stage.

Assessing the risk of gastric cancer progression based on the OLGIM stage and patient risk factors.
Discussing the clinical management and follow-up for each case.
Discuss the cases as a group, comparing staging assessments and risk assessments.
Discuss the limitations of OLGIM staging.
Activity 3:Work through 10 patients with diagnosis of colorectal cancer and document the stages based on Aster Coller staging method (2 hours)
Step1: Understanding the Aster-Coller Staging System (1 hour)
.??Introduction to Aster-Coller Staging (15 minutes)
Briefly review the importance of accurate staging in colorectal cancer for prognosis and treatment planning.
Introduce the Aster-Coller staging system, emphasizing its focus on the depth of tumor invasion and lymph node involvement.
Explain the key components of the staging system:
Detailed Review of Staging Criteria (30 minutes)
Thoroughly review the criteria for each stage, using visual aids (diagrams, images).
Discuss the specific pathological features that define each stage
Discuss the difference between the Aster-Coller staging, and the TNM staging system.
Case Examples and Discussion (15 minutes)
Present a few simplified case examples to illustrate the application of the staging criteria.
Discuss the challenges and nuances of staging colorectal cancer.
Step 2: Case Study Analysis and Staging Application (1 hour)
Case Study Presentation (30 minutes)
Present 10 simulated patient case studies, each with varying clinical, imaging, and pathological findings.
Include information on:
Tumor location and size.
Depth of tumor invasion (T stage equivalent).
Number of involved lymph nodes (N stage equivalent)
Presence of distant metastasis (M stage equivalent)
Radiological findings.
Vary the staging of the colorectal cancer in the case studies (A-D).
Case Analysis and Staging Application (30 minutes)
Participants individually analyze each case, focusing on:
Identifying the relevant clinical, imaging, and pathological findings.
Applying the Aster-Coller staging criteria to determine the appropriate stage.
Documenting the staging rationale.

Discuss the cases as a group, comparing staging assessments.
Discuss how the staging impacts treatment decisions.

Experiential-Learning 20.4 : Structured approach ensuring a comprehensive understanding of cholelithiasis pathology through targeted literature review and analysis

Duration of activity: 4 hours
Structured approach ensuring a comprehensive understanding of cholelithiasis pathology through targeted literature review and analysis (4 hours)
Step1:Review literature on understanding gallstone formation and types (1hour)
Identify the different types of gallstones and understand their formation mechanisms.?
Step 2: Factors Influencing Gallstone Formation (1 hour)
Appraise genetic, environmental, and physiological factors contributing to gallstone development.?
Step 3: Histopathological Features of Cholelithiasis (1 hour)
Understand the microscopic changes in gallbladder tissue due to gallstones, including inflammation and mucosal alterations.?
Step 4: Clinical Implications Explore the clinical consequences of gallstones (1 hour)
Discuss the clinical presentation, potential complications

Experiential-Learning 20.5 : Comprehensive understanding of the pathophysiology of fatty liver disease , hepatitis ,cirrhosis

Duration of activity: 4 hours)
Pay a visit to the deaddiction centre to reassure the patients and inmates to cousel them regarding the good effects of quitting alcohol. The bad impact of cirrhosis and cancers over the quality of life. This enables the students to see patients with various stages of fatty liver, cirrhosis, liver failure, jaundice. (4 hours)
Step 1: Observation and Interaction (1 hour)
Divide students into small groups to interact with patients under supervision.
Observe patients at different stages
Listen to patient testimonies about the impact of alcohol on their lives and health.
Note physical and emotional signs
Step 2: Discussion and Reflection (1 hour)
Conduct a group debriefing session.
Discuss the emotional and psychological effects on patients and families
Reflect on how early intervention could prevent advanced liver damage.

Step 3: Understanding Medical Implications (1 hour)
Provide a brief lecture on:
The progression from fatty liver to cirrhosis and liver failure.
Alcohol’s role in increasing cancer risks
Benefits of quitting alcohol
Discuss counseling techniques to support patients through deaddiction.
Step 4: Application and Counseling Practice (1 hour)
Apply knowledge through simulated counseling and practical advice.
Activities:
Role-play counseling sessions where students guide a "patient" to quit alcohol.
Provide practical tips: gradual reduction, support groups, medical help.
Encourage students to design an awareness poster or pamphlet for future patients.
Wrap up with key takeaways and how they can apply these insights in future medical practice.

Experiential-Learning 20.6 : Comprehensive understanding of the pathophysiology of Non Alcoholic Fatty Liver Disease , hepatitis and hepatocellular carcinoma

Duration of activities: 6 hours
Activity 1. Create educational materials for Non Alcoholic Fatty Liver Disease awareness campaigns(1 hour)
Step 1: Create materials for a direct, engaging experience to make the audience aware of Non Alcoholic Fatty Liver Disease (NAFLD.)(10 mins)
Step 2: Create materials to encourage audiences to reflect on their own health and risk factors.(15 mins)
Step 3: Create materials to teach the medical facts and prevention strategies behind Non Alcoholic Fatty Liver Disease (NAFLD).(20 mins)
Step 4: Create materials to encourage participants to take actionable steps toward prevention and monitoring.(15 mins)
Activity 2. Compare the METAVIR and ISHAK Scoring System in assessing the severity of fibrosis and inflammation in 6 patients with chronic hepatitis . (3 hours)
Step 1: Engage participants with real-world scenarios of assessing fibrosis and inflammation in 6 patients.(1 hour)
Case Study Review
Present 6 patient profiles with biopsy reports. Each profile should include patient history and histopathology reports
Interactive Chart Comparison
Provide participants with scoring sheets for both systems.
Ask them to assign fibrosis and inflammation grades using METAVIR and ISHAK for each patient
Encourage participants to compare their assessments with actual clinical data.
Step 2: Reflect on how each system interprets the same patient data differently (1 hour)

Group Discussion (20 mins)
Scoring System Pros & Cons Chart (20 mins)
Participants collaborate on a comparison chart.
Reflection Activity (20 mins)
Step 3: Synthesize knowledge and apply both scoring systems to real-life decision-making (1 hour)
Clinical Decision-Making Simulation (30 mins)
Present new patient biopsy data and ask participants to Interpret scores using METAVIR and ISHAK and decide on clinical action
Create a Quick-Reference Guide (20 mins)
Participants draft a one-page guide comparing both systems
Feedback & Wrap-Up (10 mins)
3. Analyse and document case studies of patients with hepato cellular carcinoma linked to different etiologies (2 hour)
Step 1: Examine real patient case studies to identify how different causes of HCC present and progress (1 hour)
Case Study Review (40 mins)
Present and analyze 4 patient profiles, each linked to a different etiology of Hepato cellular carcinoma
Facilitate a guided reflection using these prompts (20 mins)
How did each etiology contribute to tumor development?
Which cases showed rapid vs. slow progression?
What are the diagnostic challenges unique to each cause?
Participants complete a comparative table:
Step 2: Connect theoretical frameworks with practical decision-making and patient outcomes.
Clinical Pathway Mapping (30 mins)
Participants create a flowchart linking etiology ? diagnosis ? treatment.
Case-Based Decision Simulation (30 mins)
Participants apply their knowledge by solving a new case:
Wrap-Up:
Participants compare decisions and summarize how etiology impacts prognosis.

Modular Assessment

Assessment method	**Hour**
Instructions: Conduct a structured Modular assessment. The assessment will be for 50 marks. Keep a structured marking pattern. Use different assessment methods in	4

each module for the semester. Keep a record of the structured pattern used for assessment. Calculate the Modular grade point as per Table 6 C.
CHOOSE ANY OF THE BELOW ASSESSMENT FOR 50 MARKS
1. Topic presentations (10 marks)
A.Content Accuracy and Depth (4 Marks)
Accurate and relevant information (2 marks)
Depth of understanding and explanation (2 marks)
B. Organization and Clarity (3 Marks)
Logical organization and flow (1 mark)
Clear and concise language (1 mark)
Effective use of visual aids (1 mark)
C.Engagement and Delivery (3 Marks)
Eye contact and voice projection (1 mark)
Engagement with the audience (1 mark)
Time management and professionalism (1 mark)
2. MCQ or Quiz (10 marks)
And
3. SAQ (5 marks)
And
4.Histopathology Diagnosis and Interpretation of 3 slides or specimens each carrying 5 marks(15 marks)
Key Microscopic Features (2 Marks)
Probable Diagnosis (2 Marks)
Brief Clinical Correlation (1 Mark)
And
5. Objective Structured Clinical Examination (OSCE)(10 marks)
Task Completion (6 Marks)
Correct sequence of actions (2 marks)
Accuracy of performed steps/questions (2 marks)
Efficiency and organization (2 marks)
Communication Skills (2 Marks)
Clarity and conciseness of communication (1 mark)
Empathy and rapport building (1 mark)
Clinical Reasoning/Interpretation (2 Marks)

Logical reasoning and justification (1 mark)
Appropriate interpretation of findings (1 mark)
Or
Any practical in converted form can be taken for assessment. (25 marks)
and
Any experiential, such as portfolios / reflections / presentations can be taken as an assessment. (25 marks)

Semester No : 5

Module 21 : Renal, Male and Female Genital Tract Diseases

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

Illustrate and apply the understanding of pathophysiological processes in renal disorders, male and female genital tract diseases
Demonstrate lab diagnostic methods for appropriate diagnosis, evaluating research ideas and efficient therapeutic interventions.

M 21 Unit 1 Nephrology

21.1.1. Glomerulonephritis-primary and secondary
21.1.2. Nephritic and nephrotic syndromes
21.1.3. Pyelonephritis-acute and chronic
21.1.4. Urolithiasis
21.1.5. Urinary tract infections
21.1.6. Acute tubular necrosis
21.1.7. Nephrosclerosis
21.1.8. Renal tumours
21.1.9. Urothelial tumours

References: 29,30,33,37,47,90,98

3A	3B	3C	3D	3E	3F	3G
CO1,CO2,CO5 ,CO7,CO8	Illustrate the pathophysiology , classification microscopical features and their clinical impact of glomerular nephritis Distinguish the pathophysiology and diagnosis of acute and chronic pyelonephritis	1	Lecture	CAN	Knows-how	L&PPT , L&GD,SDL,PBL
CO1,CO2,CO5 ,CO7,CO8	Evaluate the pathogenesis ,diagnostic methods and complications of urinary tract infections and urolithiasis	1	Lecture	CAN	Knows-how	L&GD,CBL,DIS,LS
CO1,CO2,CO5 ,CO7,CO8	Describe the pathophysiology ,morphological features and diagnosis of Acute tubular necrosis and Nephro sclerosis	1	Lecture	CAP	Knows-how	CBL,PL, L&PPT
CO1,CO2,CO5 ,CO7,CO8	Analyze the epidemiology,classification, pathogenesis, clinical features, staging , diagnostic findings and complications of renal and urothelial tumours.	1	Lecture	CAP	Knows-how	BS,L&PPT ,CBL,SDL
CO1,CO3,CO4 ,CO6,CO7	Identify and interpret the gross and microscopical features suggesting the diagnosis of renal and urothelial diseases	6	Practical Training 21.1	PSY-GUD	Shows-how	DL,LRI,DIS
CO1,CO2,CO4 ,CO6,CO8	Callibrate the risk factors, epidemiological factors, underlying mechanisms and clinicopathological diagnosis of renal and urothelial diseases	10	Experiential-Learning 21.1	AFT-REC	Does	DIS,PBL, Mnt,BL,CBL

M 21 Unit 2 Male Genital Diseases

21.2.1. Acute and chronic cystitis
21.2.2. Prostatitis

21.2.3. Phimosis and Paraphimosis
21.2.4. Orchitis
21.2.5. Erectile Dysfunction
21.2.6. Benign prostate hyperplasia
21.2.7. Carcinoma prostate
21.2.8. Penis and testicular tumours

References: 29,30,33,37,47,98

3A	3B	3C	3D	3E	3F	3G
CO1,CO2,CO5 ,CO7,CO8	Discuss the pathogenesis, clinical features, diagnostic findings and complications of Acute and chronic cystitis Prostatis Phimosis Orchitis Erectile dysfunction Benign Hyperplasia of the Prostate Discuss the pathogenesis, clinical features, diagnostic findings ,staging and complications of prostate,penis and testicular cancers	2	Lecture	CAN	Knows-how	LS,L&PPT ,L&GD ,DIS
CO1,CO3,CO4 ,CO6,CO7	Identify and interpret the gross and microscopic features suggesting the diagnosis of male genital diseases	7	Practical Training 21.2	PSY-GUD	Shows-how	DL,DIS,LRI
CO1,CO2,CO4 ,CO6,CO8	Compare the pathophysiology of acute and chronic cystitis Assess the disease progression and potential complications of benign prostate hyperplasia. Evalate the grading of Prostate cancer based on the glandular structure using Gleason's score	7	Experiential-Learning 21.2	CAN	Does	PBL,LRI, CBL,LS,PL

M 21 Unit 3 Female Genital Diseases

21.3.1. Chronic Cervicitis
21.3.2. Endometriosis
21.3.3. Endometrial hyperplasia
21.3.4. Adenomyosis
21.3.5. Carcinima of cervix
21.3.6. Leiomyoma
21.3.7. Endometrial Carcinoma
21.3.8. Infections of female genital tract
21.3.9. Non neoplastic and functional ovarian cysts
21.3.10. Ovarian tumours
21.3.11. Benign tumours of the breast
21.3.12. Carcinoma of breast

References: 29,30,33,37,47

3A	3B	3C	3D	3E	3F	3G
CO1,CO2,CO5 ,CO7,CO8	Discuss the risk factors, pathophysiology,abnormal tissue growth patterns, clinical presentation and diagnosis of adenomyosis,endometriosis , endometrial hyperplasia and leiomyoma. Differentiate the pathophysiology, clinical presentations, diagnosis and complications of female genital tract infections Discuss the causes , symptoms , complications and diagnosis of cervicitis Discuss the pathogenesis, clinical features, diagnostic findings ,staging and complications of cervical and endometrial cancer Differentiate the pathophysiology, clinical presentations, diagnosis and complications of non neoplastic functional ovarian cysts and malignant ovarian tumours Differentiate the pathophysiology, clinical presentations, diagnosis and complications of benign and malignant tumours of the breast	4	Lecture	CAN	Knows-how	BS,L&GD,L&PPT ,TBL,SDL
CO1,CO3,CO4 ,CO6,CO7	Identify and interpret the gross and microscopical features suggesting the diagnosis of female genital diseases	7	Practical Training 21.3	PSY-GUD	Shows-how	DIS,LRI, DL

CO1,CO2,CO4 ,CO6,CO8	Discuss the potential clinical implications of adenomyosis based on its pathological characteristics Demonstrate the pathogenesis of common cervicitis-causing organisms and their clinical implications Arrange a Patient education program focusing on early detection and prevention of cervical cancer Summarize the key clinical implications of the Nottingham Histologic Score (NHS), emphasizing its role in personalized breast cancer management.	9	Experiential-Learning 21.3	AFT-SET	Does	LRI,DIS,JC,PL,CBL

Practical Training Activity

Practical Training 21.1 : Histological assessment of renal and urothelial diseases

Duration of practical: 6 hours
Identify and interpret the gross and microscopical features suggesting the diagnosis of renal and urothelial diseases
Step 1 The teacher should clearly state the learning objective to the students (10min)
Step 2 Preserved pathological specimens and properly labeled and stained histopathology slides should be provided to the students(5min)
Step 3 Teacher will demonstrate how to
1. Identify the key pathological features
2. Correlate the findings with the given clinical information
3. Formulate differential diagnoses
4. Arrive at most accurate histopathological diagnosis
5. Prepare and document a structured pathological report
6. Choose ancillary testing techniques to confirm the diagnosis when needed
-in the given slides / specimens suggesting the diagnosis of following diseases or conditions (1 hr, 30min)
Glomerular diseases
Tubulo interstitial diseases
Renal vascular diseases
Cystitis
Renal and urothelial tumours

Step 4 The students should perform the same step wise procedures and document a structured diagnostic report(1hour,30min)
Step 5. Small group discussions on the pathological findings and their clinical significance should be done (1hr, 30 min)
Step 6 Digital images , histopathology atlas and patient case history related to similar disease coditions should be additionally provided for comparison and discussion (1hr)
Step 7 Personalised feedback on students observation and diagnostic accuracy should be given (15 min)

Practical Training 21.2 : Histological analysis of male genital diseases

Duration of practical: 7 hours
Identify and interpret the gross and microscopic features suggesting the diagnosis of male genital diseases
Step 1 The teacher should clearly state the learning objective to the students(10min)
Step 2 Preserved pathological specimens/ and properly labeled and stained histopathology slides should be provided to the students(5min)
Step 3 Teacher will demonstrate how to
1. Identify the key pathological features
2. Correlate the findings with the given clinical information
3. Formulate differential diagnoses
4. Arrive at most accurate histopathological diagnosis
5. Prepare and document a structured pathological report
6. Choose ancillary testing techniques to confirm the diagnosis when needed
-in the given slides / specimens suggesting the diagnosis of following diseases or conditions(1 hr, 45min,)
Benign prostate hyperplasia
Prostate adenocarcinoma
Seminoma testis
Germ cell tumours
Penile tumours
Step 4 The students should perform the same step wise procedures and document a structured diagnostic report (2 hours)
Step 5. Small group discussions on the pathological findings and their clinical significance should be done (1hr, 30 min)
Step 6 Digital images , histopathology atlas and patient case history related to similar disease coditions should be additionally provided for comparison and discussion (1hr, 15 min)
Step 7 Personalised feedback on students observation and diagnostic accuracy should be given(15 min)

Practical Training 21.3 : Histological study of female genital diseases

Duration of practical: 7 hours
Identify and interpret the gross and microscopical features suggesting the diagnosis of female genital diseases
Step 1 The teacher should clearly state the learning objective to the students(10min)
Step 2 Preserved pathological specimens/ and properly labeled and stained histopathology slides should be provided to the students (5min)
Step 3 Teacher will demonstrate how to
1. Identify the key pathological features
2. Correlate the findings with the given clinical information
3. Formulate differential diagnoses
4. Arrive at most accurate histopathological diagnosis
5. Prepare and document a structured pathological report
6. Choose ancillary testing techniques to confirm the diagnosis when needed
-in the given slides / specimens suggesting the diagnosis of following (2 hr)
Endometrial hyperplasia
Endometrial carcinoma
Leiomyoma
Cervival dysplasia
Cervical carcinoma
Ovarian cysts and tumours
Benign and malignant tumours of breast
Step 4 The students should perform the same step wise procedures and document a structured diagnostic report (2 hours)
Step 5. Small group discussions on the pathological findings and their clinical significance should be done (1hr 30 min)
Step 6 Digital images , histopathology atlas and patient case history related to similar disease coditions should be additionally provided for comparison and discussion (1hr)
Step 7 Personalised feedback on students observation and diagnostic accuracy should be given (15 min)

Experiential learning Activity

Experiential-Learning 21.1 : Clinico pathological assessment of renal and urothelial diseases

Duration of activity; 10 hours
Activity 1. Evaluate the risk factors, epidemiological factors, underlying mechanisms and clinicopathological diagnosis of Diabetic nephropathy in 2 patients (2 hours)

Step 1: Risk Factors and Epidemiological Factors (1 hour)
Use credible sources to quantify their impact (e.g., odds ratios, prevalence rates) and discuss how they interact in a hypothetical patient case
Step 2: Underlying Mechanisms and Clinicopathological Diagnosis (1 hour)
Simulate a diagnostic workup for a patient with suspected diabetic nephropathy.
Analyze lab results and propose a mechanism linking hyperglycemia to the findings.
Cross-check with histopathological features to confirm the diagnosis
Sketch a flowchart linking ,highlighting key pathway
Discuss how to therapeutically interrupt this cascade.
Activity 2. Evaluate the risk factors, epidemiological factors, underlying mechanisms and clinicopathological diagnosis of Chronic Kidney Disease against KDIGO guidelines. (4 hours)
Step 1: Risk Factors Assessment (1 hour)
Identify modifiable and non-modifiable Chronic Kidney Disease (CKD) risk factors.
Compare the identified risk factors with KDIGO guidelines for Chronic Kidney Disease (CKD) prevention and management.
Evaluate emerging risk factors
Step 2 : Epidemiological Factors Analysis (1 hour)
Document a brief report summarizing Chronic Kidney Disease (CKD) epidemiology with KDIGO-aligned prevention priorities'
Step 3: Underlying Mechanisms Evaluation (1 hour)
Map primary Chronic Kidney Disease (CKD) mechanisms
Compare pathophysiological mechanisms with KDIGO’s recommended interventions
Evaluate how KDIGO integrates multifactorial pathogenesis into individualized care plans.
Step 4: Clinicopathological Diagnosis Review (1 hour)
Outline diagnostic criteria for Chronic Kidney Disease (CKD)
Compare Chronic Kidney Disease (CKD) classification (G1–G5 and A1–A3) with KDIGO's prognosis heat map.
Evaluate KDIGO’s guidelines for biopsy, imaging, and biomarkers in diagnosis.
A structured report with calibrated insights on Chronic Kidney Disease (CKD) risk factors, epidemiology, mechanisms, and diagnosis against KDIGO guidelines.
Activity 3 : Analyse and document the risk factors and epidemiological factors and the preventable causes for Urinary Tract Infections in OPD patients. (2 hours)
Step 1;Gathering data and Analysing the collected data (1 hour)
Observing and gathering data on Urinary Tract Infections (UTI) cases in OPD patients.
Analyzing the gathered data to identify patterns and trends.
Identifying Key Risk Factors and the potential correlations between risk factors and Urinary Tract
Infections (UTI) occurrence.
Step 2; Understanding ,formulating and implementing strategies for prevention (1 hour)

Developing a comprehensive understanding of the interplay between risk factors and UTI development
Creating a framework for identifying high-risk individuals in the OPD.
Formulating strategies for preventing UTIs in this population.
Implementing preventive measures in the OPD, such as creating and providing educational materials for the patients
Activity 4 . Interpret pathological specimens of urothelial tumors, correlating histological findings with clinical presentation (2 hours)
Step 1: Histological Foundations (1 hour)
Introduction and Review of Urothelial Histology:
Interactive Microscopy Session
Step 2: Clinical Correlation (1 hour)
Case-Based Learning:
Present 2-3 clinical case scenarios, each accompanied by corresponding histological images.
Participants will work in small groups to:
Analyze the histological findings.
Interpret the clinical presentation.
Discuss the likely staging and grading of the tumor.
Group Presentations and Discussion (1 hour)
Each group will present their analysis and conclusions.
Facilitated discussion to compare and contrast the different cases.
Emphasis on the correlation between histological features and clinical outcomes.
Summary and Key Takeaways:
Reinforce the importance of integrating pathological and clinical information.
Highlight the role of pathology in guiding treatment decisions.
Brief review of the TNM staging system.

Experiential-Learning 21.2 : Comparative analysis of acute and chronic cystitis
Disease progression and potential complications of benign prostate hyperplasia.
Gleason scoring: Interpreting prostate cancer pathology

Duration of activity: 7 hours
Activity 1. Creat visual representations of the comparative analysis of the pathophysiological processes involved in acute and chronic cystitis (3 hours)
Step 1-Case Studies: (30 mins)

Present students with real or simulated patient case studies, including
Clinical presentation
Patient history
Pathology reports from biopsies.
Step 2-Case Study Analysis: (1 hour)
Students analyze the provided case studies, focusing on:
Correlating clinical symptoms with pathological findings.
Identifying risk factors contributing to the condition.
Discussing the potential progression from acute to chronic cystitis.
Step 3-Journaling: (30 minutes)
Have students keep a journal of their observations during the lab, and case study reviews.
This will help them to reflect on the information they have taken in.
Step 4-Pathophysiology Mapping: (30 min)
Students create visual diagrams or flowcharts illustrating the pathophysiology of acute and chronic cystitis.
Step 5-Comparative Analysis:(30 min)
Students develop a table or chart comparing and contrasting acute and chronic cystitis.
Activity 2. Assessment of the disease progression and potential complications of benign prostate hyperplasia (2 hours)
Step 1:Case-Based Analysis of Progression (1 hour)
Present 2-3 patient case studies
Initial patient presentation with baseline The International Prostate Symptom Score (IPSS), PSA, and prostate volume.
Follow-up data showing changes in these parameters over time.
Patient reports of worsening symptoms.
Participants will work to:
Analyze the data and identify signs of progression.
Discuss the clinical significance of the changes.
Discuss the impact of the changes on the patients quality of life.
Step 2: Identifying BPH Complications (1 hour)
Discuss potential complications of BPH,
Show images of imaging that shows these complications.
Review the pathophysiology and clinical presentation of each complication
Activity 3. Interpreting prostate cancer pathology by Gleason scoring in 5 patients(3 hours)

Step 1: Gleason Scoring Fundamentals (1 hour)
Introduction to Gleason Scoring:
Brief overview of prostate cancer pathology and its clinical significance.
Explanation of the Gleason scoring system's purpose
Identifying Gleason Patterns:
Identification of different Gleason patterns
Emphasize the recognition of architectural features, such as gland size, shape, and arrangement.
Use images and diagrams to visually illustrate the different patterns.
Step 2: Gleason Score Calculation and Clinical Correlation (1 hour)
Gleason Score Calculation and Interpretation
Participants will work to:
Identify the primary and secondary Gleason patterns.
Calculate the Gleason score.
Determine the Gleason score group.
Step 3-Clinical Correlation and Discussion (1 hour)
Discuss the likely prognosis based on the Gleason Score group.
Clinical Correlation and Prognostic Implications
Discuss the correlation between Gleason scores and clinical outcomes

Experiential-Learning 21.3 : Potential clinical implications of adenomyosis pathology
Visual demonstration of the pathogenesis of common cervicitis-causing organisms.
Patient education for the early detection and prevention of cervical cancer.
Clinical implications of the Nottingham Histologic Score (NHS) in breast cancer.

Duration of activity: 9 hours
Activity 1. Potential clinical implications of adenomyosis pathology(2 hours)
Step 1: Pathological Features and Symptom Correlation(1 hour)
Establish a clear link between the microscopic features of adenomyosis and the patient's clinical presentation.
Microscopic Analysis
Clinical Case Studies
Present short clinical case studies with varying degrees of adenomyosis severity.
For each case, learners should:

Correlate the presented symptoms with the expected pathological findings.
Discuss how the depth of myometrial invasion might influence symptom severity.
Step 2: Differential Diagnosis and Clinical Management (1 hour)
Understand how adenomyosis pathology informs differential diagnosis and clinical management.
Differential Diagnosis
Present histological slides of other uterine pathologies .
Learners should:
Compare and contrast the histological features of adenomyosis with these other conditions.
Discuss the importance of accurate pathological diagnosis for appropriate clinical management.
Discuss the key differential diagnosis points
Clinical Management Implications :
Discuss how the pathological findings of adenomyosis influence treatment decisions.
The implications of adenomyosis in relation to fertility.
Activity 2. Demonstrate the pathogenesis of common cervicitis-causing organisms.(3 hours)
Step 1:Pathogen Visualization and Interactive Simulation(1 hour)
Use high-quality visual aids to demonstrate the infection process of the pathogens
Interactive simulation: use software that allows learners to virtually manipulate the pathogens and seethe effect on cervical cells.
Facilitate a short group discussion:
Step 2: Comparative Pathogenesis Analysis and Expert Discussion(1 hour)
Compare and contrast the mechanisms of infection
Develop a conceptual framework that explains the varying symptoms and complications associated with different pathogens.
Create a table comparing the pathogens, their infection methods and the resulting damage.
Step 3:Clinical Scenario Application and Pathogenesis-Based Management Planning(1 hour)
Present learners with clinical scenarios of patients presenting with cervicitis symptoms.
For each scenario, learners:
Analyze the patient's symptoms and risk factors.
Hypothesize the likely causative organism based on their understanding of pathogenesis.
Propose a diagnostic approach and a management plan that targets the specific pathogen's mechanisms.
Discuss how the pathological process of each pathogen would influence treatment choices.
Activity 3 :.Engage in educating the patients on early detection and prevention of cervical cancer(2 hours)
Step 1: Understanding Cervical Cancer and Risk Factors (Interactive Education)(1 hour)
Empower patients with foundational knowledge about cervical cancer, its causes, and risk factors.

Interactive Presentation (30 minutes):
Risk Factor Discussion (30 minutes):
Step 2: Screening, Prevention, and Empowerment (1 hour)
Equip patients with practical knowledge about screening methods and preventive measures.
Screening Demonstration and Explanation (30 minutes)
Prevention and Empowerment Workshop (30 minutes)
End the session with an empowerment discussion. Encourage open questions, and provide resources for further information and support.
Activity 4. Clinical implications of the Nottingham Histologic Score (NHS) in breast cancer.(2 hours)
Step1: Understanding the Nottingham Histologic Score (NHS) and Case Presentations(1 hour)
Introduction and Review of NHS (30 minutes)
Case Study Presentations (30 minutes)
Divide participants into small groups.
Assign each group a patient case study with a specific NHS grade.
Each group analyzes the case, focusing on the implications of the NHS grade.
Step 2: Clinical Decision-Making and Outcome Discussion(1 hour)
Group Presentations and Discussion on expected clinical behavior,the likely prognosisand the potential treatment options(45 minutes)
Outcome and Prognosis (15 minutes)
Discuss the relationship between the NHS grade and the patient's prognosis.
Summarize the key clinical implications of the NHS, emphasizing its role in personalized breast cancer management.

Modular Assessment

Assessment method	**Hour**

Instructions: Conduct a structured Modular assessment. The assessment will be for 50 marks. Keep a structured marking pattern. Use different assessment methods in each module for the semester. Keep a record of the structured pattern used for assessment. Calculate the Modular grade point as per Table 6 C. CHOOSE ANY OF THE BELOW ASSESSMENT FOR 50 MARKS 1. Topic presentations (10 marks) A.Content Accuracy and Depth (4 Marks) Accurate and relevant information (2 marks) Depth of understanding and explanation (2 marks) B. Organization and Clarity (3 Marks) Logical organization and flow (1 mark) Clear and concise language (1 mark) Effective use of visual aids (1 mark) C.Engagement and Delivery (3 Marks) Eye contact and voice projection (1 mark) Engagement with the audience (1 mark) Time management and professionalism (1 mark) 2. LAQ (10 marks) And 3. SAQ (5 marks) And 4.Histopathology Diagnosis and Interpretation of 3 slides or specimens each carrying 5 marks(15 marks) Key Microscopic Features (2 Marks) Probable Diagnosis (2 Marks) Brief Clinical Correlation (1 Mark) And 5. Objective Structured Clinical Examination (OSCE)(10 marks) Task Completion (6 Marks) Correct sequence of actions (2 marks) Accuracy of performed steps/questions (2 marks) Efficiency and organization (2 marks) Communication Skills (2 Marks) Clarity and conciseness of communication (1 mark)	4

Empathy and rapport building (1 mark)
Clinical Reasoning/Interpretation (2 Marks)
Logical reasoning and justification (1 mark)
Appropriate interpretation of findings (1 mark)
Or
Any practical in converted form can be taken for assessment. (25 marks)
and
Any experiential, such as portfolios / reflections / presentations can be taken as an assessment. (25 marks)

Module 22 : Diseases of Neurology and Musculo Skeletal System

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

Analyze and apply the knowledge of pathophysiological mechanisms in Neurological,and Musculo skeletal disorders
Perform and interpret lab diagnostic methods for the appropriate diagnosis, research and therapeutic interventions

M 22 Unit 1 Neurological Diseases

22.1.1. Seizure and epilepsy
22.1.2. Cerebro vascular diseases
22.1.3. Intracranial hemorrhage
22.1.4. Migraine and primary headache disorders
22.1.5. Dementia
22.1.6. Tremors,chorea and movement disorders
22.1.7. Motor Neuron Diseases
22.1.8. Peripheral nerve injuries
22.1.9. Central Nervous System Infections
22.1.10.Central Nervous System Tumours

22.1.11.Alzheimer’s and Parkinson’s disease
22.1.12.Peripheral neuropathy
22.1.13.Ataxic disorders
22.1.14.Multiple Sclerosis
22.1.15.Immune mediated neuropathies
22.1.16.Myasthenia Gravis
22.1.17 Neuro Psychiatric disorders
22.1.18 Neuro Pediatric diseases

References: 29,30,33,34,37,47,49,50,71,90

3A	3B	3C	3D	3E	3F	3G
CO1,CO2,CO5 ,CO7,CO8	Appraise the definition ,classification, risk factors, pathophysiology and diagnosis of seizures and epileptic syndromes, cerebrovascular diseases,intracranial hemorrhage, migraine and primary headache disorders,dementia, movement disorders, motor neuron diseases Describe the definition ,classification , aetiology ,pathophysiology and clinical presentations in peripheral neuropathies Discuss the types , pathogens involved, pathogenesis, clinical manifestations and diagnosis of Meningitis, Encephalitis, Brain Abscess Discuss the etiology, classification , pathogenesis, clinical manifestations and diagnosis of cerebro vascular tumours Discuss the etiology, classification , pathogenesis, clinical manifestations and diagnosis of Alzheimer’s and Parkinson’s disease Contrast the aetiology , pathophysiology and diagnosis of Ataxic disorders Illustrate the pathogenesis,clinical presentations and diagnosis of Multiple Sclerosis (MS), Guillain-Barré Syndrome (GBS), Chronic Inflammatory Demyelinating Polyneuropathy (CIDP), Myasthenia Gravis (MG)and Polymyositis Compare the pathogenesis and diagnosis of trigeminal neuralgia and Bell’s palsy. Discuss the pathogenesis of primary and secondary neuro psychiatric diseases- Anxiety, depression, schizophrenia	6	Lecture	CAN	Knows-how	DIS,CBL, BL,D-BED,LRI

	Discuss the pathogenesis of neuro pediatric diseases- cerebral palsy, autism, attention deficit disorder, developmental dyslexia					
CO1,CO4,CO5 ,CO6,CO7	Interpret the gross features suggesting the diagnosis of cerebrovascular diseases	5	Practical Training 22.1	PSY-GUD	Shows-how	DL,LRI,DIS
CO1,CO5,CO6 ,CO7	Interpret the microscopical features suggesting the diagnosis of cerebrovascular diseases	5	Practical Training 22.2	PSY-MEC	Shows-how	DL,DIS,PL
CO1,CO4,CO6 ,CO7,CO8	Evaluate the modifiable and non- modifiable risk factors in stroke patients. Analyze and classify the etiology of stroke using TOAST (Trial of Org 10172 in Acute Stroke Treatment) classification	3	Experiential-Learning 22.1	CAN	Does	BL,PBL,DIS,LRI,D-BED
CO1,CO3	Demonstrate empathy and effective communication on discussing prognosis and care plans with stroke patients and their families	2	Experiential-Learning 22.2	AFT-SET	Does	D-BED,DIS,CBL,TBL
CO1,CO3,CO5 ,CO7,CO8	Validate the the role of biomarkers in the pathogenesis and complications of immune mediated neuropathies by using physical and digital tools. .	2	Experiential-Learning 22.3	CAN	Does	DIS,BS,FV,CBL
CO1,CO3,CO5 ,CO7,CO8	Recognize and differentiate the behavioural and psychiatric symptoms associated with alzheimer’s and parkinson’s disease.	2	Experiential-Learning 22.4	AFT-SET	Does	DIS,BS,TBL,D-BED,CBL
CO1,CO4,CO5 ,CO7,CO8	Analyze the role of excitatory and inhibitory amino acids in pathogenesis of Parkinsonism, depression, migraine, dementia, epilepsy	4	Experiential-Learning 22.5	CAN	Does	DIS,FV,JC,CBL
CO1,CO3,CO6 ,CO7,CO8	Analyze the pathogenesis and potential complications of trigeminal neuralgia Recognize the association between peripheral neuropathy and systemic diseases	5	Experiential-Learning 22.6	CAN	Does	LRI,DIS,CBL
M 22 Unit 2 Musculo Skeletal Diseases						

22.2.1. Soft tissue injuries
22.2.2. Spinal injuries
22.2.3. Spondyloarthropathies
22.2.4. Bone and joint infections
22.2.5. Inflammatory joint diseases-Systemic Lupus Erythematosus,Rheumatoid Arthritis
22.2.6. Systemic diseases with rheumatic manifestations-metabolic,endocrine
22.2.7. Degenerative joint disease- osteo arthrosis,lumbar spondylois,cervical spondylosis
22.2.8. Bone tumours

References: 28,29,30,33,37,43,47,50

3A	3B	3C	3D	3E	3F	3G
CO1,CO2,CO5 ,CO7,CO8	Describe the pathophysiology,symptoms, differential diagnosis and diagnosis of Nutritional deficiency diseases affecting the bones and joints Deposition arthropathies Endocrine abnormalities of the musculoskeletal system Metabolic abnormalities of the musculoskeletal system Congenital anomalies of the musculoskeletal system Developmental skeletal disorder of the musculoskeletal system Differentiate the pathogenesis, symptoms and diagnosis of different injuries affecting the axial and appendicular skeletal system in adults and children Describe about the types and diagnosis of Spinal Injuries such as fractures, dislocations, herniated discs, spinal stenosis, and their impact on mobility Analyse the types, pathogenesis, diagnosis and complications of- Infections of the musculo skeletal system Autoimmune disorders of the musculoskeletal system Rheumatoid arthropathy, Ankylosing spondylitis, seronegative arthropathies Osteoarthrosis and spondylosis Describe the aetiopathogenesis, plan and interpret investigation of osteonecrosis of bones.	4	Lecture	CAN	Knows-how	L&GD,PBL,CBL,BL,L&PPT

	Describe the aetiology , pathophysiology, staging, symptoms and diagnosis of oncologic problems of musculoskeletal system both benign and malignancies, primary and secondary.					
CO1,CO3,CO4 ,CO6,CO7	Interpret the gross features suggesting the diagnosis of Musculo skeletal diseases	5	Practical Training 22.3	PSY-GUD	Shows-how	DL,SDL, LRI
CO1,CO2,CO4 ,CO6,CO7	Interpret the microscopical features suggesting the diagnosis of Musculo skeletal diseases	5	Practical Training 22.4	PSY-GUD	Shows-how	LRI,DL
CO1,CO2,CO4 ,CO6,CO8	Appraise the pathological review of musculo skeletal diseases.	8	Experiential-Learning 22. 7	PSY-GUD	Does	CBL,PL, LRI,X-Ray,DIS

Practical Training Activity

Practical Training 22.1 : Gross identification of cerebrovascular diseases

Duration of practical: 5 hours
Interpret the gross features suggesting the diagnosis of cerebrovascular diseases
Step 1 The teacher should clearly state the learning objective to the students(10 min)
Step 2 Preserved pathological specimens should be provided to the students(5 min)
Step 3 Teacher will demonstrate how to
1. Identify the key pathological features
2. Correlate the findings with the given clinical information
3. Formulate differential diagnoses
4. Arrive at most accurate histopathological diagnosis
5. Prepare and document a structured pathological report
6. Choose ancillary testing techniques to confirm the diagnosis when needed
-in the given slides and specimens suggesting the diagnosis of following diseases or conditions (2hrs)
Ischaemic stroke
Hemorrhagic stroke
Sub arachnoid hemorrhages
Cerebral vasculitis

Glioblastoma
Hemangioblastoma
Meningioma
Metastatic tumours
Cavernous angiomas
Central Nervous System infections
Alzheimer's disease
Parkinson's disease
Spino cerebellar ataxia
Friedreich's ataxia
Medulloblastoma
Multiple sclerosis
Cerebellar infarction and hemorrhage
Cerebellar atrophy and degeneration
Step 4 The students should perform the same step wise procedures and document a structured diagnostic report (1 hrs)
Step 5. Small group discussions on the pathological findings and their clinical significance should be done(30 min)
Step 6 Digital images , histopathology atlas and patient case history related to similar disease coditions should be additionally provided for comparison and discussion(1 hr)
Step 7 Personalised feedback on students observation and diagnostic accuracy should be given by OSPE method (15min)

Practical Training 22.2 : Histological diagnosis of cerebro vascular diseases

Duration of practical: 5 hours
Interpret the microscopical features suggesting the diagnosis of cerebrovascular diseases
Step 1 The teacher should clearly state the learning objective to the students(10min)
Step 2 Preserved pathological specimens/ and properly labeled and stained histopathology slides should be provided to the students(5min)
Step 3
Teacher will demonstrate how to
1. Identify the key pathological features
2. Correlate the findings with the given clinical information
3. Formulate differential diagnoses
4. Arrive at most accurate histopathological diagnosis
5. Prepare and document a structured pathological report
6. Choose ancillary testing techniques to confirm the diagnosis when needed

-in the given slides / specimens suggesting the diagnosis of following diseases or conditions(1 hr)
Ischaemic stroke
Hemorrhagic stroke
Sub arachnoid hemorrhages
Cerebral vasculitis
Glioblastoma
Hemangioblastoma
Meningioma
Metastatic tumours
Cavernous angiomas
Central Nervous System infections
Alzheimer's disease
Parkinson's disease
Spino cerebellar ataxia
Friedreich's ataxia
Medulloblastoma
Multiple sclerosis
Cerebellar infarction and hemorrhage
Cerebellar atrophy and degeneration
Step 4 The students should perform the same step wise procedures and document a structured diagnostic report(90 min)
Step 5. Small group discussions on the pathological findings and their clinical significance should be done (1hr)
Step 6 Digital images , histopathology atlas and patient case history related to similar disease coditions should be additionally provided for comparison and discussion (1hr)
Step 7 Personalised feedback on students observation and diagnostic accuracy should be given by OSPE method(15 min)

Practical Training 22.3 : Gross identification of Musculoskeletal diseases

Duration of practical 5 hours
Interpret the gross features suggesting the diagnosis of Musculo skeletal diseases
Step 1 The teacher should clearly state the learning objective to the students (10min)
Step 2 Preserved pathological specimens/ and properly labeled and stained histopathology slides should be provided to the students (5min)
Step 3 Teacher will demonstrate how to

1. Identify the key pathological features
2. Correlate the findings with the given clinical information
3. Formulate differential diagnoses
4. Arrive at most accurate histopathological diagnosis
5. Prepare and document a structured pathological report
6. Choose ancillary testing techniques to confirm the diagnosis when needed
-in the given slides / specimens suggesting the diagnosis of following diseases or conditions (1 hr)
muscle and tendon injuries
musculoskeletal infections
bone tumours
Step 4 The students should perform the same step wise procedures and document a structured diagnostic report (90 min)
Step 5. Small group discussions on the pathological findings and their clinical significance should be done (1hr)
Step 6 Digital images , histopathology atlas and patient case history related to similar disease coditions should be additionally provided for comparison and discussion (1hr)
Step 7 Personalised feedback on students observation and diagnostic accuracy should be given(15 min)

Practical Training 22.4 : Histological diagnosis of musculoskeletal diseases

Duration of practical :5 hours
Interpret the microscopical features suggesting the diagnosis of Musculo skeletal diseases
Step 1 The teacher should clearly state the learning objective to the students (10min)
Step 2 Preserved pathological specimens/ and properly labeled and stained histopathology slides should be provided to the students(5min)
Step 3
Teacher will demonstrate how to
1. Identify the key pathological features
2. Correlate the findings with the given clinical information
3. Formulate differential diagnoses
4. Arrive at most accurate histopathological diagnosis
5. Prepare and document a structured pathological report
6. Choose ancillary testing techniques to confirm the diagnosis when needed
-in the given slides / specimens suggesting the diagnosis of following diseases or conditions (1 hr)
muscle and tendon injuries
musculoskeletal infections
bone tumours

arthritis
Step 4 The students should perform the same step wise procedures and document a structured diagnostic report (90 min)
Step 5. Small group discussions on the pathological findings and their clinical significance should be done (1hr)
Step 6 Digital images , histopathology atlas and patient case history related to similar disease coditions should be additionally provided for comparison and discussion (1hr)
Step 7 Personalised feedback on students observation and diagnostic accuracy should be given(15 min)

Experiential learning Activity

Experiential-Learning 22.1 : Comprehensive evaluation of both modifiable and non-modifiable risk factors in stroke patients
Systematic approach of stroke patients by TOAST (Trial of Org 10172 in Acute Stroke Treatment)criteria

Duration of activity: 3 hours
1. The students are made to participate in outpatient assessments, focussing on identifying the modifiable and non- modifiable risk factors in 5 stroke patients.(1 hour)
Step 1-Introduction and Risk Factor Review (10 minutes)
Briefly review the key modifiable (e.g., hypertension, diabetes, smoking, hyperlipidemia, atrial fibrillation, lifestyle) and non-modifiable (e.g., age, sex, family history, race) risk factors for stroke
Step 2-Patient Chart Review/Simulated Patient Interviews (40 minutes)
Assign each student 2-3 patient charts or case summaries
Students review the charts or interact with the patients
Extract relevant information and complete the risk factor checklist.
Instruct them to identify both modifiable and non-modifiable risk factors present in each patient
Step 3-Group Discussion and Summary (10 minutes):
Facilitate a short discussion on:
The relative importance of different risk factors.
The implications of these risk factors for secondary stroke prevention.
The importance of patient education regarding modifiable risk factors.
2. Patient scenario for each TOAST (Trial of Org 10172 in Acute Stroke Treatment)subtype is provided to the participants and they are allowed to analyse and classify the stroke etiology based on the patient's history, clinical findings and diagnostic results(2 hours)
Introduction, TOAST Review, and Initial Analysis (1 hour)
Step 1- Introduction and Overview (15 minutes):
Brief review of stroke pathophysiology and clinical presentation.
Introduction to the TOAST classification system and its clinical significance.

Explanation of each TOAST subtype, highlighting key diagnostic criteria.
Step 2- TOAST Criteria Review (15 minutes):
Present the TOAST classification criteria in detail (slide or handout).
Discuss typical clinical and diagnostic findings associated with each subtype.
Step 3- Scenario Distribution and Initial Analysis (30 minutes):
Distribute one patient scenario handout to each student. Ensure each student receives a unique scenario representing a different TOAST subtype.
Student should read the patient scenario carefully.
Analyze the patient's history, clinical findings, and diagnostic results.
Begin to formulate a preliminary TOAST classification.
Presentations, Discussion, and Refinement (1 hour)
Step 4- Presentations (40 minutes):
Each student presents their patient scenario and their preliminary TOAST classification.
They should explain their reasoning, citing relevant clinical and diagnostic findings.
Encourage questions and discussion from others.
Step 5- Class Discussion and Refinement (20 minutes):
Facilitate a class discussion on the presented scenarios and classifications.
Discuss any discrepancies or alternative interpretations.
Refine the TOAST classifications based on the discussion and expert input.
Discuss how the classification of the stroke will effect the treatment of the patient.

Experiential-Learning 22.2 : Patient education on prognosis and care plans in stroke.

Duration of Activity: 2 hours
Students should participate in family meetings or patient education sessions discussing stroke prevention, recovery expectations and quality of life issues.(2 hours)
Step 1: Stroke Prevention and Recovery Expectations (1 hour)
Understanding Stroke and Risk Factors (20 minutes)
Explain what a stroke is and identify key risk factors.
Use visuals or diagrams for stroke mechanisms.
Stroke Prevention Strategies (20 minutes)
Provide practical prevention tips and lifestyle modifications.
Recovery Expectations: Timeline and Stages (20 minutes)
Set realistic recovery expectations across physical, cognitive, and emotional domains.
Step 2: Quality of Life and Long-Term Well-being (1 hour)

Managing Quality of Life Post-Stroke (20 minutes)
Address physical, emotional, and social well-being.
Promoting Independence and Caregiver Collaboration (20 minutes)
Empower patient independence while acknowledging caregiver roles.
Long-Term Care Planning and Advocacy (20 minutes)
Encourage proactive planning for future needs.
Encourage questions about future care concerns.
Share sample care plans and emergency contact templates.
Wrap-Up (5 minutes)
Summarize key messages.
Provide written resources for further learning.
Invite ongoing questions or follow-up.

Experiential-Learning 22.3 : Bio markers in Immune mediated neuropathies

validate the the role of biomarkers in the pathogenesis and complications of immune mediated neuropathies by using physical and digital tools. give activities for 4 hours split up
Hour 1: Digital Exploration and Literature Review
Activity:
Use online databases (PubMed, Google Scholar) to research recent studies on biomarkers in immune-mediated neuropathies (GBS, CIDP, etc.).
Focus on:
Specific autoantibodies (e.g., anti-GM1, anti-GQ1b, anti-MAG).
Cytokines (e.g., TNF-alpha, IL-6).
Neurofilament light chain (NfL) as a marker of axonal damage.
Use digital tools for note-taking and organization (e.g., Evernote, Zotero).
Digital Tools:
PubMed, Google Scholar, Zotero, Evernote.
Hour 2: Visualizing Pathogenesis and Biomarker Pathways
Activity:
Create visual representations of the pathogenic mechanisms of immune-mediated neuropathies, highlighting the roles of key biomarkers.
Use digital tools for diagramming and mind mapping (e.g., Lucidchart, MindMeister).
Focus on creating flow charts, and diagrams that show the interaction between the immune system and the peripheral nervous system.
Digital Tools:

Lucidchart, MindMeister, BioRender.
Hour 3: Physical Activity: Clinical Case Studies and Discussion
Activity:
Work through clinical case studies involving patients with immune-mediated neuropathies.
Discuss:
How biomarkers aid in diagnosis and management.
The challenges of interpreting biomarker results.
The importance of electrodiagnostic studies, and how those results correlate with the biomarker results.
Physical Tools:
Clinical case study printouts, whiteboards for discussion.
Hour 4: Digital Tool Application: Data Analysis and Presentation
Activity:
If possible, analyze publicly available datasets of biomarker levels in patients with immune-mediated neuropathies.
Use spreadsheet software (e.g., Excel) or statistical software (e.g., R) to identify correlations between biomarkers and clinical outcomes.
Create a short presentation summarizing the findings.
Digital Tools:
Microsoft Excel, R, PowerPoint.

Experiential-Learning 22.4 : Behavioral and Psychiatric Symptoms in Alzheimer's and Parkinson's Disease

Duration of activity: 2 hours
Activity: Behavioral and Psychiatric Symptoms in Alzheimer's and Parkinson's Disease
Step 1: Symptom Recognition and Differentiation (1hour)
Introduction and Overview:
Brief overview of Alzheimer's disease (AD) and Parkinson's disease (PD).
Emphasis on the importance of recognizing behavioral and psychiatric symptoms.
Alzheimer's Disease: Behavioral and Psychiatric Symptoms:
Presentation of common symptoms
Discussion of how these symptoms manifest in AD.
Discussion of the cognitive effects, and how they relate to the behavioral changes.
Parkinson's Disease: Behavioral and Psychiatric Symptoms:
Presentation of common symptoms
Discussion of how these symptoms manifest in PD.

Discussion of how the motor symptoms, and the medications used to treat them, effect the behavioral changes.
Comparative Analysis and Differentiation:
Comparative discussion of overlapping and distinct symptoms between AD and PD.
Emphasis on differentiating symptoms based on clinical presentation and disease context.
Chart creation, comparing and contrasting the two diseases.
Step 2: Underlying Mechanisms and Documentation (1 hour)
Underlying Mechanisms: Alzheimer's Disease:
Discussion of the neurobiological mechanisms:
Linking these mechanisms to specific behavioral and psychiatric symptoms.
Underlying Mechanisms: Parkinson's Disease:
Discussion of the neurobiological mechanisms:
Linking these mechanisms to specific behavioral and psychiatric symptoms.
Documentation and Assessment:
Discussion of standardized assessment tools:
Neuropsychiatric Inventory (NPI).
Geriatric Depression Scale (GDS).
Montreal Cognitive Assessment (MoCA).
Emphasis on accurate and detailed documentation.
How to document changes in behavior over time.
Case Studies and Group Discussion:
Presentation of brief case studies with behavioral and psychiatric symptoms.
Group discussion on:

- Recognizing and differentiating symptoms.
- Linking symptoms to underlying mechanisms.
- Developing appropriate documentation strategies.
- How the symptoms impact patient care.

Experiential-Learning 22.5 : Neurotransmitters in Neurological and Psychiatric diseases

Duration of activity: 4 hours
Analyse the role of excitatory and inhibitory amino acids in pathogenesis of Parkinsonism, depression, migraine, dementia, epilepsy(4 hours)
Step1: Introduction and Neurotransmitter Fundamentals (1hour)
Introduction and Overview:
Introduce the concept of excitatory and inhibitory neurotransmitters.
Outline the diseases to be covered (Parkinsonism, depression, migraine, dementia, epilepsy).
Neurotransmitter Mechanisms:
Use diagrams and animations to illustrate the mechanisms of neurotransmitters release, binding and uptake, ion channels and signal transduction
Case Studies Introduction:
Present brief clinical vignettes of patients with each of the target diseases.
Focus on the key symptoms and clinical features.
Step 2: Glutamate and Excitotoxicity (1 hour)
Glutamate in Disease Pathogenesis:
Discuss the role of excessive glutamate activity in each disease.
Focus on the concept of excitotoxicity and its impact on neuronal damage.
Discuss the role of NMDA and AMPA receptors.
Interactive Simulation/Case Analysis:
Use interactive simulations or software to visualize glutamate-mediated neuronal damage.
Analyze case studies, focusing on the role of glutamate in symptom development.
Group discussion about potential drug targets.
Step 3: GABA and Inhibitory Dysfunction (1hour)
GABA in Disease Pathogenesis:
Discuss the role of GABAergic dysfunction in each disease.
Focus on the impact of reduced GABA levels or receptor activity.
Discuss the role of GABAA and GABAB receptors.
Neuroimaging and Receptor Binding:
Review neuroimaging studies (e.g., PET, SPECT) that demonstrate changes in GABA receptor binding in these diseases.
Discuss the impact of drugs that modulate GABAergic systems.
Step 4: Synthesis and Therapeutic Implications (1 hour)
Comparative Analysis:
Compare and contrast the roles of glutamate and GABA in the pathogenesis of the different diseases.
Discuss the overlap and interactions between these neurotransmitter systems.

Table creation of the neurotransmitter affected, and the general effect on the disease.
Therapeutic Implications and Future Directions:
Discuss current therapeutic strategies that target glutamate and GABA receptors.
Brainstorm potential future research directions.

Experiential-Learning 22.6 : Peripheral neuropathy - Experiential learning

Activity 1: Anatomical and Physiological Mapping (60 minutes)
(15 minutes) Introduction and Anatomical Review:
Brief overview of the trigeminal nerve (CN V) anatomy, including its three branches (ophthalmic, maxillary, mandibular) and their sensory distribution.
Visual aids: Anatomical diagrams, 3D models, or interactive software to demonstrate the nerve's pathway and connections.
(30 minutes) Pathophysiological Mapping:
Divide learners into small groups.
Each group maps out the potential mechanisms of Trigeminal Neuralgia pathogenesis:
Vascular compression (superior cerebellar artery, etc.)
Demyelination and ectopic impulse generation.
Central sensitization and altered pain processing.
Pathologies such as tumors, and multiple sclerosis.
Groups should use diagrams, flowcharts, or concept maps to illustrate these processes.
Learners should describe the normal physiology of the trigeminal nerve, and then describe how the pathology alters that normal physiology.
(15 minutes) Group Presentations and Discussion:
Each group presents their pathophysiological maps.
Facilitate a discussion on the relative contributions of different mechanisms and the interplay between them.
Activity 2: Case Study Analysis and Complication Assessment (60 minutes)
(20 minutes) Case Study Introduction:
Present 2-3 case studies with varying clinical presentations and treatment approaches.
Include information on:
Patient demographics and medical history.
Pain characteristics (location, intensity, triggers).
Imaging findings (MRI).
Treatment modalities (medications, surgery).
(30 minutes) Complication Analysis:
In their groups, learners should:

Analyze the potential complications arising from TN itself (e.g., chronic pain, psychological distress, social isolation).
Assess the potential complications associated with different treatment approaches:
Medications (e.g., side effects of anticonvulsants).
Surgical procedures (e.g., sensory loss, dysesthesia, facial weakness).
Learners should make a list of the possible complications, and the mechanism that causes the complication.
(10 minutes) Group Presentations and Summary:
Each group presents their analysis of complications.
Facilitate a discussion on the importance of balancing treatment benefits with potential risks.
Summarize the key learning points regarding TN pathogenesis and complications.
Activity 2: Manage patients with peripheral neuropathy in out or in- patient settings and identify the link between primary disease and the neurological manifestations.Document and discuss the findings with the peers(3 hours)
Hour 1: (45 minutes): Case-Based Learning and Discussion - Diabetic Neuropathy
Scenario: Provide a detailed case study of a patient presenting with classic symptoms of diabetic peripheral neuropathy. Include relevant lab values and medical history.
Task: Participants, working individually or in pairs, will:
Identify the key neurological symptoms.
Hypothesize the underlying systemic disease.
Using available resources (online databases, textbooks), research the *pathophysiology* of diabetic neuropathy. Focus on:
Impact of chronic hyperglycemia on nerves.
Types of nerve fibers affected.
Common patterns of presentation .
Discuss potential diagnostic tests beyond blood glucose.
Facilitated Discussion (15 minutes): Bring the group together to share their findings. Emphasize the direct causal link between uncontrolled diabetes and nerve damage.

Hour 2: Autoimmune and Inflammatory Connections
(40 minutes): Group Exploration - Autoimmune Neuropathies
Scenario: Present three brief patient , each hinting at a different autoimmune or inflammatory systemic disease that can cause neuropathy:
1: Patient with Guillain-Barré Syndrome - GBS.
2: Patient with Chronic Inflammatory Demyelinating Polyneuropathy - CIDP.
3: Patient with Vasculitic Neuropathy associated with Systemic Lupus Erythematosus or Rheumatoid Arthritis.
Task: Divide participants into three small groups, assigning one to each. Each group will:
Brainstorm possible systemic causes of neuropathy based on the symptoms.
Research the *immune mechanisms* by which their assigned systemic disease leads to peripheral neuropathy .

Consider the diagnostic challenges in these cases .
Facilitated Discussion (20 minutes): Each group briefly presents their findings. Compare and contrast the mechanisms of nerve damage in these autoimmune conditions. Highlight the importance of a thorough systemic workup when autoimmune neuropathy is suspected.
Hour 3: Expanding the Scope & Clinical Implications
(35 minutes): Collaborative Concept Mapping - Other Systemic Causes & Overlap
Task: As a whole group, collaboratively create a concept map (on a whiteboard or digital tool) linking various systemic diseases to peripheral neuropathy. Prompt participants to recall and add categories beyond diabetes and autoimmune conditions
For each systemic disease added, briefly discuss the proposed mechanism of nerve damage and key distinguishing features.
(25 minutes): Principles of Management and Interdisciplinary Care
Discussion Points:
Why is recognizing the *systemic association* crucial for effective treatment of peripheral neuropathy?
What are the principles of managing neuropathy once a systemic cause is identified?
Emphasize the importance of an interdisciplinary approach (neurologist, endocrinologist, rheumatologist, nephrologist, dietitian, physical therapist).
Briefly discuss the prognostic implications

Experiential-Learning 22.7 : Symposium on Spectrum of Musculo skeletal diseases

Organize a Student symposium aiming at evidence based exhaustive review of musculo skeletal diseases each part dealt by one postgraduate student followed by feedback from audience and facilitator (8 hours)
Target Audience: Postgraduate medical students, residents, and interested faculty.
Morning Session (4 Hours) Foundations and Inflammatory Conditions
Introduction and Welcome (15 minutes)
Opening remarks by the facilitator, outlining the symposium's objectives and schedule.
Session 1: The Immunopathogenesis of Rheumatoid Arthritis (45 minutes)
Postgraduate student presentation
Audience Q&A and facilitator feedback.
Session 2: Systemic Lupus Erythematosus: (45 minutes)
Postgraduate student presentation
Audience Q&A and facilitator feedback.
Break (15 minutes)
Session 3: Spondyloarthropathies: (45 minutes)
Postgraduate student presentation:

Audience Q&A and facilitator feedback.
Session 4: Crystal Arthropathies: Gout and Pseudogout (45 minutes)
Postgraduate student presentation:
Audience Q&A and facilitator feedback.
Lunch Break (1 Hour)
Afternoon Session (4 Hours): Degenerative Diseases, Trauma, and Interventions
Session 5: Osteoarthritis: (45 minutes)
Postgraduate student presentation:
Audience Q&A and facilitator feedback.
Session 6: Osteoporosis and Metabolic Bone Diseases (45 minutes)
Postgraduate student presentation
Audience Q&A and facilitator feedback.
Break (15 minutes)
Session 7: Musculoskeletal Trauma and Rehabilitation (45 minutes)
Postgraduate student presentation
Audience Q&A and facilitator feedback.
Session 8: Therapeutic interventions in Musculoskeletal Diseases (45 minutes)
Postgraduate student presentation:
Audience Q&A and facilitator feedback.
Closing Remarks and Symposium Summary (15 minutes)
Facilitator summarizes key learning points and provides concluding remarks.

Modular Assessment

Assessment method	**Hour**
Instructions: Conduct a structured Modular assessment. The assessment will be for 50 marks. Keep a structured marking pattern. Use different assessment methods in each module for the semester. Keep a record of the structured pattern used for assessment. Calculate the Modular grade point as per Table 6 C. CHOOSE ANY OF THE BELOW ASSESSMENT FOR 50 MARKS 1. Topic presentations (10 marks) A.Content Accuracy and Depth (4 Marks) Accurate and relevant information (2 marks)	4

Depth of understanding and explanation (2 marks)
B. Organization and Clarity (3 Marks)
Logical organization and flow (1 mark)
Clear and concise language (1 mark)
Effective use of visual aids (1 mark)
C.Engagement and Delivery (3 Marks)
Eye contact and voice projection (1 mark)
Engagement with the audience (1 mark)
Time management and professionalism (1 mark)
2. LAQ (10 marks)
And
3. SAQ (5 marks)
And
4.Histopathology Diagnosis and Interpretation of 3 slides or specimens each carrying 5 marks(15 marks)
Key Microscopic Features (2 Marks)
Probable Diagnosis (2 Marks)
Brief Clinical Correlation (1 Mark)
And
5. Objective Structured Clinical Examination (OSCE)(10 marks)
Task Completion (6 Marks)
Correct sequence of actions (2 marks)
Accuracy of performed steps/questions (2 marks)
Efficiency and organization (2 marks)
Communication Skills (2 Marks)
Clarity and conciseness of communication (1 mark)
Empathy and rapport building (1 mark)
Clinical Reasoning/Interpretation (2 Marks)
Logical reasoning and justification (1 mark)
Appropriate interpretation of findings (1 mark)
Or
Any practical in converted form can be taken for assessment. (25 marks)
and

Any experiential, such as portfolios / reflections / presentations can be taken as an assessment. (25 marks)

Semester No : 6

Module 23 : Metabolic and Endocrine Disorders

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

Analyze and apply the knowledge of pathophysiological mechanisms in Endocrine,and Metabolic diseases
Perform and interpret lab diagnostic methods for the appropriate diagnosis, research and therapeutic interventions in endocrine and metabolic diseases.

M 23 Unit 1 Metabolic Diseases

23.1.1. Diabetes Mellitus
23.1.2. Osteopenia and Osteoporosis
23.1.3. Gout

References: 29,30,33,37,43,47

3A	3B	3C	3D	3E	3F	3G
CO1,CO2,CO5 ,CO7,CO8	Analyze the etiology, classification, pathogenesis involved and the clinical manifestations in Diabetes Mellitus and its complications and evaluate the diagnosis. Demonstrate the knowledge of the pathophysiology in Osteopenia and Osteoporosis and their clinical manifestations, complications and diagnosis. Describe the definition ,the risk factors, pathophysiology and diagnosis of Gout.	2	Lecture	CAN	Knows-how	L&GD,LRI,BL,CBL
CO3,CO4,CO5 ,CO7	Interpret the gross and microscopic features of Diabetic complications and Gout	2	Practical Training 23.1	PSY-MEC	Shows-how	DIS,DL

CO1,CO2,CO5 ,CO7	Analyse the symptoms and diagnosis of diabetic complications. Evaluate the factors contributing to osteopenia and osteoporosis	4	Experiential-Learning 23. 1	AFT-SET	Does	PL,Mnt

M 23 Unit 2 Diseases of the Pituitary Gland

23.2.1. Genetic and acquired pituitary dysfunction
23.2.2. Functional pituitary tumours
23.2.3. Pituitary adenomas , pituitary sellar ,suprasellar and para sellar masses
23.2.4. Posterior pituitary dysfunction

References: 29,30,33,36,37,47

3A	3B	3C	3D	3E	3F	3G
CO1,CO2,CO5 ,CO7,CO8	Evaluate the definition , types , pathophysiology,symptoms and differential diagnosis of Hyperpituitarism Hypopituitarism Pituitary tumours	2	Lecture	CAN	Knows-how	D-BED,CBL,L&PPT
CO1,CO4,CO5 ,CO6,CO7	Identify the gross features and microscopical features suggesting the diagnosis of pituitary diseases	4	Practical Training 23.2	PSY-MEC	Shows-how	DL
CO1,CO2	Analyse the etiology and clinical manifestations of pituitary dysfunction	6	Experiential-Learning 23. 2	PSY-MEC	Does	RP,DIS,ML,LS,SIM

M 23 Unit 3 Diseases of the Thyroid Gland

23.3.1.Hyper and Hypothyroidism

23.3.2.Thyroiditis
23.3.3.Grave's disease
23.3.4.Diffusea and Multi nodular goitre
23.3.5.Neoplasms of the thyroid gland

References: 29,30,33,36,37,47

3A	3B	3C	3D	3E	3F	3G
CO1,CO2,CO5 ,CO7,CO8	Appraise the definition , types , pathophysiology,symptoms, differential diagnosis ,imaging and laboratory features of Hyperthyroidism Hypothyroidism Thyroiditis Graves'disease Diffuse and multinodular goiter Thyroid neoplasms	2	Lecture	CAN	Knows-how	LRI,L&GD,CBL
CO1,CO4,CO5 ,CO6	Identify the gross features suggesting the diagnosis of thyroid diseases Identify the microscopical features suggesting the diagnosis of thyroid diseases	6	Practical Training 23.3	PSY-MEC	Shows-how	DL
CO1,CO2,CO4 ,CO6,CO8	Develop clinical competence in etiological assessment, diagnosis and management of thyroid disorders and tumours	6	Experiential-Learning 23.3	AFT-SET	Does	BS,DIS

M 23 Unit 4 Diseases of the Adrenal Gland

23.4.1. Hyperadrenalism
23.4.2. Adreno cortical insufficiency
23.4.3. Adrenal neoplasms
23.4.4. Pheochromocytoma

References: 29,30,33,36,37,47

3A	3B	3C	3D	3E	3F	3G
CO1,CO2,CO3 ,CO5,CO6,CO 7	Describe definition , types , pathophysiology,symptoms, differential diagnosis ,imaging and laboratory features of Adrenocortical hyperfunction Adrenocortical insufficiency Adrenocortical neoplasm Pheochromocytoma	2	Lecture	CAP	Knows-how	DIS,L&GD
CO1,CO4,CO5 ,CO6,CO7	Interpret the gross features and microscopical features suggesting the diagnosis of adrenal diseases	4	Practical Training 23.4	PSY-MEC	Shows-how	LRI,DL
CO1,CO2,CO5 ,CO6	Assess the differential diagnosis of adrenal tumours and hyper adrenal states	6	Experiential-Learning 23.4	CAP	Does	SDL,DIS

M 23 Unit 5 Diseases of the Parathyroid Gland

23.5.1.Hyperparathyroidism 23.5.2. Hypo parathyroidism

References: 29,30,33,36,37,47

3A	3B	3C	3D	3E	3F	3G
CO1,CO2,CO5 ,CO7,CO8	Distinguish the etiology, pathogenesis,clinical features, imaging and laboratory features of hyper and hypo parathyroidism,	2	Lecture	CAN	Knows-how	L&PPT , L&GD,BS
CO1,CO2,CO5 ,CO6	Identify the gross and microscopic features suggesting the diagnosis of parathyroid diseases	4	Practical Training 23.5	PSY-MEC	Shows-how	DL

CO1,CO2,CO5 ,CO6,CO7	Summarize the pathophysiology of Hyper and Hypo parathyroidism	4	Experiential-Learning 23.5	CAN	Does	LS,DIS,SDL

Practical Training Activity

Practical Training 23.1 : Histopathological analysis of Diabetic complications and Gout

Duration of practical: 2 hours
Interpret the gross and microscopic features of Diabetic complications and Gout
Step 1 The teacher should clearly state the learning objective to the students (10min)
Step 2 Preserved pathological specimens/ and properly labeled and stained histopathology slides should be provided to the students (5min)
Step 3 Teacher will demonstrate how to
1. Identify the key pathological features
2. Correlate the findings with the given clinical information
3. Formulate differential diagnoses
4. Arrive at most accurate histopathological diagnosis
5. Prepare and document a structured pathological report
6. Choose ancillary testing techniques to confirm the diagnosis when needed
-in the given slides / specimens suggesting the diagnosis of following conditions (30min)
Diabetic nephropathy
Diabetic neuropathy
Diabetic retinopathy
Gout
Step 4 The students should perform the same step wise procedures and document a structured diagnostic report (30min)
Step 5. Small group discussions on the pathological findings and their clinical significance should be done (15 min)
Step 6 Digital images , histopathology atlas and patient case history related to similar disease coditions should be additionally provided for comparison and discussion (15min)
Step 7 Personalised feedback on students observation and diagnostic accuracy should be given (15 min)

Practical Training 23.2 : Histopathological study of Pituitary diseases

Duration of practical: 4 hours
Demonstration of the gross and microscopic features supporting the diagnosis of pituitary disorders (4 hours)
Step 1 The teacher should clearly state the learning objective to the students (10min)
Step 2 Preserved pathological specimens and properly labeled and stained histopathology slides should be provided to the students (5min)
Step 3 Teacher will demonstrate the the gross/ microscopic pathological features suggesting the diagnosis of following diseases or conditions(1 hr)
Pituitary hyperplasia,
Pituitary adenomas
Cranio pharyngiomas
Step 4 The students are engaged to perform the gross/microscopical examination and identify the key pathological features of above diseases or conditions and develop structured diagnostic report (1 hr,30min)
Step 5. Small group discussions on the pathological findings and their clinical significance should be done (30 min)
Step 6 Digital images , histopathology atlas and patient case history related to similar disease coditions should be additionally provided for comparison and discussion (30 min)
Step 7 Personalised feedback on students observation and diagnostic accuracy should be given(15 min)

Practical Training 23.3 : Histopathological study of thyroid disorders and tumours

Duration of practical: 6 hours
Demonstration of the gross and microscopic features supporting the diagnosis of thyroid disorders and tumours (6 hours)
Step 1 The teacher should clearly state the learning objective to the students (10min)
Step 2 Preserved pathological specimens/ and properly labeled and stained histopathology slides should be provided to the students (5min)
Step 3 Teacher will demonstrate the the gross and microscopic pathological features suggesting the diagnosis of following diseases or conditions (1 hr,)
Thyroiditis
Graves'disease
Diffuse and multinodular goiter
Thyroid neoplasms
Step 4 The students are engaged to perform the gross/microscopical examination and identify the key pathological features of above diseases or conditions and develop structured diagnostic report (90 min,)
Step 5. Small group discussions on the pathological findings and their clinical significance should be done (1hr, 30 min)
Step 6 Digital images , histopathology atlas and patient case history related to similar disease coditions should be additionally provided for comparison and discussion (1hr, 30 min)

Step 7 Personalised feedback on students observation and diagnostic accuracy should be given (15 min)

Practical Training 23.4 : Histological dignosis of adrenal diseases and tumours

Duration of practical: 4 hours
Demonstration of the gross and microscopic features supporting the diagnosis of adrenal disorders (4 hours)
Step 1 The teacher should clearly state the learning objective to the students (10min)
Step 2 Preserved pathological specimens and properly labeled and stained histopathology slides should be provided to the students (5min)
Step 3 Teacher will demonstrate the the gross/ microscopic pathological features suggesting the diagnosis of following diseases or conditions (1 hr)
Adrenal hyperplasia,
Adrenal cortical adenomas
Adrenal carcinoma
Addisons disease
Pheochromocytoma
Step 4 The students are engaged to perform the gross/microscopical examination and identify the key pathological features of above diseases or conditions and develop structured diagnostic report (1 hr,30min)
Step 5. Small group discussions on the pathological findings and their clinical significance should be done (30 min)
Step 6 Digital images , histopathology atlas and patient case history related to similar disease coditions should be additionally provided for comparison and discussion (30 min)
Step 7 Personalised feedback on students observation and diagnostic accuracy should be given(15 min)

Practical Training 23.5 : Callibrate the histological diagnosis of parathyroid diseases

Duration of practical: 4 hours
Identify the gross and microscopic features suggesting the diagnosis of parathyroid diseases
Step 1 The teacher should clearly state the learning objective to the students (10min)
Step 2 Preserved pathological specimens/ and properly labeled and stained histopathology slides should be provided to the students (5min)
Duration of practical
Step 3 Teacher will demonstrate how to
1. Identify the key pathological features
2. Correlate the findings with the given clinical information
3. Formulate differential diagnoses

4. Arrive at most accurate histopathological diagnosis
5. Prepare and document a structured pathological report
6. Choose ancillary testing techniques to confirm the diagnosis when needed
-in the given slides / specimens suggesting the diagnosis of following (1 hour)
Hyperparathyroidism
Parathyroid tumours
Step 4 The students should perform the same step wise procedures and document a structured diagnostic report (1 hour)
Step 5. Small group discussions on the pathological findings and their clinical significance should be done (30 min)
Step 6 Digital images , histopathology atlas and patient case history related to similar disease coditions should be additionally provided for comparison and discussion (30 min)
Step 7 Personalised feedback on students observation and diagnostic accuracy should be given(15 min)

Experiential learning Activity

Experiential-Learning 23.1 : Patient education on diabetic complications
Analytics of bone mineral density disorders in post menopausal women

Duration of activity: 4 hours
1. Students should educate the patients about the complications of uncontrolled diabetes and their manifestations.(2 hours)
Step 1: Understanding Complications of Uncontrolled Diabetes (1 hour)
Discuss macrovascular complications
Explain microvascular complication
Address diabetes-related infections and foot complications
Question and Answer and patient engagement
Encourage patients to share concerns
Provide real-life examples and simple preventive measures
Step 2: Recognizing Manifestations and Prevention Strategies (1 hour)
Recognizing early warning signs
Importance of lifestyle modifications
Blood sugar monitoring and control
Role-playing and patient action plan
Help patients develop personalized diabetes management plans

Provide take-home educational materials
2. Analyse the contributing factors, structural changes and clinical outcomes associated with bone mineral density disorders in post menopausal women and discuss the findings in small groups (2 hours)
Step 1: Understanding BMD Disorders in Postmenopausal Women (1 hour)
Contributing Factors (Whole Group Discussion)
Structural Changes in Bone (Small Group Discussion & Presentation)
Clinical Manifestations and Diagnosis (Whole Group)
Step 2: Clinical Outcomes and Management Strategies (1 hour)
Clinical Outcomes and Complications (Small Groups)
Group Discussions & Summary

Experiential-Learning 23.2 : Pituitary dysfunction -Analysis in real patients

Duration of activity: 6 hours
Activity 1. Hormone Pathway Mapping Activity:(2 hours)
Step 1:Students work in groups to create visual maps of the hormone pathways to represent the hypothalamus, pituitary gland, and target organs.(30 mins)
Step 2:They label the hormones involved (e.g., GH, ACTH, TSH, LH, FSH, prolactin) and their effects.(30 mins)
Step 3:They then add "problem areas" to their maps, showing where tumors or other pathologies can disrupt the normal flow of hormones, leading to hyper- or hypopituitarism.(30 mins)
Step 4: Discussion of hormone interactions, and the effects of disruptions to those interactions.(30 mins)
Activity 2. "Case Study Role-Playing" activity(4 hours)
Step 1:Students are given case studies of patients with hyper- or hypopituitarism, with varying symptoms and hormone levels.(30 mins)
Step 2:They take on roles such as doctors, patients, and family members.(10 mins)
Step 3:They must:
Analyze the patient's symptoms and laboratory findings.(1 hour)
Determine the likely cause of the pituitary dysfunction.(30 mins)
Explain the underlying pathogenesis.(30 mins)
Observe and document their assessment(1 hour)
Discuss potential treatment options.(20 mins)

Experiential-Learning 23.3 : Patient centered approach of thyroid disorders and tumours

Duration of activity: 6 hours
Analyze real cases to explore the etiology,clinical presentations , differential diagnosis and complications in thyroid disorders and tumours (6 hours)
Step 1: Overview and Case Selection (1 hour)
Brief overview of thyroid function and pathology
Normal thyroid physiology
Common thyroid disorders
Types of thyroid tumors
Case selection and group division
Assign real or hypothetical cases to small groups
Cases should represent diverse thyroid conditions
Step 2: Etiology Analysis (Small Group Discussions) (1 hour30 minutes)
Explore causes for each case
Students present findings
Discuss possible causes for their assigned case
Compare and contrast different etiological factors
Step 3: Clinical Presentation (Symptoms & Diagnostic Approach) (1 hour)
Analyze symptoms for each case
Hypothyroidism
Hyperthyroidism
Thyroid malignancy
Diagnostic approach
Physical exam findings
Lab tests (TSH, T3, T4, anti-thyroid antibodies, calcitonin)
Imaging (ultrasound, radioactive iodine uptake scan, fine-needle aspiration biopsy)
Step 4: Differential Diagnosis and Case Comparisons (1 hour)
Students develop differential diagnoses
Distinguishing between benign and malignant nodules
Differentiating Graves' disease vs. thyroiditis-induced thyrotoxicosis
Identifying autoimmune hypothyroidism vs. non-autoimmune causes
Presentations and discussion
Compare cases to highlight diagnostic challenges
Discuss additional tests that can confirm diagnoses

Step 5: Complications and Long-term Consequences (30 min)
Discuss potential complications
Step 6: Final Discussions & Case Synthesis (1 hour)
Group presentations on case conclusions
Etiology, diagnosis, and prognosis for each case
Lessons learned from each condition
Open discussion and Q&A

Experiential-Learning 23.4 : Differential diagnosis of Adrenal tumours and Hyper adrenal states

Duration of activity: 6 hours
Activity 1: Practice applying the Weiss score to assess malignancy potential of adrenal tumours(3 hours)
Step 1: Understanding the Weiss Score Criteria (1 hour)
Review the seven criteria of the Weiss score:
Discuss the histological features associated with each criterion.
Examine histological images demonstrating each criterion, paying close attention to the subtle differences between benign and malignant features.
Create a study guide, with pictures, and descriptions of each criteria.
Step 2: Case Studies - Applying the Weiss Score
Present 3-4 case studies of adrenal cortical tumors, each with detailed histological descriptions and images.
For each case, work through the Weiss score criteria systematically, evaluating each feature and assigning a score.
Document your findings in a table, noting the presence or absence of each criterion and the corresponding score.
Discuss the overall Weiss score for each case and its implications for malignancy potential.
Practice quantifying the mitotic rate.
Step 3: Case Studies - Applying the Weiss Score and Discussion
Present 3-4 additional case studies, including more challenging cases with subtle or ambiguous features.
Work in small groups to apply the Weiss score to each case and discuss your findings.
Compare your assessments and discuss any discrepancies.
Discuss the limitations of the Weiss score and the importance of integrating clinical and imaging findings.
Discuss the role of immunohistochemistry in difficult cases.
Discuss how the Ki67 proliferation index interacts with the Weiss score.
Discuss the impact of the score on patient management.
Activity 2: Create a flow chart for differential diagnosis of hyperadrenal states(3 hours)
Step 1: Brainstorming and Initial Flowchart Structure (1 hour)

Begin with a brainstorming session to list all possible causes of hyperadrenalism:
Identify key differentiating factors:
Clinical presentation
Laboratory findings
Imaging findings
Create a basic flowchart structure with decision points based on these factors.
Step 2: Refining the Flowchart with Diagnostic Tests(1 hour)
Add specific laboratory tests to the flowchart, including:
24-hour urinary free cortisol.
Low-dose and high-dose dexamethasone suppression tests.
Plasma ACTH levels.
Plasma renin activity and aldosterone levels.
Plasma and urine metanephrines.
Include imaging modalities:
CT/MRI of the adrenal glands.
CT/MRI of the pituitary gland.
MIBG scan.
Create decision points based on the results of these tests.
Add branches to the flowchart to differentiate between different causes of each hyperadrenal state
Step 3: Case Studies and Flowchart Validation (1 hour)
Present several case studies of patients with hyperadrenalism, each with varying clinical and laboratory findings.
Work through each case study using the flowchart to determine the most likely diagnosis.
Discuss any challenges or ambiguities encountered during the process.
Refine the flowchart based on the case study analysis, adding or modifying decision points as needed.

Experiential-Learning 23.5 : Hyper and Hypo parathyroidism- Poster presentation

Duration of activity: 4 hours
Create a poster presentation on parathyroid pathology
Step 1: Content Planning and Outline (1 hour)
Brainstorm key topics to include:
Create an outline for the poster, including sections for:

Introduction/Background.
Pathophysiology.
Clinical Features.
Diagnostic Methods.
Histopathology.
Treatment.
Complications.
Conclusion.
Gather relevant images (histological slides, imaging scans, anatomical diagrams).
Gather relevant data, and laboratory values.
Step 2: Designing the Poster Layout (1 hour)
Choose a poster design software (e.g., PowerPoint, Canva, Google Slides).
Create a visually appealing layout with clear sections and headings.
Use a consistent color scheme and font.
Incorporate images and diagrams to enhance visual appeal.
Ensure that text is concise and easy to read.
Prioritize information hierarchy, to draw the viewers eye to the most important information.
Use bullet points and short paragraphs.
Step 3: Content Development and Data Integration (1 hour)
Write concise and informative text for each section.
Incorporate key laboratory findings and imaging results.
Include histological images of parathyroid adenomas, hyperplasia, and carcinomas.
Create tables or charts to present data effectively.
Ensure that all information is accurate and up-to-date.
Add citations for any references used.
Pay special attention to the histopathology section, and make sure that the images are clear, and well labeled.
Step 4: Finalizing and Practicing the Presentation(1 hour)
Review the poster for clarity, accuracy, and visual appeal.
Make any necessary revisions.
Prepare a brief presentation to accompany the poster.
Practice delivering the presentation, focusing on key points and answering potential questions.
Ensure that the presentation is concise and engaging.

Prepare answers to common questions.
Print the poster, or prepare a digital version.
Prepare a handout, with key information, and a list of references.

Modular Assessment

Assessment method	**Hour**
Instructions: Conduct a structured Modular assessment. The assessment will be for 50 marks. Keep a structured marking pattern. Use different assessment methods in each module for the semester. Keep a record of the structured pattern used for assessment. Calculate the Modular grade point as per Table 6 C. CHOOSE ANY OF THE BELOW ASSESSMENT FOR 50 MARKS 1. Topic presentations (10 marks) A.Content Accuracy and Depth (4 Marks) Accurate and relevant information (2 marks) Depth of understanding and explanation (2 marks) B. Organization and Clarity (3 Marks) Logical organization and flow (1 mark) Clear and concise language (1 mark) Effective use of visual aids (1 mark) C.Engagement and Delivery (3 Marks) Eye contact and voice projection (1 mark) Engagement with the audience (1 mark) Time management and professionalism (1 mark) 2. LAQ (10 marks) And 3. SAQ (5 marks) And 4.Histopathology Diagnosis and Interpretation of 3 slides or specimens each carrying 5 marks(15 marks) Key Microscopic Features (2 Marks) Probable Diagnosis (2 Marks) Brief Clinical Correlation (1 Mark)	4

And
5. Objective Structured Clinical Examination (OSCE)(10 marks)
Task Completion (6 Marks)
Correct sequence of actions (2 marks)
Accuracy of performed steps/questions (2 marks)
Efficiency and organization (2 marks)
Communication Skills (2 Marks)
Clarity and conciseness of communication (1 mark)
Empathy and rapport building (1 mark)
Clinical Reasoning/Interpretation (2 Marks)
Logical reasoning and justification (1 mark)
Appropriate interpretation of findings (1 mark)
Or
Any practical in converted form can be taken for assessment. (25 marks)
and
Any experiential, such as portfolios / reflections / presentations can be taken as an assessment. (25 marks)

Module 24 : Dermatological Disorders

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

Analyze and apply the knowledge of pathological mechanisms and morphological lesions in dermatological disorders
Perform, assess and interpret the diagnostic findings to calibrate the diagnosis, research critical thinking and therapeutic interventions in dermatological disorders
Promote preventive measures for conditions related to lifestyle and environmental factors.
Demonstrate sensitivity and adaptability in dermatological care for diverse populations

M 24 Unit 1 Disorders of Hair, Nail and Subcutaneous Tissues

24.1.1.Disorders of hair
24.1.2.Disorders of nail
24.1.3.Disorders of sweat and sebaceous glands
24.1.4.Disorders of melanocytes

References: 29,30,33,37,38,47,48

3A	3B	3C	3D	3E	3F	3G
CO1,CO2,CO5 ,CO7,CO8	Describe the types, etiology and pathogenesis of hair disorders – alopecia, hair shaft disorders, hirsutism and hypertrichosis Discuss the disorders of nails – congenital abnormalities-changes in trauma, nervous tics and chemical injury- nail infections- nails in skin and systemic diseases-nail plate and nail fold changes Categorize the types, etiology pathogenesis and differential diagnosis of hyper and hypo pigmentary disorders. Describe the types, etiology and pathogenesis of sweat glands, pilosebaceous glands disorders	2	Lecture	CAN	Knows-how	CBL,L&P PT
CO1,CO3,CO4 ,CO6,CO7	Interpret the histopathological features seen in the disorders of hair,nail, sweat, sebaceous glands and melanocytes.	3	Practical Training 24.1	PSY-GUD	Shows-how	LRI,DL,DIS
CO1,CO2,CO4 ,CO6,CO8	Evaluate the underlying causes of alopecia in real patients. Predict the emerging targets that could be aimed for the treatment of vitiligo with a literary review.	4	Experiential-Learning 24.1	AFT-RES	Does	LS,SDL, Mnt,ML, TBL

M 24 Unit 2 Infectious Skin Diseases

24.2.1.Bacterial diseases
24.2.2.Viral diseases

24.2.3.Fungal diseases

References: 29,30,33,37,38,47,48

3A	3B	3C	3D	3E	3F	3G
CO1,CO2,CO5 ,CO7,CO8	Compare the types, etiology and pathogenesis of bacterial diseases (cellulitis, gram – positive infections, gram - negative coccal, actinomycosis, nocardiosis, leprosy, gonorrhea, mycoplasm and vaginosis) Contrast the types, etiology and pathogenesis of viral skin diseases (Exanthematous viral diseases, herpes simplex, varicella, herpes zoster, poxvirus, Human papillomavirus, HIV) Compare the types, etiology and pathogenesis of fungal (Superficial , yeast and deep fungal) and parasitic infections in skin	2	Lecture	CAP	Knows-how	CBL,D-BED,L&PPT ,BS
CO1,CO3,CO4 ,CO5,CO6,CO 7	Interpret the gross and microscopical features suggesting the diagnosis of infectious skin diseases.	3	Practical Training 24.2	PSY-GUD	Shows-how	DL,DIS
CO1,CO2,CO4 ,CO6,CO7	Appraise the pathogenic mechanisms underlying common infectious skin diseases through interactive analysis of clinical cases	3	Experiential-Learning 24.2	AFT-REC	Does	ML,DIS, LRI,BS,D-BED

M 24 Unit 3 Psycho, Neuro, Vascular and Genetic Skin Diseases

24.3.1.Psychologicaldisorders
24.3.2.Neurologicaldisorders
24.3.3.Atherosclerosis,Deep Vein Thrombosis and Stasis dermatitis
24.3.4.Genodermatoses

References: 29,30,33,37,38,47,48

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

CO1,CO2,CO5 ,CO7,CO8	Describe the skin manifestations caused by psychological disorders(Delusion, Obsessive Compulsion Disorder, Factitious, psychogenic itch) Describe the skin manifestations caused by neurological disorders (mucocutaneous pain syndrome, nerve entrapment syndrome, hereditary neuopathies) Describe the skin manifestations caused by Atherosclerosis, Deep Vein Thrombosis, Stasis dermatitis Describe the types, etiology and pathogenesis of genodermatoses (Ichthyoses, Kerato derma,Neurofibromatoses, Acanthosis nigricans , Albinism)	1	Lecture	CAN	Knows-how	L&PPT ,BL
CO1,CO3,CO4 ,CO5,CO6,CO 7	Interpret the histopathological findings in the skin manifestations of vascular skin diseases and genodermatoses	3	Practical Training 24.3	PSY-GUD	Shows-how	DIS,LRI
CO1,CO3,CO5 ,CO6,CO7	Evaluate the underlying psychological factors in patients presenting with dermatological symptoms using Patient Health Questionnaire(PHQ-9) or Generalized Anxiety Disorder(GAD-7) scale Intergrate the precise terminology and correlating histological findings with clinical information of vascular dermatoses	3	Experiential-Learning 24. 3	AFT-REC	Does	LRI,DIS, ML,BS,D-BED

M 24 Unit 4 Inflammatory Skin Disorders

24.4.1.Pemphigus
24.4.2.Bullouspemphigoid
24.4.3.Chronic Bullous Disease of Childhood
24.4.4.Dermatitisherpetiformis
24.4.5.Psoriasis
24.4.6.Lichen planus
24.4.7.Pitryiasis
24.4.8.Dermatitis
24.4.9.Erythema
24.4.10.Urticaria
24.4.11.Vasculitis

References: 29,30,33,37,38,47,48

3A	3B	3C	3D	3E	3F	3G
CO1,CO2,CO5 ,CO7,CO8	Illustrate the definition,classification,pathophysiology ,clinical presentations , differential diagnosis and investigations of Pemphigus Bullous pemphigoid and Chronic Bullous Disease of Childhood Dermatitis Herpetiformis Illustrate the definition,classification,pathophysiology ,clinical presentations , differential diagnosis and investigations of Psoriasis Lichen planus Pitriyasis Discuss the aetiological classification, clinical and histopathological manifestations, complications, differential diagnosis and investigations of Dermatitis	2	Lecture	CAN	Knows-how	SDL,W,CBL,TBL, L&PPT
CO1,CO3,CO4 ,CO5,CO6,CO 7	Interpret the histopathological features of inflammatory skin disorders	2	Practical Training 24.4	PSY-GUD	Shows-how	W,LRI,DL
CO1,CO2,CO4 ,CO7,CO8	Intergrate the symptoms with underlying mechanisms in psoriasis and dermatitis patients	6	Experiential-Learning 24.4	AFT-REC	Does	SDL,BS, CBL,LRI

M 24 Unit 5 Cutaneous Manifestations in Systemic and Nutritional Diseases

24.5.1.Cutaneous manifestations in Endocrine disorders
24.5.2.Cutaneous manifestations in Renal disorders
24.5.3.Cutaneous manifestations in Liver disorders
24.5.4.Cutaneous manifestations in Metabolic disorders
24.5.5.Cutaneous manifestations in Malignancies.
24.5.6.Cutaneous manifestations in Malnutrition and malabsorption.

References: 29,30,33,34,36,37,38,47,48,58,60

3A	3B	3C	3D	3E	3F	3G
CO1,CO2,CO5,CO7,CO8	Discuss the cutaneous manifestations in -Endocrine disorders Renal disorders Liver disorders Metabolic disorders Malignancies Malnutritions and malabsorptions .	1	Lecture	CAN	Knows-how	LS,DIS,L&PPT,BL
CO1,CO3,CO4,CO5,CO6,CO7	Interpret the histopathological features of skin manifestations in endocrine, renal, hepatic, metabolic diseases and metastatic malignancies	4	Practical Training 24.5	PSY-GUD	Shows-how	DL,LRI,IBL
CO1,CO3,CO5,CO6,CO7	Appreciate the characteristic skin changes in Diabetes Hepatic and renal disorders Endocrine disorders Metastatic malignancies	5	Experiential-Learning 24.5	AFT-REC	Does	BS

M 24 Unit 6 Tumours of the Skin

24.6.1 Benign, pre malignant and malignant tumours of the epidermis
24.6.1.1.Seborrheic keratosis
24.6.1.2.Skin tags
24.6.1.3.Melanocytic naevi
24.6.1.4.Kerato acanthoma
24.6.1.5.Basal Cell Carcinoma
24.6.1.6.Squamous Cell Carcinoma
24.6.1.7.Malignant Melanoma
24.6.2.Benign and malignant tumours of the skin appendages

24.6.3.Benign and malignant tumours of the dermis
24.6.3.1.Haemangioma
24.6.3.2.Keloid
24.6.3.3.Leiomyoma
24.6.3.4.Lipoma
24.6.3.5.Mycosis fungoides
24.6.3.6.Cutaneous B cell Lymphoma

References: 29,30,33,37,38,47,48

3A	3B	3C	3D	3E	3F	3G
CO1,CO2,CO5 ,CO7,CO8	Describe the classification, etiology ,pathogenesis, differential diagnosis ,staging and diagnosis of benign, pre malignant and malignant tumours of the epidermis Seborrheic keratosis Skin tags Melanocytic naevi Kerato acanthoma Basal Cell Carcinoma Squamous Cell Carcinoma Malignant Melanoma Describe the types, etiology and pathogenesis of benign and malignant tumours of the skin appendages Describe the classification, etiology ,pathogenesis, differential diagnosis ,staging and diagnosis of benign and malignant tumours of the dermis Haemangioma Keloid Leiomyoma Lipoma Mycosis fungoides Cutaneous B cell Lymphoma	2	Lecture	CAN	Knows-how	L&PPT ,BL,CBL

CO1,CO2,CO4,CO5,CO6,CO7	Interpret the histopathological features of benign and malignant lesions of the epidermis, dermis and the skin appendages	5	Practical Training 24.6	PSY-GUD	Shows-how	DIS,LRI, DL
CO1,CO3,CO5,CO6,CO7	Analyse the aetiopathogenesis, clinical presentation and diagnosis of cutaneous malignancies	5	Experiential-Learning 24.6	AFT-REC	Does	SDL,DIS, PL

Practical Training Activity

Practical Training 24.1 : Histological study of the disorders of Hair, Nail, Sweat, Sebaceouus glands and Melanocytes

Duration of practical: 3 hours
Interpret the histopathological features seen in the disorders of hair,nail, sweat, sebaceous glands and melanocytes.
Step 1 The teacher should clearly state the learning objective to the students (10min)
Step 2 Preserved pathological specimens/ and properly labeled and stained histopathology slides should be provided to the students(5min)
Step 3 Teacher will demonstrate how to
1. Identify the key pathological features
2. Correlate the findings with the given clinical information
3. Formulate differential diagnoses
4. Arrive at most accurate histopathological diagnosis
5. Prepare and document a structured pathological report
6. Choose ancillary testing techniques to confirm the diagnosis when needed
-in the given slides / specimens suggesting the diagnosis of following diseases or conditions (1 hr)
Alopecia
Tineacapitis
Onychomycosis
Lichen planus
Psoriasis
Seborrheic dermatitis
Sebaceous cysts
Step 4 The students should perform the same step wise procedures and document a structured diagnostic report (1 hour)
Step 5. Small group discussions on the pathological findings and their clinical significance should be done (15 min)

Step 6 Digital images , histopathology atlas and patient case history related to similar disease conditions should be additionally provided for comparison and discussion (15 min)
Step 7 Personalised feedback on students observation and diagnostic accuracy should be given(15 min)

Practical Training 24.2 : Histopathological diagnosis of infectious skin diseases

Duration of Practical: 3 hours
Interpret the gross and microscopical features suggesting the diagnosis of infectious skin diseases.
Step 1 The teacher should clearly state the learning objective to the students(10mins)
Step 2 Preserved pathological specimens and properly labeled and stained histopathology slides should be provided to the students(5mins)
Step 3
Teacher will demonstrate how to
1. Identify the key pathological features
2. Correlate the findings with the given clinical information
3. Formulate differential diagnoses
4. Arrive at most accurate histopathological diagnosis
5. Prepare and document a structured pathological report
6. Choose ancillary testing techniques to confirm the diagnosis when needed
-in the given slides / specimens suggesting the diagnosis of following diseases or conditions(1 hr)
cellulitis
gram – positive infections
gram - negative coccal
actinomycosis
nocardiosis
leprosy
gonorrhea
mycoplasm
herpes simplex, varicella, herpes zoster, poxvirus, Human papillomavirus,
Superficial , yeast and deep fungal and parasitic infections in skin
Step 4 The students should perform the same step wise procedures and document a structured diagnostic report (1 hour)
Step 5. Small group discussions on the pathological findings and their clinical significance should be done (15mins)
Step 6 Digital images , histopathology atlas and patient case history related to similar disease coditions should be additionally provided for comparison and discussion (15

mins)
Step 7 Personalised feedback on students observation and diagnostic accuracy should be given(15 mins)

Practical Training 24.3 : Vascular and Genodermatoses- histological diagnoses

Duration of practical: 3 hours
Interpret the histopathological findings in the skin manifestations of vascular skin diseases and genodermatoses
Step 1 The teacher should clearly state the learning objective to the students(10mins)
Step 2 Preserved pathological specimens/ and properly labeled and stained histopathology slides should be provided to the students(5mins)
Step 3 Teacher will demonstrate how to
1. Identify the key pathological features
2. Correlate the findings with the given clinical information
3. Formulate differential diagnoses
4. Arrive at most accurate histopathological diagnosis
5. Prepare and document a structured pathological report
6. Choose ancillary testing techniques to confirm the diagnosis when needed
-in the given slides / specimens suggesting the diagnosis of following diseases or conditions(1 hr)
Hemangioma
Stasis dermatitis
Icchthyoses
Keratoderma
Neurofibromatosis
Acanthosis nigricans
Albinism
Step 4 The students should perform the same step wise procedures and document a structured diagnostic report (1 hour)
Step 5. Small group discussions on the pathological findings and their clinical significance should be done (15 mins)
Step 6 Digital images , histopathology atlas and patient case history related to similar disease coditions should be additionally provided for comparison and discussion (15 mins)
Step 7 Personalised feedback on students observation and diagnostic accuracy should be given(15 mins)

Practical Training 24.4 : Histological diagnosis of inflammatory skin disorders

Duration of practical: 2 hours
Interpret the histopathological features of inflammatory skin disorders
Step 1 The teacher should clearly state the learning objective to the students (5mins)
Step 2 Preserved pathological specimens/ and properly labeled and stained histopathology slides should be provided to the students (5mins)
Step 3 Teacher will demonstrate how to
1. Identify the key pathological features
2. Correlate the findings with the given clinical information
3. Formulate differential diagnoses
4. Arrive at most accurate histopathological diagnosis
5. Prepare and document a structured pathological report
6. Choose ancillary testing techniques to confirm the diagnosis when needed
-in the given slides / specimens suggesting the diagnosis of following diseases or conditions (30mins)
Pemphigus
bullous pemphigoid lesions
Psoriasis
Lichen planus
Pitriyasis
Step 4 The students should perform the same step wise procedures and document a structured diagnostic report (30mins)
Step 5. Small group discussions on the pathological findings and their clinical significance should be done (15 mins)
Step 6 Digital images , histopathology atlas and patient case history related to similar disease coditions should be additionally provided for comparison and discussion (10min)
Step 7 Personalised feedback on students observation and diagnostic accuracy should be given (5 mins)

Practical Training 24.5 : Histological diagnosis of skin manifestations in endocrine, renal, hepatic,metabolic diseases and metastatic malignancies

Duration of practical: 4 hours
Interpret the histopathological features of skin manifestations in endocrine, renal, hepatic, metabolic diseases,
and metastatic malignancies
Step 1 The teacher should clearly state the learning objective to the students(10mins)

Step 2 Preserved pathological specimens/ and properly labeled and stained histopathology slides should be provided to the students(5mins)
Step 3 Teacher will demonstrate how to
1. Identify the key pathological features
2. Correlate the findings with the given clinical information
3. Formulate differential diagnoses
4. Arrive at most accurate histopathological diagnosis
5. Prepare and document a structured pathological report
6. Choose ancillary testing techniques to confirm the diagnosis when needed
-in the given slides / specimens suggesting the diagnosis of following diseases or conditions(1 hr)
Myxoedema
Grave's disease
Cushing's syndrome
Diabetic dermopathy
Calcinosis cutis
Addison's disease
Acanthosis nigricans
Uremic pruritus
Hepatic dermopathy
Sister mary joseph nodules
Paget's disease
Metastatic melanoma
Dermatomyositis
Step 4 The students should perform the same step wise procedures and document a structured diagnostic report (1 hour)
Step 5. Small group discussions on the pathological findings and their clinical significance should be done (1hr)
Step 6 Digital images , histopathology atlas and patient case history related to similar disease coditions should be additionally provided for comparison and discussion (30 mins)
Step 7 Personalised feedback on students observation and diagnostic accuracy should be given (15 mins)

Practical Training 24.6 : Histopathological diagnosis of cutaneous malignancies

Duration of practical: 5 hours
Interpret the histopathological features of benign and malignant lesions of the epidermis, dermis and the skin appendages
Step 1 The teacher should clearly state the learning objective to the students (10min)

Step 2 Preserved pathological specimens/ and properly labeled and stained histopathology slides should be provided to the students (5min)
Step 3 Teacher will demonstrate how to
1. Identify the key pathological features
2. Correlate the findings with the given clinical information
3. Formulate differential diagnoses
4. Arrive at most accurate histopathological diagnosis
5. Prepare and document a structured pathological report
6. Choose ancillary testing techniques to confirm the diagnosis when needed
-in the given slides / specimens suggesting the diagnosis of following (1 hr)
seborrheic keratitis
melanocytic naevi
kerato acanthoma
basal cell carcinoma
squamous cell carcinoma
malignant melanoma
hemangioma
mycosis fungoides
cutaneous Bcell lymphoma
lipoma
benign and malignant lesions of skin appendages
Step 4 The students should perform the same step wise procedures and document a structured diagnostic report (90 min)
Step 5. Small group discussions on the pathological findings and their clinical significance should be done (1hr)
Step 6 Digital images , histopathology atlas and patient case history related to similar disease coditions should be additionally provided for comparison and discussion (1hr)
Step 7 Personalised feedback on students observation and diagnostic accuracy should be given (15 min)

Experiential learning Activity

Experiential-Learning 24.1 : Etiology of alopecia
Comprehensive understanding of vitiligo pathogenesis and the potential for emerging therapeutic targets.

Duration of activity: 4 hours.
Activity 1: Evaluate the underlying causes or contributing factors including genetic, auto immune and environmental factors in alopecia patients (1 hour)

Step 1 Introduction and Framework (15 minutes):
Introduce the "GEA" framework:
Genetic: Inherited predispositions.
Environmental: Triggers and exposures.
Autoimmune: Immune system involvement.
Emphasize the importance of a comprehensive patient history and focused examination.
Step 2: Case Scenarios and Factor Analysis (30 minutes):
Divide participants into small groups.
Each group analyzes a case scenario using the "GEA" framework.
Identify potential genetic, environmental, and autoimmune factors.
Develop a list of relevant questions to ask the patient.
Identify what diagnostic tests would be useful.
Have each group present their findings.
Step 3. Discussion and Differential Diagnosis (15 minutes):
Facilitated discussion to synthesize the findings from the case scenarios.
Focus on:
Differentiating between the "GEA" factors.
Recognizing overlapping factors
The role of autoimmune markers
Summarize the key takeaways and emphasize the interconnectedness of genetic, environmental, and autoimmune factors in alopecia.
Activity 2: Predict the emerging targets that could be aimed for the treatment of vitiligo with a literary review (3 hours)
Step 1:Targeted Literature Search & Database Exploration (30 mins)
Develop search strategies to identify relevant research papers.
Step 2: Critical Appraisal & Data Extraction (30 mins)
Extract key information from research papers and critically assess study designs.
A structured database of extracted information and critical appraisals.
Step 3: Target Identification & Hypothesis Generation (1 hour)
Synthesize extracted information to identify key pathways and potential therapeutic targets.
Prioritize potential targets based on:
Strength of evidence.
Specificity for melanocytes or immune cells involved in vitiligo.
Potential for drug development.

A list of prioritized potential therapeutic targets with supporting evidence.
Step 4: Hypothesis Generation and "Future Directions" Brainstorming (1 hour)
Formulate hypotheses about the efficacy of potential therapeutic targets and propose future research directions
Present the findings in a group setting.

Experiential-Learning 24.2 : Clinical presentations correlating with the microscopic evidence of pathogenesis in infectious skin diseases

Duration of activity :3 hours
Step 1: Image-Based Case Studies (30 minutes)
For each case,
Describe the clinical presentation
Hypothesize the likely causative organism.
Discuss the potential pathogenic mechanisms involved.
Step 2: Virtual Microscopy (30 minutes)
Learners examine the slides, focusing on:
Identifying inflammatory infiltrates.
Recognizing pathogen-specific features
Correlating microscopic findings with the clinical presentation.
Step 3: Pathogenesis Pathway Mapping (1 hour)
Divide learners into small groups, assigning each group a specific infectious skin disease.
Groups create a visual pathway map illustrating the pathogenic mechanisms involved, from pathogen entry to tissue damage.
Include host immune responses on the maps.
Step 4: Case-Based Pathogenesis Discussion (1 hour)
Present a new, complex case of an infectious skin disease.
Facilitate a discussion where learners:
Analyze the clinical presentation.
Apply their knowledge of pathogenesis to explain the observed findings.
Discuss potential complications and treatment strategies based on the pathogenic mechanisms.
Focus on how the pathogens actions, and the hosts reactions, create the symptoms.

Experiential-Learning 24.3 : Psychosocial influence in dermatological disorders
Precise terminology and clinical-histological correlation in vascular dermatoses,

Duration of activity: 3 hours
Activity 1: Evaluate the underlying psychological factors in patients presenting with dermatological symptoms using Patient Health Questionnaire(PHQ-9) or Generalized Anxiety Disorder(GAD-7) scale(1 hour 30 mins)
Step 1: Introduction to PHQ-9 and GAD-7 scale(15minutes):
Step 2: Scale Interpretation (30 mins)
Review the scoring and interpretation guidelines for the PHQ-9 and GAD-7.
Discuss the significance of different score ranges and their clinical implications.
Step 3: Case-Based Application (45 mins)
Present 2 dermatological patients,
Learners, in small groups, will:
Analyze the cases and interpret the scale scores.
Discuss the potential relationship between the patient's psychological distress and their dermatological symptoms.
Communicating findings to the patients
Activity 2: Intergrate the precise terminology and correlating histological findings with clinical information of vascular dermatoses(1 hour 30 mins)
Step 1: Terminology Deep Dive(10 mins)
Understanding of key histological terms used in vascular dermatoses
Discuss the nuances of each term and its significance in different vascular dermatoses.
Step 2: Clinical-Histological Correlation(1 hour)
Participants analyze 3-4 case studies of patients with vascular dermatoses and:
Identify key clinical features.
Identify key histological findings.
Explain how the histological findings correlate with the clinical presentation.
Explain the likely pathogenesis based on the clinical and histological findings.
Step 3: Documentation and Synthesis(20 mins)
Write brief summaries of the clinical and histological findings for one of the case studies, using precise terminology.

Experiential-Learning 24.4 : Analysis of pathology of inflammatory skin diseases

Duration of activity: 6 hours
Intergrate the symptoms with underlying mechanisms in psoriasis and dermatitis patients(6 hours)

Step 1: Review of Pathophysiology (1 hour)
Review detailed diagrams and explanations of the immune pathways involved in psoriasis
Create visual aids (flowcharts, diagrams) linking specific symptoms to their underlying cellular and molecular processes.
Research the role of genetic factors in both conditions.
Step 2 : Case Study Symptom-Mechanism Analysis (1 hour)
Present simulated patient case studies with detailed symptom descriptions.
For each symptom, identify the likely underlying mechanism
Create a table correlating symptoms with pathological processes.
Step 3: Comorbidity and Systemic Links (1 hour)
Explore the systemic connections of psoriasis and dermatitis .
Discuss how the underlying inflammatory processes contribute to these comorbidities.
Research the links between mental health and these skin conditions.
Step 4: Differential Diagnosis and Mechanism Differentiation (1 hour)
Present cases with overlapping symptoms
Practice differentiating between psoriasis and various forms of dermatitis by analyzing the subtle differences in symptoms and their underlying mechanisms.
Discuss how a skin biopsy can help in the differencial diagnosis.
Step 5 : Treatment and Mechanism Targeting (1 hour)
Review the mechanisms of action of common psoriasis and dermatitis treatments
Discuss how these treatments target specific steps in the underlying pathological processes.
Discuss future treatments, and how they will target even more specific portions of the pathological pathways.
Step 6: Presentations,Class Discussion and Refinement (1 hour)
Each student presents their patient scenario and their documentations
Explain their reasoning, citing relevant clinical and diagnostic findings.
Encourage questions and discussion from other groups.
Facilitate a class discussion on the presented scenarios and classifications.
Discuss any discrepancies or alternative interpretations.

Experiential-Learning 24.5 : Cutaneous manifestations in systemic diseases

Observe and document the characteristic skin lesions in patients with known diabetic, endocrine,renal or hepatic diseases to reinforce the correlation between the systemic diseases and their cutaneous manifestations

- 30 minutes: Theoretical Foundation
    - Overview of the common cutaneous manifestations in diabetic, endocrine,renal or hepatic diseases
    - Briefly discuss the underlying pathophysiology linking these diseases to the skin changes
- 30 minutes: Case Study Analysis-Diabetic Dermatopathy
    - Analyze de-identified patient charts with documented diabetes.
    - Look for descriptions of skin lesions.
    - Correlate reported skin lesions with the theoretical knowledge.
    - Use visual aids to compare the patient description to standard medical images.
- 30 minutes: Endocrine Dermatopathy
    - Review the underlying hormonal influences on skin.
    - Document the findings
- 30 minutes: Renal Dermatopathy
    - Focus on:
        - Uremic pruritus.
        - Xerosis (dry skin).
        - Pallor.
        - Half-and-half nails (Lindsay's nails).
        - Calciphylaxis.
    - Discuss the role of kidney dysfunction in causing these skin changes (e.g., accumulation of uremic toxins, mineral imbalances).
    - Document the findings as done in hour 1.
- 30 minutes: Hepatic Dermatopathy
    - Focus on:
        - Jaundice.
        - Spider angiomas.
        - Palmar erythema.
        - Pruritus.
        - Purpura.
        - Nail changes.
    - Explain the link between liver dysfunction and skin manifestations (e.g., impaired bilirubin metabolism, altered coagulation factors).
    - Document the findings as done in hour 1.
- 30 minutes: Synthesis and Discussion
    - Review the documented cases.

- Identify common themes and patterns.
- Discuss the challenges in differentiating skin lesions caused by different systemic diseases.
- Consider the impact of these skin manifestations on patient quality of life.
- Discuss the importance of systemic examination of patients.
- Discuss the importance of the correlation of lab results with the skin findings.

Ethical Considerations:

- Ensure patient confidentiality by using de-identified data.
- Obtain informed consent before taking any photographs (if applicable).
- Follow institutional guidelines and regulations regarding patient data and image handling.

Observe patients with known metastatic cancers and examine the skin lesions for their specific characteristics and location,to differentiate them from primary skin malignant lesions.

Experiential-Learning 24.6 : Appreciate the pathological views on cutaneous malignancies

The expected outcome is explained to the students
The students are allowed to
Observe and document the morphology,size, location of skin lesions in patients diagnosed with primary skin cancers
Apply and document ABCDE rule and document the findinds in patients with suspicious mole like lesions
Compare ,contrast and document the histopathological features of different cutaneous malignancies in clinical scenario
Perform literature review on emerging facts about the pathology of cutaneous malignancies
Practice detailed discussion on above documentations in small groups

Modular Assessment

Assessment method	**Hour**
Instructions: Conduct a structured Modular assessment. The assessment will be for 50 marks. Keep a structured marking pattern. Use different assessment methods in each module for the semester. Keep a record of the structured pattern used for assessment. Calculate the Modular grade point as per Table 6 C. CHOOSE ANY OF THE BELOW ASSESSMENT FOR 50 MARKS	4

1. Topic presentations (10 marks)
A.Content Accuracy and Depth (4 Marks)
Accurate and relevant information (2 marks)
Depth of understanding and explanation (2 marks)
B. Organization and Clarity (3 Marks)
Logical organization and flow (1 mark)
Clear and concise language (1 mark)
Effective use of visual aids (1 mark)
C.Engagement and Delivery (3 Marks)
Eye contact and voice projection (1 mark)
Engagement with the audience (1 mark)
Time management and professionalism (1 mark)
2. LAQ (10 marks)
And
3. SAQ (5 marks)
And
4.Histopathology Diagnosis and Interpretation of 3 slides or specimens each carrying 5 marks(15 marks)
Key Microscopic Features (2 Marks)
Probable Diagnosis (2 Marks)
Brief Clinical Correlation (1 Mark)
And
5. Objective Structured Clinical Examination (OSCE)(10 marks)
Task Completion (6 Marks)
Correct sequence of actions (2 marks)
Accuracy of performed steps/questions (2 marks)
Efficiency and organization (2 marks)
Communication Skills (2 Marks)
Clarity and conciseness of communication (1 mark)
Empathy and rapport building (1 mark)
Clinical Reasoning/Interpretation (2 Marks)
Logical reasoning and justification (1 mark)
Appropriate interpretation of findings (1 mark)

Or Any practical in converted form can be taken for assessment. (25 marks) and Any experiential, such as portfolios / reflections / presentations can be taken as an assessment. (25 marks)	

Paper No : 4 FUNDAMENTALS AND APPLICATIONS OF DIAGNOSTIC MODALITIES AND THEIR INTERPRETATIONS

Semester No : 3

Module 25 : Clinical and Physical Diagnosis

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

Collect comprehensive patient histories, including medical, social, and family backgrounds.
Identify key components of a focused history relevant to the presenting complaint.
Demonstrate proficiency in inspection, palpation, percussion, and auscultation across different body systems.
Perform a systematic physical examination, ensuring thoroughness and accuracy.
Recognize normal versus abnormal values and their clinical implications.
Document findings from patient examinations clearly and accurately in medical records.
Use appropriate medical terminology and language in documentation.
Integrate findings from the physical examination with patient history to develop a differential diagnosis.
Formulate a clinical impression based on examination findings.
Apply evidence-based guidelines for specific physical examinations (e.g., cardiovascular, respiratory, neurological).
Comprehend the rationale behind different examination techniques.
Recognize and describe abnormal physical findings and their potential clinical significance.
Prioritize findings that require immediate attention or further investigation.
Identify which examinations are pertinent based on the patient's presenting symptoms.
Utilize diagnostic reasoning to distinguish between similar clinical presentations.
Employ appropriate diagnostic tools and technology (e.g., stethoscopes, otoscopes) in the clinical examination.
Comprehend the role of laboratory and imaging studies in supporting clinical findings.
Participate in peer assessments to enhance learning and skill acquisition.

M 25 Unit 1 Types of Diagnosis and Classification of Diseases

25.1.1.Clinical diagnosis
25.1.2.Lab diagnosis
25.1.3.Molecular diagnosis
25.1.4.Radio diagnosis
25.1.5.Electrography diagnosis
25.1.6.Endoscopy diagnosis
25.1.7.Tissue diagnosis
25.1.8.Admission (Provisional) diagnosis
25.1.9.Discharge (Final) diagnosis
25.1.10.Prenatal diagnosis
25.1.11.Exclusion diagnosis
25.1.12.Remote diagnosis (Telemedicine)
25.1.13.International Classification of Diseases (ICD 11)

References: 34,49,51,56,59,60,61,62,63,64,65,66,67,68,69,70,71,72,73,74,90

3A	3B	3C	3D	3E	3F	3G
CO1,CO4,CO6 ,CO8	Define various types of diagnostic techniques and understand the rationale behind different examination techniques like Clinical diagnosis, Lab. diagnosis, Molecular diagnosis, Radio diagnosis, Electrography diagnosis, Endoscopy diagnosis, Tissue diagnosis, Admission (Provisional) diagnosis, Discharge (Final) diagnosis, Prenatal diagnosis, Exclusion diagnosis, Remote diagnosis (Telemedicine), International Classification of Diseases (ICD 11).	1	Lecture	CAN	Know	L_VC,L& GD,L,L& PPT

M 25 Unit 2 General Examination and Elicitation of case history

25.2.1. Posture and gait
25.2.2. Speech and interaction
25.2.3. Physique and nutrition
25.2.4. Temperature
25.2.5. Hands
25.2.6. Odour

25.2.7. Lymph glands and lymphadenopathy
25.2.8. Pulses
25.2.9. History taking
25.2.10.Indirect and direct questions
25.2.11.Disease-centred versus Patient centered questions
25.2.12.Judging the severity of symptoms
25.2.13. Schematic history – demography, main presenting complaints, past medical history, specific past medical history, history of main presenting complaints, family history, occupational history, drug and other treatment history, retaking the history and note-taking history

References: 34,49,51,56,59,60,61,62,63,64,65,66,67,68,69,70,71,73,74,90

3A	3B	3C	3D	3E	3F	3G
CO1,CO4,CO6 ,CO8	Describe the elicitation of case history, general physical examination, following a systematic approach to ensure no area is overlooked.	1	Lecture	CAP	Knows-how	L&GD,L &PPT ,L_VC
CO1,CO4,CO6 ,CO8	Conduct and document examination findings in a clear, organized manner, using appropriate medical terminology.Employ structured techniques for taking a comprehensive patient history. Identify and gather essential components of a case history, including chief complaint, history of present illness, past medical history, and social history, physical examination of systems and vital signs assessment.	2	Practical Training 25.1	PSY-GUD	Shows-how	RP,D,CB L,D-BED
CO1,CO4,CO6 ,CO8	Synthesize the collected information from the case history and realte to the clinical examination findings to aid the diagnostic processes.	3	Experiential-Learning 25. 1	PSY-SET	Does	DIS,PBL, CBL

M 25 Unit 3 Examination of Skin, Hair and Nails

25.3.1. Examination of color and pigmentation
25.3.2. Lesions and eruptions
25.3.3. Configuration of skin lesion
25.3.4. Hair – growth, fall,grey hair,split hair, ralopecia

25.3.5. Nails – Nail matrix abnormalities, nail bed abnormalities, nail in systemic disease
25.3.6. Cutaneous manifestation of internal disease

References: 34,49,51,56,59,60,61,62,63,64,65,66,67,68,69,70,71,73,74,90

3A	3B	3C	3D	3E	3F	3G
CO1,CO4,CO6,CO8	Identify and describe common dermatological conditions (e.g., eczema, psoriasis, fungal infections) and their typical clinical presentations.	1	Lecture	CAP	Shows-how	CD,L
CO1,CO4,CO6,CO8	Conduct a thorough visual inspection of the skin, hair, and nails, identifying normal anatomical structures and variations and accurately document findings from the examination of skin, hair, and nails, using appropriate medical terminology and descriptive language. Skin Color, Skin Texture, Lesions, Distribution, Palpation of the Skin including Temperature, Moisture, Turgor should be properly examined to arrive at diagnosis.	2	Practical Training 25.2	PSY-SET	Shows-how	D,LS
CO1,CO4,CO6,CO8	Correlate findings from the skin, hair, and nail examination with potential systemic diseases and dermatological conditions.	3	Experiential-Learning 25.2	PSY-SET	Does	DIS,BS,LS,PBL

M 25 Unit 4 Examination of Respiratory system

25.4.1. Inspection
25.4.2. Palpation
25.4.3. Percussion
25.4.4. Auscultation - Vesicular breath sound, bronchial breath sound, vocal fremitus.

References: 34,49,51,56,59,60,61,62,63,64,65,66,67,68,69,70,71,73,74,90

3A	3B	3C	3D	3E	3F	3G
CO1,CO4,CO6,CO8	Identify and describe common Respiratory conditions.	1	Lecture	CAP	Knows-how	L&GD

CO1,CO4,CO6 ,CO8	Conduct a systematic and thorough examination of the respiratory system	2	Practical Training 25.3	PSY-GUD	Shows-how	DIS,D-BED,CBL
CO1,CO4,CO6 ,CO8	Conduct a respiratory system examination in the light of the given / presented case history and complaints, apply evidence-based guidelines for the examination and assessment of common respiratory conditions.	3	Experiential-Learning 25.3	PSY-SET	Does	DIS,D-BED,CBL

M 25 Unit 5 Examination of Cardiovascular System

25.5.1. Presenting complaints
25.5.2. Risk Factors of Cardio Vascular Disease
25.5.3. Past medical history
25.5.4. Drug history
25.5.5. Major symptoms and Major signs
25.5.6.Inspection : Anaemia, cyanosis, clubbing, other cutaneous and ocular signs of infective endocarditis and oedema,
25.5.7. Arterial pulse
25.5.8. Measurement of BP
25.5.9. JVP
25.5.10.Palpation of the chest wall
25.5.11. Auscultation of heart

References: 34,49,51,56,59,60,61,62,63,64,65,66,67,68,69,70,71,73,74,90

3A	3B	3C	3D	3E	3F	3G
CO1,CO4,CO6 ,CO8	Describe in detail the importance of examination of the Cardiovascular System, including presenting complaints, CVD risk factors, past medical history, drug history and major signs and symptoms.	1	Lecture	CAN	Knows-how	L,L&GD
CO1,CO4,CO6 ,CO8	Conduct a systematic and thorough examination of the cardiovascular system.	2	Practical Training 25.4	PSY-GUD	Shows-how	CBL

CO1,CO4,CO6,CO8	Apply clinical skills to perform a thorough cardiovascular system examination, integrating case history and presenting complaints to identify signs, correlate findings, and develop a differential diagnosis.	3	Experiential-Learning 25.4	PSY-SET	Does	PBL,CBL,RLE

M 25 Unit 6 Examination of Gastro Intestinal Tract and abdomen

25.6.1. Common signs and symptoms of Gastro Intestinal Tract diseases
25.6.2. Nutritional assessment
25.6.3. Physical examination of Gastro Intestinal Tract and Abdomen: General signs, inspections – shape of umbilicus, Movements of abdominal wall and skin and surface
25.6.4. Palpation of specific organs
25.6.5. Percussion
26.6.6. Auscultation

References: 34,49,51,56,59,60,61,62,63,64,65,66,67,68,69,70,71,73,74,90

3A	3B	3C	3D	3E	3F	3G
CO4,CO6,CO8	Describe examination of Gastro Intestinal tract and Abdomen.	1	Lecture	CC	Knows-how	L,DIS,L&GD
CO1,CO4,CO6,CO8	Apply a patient-centered approach to demonstrate as well as perform a Gastrointestinal Tract and Abdomen examination, integrating the case history and presenting complaints to assess, identify, and correlate clinical findings for an accurate diagnosis.	2	Practical Training 25.5	PSY-GUD	Shows-how	D-BED
CO4,CO6,CO8	Apply the principles of gastrointestinal (GIT) and abdominal examination to assess and interpret clinical findings in relation to the patient's case history and presenting complaints.	3	Experiential-Learning 25.5	PSY-SET	Does	D,CBL,DIS

M 25 Unit 7 Examination of Uro-genital system and Gynaecological Examinations, Partogram

25.7.1. Examination of groins, genitalia
25.7.2..Symptoms of renal urological diseases
25.7.3. General features of the Uro-genital system

References: 34,49,51,56,59,60,61,62,63,64,65,66,67,68,69,70,71,73,74,90

3A	3B	3C	3D	3E	3F	3G
CO1,CO4,CO6,CO8	Describe examination of Uro-genital system and Gynaecological Examinations, Partogram.	1	Lecture	CAN	Knows-how	L&PPT
CO1,CO4,CO6,CO8	Conduct a comprehensive examination of Uro-genital system and Gynaecological Examinations, Partogram	2	Practical Training 25.6	PSY-GUD	Does	CD,CBL,DIS,D-BED
CO1,CO4,CO6,CO8	Conduct a Uro-genital system and Gynaecological Examinations in light of given / presented case history and complaint.	3	Experiential-Learning 25.6	PSY-SET	Does	D,CBL

M 25 Unit 8 Ano - rectal examination

25.8.1. Inspection
25.8.2. Palpation
25.8.3. Rectal Examination

References: 34,49,51,56,59,60,61,62,63,64,65,66,67,68,69,70,71,72,73,74,90

3A	3B	3C	3D	3E	3F	3G
CO1,CO4,CO6,CO8	Discuss the examination of Ano - rectal system.	1	Lecture	CAN	Shows-how	L
CO1,CO4,CO6,CO8	Conduct a thorough ano-rectal examination, understanding the indications and techniques involved.	2	Practical Training 25.7	PSY-MEC	Does	CBL,D-BED
CO1,CO4,CO6,CO8	Conduct Ano - rectal examination in light of given / presented case history and complaints	3	Experiential-Learning 25.7	PSY-SET	Does	DIS,CBL,D-BED

M 25 Unit 9 Musculoskeletal Examination and Nervous system

25.9.1. General assessment of Gait Arms Legs and Spine – Screening history and examination
25.9.2. Examinations of bones – inspections, palpation. Inspection of suspected fracture
25.9.3. Examination of joints– inspection, palpation, tendon sheath crepitus, joint crepitus, Range Of Movements
25.9.4. Examination of individual joints
25.9.5. General examination of vertebral column
25.9.6. Hyper mobility
25.9.7. Drawers test, Schobers test, Femoral Nerve Stretch Test, Straight Leg Raising, Lassegue test, Fabers test, Bragard test, Lachmann test, spurling test, Lhermittes test, chin test, coin test, shoulder abduction test, Valgus Stress Test, Varus Stress Test, McMurray test, Thessaly test, Cervical compression test, Cervical distraction test, Hoffmann sign, Vertebral artery test, Beighton score, Gaenslen Test, Leg Lowering Test, McKenzie Side Glide Test, Posterior Pelvic Pain Provocation Test, Slump Test, Waddell Sign, The lumbar extension-loading test, Bicycle Stress Test, Two-Stage Treadmill Test, Exercise stress testing on a treadmill, Trendelenburg test, Romberg test, Achilles tendon reflexes
25.9.8. General examination of the nervous system
25.9.9. Cranial examination
25.9.10. Motor system examination
25.9.11. Cerebral system examination
25.9.12. Examination of limb coordination
25.9.13. Reflexes
25.9.14. Movement disorder
25.9.15. Cutaneous sensory examinations
25.9.16. Patterns of motor and sensory signs
25.9.17. Examination of cognitive function

References: 34,49,51,56,59,60,61,62,63,64,65,66,67,68,69,70,71,73,74,90

3A	3B	3C	3D	3E	3F	3G
CO1,CO4,CO6,CO8	Describe examination of Muskuloskeletal and Nervous system.	1	Lecture	CAN	Knows-how	L&GD
CO1,CO4,CO6	Conduct a comprehensive and systematic musculoskeletal examination, assessing all	4	Practical	PSY-	Does	CBL

,CO8	major joints and muscle groups.		Training 25.8	GUD		
CO1,CO4,CO6 ,CO8	Conduct examination of Musculoskeletal and Nervous system in light of given / presented case history and complaints.	3	Experiential-Learning 25.8	PSY-SET	Does	CBL

M 25 Unit 10 Examination of Breast

25.10.1. Inspection
25.10.2. Palpation
25.10.3 Documentation Common terminology found in the documentation of a breast exam includes the following: Symmetrical or asymmetrical, Shape (ptotic, pendulous, any scars or deformities with descriptions), Texture (soft, nodular, fibrocystic, dense, presence of inframammary ridge in large breasts), Masses (described as indicated above versus no masses evident) Nipple-areolar complex (pink, brown, everted, inverted, discharge present/absent with description, presence of dry, scaly texture concerning for Paget's disease), Skin (warm, dry, presence/absence of erythema, edema, peau d'orange appearance, open sores, draining fluid collection.

References: 34,49,51,56,59,60,61,62,63,64,65,66,67,68,69,70,71,73,74,90

3A	3B	3C	3D	3E	3F	3G
CO1,CO4,CO6 ,CO8	Describe examination of Breast.	1	Lecture	CAN	Knows-how	L&GD,L
CO1,CO4,CO6 ,CO8	Conduct a comprehensive examination of breast	2	Practical Training 25.9	PSY-GUD	Does	CBL,D-BED
CO1,CO4,CO6 ,CO8	Conduct Breast examination in light of given / presented case history and complaints.	2	Experiential-Learning 25.9	PSY-SET	Does	SIM,DIS, PBL,CBL

Practical Training Activity

Practical Training 25.1 : General Examination and Elicitation of case history

Duration of activity - 2 hours
Activity : Demonstration (30 minutes)
Activity 1: Preparation and Planning (15 minutes)
Emphasize the importance of bedside demonstrations and case-based learning.
Prepare clinical cases in advance, ensuring diversity in symptoms and medical conditions.
Teach students to maintain patient comfort and confidentiality during the examination.
Activity 2: Teaching the Steps (15 minutes)
Posture and Gait: Demonstrate observation techniques, guiding students to notice abnormalities like asymmetry or instability.
Speech and Interaction: Explain how speech patterns and interaction styles may indicate neurological, psychological, or systemic conditions.
Physique and Nutrition: Show how to assess body mass, fat distribution, and signs of malnutrition.
Temperature: Demonstrate the use of a thermometer and interpretation of readings.
Hands: Highlight signs like pallor, cyanosis, or clubbing and their clinical implications.
Odour: Discuss specific odours linked to metabolic conditions or infections.
Lymph Glands and Lymphadenopathy: Teach techniques to palpate and assess lymph nodes.
Vital Signs: Guide students on measuring pulse, heart rate, respiratory rate and blood pressure accurately.
Activity : Role play (15 minutes)
Activity 3: History Taking (15 minutes)
Use role-play scenarios to teach indirect and direct questioning methods.
Emphasize distinguishing between disease-centered and patient-centered questions.
Guide students on how to judge the severity of symptoms.
Activity : Demonstration bedside (20 minutes)
Activity 4: Schematic History Writing (15 minutes)
Provide examples of schematic history formats, covering demographics, presenting complaints, past medical history, family history, occupational history, and drug history.
Conduct live case demonstrations to show how to retake histories effectively.
Activity 5: Assessment and Feedback (5 minutes)
Observe students during bedside demonstrations and provide constructive feedback.
Use case-based learning sessions to test their understanding and skills.
Activity: Case based learning (55 minutes)
Activity 6: Instructions for Students (5 minutes)
Begin with a respectful introduction and explain the purpose of the examination.
Establish rapport through active listening and empathy.
Activity 7: Steps for General Examination (20 minutes)

Posture and Gait: Observe the patient's standing and walking, noting symmetry, balance, and ease of movement.
Speech and Interaction: Engage the patient in conversation to assess coherence, tone, and fluency.
Physique and Nutrition: Evaluate overall body build, fat distribution, and signs of nutritional deficiencies.
Temperature: Measure and document body temperature accurately.
Hands: Examine for pallor, cyanosis, tremors, or other physical signs.
Odour: Note any unusual body or breath odours, correlating them with possible clinical conditions.
Lymph Glands and Lymphadenopathy: Palpate lymph nodes for size, consistency, and tenderness.
Vital Signs: Accurately measure and document pulse, heart rate, respiratory rate, and blood pressure.
Activity 8: History Taking (15 minutes)
Use indirect and direct questions to gather comprehensive information.
Balance disease-centered questions (specific to symptoms) with patient-centered questions (impact on the patient's life).
Gauge the severity and onset of symptoms effectively.
Activity 9: Schematic History Documentation (15 minutes)
Record demographic details, main presenting complaints, and past medical history systematically.
Include family history, occupational history, drug history, and a detailed account of the presenting complaints.
Be thorough in retaking the history when needed and maintain clear, concise notes.

Practical Training 25.2 : Examination of skin, and appendages

Duration of activity - 2 hour
Activity: Library Session (30 minutes)
Activity 1: Theoretical Introduction to Skin Examination (15 minutes)
Anatomy and Physiology: Overview of skin structure and appendages (hair, nails, sweat glands).
Skin Examination Components: Discuss inspection and palpation techniques for assessing color, texture, moisture, temperature, turgor, and lesions.
Common Skin Abnormalities: Discuss different types of lesions (macules, papules, nodules, vesicles, etc.), as well as common skin conditions (eczema, psoriasis, acne, etc.).
Activity 2: Introduction to Appendages Examination (15 minutes)
Hair Examination: Checking for hair loss, texture, and distribution.
Nail Examination: Inspection of nails for abnormalities (e.g., clubbing, color changes, pitting).
Sweat Glands: Assessing for any abnormalities such as excessive sweating or dryness.
Activity: Demonstration (30 minutes)
Activity 3: Demonstration of Skin Examination (20 minutes)
General Inspection: Demonstrating how to inspect the entire body, looking for any visible abnormalities, rashes, or lesions.

Palpation: Techniques for palpating the skin for texture, temperature, moisture, and turgor.
Lesion Identification: Show how to identify and describe lesions (size, shape, color, and distribution).
Activity 4: Demonstration of Appendages Examination (10 minutes)
Hair Inspection: Demonstrate how to inspect and palpate the scalp and body hair for abnormalities.
Nail Inspection: Show how to assess nails for signs of systemic disease (e.g., clubbing, cyanosis, pitting).
Sweat Gland Function: Discuss how to assess for signs of excessive dryness or sweating.
Activity : Kinesthetic Learning (1 hour)
Activity 5: Learners Practice Skin Examination (15 minutes)
Each learner will perform a comprehensive skin examination, inspecting and palpating different areas of the body.
Focus Areas: Check for abnormalities like rashes, lesions, pigmentation changes, scars, and signs of systemic diseases.
Instructor provides guidance on proper techniques and feedback.
Activity 6: Learners Practice Appendages Examination (15 minutes)
Learners will inspect the hair, nails, and sweat glands.
Hair: Inspect the scalp and body for hair loss, texture, and distribution.
Nails: Check for abnormalities such as clubbing, color changes, or pitting.
Sweat Glands: Assess areas for signs of excessive sweating or dryness.
Instructor provides feedback and corrects techniques as needed.
Activity 7: Documentation of Findings (30 minutes)
Learners will document their findings from the skin and appendages examination using appropriate medical terminology.
Focus on organizing the documentation systematically (e.g., general inspection, lesions, hair/nail/sweat gland findings).
Instructor reviews and provides feedback on the documentation process.

Practical Training 25.3 : Examination of Respiratory System

Duration of activity - 2 hours
Activity: Case Based Learning (10 minutes)
Activity 1: Pre-Examination Preparation (10 minutes)
Wash hands and ensure infection control.
Explain the procedure to the patient and obtain consent.
Ensure the patient is seated comfortably with adequate exposure (chest exposed from the neck to the waist).
Maintain privacy.
Activity: Demonstration Bedside (1 hours 30 minutes)
Activity 1: Inspection (15 minutes)

Observe the patient from the front, side, and back.
Key aspects to assess:
Shape of the chest – Barrel chest, Pectus excavatum, Pectus carinatum.
Symmetry of chest movements – Equal expansion during breathing.
Respiratory Rate and Pattern – Tachypnea, Bradypnea, Cheyne-Stokes.
Use of Accessory Muscles – Intercostal or supraclavicular retraction.
Cyanosis, Clubbing, or Peripheral Signs.
Activity 2: Palpation (20 minutes)
Assess chest expansion by placing hands symmetrically on the chest wall.
Perform tactile vocal fremitus (TVF) using the ulnar border of the hand while the patient says "99."
Evaluate for any tracheal deviation.
Check for tenderness, masses, or subcutaneous emphysema.
Activity 3: Percussion (20 minutes)
Perform comparative percussion over the chest wall.
Identify resonant, dull, or hyper-resonant sounds.
Map out lung borders and diaphragmatic movement.
Activity 4: Auscultation (20 minutes)
Use the diaphragm of the stethoscope.
Listen over all lung zones in a systematic manner (anterior, lateral and posterior chest).
Assess:
Breath sounds – Vesicular, Bronchial or Absent.
Adventitious sounds – Crackles, Wheezes, or Pleural rubs.
Vocal Resonance – Egophony, Bronchophony etc.
Activity 5: Interpretation and Documentation (15 minutes)
Record findings systematically under appropriate headings:
Inspection, Palpation, Percussion, and Auscultation.
Correlate findings with possible clinical conditions.
Activity: Discussion (10 minutes)
Activity 1: Discussion and Q&A (10 minutes)
Clarify doubts and review common respiratory pathologies.
Emphasize the importance of integrating examination findings with clinical history.

Practical Training 25.4 : Examination of Cardiovascular System

Duration of activity - 2 hours
The teacher should give step-by-step instructions and demonstrate how to examine cardiovascular system
Activity: Case Based Learning
Activity 1: Inspection (15 minutes)
General appearance: Assess for signs of distress, cyanosis (bluish color), or pallor.
Chest inspection:
Look for abnormal pulsations, scars, or deformities in the chest (e.g., precordial heave, visible pulsations).
Check the symmetry of the chest and any abnormal movements during breathing.
JVP (Jugular Venous Pressure):
Position the patient at a 45° angle and inspect the neck for any visible jugular venous distension.
Measure the height of the JVP (should not exceed 4 cm above the sternal angle).
Peripheral signs:
Look for peripheral edema, clubbing, or cyanosis in the fingers and toes.
Inspect the nails for signs of hypoxia (e.g., clubbing or cyanosis).
Assess for signs of heart failure:
Assess for raised jugular veins, peripheral edema, and presence of ascites.
Activity 2: Palpation (25 minutes)
Precordial palpation:
Using the pads of your fingers, palpate the chest wall for any abnormal pulsations.
Locate the apex beat (usually in the 5th intercostal space, midclavicular line) and palpate it to assess for displacement or abnormal rhythm.
Check for any heaves or lifts indicating right or left ventricular hypertrophy.
Palpate for any abnormal thrills (vibrations) that could indicate murmurs or valvular problems.
Peripheral pulses:
Palpate the radial, brachial, femoral, popliteal, dorsalis pedis, and posterior tibial pulses for strength and symmetry.
Assess for any absent or weak pulses.
Measure pulse rate and note if it is regular or irregular.
Assess for edema:
Palpate both lower limbs for signs of pitting edema.
Press the shin or the dorsum of the foot to check for indentation and measure the degree of pitting (1+ to 4+).
Activity 3: Auscultation (30 minutes)

Heart sounds:
Murmurs: Listen for murmurs, noting their timing (systolic or diastolic), location, radiation, and intensity.
Use the bell of the stethoscope to hear low-pitched sounds and the diaphragm for higher-pitched sounds.
Additional heart sounds:
Listen for S3 (gallop) or S4 (aortic or pulmonary stenosis).
Assess for pericardial rubs by having the patient breathe normally while listening over the left sternal border.
Activity4: Blood Pressure Measurement (20 minutes)
Activity 5: Special Tests (30 minutes)
Orthostatic blood pressure:
Heart failure assessment:
Perform the left-sided heart failure assessment by palpating for edema and auscultating for crackles at the lung bases (indicating pulmonary congestion).
Listen for S3 heart sound which could suggest heart failure.
Postural changes in heart rate:
Assess the heart rate while moving from supine to standing to look for any signs of sinus arrhythmia or orthostatic changes, Assessment of practical should be based on Objective Structured Practical Examination.

Practical Training 25.5 : Examination of GIT and abdomen

Duration of activity - 2 hours
Activity: Demonstration Bedside
Activity 1: Patient Introduction & History Taking (10 minutes per patient)
Gathering Case History
Start with a brief introduction and explain the procedure to the patient.
Ask the patient about their presenting symptoms (e.g., pain, bloating, nausea, vomiting, changes in appetite or bowel movements).
Key History Points to Focus on:
Duration, intensity, and location of pain
Associated symptoms (e.g., weight loss, fever, jaundice, diarrhea, constipation)
Medical history (e.g., previous abdominal surgeries, liver disease, gastrointestinal disorders)
Family history of GI diseases (e.g., colorectal cancer, inflammatory bowel disease, peptic ulcers)
Medication history (e.g., NSAIDs, antibiotics, or laxatives)
Learning Focus:
Effective communication and history taking.
Correlating the patient’s presenting complaints with potential GI conditions.

Document the History
Teach students how to document the case history accurately and systematically.
Activity 2: General Inspection (10 minutes per patient)
Positioning the Patient:
Ask the patient to lie down on the examination table with their abdomen exposed, ensuring they are comfortable and warm.
Inspection
Overall Appearance: Assess the patient's general condition, noting signs of distress, malnutrition, or discomfort.
Abdominal Wall Inspection:
Learning Focus:
Identifying key visual clues in abdominal examinations, such as signs of liver disease (jaundice), ascites, or abnormal growths.
Activity 3: Palpation (15 minutes per patient)
Light Palpation
Deep Palpation
Follow up with deep palpation to assess for deeper abdominal masses or organomegaly (e.g., liver or spleen enlargement).
Rebound tenderness: Check for signs of peritoneal irritation (e.g., appendicitis).
Liver Palpation: Gently palpate for the liver edge below the right costal margin (noting size, tenderness, and consistency).
Spleen Palpation: Palpate below the left costal margin to assess for splenomegaly.
Assess for Specific Findings:
Ascites: Palpate for fluid waves or shifting dullness if ascites is suspected.
Palpate for Renal Tenderness: Assess for kidney tenderness (e.g., pyelonephritis).
Learning Focus:
Mastering palpation techniques to identify tenderness, organomegaly, and abnormal masses.
Activity 4: Percussion (10 minutes per patient)
Percuss the Abdomen
General Percussion: Percuss all four quadrants to assess for dullness or tympany.
Liver Span: Percuss the liver border (midclavicular line) to assess liver size and consistency.
Splenic Dullness: Percuss the left lower quadrant for dullness, indicating splenomegaly.
Assess for Ascites:
Shifting Dullness: Perform percussion with the patient lying on their side to detect fluid accumulation.
Fluid Wave: Gently tap one side of the abdomen and feel for a transmitted wave, indicating ascitic fluid.
Learning Focus:
Using percussion to identify organ size, abnormal fluid accumulation, and changes in abdominal sounds.

Activity 5: Auscultation (25 minutes per patient)
Auscultation of Bowel Sounds
Use the diaphragm of the stethoscope to auscultate the abdomen in all four quadrants for bowel sounds.
Listen for normal bowel sounds (clicks and gurgles), hyperactive or hypoactive sounds, or absence of sounds (indicating ileus or peritonitis).
Auscultate for Bruits
Listen for vascular sounds or bruits over the abdominal aorta, renal arteries, iliac arteries, and femoral arteries.
Bruits may indicate atherosclerosis or other vascular abnormalities.
Friction Rubs:
Listen for friction rubs over the liver and spleen, which may suggest inflammation (e.g., perihepatitis or splenic infarction).
Activity 6: Special Tests (20 minutes per patient)
Murphy's Sign
Check for gallbladder tenderness (cholecystitis) by asking the patient to take a deep breath while you palpate the right upper quadrant. A positive test is pain upon inspiration.
McBurney's Point
Palpate McBurney's point (one-third of the way from the anterior superior iliac spine to the umbilicus) to assess for tenderness in cases of appendicitis.
Activity 7: Reflection and Documentation (10 minutes per patient)
Post-Examination Reflection:
After each patient examination, allow students to reflect on their findings.
Discuss the differential diagnosis based on the case history and physical examination findings.
Encourage students to document their findings clearly, noting any abnormal results.
Case Discussion:
Discuss the possible diagnosis for each case and the reasoning behind it, integrating history, symptoms, and examination findings.
Learning Focus:
Developing critical thinking skills by interpreting examination findings and correlating them with the case history.
Wrap-Up and Summary (10 minutes)
Review Key Learning Points:
Emphasize the importance of integrating the patient's history with the physical examination.
Highlight common gastrointestinal conditions (e.g., peptic ulcers, irritable bowel syndrome, liver disease, gallstones, etc.).
Discuss the role of patient-centered care in making the patient feel comfortable during the examination.

Practical Training 25.6 : Examination of Uro-genital system and Gynaecological Examinations, Partogram

Duration of activity: 2 hours

Activity: Demonstration Bedside (40 minutes)
Activity 1: Introduction (10 minutes)
Discuss the importance of these examinations in diagnosing conditions such as urinary tract infections (UTIs), reproductive health issues, Briefly explain the purpose and steps involved in a gynaecological examination, and how to conduct a partogram.
Activity1: Introduction and Consent (5 minutes)
Activity 2: Inspection of the External Genitalia (5 minutes)
Activity 3: Palpation of the Abdomen (5 minutes)
Activity 4: Pelvic Examination (for females) (10 minutes)
External Examination: Inspect the labia, clitoris, and vaginal opening for any abnormal findings.
Speculum Examination: Insert a speculum to examine the cervix, looking for any abnormalities like discharge, lesions, or cervicitis.
Bimanual Examination: Use two fingers to examine the uterus and ovaries through the vagina, and palpate the abdomen for enlargement or tenderness.
Rectovaginal Examination (if necessary): Assess the posterior vaginal wall, rectum, and the cul-de-sac for any abnormalities.
Activity 5: Documentation (5 minutes)
Students document their findings systematically in the patient chart, ensuring a clear description of normal and abnormal findings.
Activity: Case Based Learning (30 minutes)
Activity 1: History Taking (5 minutes)
Review the patient's history, focusing on symptoms like abnormal discharge, pelvic pain, menstrual history, and any history of sexual activity.
Activity 2: General Inspection (5 minutes)
Assess the general appearance of the patient, checking for signs of discomfort, anxiety, or any visible signs of reproductive health issues.
Activity 3: Speculum Examination (5 minutes)
Perform a speculum examination to inspect the cervix, noting the color, shape, and any discharge or lesions.
Take swabs for any infections (e.g., Pap smear or cultures for STDs if indicated).
Activity 4: Bimanual Examination (5 minutes)
Examine the cervix, uterus, and adnexa (ovaries and fallopian tubes) for tenderness, masses, or enlargement.
Check for any signs of pelvic inflammatory disease, uterine fibroids, or ovarian cysts.
Activity 5: Pelvic Floor Assessment (5 minutes)
Palpate the pelvic floor to assess for any prolapse or weakness, especially in women with symptoms of incontinence or pelvic pressure.
Activity 6: Documentation (5 minutes)
Students document the findings, ensuring to detail the normal and abnormal signs observed.
Activity : Case Diagnosis (30 minutes)
Activity 1: Introduction to the Partogram (5 minutes)
Explain the purpose of the partogram, a graphical tool used to monitor labor progress.

Discuss the key features on the partogram, including the fetal heart rate, cervical dilation, contractions, and progress of labor over time.
Activity 2: Identifying Key Information on the Partogram (10 minutes)
Explain the stages of labor and how to chart data on the partogram:
Cervical Dilation: Mark the cervical dilatation as labor progresses.
Fetal Heart Rate (FHR): Record the fetal heart rate every 30 minutes.
Contractions: Chart the frequency and intensity of contractions.
Labor Progress: Plot labor progress on the partogram.
Alert and Action Lines: Discuss the significance of these lines and when intervention is necessary.
Activity 3: Filling Out the Partogram, this may be done based on case videos or scenarios (10 minutes)
Activity 4: Review and Feedback (5 minutes)
Activity : Discussion (20 minutes)
Activity 1: Group Discussion (10 minutes)
Discuss common challenges encountered during uro-genital and gynaecological examinations and how to overcome them.
Activity 2: Q&A and Feedback (10 minutes)
Expected Learning Outcomes:
Students will demonstrate the ability to perform a thorough uro-genital and gynaecological examination, including speculum and bimanual examinations.
Students will understand the components of a partogram and how to accurately monitor labor progress.
Students will develop the skills to document their findings accurately and systematically.
Assessment and Evaluation:
Formative Assessment: Observation of students during practical examinations and their completion of the partogram.

Practical Training 25.7 : Ano rectal Examination

Duration of activity 2 hours
Conduct a thorough ano-rectal examination, understanding the indications and techniques involved.
Activity: Case Based Learning
Activity 1: Prepare the patient for the examination by explaining the procedure, ensuring their comfort, and maintaining privacy. (15 minutes)
Activity 2: Conduct a digital rectal examination to assess rectal tone, the presence of masses, and to evaluate the prostate in male patients. (30 minutes)
Activity 3: Recognize and describe abnormal findings during the examination, including potential indicators of conditions such as anal fissures, rectal prolapse, or tumors. (30 minutes)
Activity 4: Correlate findings from the ano-rectal examination with patient history and symptoms to develop a differential diagnosis. (15 minutes)

Practical Training 25.8 : Musculoskeletal examination

Duration of activity (4 hour)
Students should be demonstrated how to conduct the following examination
Activity : Case Based Learning
Activity 1: Conduct a comprehensive and systematic musculoskeletal examination, assessing all major joints and muscle groups.(15 minutes)
Activity 2:Perform visual inspection of affected joints and surrounding areas for swelling, deformities, redness, and asymmetry evaluate active and passive range of motion in major joints, identifying limitations or pain during movement.(15 minutes)
Activity 3:Conduct functional tests relevant to the patient's daily activities, evaluating the impact of musculoskeletal issues on their mobility and quality of life. (15 minutes)
Activity 4:Recognize and describe abnormal findings related to common musculoskeletal conditions (e.g., arthritis, tendonitis, fractures). (15 minutes)
Activity 5:Correlate findings from the musculoskeletal examination with patient history and symptoms to develop a differential diagnosis and management plan. (30 minutes)
Activity 6:Conduct a thorough and systematic neurological examination, including assessment of mental status, cranial nerves, motor function, sensory function, reflexes, and coordination. (30 minutes)
Activity 7:Evaluate the patient's level of consciousness, orientation, memory, and cognitive function through appropriate questioning and testing.(15 minutes)
Activity 8:Perform a complete assessment of all 12 cranial nerves, identifying normal and abnormal function. (30 minutes)
Activity 9:Assess muscle strength, tone, and bulk, including coordination tests (e.g., finger-to-nose, heel-to-shin). (15 minutes)
Activity 10:Evaluate sensory modalities (e.g., light touch, pain, temperature, vibration, proprioception) in various body areas.(15 minutes)
Activity 11:Assess deep tendon reflexes, superficial reflexes, and pathological reflexes, documenting findings accurately. (15 minutes)
Activity 12:Observe the patient's gait and perform balance tests (e.g., Romberg test) to assess stability and coordination. (15 minutes)
Activity 13:Recognize and describe abnormal neurological findings related to common neurological conditions (e.g., stroke, neuropathy, multiple sclerosis). (15 minutes)
Assessment should be done on the basis of performance cas based assessment or Direct Observation of Procedural Skills

Practical Training 25.9 : Examination of Breast

Duration of activity 2 hours
Activity: Demonstration Bedside (1 Hour)
Activity1: Perform a visual inspection of the breasts in various positions (e.g., arms at sides, raised, hands on hips) to identify asymmetry, skin changes, or abnormalities. (15 Minutes)
Activity 2: Use appropriate palpation techniques to assess breast tissue for lumps, tenderness, or abnormalities, employing different patterns (circular, vertical, radial). (15 Minutes)
Activity 3: Recognize and describe abnormal findings, such as masses, nodules, skin changes (e.g., dimpling, retraction), or discharge from the nipples. (30 Minutes)
Activity: Case Based Learning (1 Hour)

Activity 4: Correlate findings from the breast examination with patient history and risk factors to develop a differential diagnosis and management plan. (30 Minutes)
Activity 5: Understand and apply current guidelines for breast cancer screening, including the appropriate age for initiation and frequency of mammograms.(30 Minutes)
At the end of the practical case based assessment may be done.

Experiential learning Activity

Experiential-Learning 25.1 : Elicitation of the case history and general examination

Duration of activity 3 hours
Activity: Case Based Learning (2 hours 35 minutes)
Activity 1: Preparation and Approach to the Patient (5 minutes)
Begin by introducing yourself to the patient politely and explaining the purpose of the interaction.
Obtain the patient's consent before proceeding with history-taking or physical examination.
Create a calm, respectful environment to ensure the patient feels comfortable and safe.
Activity 2: Clinical History Elicitation (10X5=50 minutes)
Start with Open-Ended Questions
Encourage the patient to describe their main complaints in their own words.
Actively listen to their narrative to gather an overview of their condition.
Follow a Systematic History-Taking Approach
Demographics: Record the patient's age, gender, occupation, and other relevant details.
Main Presenting Complaint: Note the primary issue, focusing on its onset, duration, progression, and associated symptoms.
History of Present Illness: Explore detailed information about the condition, including triggering factors and previous episodes.
Past Medical History: Ask about any previous illnesses, surgeries, or hospitalizations.
Family History: Identify hereditary or familial diseases.
Occupational History: Examine lifestyle factors or job-related risks.
Drug and Treatment History: Document current medications, known allergies, and past treatment regimens.
Use Targeted Questions
Utilize disease-centered questions to explore specifics about symptoms or suspected conditions.
Include patient-centered questions to understand how the condition impacts the patient's quality of life.
Clarify and Summarize
Confirm key points with the patient to ensure accuracy and completeness.
Activity 3: Physical Examination (10X5=50 minutes)
General Examination

Observe the patient’s posture and gait for abnormalities.
Assess their speech and interaction to detect neurological or psychological issues.
Evaluate physique and nutrition to identify signs of malnutrition or other systemic conditions.
Check temperature using appropriate methods.
Inspect and palpate hands for pallor, cyanosis, clubbing, or tremors.
Note any unusual odours that might indicate metabolic or infectious conditions.
Examine lymph glands for signs of lymphadenopathy or tenderness.
Vital Signs
Measure and document the patient’s pulse, heart rate, respiratory rate, and blood pressure accurately.
System-Specific Examination
Perform a focused examination of the organ system relevant to the patient’s complaints (e.g., cardiovascular, respiratory, gastrointestinal).
Activity 4: Documentation (10X5=50 minutes)
Organize Findings Systematically
Create a clear and concise record of your findings, including:
Demographic details.
Main presenting complaint and history of the present illness.
Past medical, family, and occupational history.
Summary of physical examination findings.
Note Diagnostic Impressions
Highlight any preliminary impressions or areas requiring further investigation.
Reflect and Clarify
If needed, retake parts of the history to address any inconsistencies or missing details.
Activity: Discussion (25 minutes)
Activity 1: Reflection and Learning (25 minutes)
After completing the examinations, reflect on your experience with each case.
Identify strengths and areas for improvement in your approach, communication, and clinical skills.
Ensure all documentation is thorough and accurate, as it forms the basis for further clinical decision-making.
Preferably case based assessment should be done.

Experiential-Learning 25.2 : Analysis of conditions related to Skin and Appendages through examination

Duration of activity – 3 hours,
Activity: Library session (45 minutes)

Activity 1: Theoretical Review of Skin and Appendages Examination (15 minutes)
Skin Layers and Functions: Brief review of skin anatomy, hair, nails, and sweat glands.
Common Dermatological Conditions: Review of common skin disorders (e.g., eczema, psoriasis, acne) and appendage conditions (e.g., alopecia, nail clubbing).
Systemic Conditions with Skin Manifestations: Conditions like diabetes, systemic lupus erythematosus, and liver disease that can present with skin changes.
Activity 2: Overview of Skin and Appendages Examination (30 minutes)
Techniques for Skin Examination: How to inspect and palpate skin to identify signs of conditions (color, texture, temperature, moisture).
Hair, Nail, and Sweat Gland Examination: Techniques for inspecting hair, nails, and sweat glands, and identifying abnormal findings (e.g., nail pitting, hair thinning).
Documentation and Case Presentation: How to document skin and appendage findings using appropriate medical terminology and organize the information clearly.
Activity: Brainstroming (1 Hour)
Activity 1: Introduction to Case Studies (10 minutes)
Present several case studies, each representing a different dermatological or systemic condition that affects the skin and appendages (e.g., eczema, psoriasis, alopecia, systemic lupus erythematosus).
Discuss how each case was identified and the key findings to look for.
Activity 2: Group Work: Condition Identification (30 minutes)
Small Group Activity: Divide learners into small groups (3-4 people) and assign each group a different case study.
Each group will review a case, discuss the examination findings, and diagnose the condition based on observed skin and appendage changes.
Activity 3: Group Presentations and Discussion (20 minutes)
Each group presents their case, the findings, and their diagnosis to the larger group.
Discuss the reasoning behind each diagnosis and the key examination findings.
Clarify any doubts and provide additional information about less common conditions.
Activity 3: Kinesthetic Learning (45 minutes)
Activity 1: Hands-On Skin and Appendages Examination (25 minutes)
Learner Practice: Each learner will perform a full skin and appendages examination on a peer or mannequin, focusing on identifying conditions discussed earlier.
Key Areas to Examine:
Skin inspection for color, texture, moisture, lesions, and rashes.
Hair inspection for loss, texture, and distribution.
Nail examination for abnormalities like clubbing, pitting, or discoloration.
Learners should make a note of any findings that might suggest specific conditions (e.g., eczema, psoriasis, seborrheic dermatitis).
Instructor observes, provides feedback on technique, and assists in identifying abnormal findings.
Activity2: Condition Diagnosis and Analysis (20 minutes)
After the hands-on examination, learners will use their findings to discuss possible diagnoses.
Discussion Points:

Correlating skin changes with systemic diseases.
How to narrow down differential diagnoses based on history and examination.
Identifying conditions that are urgent vs. non-urgent.
Activity 4: Discussion (30 minutes)
Activity 1: Documentation of Findings (15 minutes)
Learners will document their findings from the hands-on examination.
Focus on:
Accurately describing the skin, hair, nails, and sweat glands.
Using appropriate terminology (e.g., macules, papules, pustules, clubbing, pitting).
Organizing the findings logically (general inspection, hair/nail findings, lesions).
Learners will write up their case, noting their differential diagnosis and proposed treatment options based on their findings.
Activity 2: Case Review and Instructor Feedback (10 minutes)
Instructor reviews a few of the documented cases, providing feedback on clarity, accuracy, and completeness.
Discuss how to improve documentation to make it more concise and effective.
Activity 3: Wrap-Up and Q&A (5 minutes)
Open the floor for any remaining questions.
Summarize the key learning points from the session.
Encourage learners to continue practicing their skin and appendage examination skills.
Key Focus Areas:
Analysis of skin and appendage conditions based on examination findings.
Differential diagnosis skills, particularly in identifying dermatological and systemic conditions.
Effective documentation of skin and appendage examination findings with appropriate medical terminology.
Hands-on practice and feedback to refine clinical examination skills.

Experiential-Learning 25.3 : Developing Expertise in Respiratory System Examination through Experiential Learning

Duration of activity - 3 hours
Activity: Demonstration Bedside (30 Minutes)
Activity1: Clinical History Taking (15 Minutes)
Faculty demonstrates history-taking focusing on respiratory symptoms:
Chief complaints (e.g., cough, breathlessness, chest pain)
History of present illness
Past medical and surgical history

Family history and social history
Risk factors (smoking, occupation, environmental exposure)
Emphasize building rapport and open-ended questioning.
Activity 2: Respiratory System Examination (15 Minutes)
Faculty performs a complete respiratory examination step-by-step.
Explain findings and correlate with possible clinical conditions.
Activity: Case Based Learning (2 Hours)
Students will work in small groups (2-3 students per patient).
Each student will take turns to perform:
Activity 1: Clinical History (15 Minutes)
Activity 2: Respiratory Examination (15 Minutes)
Remaining group members will observe, take notes, and provide peer feedback.
Process for Each Patient:
Patient 1: Perform with direct faculty supervision.
Patient 2: Perform with minimal faculty guidance.
Patient 3, 4, 5: Perform independently with peer observation.
Faculty Role:
Provide feedback on communication skills, history-taking approach, and examination techniques.
Ensure findings are accurately documented.
Discuss differential diagnoses based on findings.
Case based assessment should be done
Activity: Discussion (30 minutes)
Activity 1: Reflection and Group Discussion (30 Minutes)
Students share their experiences and challenges.
Faculty facilitates reflection on areas for improvement.
Discuss key findings from different patients and correlate with possible diagnoses.
Emphasize the integration of clinical history and examination findings.
Materials Required:
Stethoscope, Percussion hammer, Measuring tape (for chest expansion), Respiratory examination mannequins (optional)

Experiential-Learning 25.4 : Hands-On Exploration of Cardiovascular System Examination: An Experiential Learning Approach

Duration of the activity - 3 hours

Students will be asked to examine the Cardiovascular System of at least 5 patients, preferably with cardiac complaints. By the end of this session, students will be able to conduct a thorough cardiovascular system examination for five consecutive patients, integrating case history, clinical signs, and symptoms to assess and form differential diagnosis.
Activity: Case Based Learning
Activity 1: Introduction to the Patient (5 minutes per patient total 25 minutes)
History Taking
Introduce each patient and their complaints.
Key Areas to Focus On:
Presenting symptoms (chest pain, palpitations, dizziness, edema, etc.)
Relevant medical history (hypertension, diabetes, previous cardiovascular events, etc.)
Family history of cardiovascular diseases.
Medications and lifestyle factors.
Any prior tests or imaging results.
Learning Focus:
Communication Skills: How to effectively gather and document patient history.
Correlation: Understanding how case history guides the examination focus.
Activity 2: Cardiovascular Examination (10X5=50 minutes)
(Systematic Approach)
Inspection
Position the patient: Supine or semi-reclining position, with head slightly elevated (30-45 degrees).
General Appearance: Look for signs of distress, cyanosis, or pallor.
Inspect the chest for abnormal pulsations, scars, or visible deformities (e.g., precordial heave).
Jugular Venous Pressure (JVP): Check for distention of the jugular veins at a 45° angle.
Learning Focus:
Identifying visible cardiovascular signs and understanding their clinical significance.
Palpation
Apex Beat: Locate the apex beat (5th intercostal space, midclavicular line) and assess for displacement or abnormal findings.
Precordial Palpation: Feel for any abnormal pulsations or thrills (vibrations).
Peripheral Pulses: Palpate radial, femoral, popliteal, dorsalis pedis, and posterior tibial pulses for rate, rhythm, and symmetry.
Edema Check: Palpate lower limbs to assess for pitting edema.
Learning Focus:
Practicing palpation techniques and recognizing abnormal findings.

Auscultation
Heart Sounds:Use the diaphragm of the stethoscope to listen for high-pitched sounds (S1, S2).
Use the bell of the stethoscope to listen for low-pitched sounds (S3, S4, murmurs).
Locations to Auscultate:
Aortic area (right second intercostal space)
Pulmonic area (left second intercostal space)
Tricuspid area (left lower sternal border, 4th intercostal space)
Mitral area (5th intercostal space, midclavicular line)
Murmurs: Listen for any murmurs, noting their timing (systolic vs. diastolic), pitch, and location.
Additional Sounds: Identify the presence of S3, S4, or pericardial rubs.
Learning Focus:
Mastering auscultation techniques and interpreting heart sounds, murmurs, and abnormal rhythms.
Activity 3: Blood Pressure Measurement (5 minutes per patient total 25 minutes)
Measure Blood Pressure:
Position the patient with their arm at heart level.
Inflate the cuff and listen for Korotkoff sounds to determine systolic and diastolic pressures.
Repeat if Necessary: Check blood pressure in both arms if there is a significant difference or suspected abnormality.
Learning Focus:
Practicing accurate blood pressure measurement and interpreting results.
Activity 4: Special Tests (10 minutes)
Orthostatic Blood Pressure:
Measure BP while the patient is lying down, sitting, and standing.
Check for any significant drop (more than 20 mmHg systolic), which may indicate orthostatic hypotension.
Heart Failure Signs:
Listen for lung crackles (pulmonary edema).
Inspect for peripheral edema and check for signs of fluid retention.
Learning Focus:
Performing special tests that help detect specific cardiovascular conditions like heart failure or orthostatic hypotension.
Activity 5: Reflection and Documentation (30 minutes)
Discussion:
After each examination, allow time to reflect on the findings.
Discuss the possible diagnoses based on the patient's history and examination.

How do the signs and symptoms align with specific cardiovascular conditions?
Documentation:
Guide students on how to document findings, including physical examination results, blood pressure measurements, heart sounds, pulses, and special tests.
Encourage clear and concise documentation for future reference and potential follow-up.
Learning Focus:
Enhancing documentation skills and fostering clinical reasoning based on examination findings.
Activity 6: Case Discussion and Differential Diagnosis (30 minutes)
Post-Examination Discussion:
At the end of examining all 5 patients, convene for a group discussion.
Each student presents their findings and possible diagnoses for each case.
Discuss common cardiovascular conditions (e.g., hypertension, heart failure, arrhythmias, valvular disease).
Reflect on any challenges faced during the examination process.
Learning Focus:
Developing differential diagnosis skills and fostering clinical reasoning based on real-time feedback.
Conclusion (10 minutes)
Summarize key learning points from the session.

Experiential-Learning 25.5 : Examination of GIT and Abdomen in Various Clinical Scenarios

Duration of activity - 3 hours
Students will learn to systematically perform a GIT examination on a series of 5 consecutive patients, integrating theoretical knowledge with practical clinical skills.
Overview of the Session:
Activity : Demonstration (45 minutes)
Overview of GIT Examination: (15 minutes)
Briefly review the components of the GIT examination, including inspection, palpation, percussion, and auscultation.
Discuss the importance of systematic examination and how it helps in diagnosing various abdominal conditions.
Recap the common conditions that might present during a GIT exam (e.g., appendicitis, hernias, constipation, jaundice, liver diseases).
Activity 1: Patient Introduction and Consent (5 mins)
Explain the examination process to the patient, ensuring their comfort and privacy. Obtain consent before proceeding.
Activity 2: Inspection (5 mins)
Position the patient in a comfortable lying position with the abdomen exposed.
Look for signs of abdominal distension, scars, bruising, or any unusual skin changes (e.g., jaundice, striae, or varicosities).
Check for visible peristalsis, pulsations, or any abnormal masses.

Activity 3: Auscultation (5 mins)
Use the stethoscope to listen to bowel sounds in all four quadrants.
Assess the character, frequency, and intensity of bowel sounds (e.g., hypoactive, hyperactive, absent).
Activity 4: Percussion (5 mins)
Percuss the abdomen to detect areas of dullness (which may indicate fluid or mass) and tympany (which may indicate gas).
Percuss over the liver and spleen to check for enlargement or tenderness.
Activity 5: Palpation (10 mins)
Light palpation: Start from the quadrants away from the area of pain.
Deep palpation: Check for masses, tenderness, rigidity, or guarding.
Palpate the liver, spleen, kidneys, and any other specific regions based on the patient's history.
Check for signs of rebound tenderness or peritoneal irritation (e.g., in cases of appendicitis).
Activity : Case Based Learning (1 hour 30 minutes)
(Approx. 18 minutes per patient)
Activity 1: Review Patient History (3 minutes)
Provide each student with a brief history of the patient, including relevant symptoms (e.g., pain, nausea, vomiting, changes in bowel movements).
Discuss the differential diagnosis based on the patient’s complaint.
Activity 2: Perform the GIT Examination (12 minutes)
Each student performs the examination on one patient, applying the steps discussed.
Encourage students to work in pairs, with one conducting the examination and the other observing and providing feedback.
After completing the examination, students should document their findings, including any abnormal findings (e.g., tenderness, palpable masses).
Activity 3: Feedback and Discussion (3 minutes)
After each patient examination, gather the group for a brief discussion of the findings.
Discuss what was observed, what could have been missed, and potential differential diagnoses.
Activity : Discussion (45minutes)
Activity 1. Review of Key Findings (15 minutes)
Have the students share their findings and interpretations of the examination.
Discuss the common and rare signs they encountered, and how to differentiate between benign and concerning findings.
Activity 2. Practical Tips for Improvement (10 minutes)
Provide practical tips for improving technique, e.g., using more systematic palpation, or refining auscultation skills.
Emphasize the importance of communication with patients to ensure cooperation during the examination.
Activity 3 Q&A and Closing Remarks (5 minutes)
Open the floor for any final questions.

Provide guidance on how to further practice GIT examinations, such as through self-study, observing clinicians, and continuing with patient examinations.
Activity 4: Evaluation & Feedback: (15 minutes)
Assessment of Practical Skills:
Continuous formative assessment throughout the session by observing students' examination techniques, case based assessment may be done
Provide immediate, constructive feedback during each patient session.

Experiential-Learning 25.6 : Comprehensive Uro-Genital and Gynaecological Examinations: A Hands-On Approach to Clinical Skills

Duration of the activity 3 hours
Students will perform uro-genital and gynaecological examinations, practice skills on manikins or real patients, and learn how to document and interpret findings. Students will be asked to elicit the clinical history and do physical examination for a consecutive series of 5 patients.
Materials Needed:
Examination tables
Sterile gloves, lubricants, speculum
Manikins or real patients
Stethoscopes
Swabs, collection materials
Partogram charts
Privacy curtains, markers/pens
Activity : Case Based Learning (15 minutes)
Activity 1: Introduction (15 minutes)
Brief on the importance of uro-genital and gynaecological exams and how the patient's history guides the approach.
Hands-on stations with practical demonstrations.
Activity: Kinaesthetic Learning (45 minutes)
Activity 1: Introduction & Consent (5 minutes)
Explain the examination process and ensure patient comfort.
Activity 2: History Taking (5 minutes)
Students practice taking a thorough history of urinary and pelvic symptoms.
Activity 3: Inspection of External Genitalia (10 minutes)
Inspect for abnormalities, lesions, or swelling.
Activity 4: Abdominal Palpation (10 minutes)
Palpate the abdomen for tenderness, bladder distension, or masses.
Activity 5: External Genital Examination (10 minutes)

Inspect the external genitalia and perineum for signs of infection or abnormalities.
Activity 6: Documentation (5 minutes)
Document findings clearly and accurately.
Activity: Demonstration (1 hour 30 minutes)
Activity 1: Introduction & Consent (10 minutes)
Explain the procedure and obtain consent.
Activity 2: History Taking (10 minutes)
Practice gathering a detailed gynecological history.
Activity 3: General Inspection (10 minutes)
Observe for signs of distress or systemic illness.
Activity 4: Speculum Examination (20 minutes)
Demonstrate and practice speculum insertion and cervix inspection.
Activity 5: Bimanual Examination (20 minutes)
Perform bimanual examination to assess the uterus and adnexa for tenderness or abnormalities.
Activity 6: Pelvic Floor Assessment (10 minutes)
Palpate the pelvic floor for signs of prolapse or weakness.
Activity 7: Documentation (10 minutes)
Document findings, ensuring accuracy and clarity.
Activity: Discussions (30 minutes)
Activity 1: Case Review & Findings (15 mins)
Discuss clinical findings and interpretation.
Activity 2: Discussion of Common Mistakes & Tips (10 mins)
Address common errors and provide improvement strategies.
Activity 3: Q&A and Conclusion (5 mins)
Final questions and summary of key takeaways.

Experiential-Learning 25.7 : Comprehensive Ano - rectal examinations: A Hands-On Approach to Clinical Skills

Duration of activity 3 hours
Student will be asked to elicit Ano -rectal examination for a series of 5 patients.
Students will perform a comprehensive ano-rectal examination, learning the steps involved, how to identify abnormalities, and how to document and interpret their findings.
Activity :Case Based Learning (30 minutes)
Activity 1: Overview of the Ano-Rectal Examination (15 minutes)

Importance in diagnosing conditions such as hemorrhoids, anal fissures, rectal tumors, and other anorectal disorders.
Discussion of the anatomy of the anal canal, rectum, and perineum.
Explain the significance of patient comfort and privacy during this sensitive examination.
Activity 2: Procedure Outline (15 minutes)
Overview of the session's structure, with students rotating through hands-on stations.
Brief on how history-taking complements the physical examination.
Activity: Demonstration Bedside (60 minutes)
Activity 1: Introduction & Consent (15 minutes)
Demonstrate how to introduce the examination to a patient, explain the procedure, and obtain informed consent.
Discuss the importance of making the patient feel at ease.
Activity 2: History Taking (15 minutes)
Practice taking a thorough history relevant to ano-rectal complaints, including symptoms like pain, bleeding, changes in bowel habits, itching, or discharge.
Include questions about lifestyle, bowel patterns, diet, and any prior history of gastrointestinal conditions.
Activity 3: Inspection of the Perianal Area (15 minutes)
Demonstrate and practice inspecting the perianal region for signs of external hemorrhoids, skin tags, rashes, fissures, abscesses, or fistulas.
Encourage students to look for signs of trauma, prolapse, or swelling.
Activity 4: Digital Rectal Examination (DRE) – External Examination (15 minutes)
Demonstrate the technique of performing a digital rectal exam, focusing on external anatomical landmarks and assessing the tone of the anal sphincter.
Discuss how the patient should be positioned for comfort and to facilitate the examination.
Activity: Kinaesthetic Learning (60 minutes)
Activity1: Inspection with Anoscope or Proctoscope (15 minutes)
Demonstrate how to insert an anoscope or proctoscope to inspect the anal canal and rectum for signs of internal hemorrhoids, tumors, polyps, or lesions.
Discuss the importance of lubricating the instrument for smooth insertion and minimizing discomfort.
Activity 2: Palpation of the Rectum (15 minutes)
Guide students in the technique of gently inserting one or two lubricated fingers into the rectum to assess the rectal walls, prostate (in males), and any abnormalities such as masses, tenderness, or changes in tone.
Explain how to evaluate rectal tone (hypotonia or hypertonia), and palpate for tumors, impaction, or other masses.
Activity 3: Assessing the Pelvic Floor (15 minutes)
Practice palpation for signs of pelvic floor weakness, rectal prolapse, or incontinence.
Discuss how the findings may indicate conditions such as fecal incontinence or rectal prolapse.
Activity: Discussion (30 minutes)
Activity1: Case Review & Interpretation (10 minutes)

Discuss different types of findings (e.g., hemorrhoids, anal fissures, tumors) and how they can be interpreted based on patient history and examination.
Students share findings and potential diagnoses.
Activity 2: Documentation (10 minutes)
Teach students how to document their findings clearly and comprehensively, including any abnormalities, techniques used, and the patient's response.
Discuss the importance of thorough and accurate documentation in clinical practice.
Activity 3: Feedback and Q&A (5 minutes)
Open the floor for any questions and provide final feedback on techniques and approach.
Activity 4: Expected Learning Outcomes: (5 minutes)
Students will demonstrate proficiency in conducting a comprehensive ano-rectal examination, including inspection, digital rectal examination, anoscopy, and rectal palpation.
Students will be able to recognize common ano-rectal abnormalities such as hemorrhoids, fissures, abscesses, and tumors.
Students will understand the importance of patient comfort and communication during sensitive examinations.
Students will gain skills in accurately documenting examination findings.
Assessment and Evaluation:
Formative Assessment: Observational feedback during practical sessions, including the quality of the inspection, palpation, and patient interaction.
Post-Session Reflection: Students will complete a self-assessment reflecting on their strengths and areas for improvement in conducting the ano-rectal examination.

Experiential-Learning 25.8 : Comprehensive Musculoskeletal and Neurological Examinations: A Hands-On Approach to Clinical Skills

Duration of activity - 3 hours
Students will be asked to elicit the clinical history and do examination of Musculoskeletal and Nervous system for a consecutive series of 5 patients.
Activity: Case Based Learning (3 hours)
Activity1: Introduction (15 minutes)
Activity 2: Musculoskeletal system examination (history, inspection, palpation, special tests). (90 minutes)
Activity 3: Neurological system examination (history, cranial nerve exam, motor and sensory testing). (90 minutes)
Activity 4: Arriving provisional diagnosis (15 minutes)

Experiential-Learning 25.9 : Examination of Breast in various benign and malignant conditions in different age groups

Duration of activity 2 hours
Step: Wise Procedure for Breast Examination in Various Benign and Malignant Conditions Across Age Groups
Note : Student will be asked to elicit the clinical history and do Breast examination for a consecutive series of 5 patients.
Activity: Case-Based Learning (30 minutes)

Activity 1: Preparation (15 minutes)
Orientation:
Begin with an overview of the anatomy, physiology, and common pathologies of the breast.
Discuss age-related variations in breast tissue (e.g., adolescent, reproductive age, postmenopausal).
Patient-Centered Communication:
Emphasize obtaining informed consent, maintaining privacy, and using appropriate language during the examination.
Highlight the importance of patient comfort and dignity.
Simulation Models:
Familiarize students with breast examination simulation models that replicate benign and malignant conditions.
Activity 2: Clinical History Collection (15 minutes)
Students will work with age-specific case scenarios, eliciting clinical histories to guide their examination.
Adolescent Patient (e.g., Fibroadenoma):
Symptoms: Lump in the breast, no pain.
History: Duration, growth, associated symptoms, family history of breast disease.
Reproductive-Age Patient (e.g., Fibrocystic Changes):
Symptoms: Cyclic breast pain, bilateral lumps.
History: Relation to menstrual cycle, contraceptive use, or hormonal therapy.
Postmenopausal Patient (e.g., Breast Cancer):
Symptoms: Painless lump, nipple discharge, skin changes.
History: Duration, progression, family history, lifestyle factors (smoking, alcohol)
Activity : Simulation-Based Learning (30 minutes)
Activity 1: Physical Examination (30 minutes)
Students will practice on simulation models before interacting with patients. Emphasis is placed on the inspection and palpation techniques:
Inspection
Observe the patient in sitting and supine positions.
Look for symmetry, skin changes (dimpling, redness, peau d'orange), nipple retraction, or discharge.
Palpation
Use the pads of fingers in a systematic circular, wedge, or vertical strip pattern.
Examine all quadrants and the axillary tail.
Note characteristics of lumps (size, shape, consistency, mobility, tenderness, or fixation).
Special Areas
Palpate the axillary and supraclavicular lymph nodes for enlargement.

Activity: Problem-Based Learning (30 minutes)
Activity 4: Students are presented with patient cases where they must apply their knowledge and examination skills to identify and manage conditions.
Scenario-Based Discussions:
A 22-year-old with a movable, painless lump in the upper outer quadrant.
A 45-year-old with bilateral pain and multiple lumps correlating to the menstrual cycle.
A 65-year-old with a fixed lump and skin changes in the left breast.
Analysis and Diagnosis:
Students identify clinical features, propose differential diagnoses, and discuss investigations (e.g., mammography, ultrasound, biopsy).
Management Strategies:
Develop management plans based on case findings, including referral pathways, biopsy techniques, and follow-up protocols.
Activity: Discussion (30 minutes)
Activity 5: Reflection and Feedback (30 minutes)
Debriefing Sessions:
Review the cases, focusing on clinical findings, diagnosis, and student performance.
Discuss common pitfalls and areas for improvement.
Simulation Feedback:
Evaluate palpation techniques and diagnostic reasoning during simulated exercises.
Problem-Solving Reflection:
Encourage students to reflect on their thought process, decision-making, and patient communication.

Modular Assessment

Assessment method	**Hour**
Instructions: Conduct a structured Modular assessment. The assessment will be for 50 marks. Keep a structured marking pattern. Use different assessment methods in each module for the semester. Keep a record of the structured pattern used for assessment. Calculate the Modular grade point as per Table 6 C. CHOOSE ANY OF THE BELOW ASSESSMENT FOR 50 MARKS Total Marks: 50 / Time Duration 1.Patient History Taking (10 Marks) Formative Assessment Method: Role-play / Simulation Students will take turns role-playing as the clinician and patient. This provides an opportunity for immediate feedback on history-taking skills. Question 1: List five key components to inquire about during a patient’s medical history. (5 Marks)	4

Question 2: Explain the importance of understanding a patient's family history in physical diagnosis. (5 Marks)
2.General Physical Examination (10 Marks)
Formative Assessment Method: Peer Assessment
3.Systemic Examination (15 Marks)
Formative Assessment Method: Observed Structured Clinical Examination (OSCE)
4.Clinical Reasoning and Diagnosis (10 Marks)
Formative Assessment Method: Case-based Discussion
5.Communication and Patient Interaction (5 Marks)
Formative Assessment Method: Patient-Clinician Interaction Evaluation
Or
Any practical in converted form can be taken for assessment. (25 marks)
and
Any experiential, such as portfolios / reflections / presentations can be taken as an assessment. (25 marks)

Module 26 : Modalities of Diagnostic Imaging

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

Identify and describe various imaging modalities (e.g., X-ray, Computed Tomography (CT), Magnetic Resonance Imaging (MRI), and Ultrasonography (USG) and their appropriate clinical applications.
Describe common pathologies and their imaging characteristics across various modalities, which develops ability to arrive at diagnosis
Differentiate between similar imaging findings incorporating clinical history and physical examination.
Apply evidence - based guidelines for the appropriate use of imaging in clinical practice.
Discuss and apply ethical considerations in imaging diagnosis, including patient safety and informed consent.

M 26 Unit 1 Introduction to Imaging Diagnosis

26.1.1. Principles of X-ray diagnosis

26.1.2. Computed Tomography (CT),
26.1.3. Magnetic Resonance Imaging (MRI).
26.1.4. Clinical importance

References: 75,76,77,78,79,80

3A	3B	3C	3D	3E	3F	3G
CO1,CO7,CO8	Discuss the primary imaging modalities (X-ray, CT, MRI, ultrasound) and their basic principles. Demonstrate a fundamental understanding of normal anatomy as viewed through different imaging techniques. Understand the common clinical indications for each imaging modality.	1	Lecture	CC	Knows-how	L&GD,L

M 26 Unit 2 X-Ray

26.2.1. X ray
26.2.2 Digital X ray

References: 50

3A	3B	3C	3D	3E	3F	3G
CO1,CO7,CO8	Identify and describe normal and abnormal anatomical structures visible on X-ray images.	1	Lecture	CC	Knows-how	L,X-Ray
CO1,CO7,CO8	Develop the ability to interpret basic X-ray images and identify common abnormalities (e.g., fractures, infections, tumors).	4	Practical Training 26.1	PSY-GUD	Shows-how	X-Ray,CBL
CO1,CO7,CO8	Apply the skills to identify and describe normal anatomical structures on X-ray images, while effectively recognizing and interpreting common abnormalities such as fractures, infections, and tumors. Apply the principles of X-ray quality assessment, including evaluation of exposure, positioning, and contrast, to optimize diagnostic accuracy. Apply radiation safety protocols for both patients and healthcare workers, and engage in case-based discussions to deepen understanding and practical application of X-ray imaging in	6	Experiential-Learning 26.1	PSY-SET	Shows-how	CBL,X-Ray

	clinical decision-making.					

M 26 Unit 3 Ultrasonography

26.3.1. Ultrasonography (USG)
26.3.2. Doppler Ultrasonography
26.3.3. Echocardiogram
26.3.4. Intravenous Ultrasound (IVUS)
26.3.5. Endoanal Ultrasound
26.3.6. Liver Elastography (FibroScan)
26.3.7. Trans Vaginal Sonography for ovulation studies

References: 50,75,76,77,78,79,80

3A	3B	3C	3D	3E	3F	3G
CO1,CO7,CO8	Identify and explain the differences between standard Ultrasonography (USG), Doppler USG, Echocardiogram (ECG), Intravenous Ultrasound (IVUS), Endoanal Ultrasound, Fibroscan, Trans Vaginal Sonography for ovulation studies.	1	Lecture	CE	Knows-how	L
CO1,CO7,CO8	Perform and/or interpret Ultrasonography (USG), Doppler USG, Intravenous Ultrasound (IVUS), Endoanal Ultrasound, Fibroscan, Trans Vaginal Sonography for ovulation studies, Echocardiogram (ECG), and/or findings and differentiate normal and abnormal findings.	4	Practical Training 26.2	PSY-GUD	Shows-how	D
CO1,CO7,CO8	Develop the ability to perform and/or interpret basic abdominal and pelvic ultrasounds, identifying normal and abnormal findings.Learn to perform Doppler ultrasound to assess blood flow, including recognizing normal and pathological flow patterns. Acquire skills to interpret echocardiograms, identifying cardiac structures and recognizing common pathologies (e.g., valvular heart disease, heart failure). Incorporate relevant clinical history and physical examination findings when interpreting ultrasound studies. Effectively communicate ultrasound findings to referring physicians and patients, including the implications of the results.	4	Experiential-Learning 26.2	PSY-SET	Shows-how	DIS,D,CD

M 26 Unit 4 Computed Tomography (CT)scan

26.4.1. Computed Tomography (CT) scan

References: 50

3A	3B	3C	3D	3E	3F	3G
CO1,CO7,CO8	Discuss the common clinical indications for CT scans in various medical specialties (e.g., trauma, oncology, vascular imaging).	1	Lecture	CE	Knows-how	L_VC,L&GD,L&PPT
CO1,CO7,CO8	Demonstrate how to interpret basic CT images, identifying normal anatomy and common pathologies (e.g., fractures, tumors, hemorrhages). Incorporate patient history and clinical findings into the interpretation of CT results.	4	Practical Training 26.3	PSY-SET	Shows-how	D,DIS
CO1,CO7,CO8	Develop skills to interpret basic CT images, identifying normal anatomy and common pathologies (e.g., fractures, tumors, hemorrhages). Incorporate patient history and clinical findings into the interpretation of CT results.	6	Experiential-Learning 26.3	PSY-ORG	Does	CD,CBL

M 26 Unit 5 Magnetic Resonance Imaging (MRI), Fistulogram and Sinogram

26.5.1. Magnetic Resonance Imaging MRI
26.5.2. Fistulogram
26.5.3. Sinogram

References: 50

3A	3B	3C	3D	3E	3F	3G
CO1,CO7,CO8	Identify the common clinical indications for MRI, fistulogram, and sinogram procedures in various medical contexts, and explain the differences between these imaging	2	Lecture	CC	Knows-how	L&PPT , L_VC,L&

	techniques, including their specific applications, advantages, and appropriate clinical scenarios for their use.					GD
CO1,CO7,CO8	Demonstrate common clinical indications for MRI fistulogram, and sinogram procedures in various medical contexts. Explain the differences between MRI, fistulogram, and sinogram, including their specific applications and advantages. Develop the skills to interpret fistulograms and sinograms, understanding the techniques for visualizing fistulas and sinuses. Incorporate relevant patient history and clinical findings into the interpretation of MRI fistulogram, and sinogram results.	2	Practical Training 26.4	PSY-GUD	Shows-how	CBL,DIS, PBL
CO1,CO7,CO8	Interpret the radiodiagnosis of MRI findings in common clinical conditions in various cases and incorporate relevant patient history and clinical findings into the interpretation of MRI fistulogram, and sinogram results.	4	Experiential-Learning 26.4	CS	Shows-how	CD,DIS, D

M 26 Unit 6 Nuclear Imaging

26.6.1.Nuclear Imaging
26.6.1.1.Positron Emission Tomography
26.6.1.2. Single-Photon Emission Computed Tomography
26.6.1.3.Radionuclide Scanning : Myocardial perfusion studies

References: 50

3A	3B	3C	3D	3E	3F	3G
CO1,CO7,CO8	Detail the common clinical indications and applications for PET (Positron Emission Tomography) and SPECT (Single Photon Emission Computed Tomography) and radionuclide scanning in various medical specialties (e.g., oncology, cardiology, neurology).	2	Lecture	CC	Knows-how	L
CO1,CO7,CO8	Demonstrate how to interpret the common clinical indications and discuss the applications for PET (Positron Emission Tomography) and SPECT (Single Photon Emission Computed Tomography), and radionuclide scanning in various medical specialties (e.g., oncology, cardiology, neurology). Develop skills to interpret	4	Practical Training 26.5	PSY-GUD	Shows-how	DIS,D

	myocardial perfusion studies, understanding the techniques used to assess cardiac blood flow and viability.					
CO1,CO7,CO8	Apply skills in interpreting PET, SPECT, and radionuclide scans involves recognizing normal anatomical structures, identifying abnormalities, and correlating findings with clinical history.	4	Experiential-Learning 26.5	PSY-SET	Does	CD,DIS

M 26 Unit 7 Arteriograms, Lymphangiography and Venography

26.7.1. Arteriograms
26.7.2. Lymphangiography
26.7.3. Venography

References: 50

3A	3B	3C	3D	3E	3F	3G
CO1,CO7,CO8	Discuss the common clinical indications for arteriograms, lymphangiography, venography and angiograms in various medical contexts (e.g., vascular diseases, lymphatic disorders). Explain the differences between arteriograms, lymphangiography, and venography, including their specific applications and benefits.	2	Lecture	CC	Knows-how	L
CO1,CO7,CO8	Develop skills to interpret the results of arteriograms, lymphangiography, and venography, identifying normal anatomy and common pathologies (e.g., blockages, lymphatic malformations).	2	Practical Training 26.6	PSY-GUD	Shows-how	CBL,D
CO1,CO7,CO8	Apply skills in interpreting the results of arteriograms, lymphangiography and venography, identifying normal anatomy and common pathologies (e.g., blockages, lymphatic malformations). Incorporate relevant patient history and clinical findings into the interpretation of imaging studies.	2	Experiential-Learning 26.6	PSY-SET	Shows-how	CD,PBL

Practical Training Activity

Practical Training 26.1 : Identification of X Rays and interpret common abnormalities

Duration of practical: 4 hours
Activity: X ray Identification (30 minutes)
Activity 1: Introduction (3 minutes):
Discuss the normal appearance of chest, abdomen, and spine X-rays.
Focus on identifying lung fields, heart, diaphragm, vertebral alignment, and abdominal structures.
Activity 2: Interpretation (10 minutes):
Students identify normal anatomical structures.
Discuss lung fields, heart borders, ribs, diaphragm, vertebral alignment, and bowel gas patterns.
Activity 3: Group Discussion (17 minutes):
Identify any slight variations within normal ranges.
Compare and contrast normal findings in each X-ray.
Activity: Practical (30 minutes)
X-rays Provided: Fractured femur, radius, and ulna
Activity 1: Introduction (3 minutes):
Discuss common fracture types (e.g., transverse, oblique, spiral).
Focus on bone displacement and alignment.
Activity 2: Interpretation (10 minutes):
Students identify and describe the fractures (location, type, displacement).
Discuss severity and potential complications.
Activity 3: Group Discussion (17 minutes):
Discuss fracture healing, immobilization, and management.
Review radiographic healing stages.
Activity: Case Based Learning (30 minutes)
X-rays Provided: Maxillary sinusitis X-ray
Activity 1: Introduction (3 minutes):
Discuss the role of X-rays in diagnosing sinusitis and normal sinus anatomy.
Activity 2: Interpretation (10 minutes):
Identify signs of sinusitis: opacification, air-fluid levels.
Compare with normal sinus findings.
Activity 3: Group Discussion (17 minutes):

Discuss clinical symptoms of sinusitis and radiographic correlation.
Management of sinusitis (e.g., antibiotics, drainage).
Activity: Case Based Learning (30 min)
X-rays Provided: Bone Infections (E.g. : Osteomyelitis)
Activity 1: Introduction (3 minutes):
Discuss osteomyelitis, its pathophysiology, and radiographic signs (bone lysis, periosteal reaction).
Activity 2: Interpretation (10 minutes):
Identify the radiographic features of infection, such as bone changes and soft tissue involvement.
Activity 3: Group Discussion (17 minutes):
Discuss treatment options: antibiotics, surgery.
Discuss the chronicity and complications of osteomyelitis.
Activity: Case Based Learning (30 minutes)
X-rays Provided: E.g.: IVP showing renal stones
Activity 1: Introduction (3 minutes):
Discuss the IVP procedure and its role in detecting renal issues.
Activity 2: Interpretation (10 minutes):
Identify renal stones, obstruction, or hydronephrosis.
Discuss contrast distribution.
Activity 3: Group Discussion (17 minutes):
Discuss clinical management of kidney stones, hydronephrosis, and other renal pathologies.
Role of further imaging (e.g., CT scan).
Activity: Case Based Learning (30 minutes)
X-rays Provided: Scoliosis and spondylolisthesis X-ray
Activity 1: Introduction (3 minutes):
Discuss normal spinal curvature and common spinal deformities (e.g., scoliosis, spondylolisthesis).
Activity 2: Interpretation (10 minutes):
Identify scoliosis (curvature) and spondylolisthesis (vertebral slippage).
Discuss the extent of the abnormalities.
Activity 3: Group Discussion (17 minutes):
Discuss treatment approaches (e.g., bracing, surgery, therapy).
Importance of monitoring the progression of spinal issues.
Objective structured Practical Examination will be conducted using X Rays of Normal conditions and common abnormal conditions like fractures, Paranasal Sinus

infections, bone infections, Intravenous Pyelogram, Abdominal erect images, Spinal abnormalities for students in groups.

Practical Training 26.2 : Conduct and/or interpret USG examination

Duration of activity 4 hours
Conduct and/or interpret reports of Ultrasonography (USG), Doppler USG, Echocardiogram (ECG), Intravenous Ultrasound (IVUS), Endoanal Ultrasound, Fibro scan, Trans Vaginal Sonography for ovulation studies. On five common conditions
Activity: Demonstration (4 hour)
Activity 1: Review the Patient's History and Symptoms (10 minutes):
Gather the Reports and Images (10 minutes):
Activity 2: Interpret Ultrasonography (USG) E.g: for Abdominal Pain (40 minutes)
Activity 2.1: Examine the Image Quality and Focus (5 minutes):
Ensure that the image quality is sufficient for interpretation. Look for clear delineation of abdominal organs.
Assess if the liver, spleen, pancreas, and kidneys are visualized well.
Activity 2.2: Interpret Key Findings (25 minutes):
Liver: Check for signs of fatty liver (increased echogenicity) or cirrhosis (irregular surface, nodularity).
Gallbladder: Look for gallstones (hyperechoic with shadowing) or inflammation (thickened wall).
Kidneys: Identify any renal stones (hyperechoic with shadowing), cysts, or signs of hydronephrosis (dilated renal pelvis).
Appendix: Look for appendicitis (non-compressible, swollen appendix, greater than 6 mm).
Fluid: Check for ascites (free fluid in the peritoneal cavity).
Activity 2.3: Document Findings (10 minutes):
Note the size, shape, echogenicity, and location of abnormal findings.
List potential diagnoses based on the ultrasound findings (e.g., gallstones, appendicitis).
Activity 3: Interpret Doppler Ultrasonography (USG) for Cardiovascular Conditions (40 minutes)
Activity 3.1 Review the Blood Flow (5 minutes):
Focus on color Doppler images to assess the direction of blood flow.
Look for turbulent flow or abnormal flow patterns, which could indicate stenosis, aneurysms, or thrombi.
Activity 3.2 Assess Spectral Doppler Waveforms (25 minutes):
Look at the velocity of blood flow (e.g., in carotid, femoral, or renal arteries).
Identify any abnormal waveforms indicative of vascular disease, such as turbulent flow, reversed flow, or high-velocity jets suggesting stenosis.
Activity 3.3 Interpret Findings (5 minutes):
Normal Flow: Laminar flow with a smooth waveform.
Stenosis: Narrowing of vessels with increased velocity and post-stenotic turbulence.

DVT: Absence of flow in veins with potential thrombus presence.
Aneurysm: Abnormal dilation of vessels with disturbed flow.
Activity 3.4 Document Findings(5 minutes)
Record the location of any significant abnormalities (e.g., stenosis in the carotid artery, DVT in the leg veins).
Activity 4: Interpret Echocardiogram (ECG) for Cardiovascular Conditions (40 minutes)
Activity 4.1 Examine Overall Heart Size and Function (5 minutes):
Assess the size of the heart chambers and their function.
Look at the ejection fraction (EF), which should be between 50-70% for normal heart function.
Activity 4.2 Evaluate Valve Function (20 minutes):
Check for any valvular regurgitation (leakage) or stenosis (narrowing).
Look for thickened valve leaflets or prolapse (e.g., mitral valve prolapse).
Activity 4.3 Assess Wall Motion (10 minutes):
Check for abnormal wall motion, which may indicate ischemia or infarction (e.g., hypokinesis or akinesis).
Evaluate the septal wall, left ventricle, and right ventricle for movement abnormalities.
Activity 4.4 Document Findings (5 minutes)
Summarize heart function (EF), any abnormal valve function, and structural abnormalities (e.g., dilated ventricles or pericardial effusion).
Activity 5: Interpret Fibro scan for Liver Disease (40 minutes)
Activity 5.1 Review the Stiffness Measurement (5 minutes):
Look at the liver stiffness (kPa) value. Higher values (>7 kPa) suggest fibrosis or cirrhosis.
Activity 5.2 Evaluate Fatty Liver (10 minutes):
If the liver stiffness is normal but there is increased echogenicity, consider non-alcoholic fatty liver disease (NAFLD) or other forms of steatosis.
Activity 5.4 Identify Cirrhosis (15 minutes):
A stiffness value over 12 kPa is suggestive of cirrhosis. Check for any compensatory liver enlargement or signs of portal hypertension.
Activity 5.5 Document and Correlate with Clinical Findings (10 minutes):
Document liver stiffness values, and correlate them with the patient's clinical history (e.g., chronic alcohol use, hepatitis infection).
Activity 6: Interpret Transvaginal Sonography for Ovulation Studies (40 minutes)
Activity 6.1 Assess Follicular Growth (15 minutes):
Look for the dominant follicle, which should be between 18-24 mm at ovulation.
Identify multiple smaller follicles in cases of polycystic ovary syndrome (PCOS).
Activity 6.2 Endometrial Thickness (10 minutes):
Assess the endometrial lining, which should be 8-14 mm during the luteal phase for optimal implantation.
Activity 6.3 Monitor Ovulation Status (10 minutes):

Look for ovulation signs such as follicle rupture or the presence of fluid around the ovary.
Activity 6.4 Document Findings (5 minutes):
Record follicle size, the number of follicles, endometrial thickness, and any abnormalities (e.g., absence of dominant follicle, thin endometrium).
Activity 7: Final Interpretation and Reporting (30 minutes)
Activity 7.1 Correlate All Reports (10 minutes):
Combine findings from the USG, Doppler, Echocardiogram, Fibro scan, and Transvaginal Sonography to form a comprehensive clinical picture.
Consider how different findings correlate with each other (e.g., if both cardiac function and Doppler USG indicate vascular issues).
Activity 7.2 Formulate a Diagnosis or Differential Diagnosis (15 minutes):
Based on all reports, make a diagnosis or a list of differential diagnoses.
Provide recommendations for further tests or treatment if necessary.
Activity 7.3 Document the Findings (5 minutes):

Practical Training 26.3 : Interpretation of CT images

Duration of activity 4 hours
By the end of the session, learners will be able to identify normal anatomical structures and commonly encountered pathological features on CT images, including: Cerebral infarct, Cerebral hemorrhage, Subarachnoid hemorrhage, Internal organ pathology, Bone tumors, arthritis, and fractures of long bones
Activity : Demonstration (45 minutes)
Activity 1: Introduction to CT Imaging and Overview of Anatomy (5 minutes)
Explanation of the role of CT in identifying both normal and pathological findings.
Activity 2: CT Imaging Basics (15 minutes)
Overview of CT imaging principles and normal anatomical structures.
Discussing axial, coronal, and sagittal plane images.
Activity 3: Anatomy Review (25 minutes)
Discuss common normal structures seen in CT images (brain, liver, lungs, bones, and muscles).
Focus on identifying key features: cerebral sulci, ventricles, organs, bone density, and soft tissues.
Activity: Discussion (3 hours 15 minutes)
Activity 1 : Cerebral Infarct (15 minutes)
Discuss typical CT findings in cerebral infarction (e.g., hypodense areas, loss of gray-white differentiation).
Show examples and have learners identify infarcts.
Activity 2 Cerebral Hemorrhage (15 minutes)

Discuss CT characteristics of cerebral hemorrhage (hyperdense areas indicating blood).
Present different types (e.g., intracerebral, subdural) and have learners identify them.
Activity 3 Subarachnoid Hemorrhage (15 minutes)
Discuss CT findings of subarachnoid hemorrhage (blood in the subarachnoid space).
Learners analyze cases to identify subarachnoid hemorrhage.
Activity 4: Liver and Kidney Pathology (15 minutes)
Discuss CT findings of common liver and kidney pathologies (e.g., liver cirrhosis, renal cysts, tumors).
Learners review cases and identify lesions, masses, or abnormalities.
Activity 5: Lung Pathology (15 minutes)
CT features of lung conditions such as pneumonia, lung cancer, and emphysema.
Learners identify lesions, consolidations, and abnormal patterns.
Activity 6: Abdominal and Pelvic Pathology (15 minutes)
Review CT findings in abdominal organs (e.g., bowel obstruction, appendicitis, abdominal masses).
Learners analyze scans and identify relevant abnormalities.
Activity 7: Case Review (15 minutes)
Present a mix of internal organ pathologies and have learners identify and diagnose based on CT findings.
Activity 8: Bone Tumors (10 minutes)
Discuss CT findings in bone tumors (e.g., osteosarcoma, metastatic lesions).
Show learners images and have them identify typical features.
Activity 9: Arthritis (10 minutes)
CT features of osteoarthritis, rheumatoid arthritis, and other arthritis.
Learners identify joint changes and bone involvement.
Activity 10: Fractures (10 minutes)
Overview of CT findings in fractures of long bones (e.g., femur, tibia, humerus).
Learners identify different types of fractures (e.g., comminuted, displaced, stress fractures).
Activity 11: Hands-On Image Analysis & Case Discussion (30 minutes)
Learner Image Analysis (20 minutes)
Learners will review a set of CT images, focusing on the identification of the pathology discussed.
Each learner will analyze several CT scans, documenting their findings.
Case Discussion & Review (10 minutes)
Instructor-led discussion of selected CT images, with learners presenting their interpretations.
Clarification of difficult cases and feedback on image interpretation.

Key Learning Points:
Identification of Normal Anatomy: Learn to differentiate between normal structures and pathological findings on CT images.
Recognition of Common Pathologies: Cerebral infarct, hemorrhage, subarachnoid hemorrhage, and various internal organ pathologies.
Bone Pathologies: Identification of bone tumors, arthritis, and fractures in long bones.
Image Interpretation Skills: Enhance the ability to accurately interpret CT scans and correlate findings with clinical presentations. Assessment should be done by direct observation of procedural skills

Practical Training 26.4 : Arrive at the appropriate radiological diagnosis with the MRI Scan images

Duration of activity 2 hours
Activity: Case Based Learning (120 minutes)
Activity 1: Introduction to Imaging Techniques (30 Minutes)
Overview of Techniques: Discuss MRI, fistulogram, and sinogram – their indications, advantages, and differences.
Clinical Context: When to use each imaging method based on patient symptoms.
Activity 2: MRI Interpretation 30 Minutes
Case Study: Review MRI images
Task: Identify key structures and abnormalities
Activity 3: Fistulogram Interpretation (30 Minutes)
Case Study: Review fistulogram images showing contrast in fistula tracts.
Task: Identify fistula path, complexity, and connections to other structures.
Activity 4: Sinogram Interpretation (30 Minutes)
Case Study: Review sinogram images illustrating sinus tract paths.
Task: Identify the sinus tract course and its communication with abscesses or other structures.
Summary and Assessment:
Assessment: Evaluate interpretation accuracy of MRI, fistulogram and sinogram images and integration with patient history.

Practical Training 26.5 : Interpretation of the PET (Positron Emission Tomography) and SPECT (Single Photon Emission Computed Tomography), and radionuclide : myocardial perfusion studies

Duration of activity 4 hours
Activity: Demonstration (120 minutes)
Activity 1: Introduction to PET, SPECT, and Radionuclide Myocardial Perfusion Studies
Introduction to Myocardial Perfusion Imaging (20 minutes)

Overview of myocardial perfusion and its importance in diagnosing ischemic heart disease.
Explain how PET and SPECT are used for myocardial perfusion imaging.
Radionuclides commonly used (e.g., Technetium-99m, Thallium-201 for SPECT; Rubidium-82, Nitrogen-13 for PET).
Basic Principles of PET and SPECT (20 minutes)
PET: Overview of the principles of PET (positron emission, coincidence detection, and 3D imaging). How it helps in assessing myocardial blood flow, viability, and metabolism.
SPECT: Basics of SPECT imaging, using gamma cameras to detect single photon emissions from radiotracers.
Discuss the pros and cons of each technique
Radionuclides and Tracers Used in Imaging (20 minutes)
Description of isotopes used in myocardial perfusion (e.g., Technetium-99m, Thallium-201, Rubidium-82, and N-13 ammonia).
Half-life, properties, and the typical clinical indications for each.
Activity 2: Image Acquisition and Understanding Key Concepts
Image Acquisition for PET and SPECT (30 minutes)
Discuss patient preparation: fasting, medication, and imaging protocols.
Image acquisition techniques for both PET and SPECT, including stress and rest imaging (e.g., pharmacologic vs. exercise stress testing).
Image quality and factors influencing interpretation (patient positioning, imaging time, artifact recognition).
Key Imaging Features in Perfusion Studies (30 minutes)
Normal Myocardial Perfusion: Homogeneous uptake of radiotracer throughout the myocardium.
Ischemic/Abnormal Perfusion: Reduced or absent radiotracer uptake in a specific myocardial region.
Defects and Patterns: Anterior, inferior, lateral, and septal wall involvement.
Activity: Kinaesthetic Learning (60 minutes)
Activity 3: Hands-On Interpretation of Sample Images
Interpretation of PET and SPECT Myocardial Perfusion Scans (30 minutes)
Provide participants with anonymized case studies containing PET and SPECT images.
Break down how to interpret:
Areas of hypoperfusion (ischemia).
Distribution of perfusion (anterior, inferior, lateral walls).
Normal vs. abnormal results.
Assessing for myocardial viability.
Step-by-step process:
Look for the distribution of radiotracer uptake in the myocardium.
Compare stress vs. rest images.

Determine if there’s a reversible defect (ischemia) or fixed defect (scar).
Evaluate the location and extent of the defect (e.g., anterior wall, inferior wall).
Assess clinical implications: Is the defect indicative of significant coronary artery disease?
Practical Session 2: Report Interpretation (30 minutes)
Present sample reports of PET and SPECT myocardial perfusion studies.
Key points to cover in the report interpretation:
Radiotracer uptake: Presence and extent of uptake in various myocardial regions.
Clinical relevance: Impact of findings on diagnosis (e.g., coronary artery disease, myocardial infarction).
Activity: Discussion (60 minutes)
Activity 1: Clinical Correlation and Final Q&A
Clinical Case Discussion (30 minutes)
Go through clinical cases and interpret PET/SPECT results in the context of patient history, clinical presentation, and risk factors (e.g., chest pain, hypertension, diabetes, family history).
Discuss how imaging findings guide treatment decisions (e.g., medical management vs. interventional procedures like angioplasty or coronary artery bypass grafting).
Q&A Session (20 minutes)
Open the floor for questions and discussion.
Clarify common challenges in interpreting myocardial perfusion studies.
Recap and Summary (10 minutes)
Review key points:
Normal and abnormal patterns in PET/SPECT scans.
Key steps in interpreting reports.
Clinical relevance of myocardial perfusion imaging in diagnosing coronary artery disease and ischemia.
Learning Materials:
Example images of both PET and SPECT myocardial perfusion scans.
Sample reports for interpretation.
A guide with common terminology and interpretation tips.

Practical Training 26.6 : Interpreting the report / image findings of Arteriogram, Lymphangiogram and Venography

Duration of activity 2 hours
Activity: Case Based Learning (60 minutes)
Activity 1: Understanding and evaluating the reports and / or imaging of Arteriogram, Venography and Lymphangiography (10 minutes)

Activity 2: Discuss the importance of the Arteriography, Venography and Lymphangiography in various 5 clinical conditions (20 minutes)
Activity 3: Contraindications and special precautions of the procedures will be discussed (30 minutes)
Activity: Demonstration (60 minutes)
Activity 1: Demonstrate the findings of Coronary angiogram through images and report (30 minutes)
Activity 2: Demonstrate the findings of Cerebral angiogram through images and report (30 minutes)

Experiential learning Activity

Experiential-Learning 26.1 : Hands-On Experience in Observing and Interpreting X-Ray Findings

Duration of activity 6 hours
Each student should be able to interpret at least 5 conditions under each heading (normal, fractures, pneumonia, pleural effusion, bowel obstruction, osteomyelitis, spinal abnormalities, etc.) using X-ray films and/or clinical scenarios or images.
Activity: X-Ray Identification (50 minutes)
Focus: Identification of normal anatomical structures in a chest X-ray.
Activity 1: Introduction (10 minutes)
Brief overview of normal chest X-ray anatomy: lungs, heart, diaphragm, ribs, clavicles.
Activity 2: Interpretation Practice with Real Cases (40 minutes)
Each student should interpret at least 5 normal chest X-rays, identifying lung fields, heart silhouette, diaphragm, ribs, and airways.
Activity: Case-Based Discussion (10 minutes)
Activity 1: Introduction (10 minutes)
Brief discussion on different fracture types (transverse, spiral, oblique, displaced).
Interpretation Practice with Real Cases (40 minutes)
Each student should interpret at least 5 X-ray films showing fractures (e.g., femur, radius, tibia).
Discuss the type, severity, and complications of each fracture.
Activity: Case Diagnosis (60 minutes)
Discuss the clinical background and decision-making based on X-ray findings.
Activity 1: Introduction (10 minutes)
Discuss signs of pneumonia and pleural effusion on X-rays.
Activity 2: Interpretation Practice with Real Cases (40 minutes)
Each student should interpret at least 5 X-rays showing pneumonia or pleural effusion and correlate findings with clinical signs.
Activity: Case-Based Discussion (60 minutes)
Activity 1: Introduction (10 minutes)

Discuss normal abdominal X-ray findings and common abnormalities (e.g., bowel obstruction, free air).
Activity 2: Interpretation Practice with Real Cases (40 minutes)
Each student should interpret at least 5 abdominal X-rays showing bowel obstruction and free air.
Activity: Case-Based Discussion (60 minutes)
Discuss clinical scenarios that led to the use of these X-rays for diagnosis.
Activity 1: Introduction (10 minutes)
Discuss the radiographic features of osteomyelitis.
Activity 2: Interpretation Practice with Real Cases (40 minutes)
Each student should interpret at least 5 X-rays showing osteomyelitis in bones like the tibia or femur.
Activity: Case-Based Discussion (60 minutes)
Discuss real patient cases diagnosed with osteomyelitis and treatment approaches.
Activity 1:Introduction (10 minutes)
Discuss normal spinal alignment and common abnormalities (e.g., scoliosis, spondylolisthesis, herniated discs).
Activity 2: Interpretation Practice with Real Cases (40 minutes)
Each student should interpret at least 5 spinal X-rays showing conditions like scoliosis, fractures, or disc issues.

Experiential-Learning 26.2 : Performing and/or interpretation of findings of Ultrasonogram Ultrasonography (USG), Doppler USG, Echocardiogram (ECG), Intravenous Ultrasound (IVUS), Endoanal Ultrasound, Liver Elastography, Trans Vaginal Sonography for ovulation studies

Total learning hours 4 hours
Learners will gain practical experience in performing and interpreting different types of ultrasound (USG, Doppler, Echocardiogram, IVUS, Endoanal USG, Liver Elastography, Trans Vaginal Sonography) and understand their clinical applications.
Activity: Demonstration (1 hour)
Activity 1: Introduction and Theoretical Overview (15 minutes)
Introduction to ultrasound techniques and their clinical relevance.
Theoretical Review of Ultrasound Types (45 minutes)
Quick review of USG, Doppler, Echocardiogram, IVUS, Endoanal US, Liver Elastography, and Trans Vaginal US.
Common conditions diagnosed using each technique.
Activity: Case Diagnosis (1 hour)
Activity 1: Case Study & Imaging Interpretation (30 minutes)
Presentation of Real Case Scenarios if available or else time may be adjusted in interpretation part

Show case studies for each ultrasound type, emphasizing key findings.
Activity 2: Group Work: Interpretation of Ultrasound Findings (30 minutes)
Learners analyze case images, discuss diagnoses, and identify key findings from the ultrasound scans.
Activity: Kinaesthetic Learning (1 hour)
Activity 1: Introduction to Equipment and Techniques (10 minutes)
Brief demo of ultrasound machines and probe handling.
Activity 2: Learner Practice (50 minutes)
Station-based practice on USG, Doppler USG, Echocardiogram, Endoanal US, Liver Elastography, and Trans Vaginal US.
Note: Any available techniques may be practiced or else video of the same may be shown to students.
Activity : Discussion (1 hour)
Group Case Presentations (45 minutes)
Learners present their findings of USG, Doppler, Echocardiogram, IVUS, Endoanal USG, Liver Elastography, Trans Vaginal Sonography findings, discuss clinical relevance, and diagnose based on imaging.
Instructor Feedback & Wrap-Up (15 minutes)
Instructor reviews key findings, provides feedback, and clarifies common mistakes.
Key Learning Points:
Hands-on practice in performing and interpreting ultrasound imaging.
Real-world case scenarios for diagnostic application.
Clinical decision-making based on ultrasound findings.
Assessment should be made through direct observation of procedural skills.

Experiential-Learning 26.3 : Hand on training in Identification and Interpretation of CT Scan findings.

Duration: 6 hours
Reports of real cases, case scenarios, or images sourced from reliable and authoritative sources may be used to enhance the learning experience. Each learner will analyze several CT scans, documenting their findings. Station based assessment as well as assessment during OPD / IPD may also be done (Direct Observation of Procedural Skills). Each student should observe and interpret at least five conditions.
Activity: Kinesthetic Learning (2 hours)
Activity1: Introduction to CT Imaging (30 minutes)
Objective: Provide foundational knowledge on CT imaging and the types of planes (axial, sagittal, coronal).
Activities:
Brief lecture on CT principles, anatomical planes, and basic structures visible on CT.
Outcome: Learners will understand the basic principles of CT imaging and how to interpret images from different planes.

Activity 2: Orientation to Normal Anatomy (30 minutes)
Objective: Teach learners to identify normal anatomical structures across CT planes.
Activity 3: Identifying Fractures (1 hour)
Objective: Teach learners to identify bone fractures in CT scans.
Activities:
Present CT images of different fractures (e.g., femur, tibia, humerus).
Explain fracture types: comminuted, displaced, stress fractures.
Outcome: Learners will identify at least one fracture in a CT image and document the type and location.
Assessment: Learners will analyze 2-3 CT scans and identify fractures.
Activity: Case Diagnosis (2 hour 30 minutes)
Activity 1: Interpreting Cerebral Pathologies (60 minutes)
Objective: Identify cerebral hemorrhage, infarcts, and subarachnoid hemorrhage.
Activities:
Show CT scans of hemorrhage (e.g., intracerebral, subdural) and infarct (e.g., hypodense areas in brain).
Discuss radiographic appearance: blood (hyperdense in hemorrhage, hypodense in infarcts).
Outcome: Learners will identify at least one cerebral hemorrhage or infarct on CT images.
Assessment: Learners will interpret 2-3 CT scans of cerebral pathologies.
Activity 2: Abdominal and Pelvic Pathology (45 minutes)
Objective: Identify pathologies in abdominal organs and pelvis (liver, kidney, tumors).
Activities:
Present CT images of liver pathologies (e.g., cirrhosis, tumors), kidney (e.g., cysts, tumors).
Learners practice identifying abnormalities in abdominal organs.
Outcome: Learners will identify at least one organ pathology (e.g., liver mass, kidney cyst).
Assessment: Learners will analyze 2-3 CT scans and identify organ pathology.
Activity 3: Interpretation of Bone Tumors and Soft Tissue Pathology (45 minutes)
Objective: Teach learners to identify bone tumors and soft tissue masses on CT.
Activities:
Present CT images showing bone tumors (e.g., osteosarcoma) and soft tissue tumors (e.g., lipomas, fibromas).
Learners practice identifying bone and soft tissue pathologies.
Outcome: Learners will identify at least one bone tumor or soft tissue mass on CT images.
Assessment: Learners will interpret 1-2 CT scans with bone tumors or soft tissue pathologies.
Activity: Case Based Learning (1 hour 30 minutes)

Activity 1: Review and Case-Based Learning (60 minutes)
Objective: Consolidate learning through case review and application of knowledge.
Activities:
Present a mixed set of CT cases (fractures, hemorrhages, tumors, organ pathology).
Learners work in small groups to identify conditions on CT scans, document findings, and discuss diagnoses.
Outcome: Each learner will be able to identify and interpret at least 5 different conditions across different planes.
Assessment: Learners present their interpretations and discuss the reasoning behind their diagnoses.
Activity 8: Final Assessment and Feedback (30 minutes)
Objective: Evaluate learners' interpretation skills and provide feedback.
Activities:
Provide learners with a final set of 5-6 CT images showing different conditions (fractures, hemorrhages, tumors, organ pathologies).
Learners identify and document findings independently.
Outcome: Learners should be able to interpret at least 5 different conditions from the provided CT images.
Assessment: Instructor reviews the interpretations and provides feedback, ensuring learners correctly identify and understand the pathologies.
Key Learning Points:
Interpret CT Scans: Learners will identify at least 5 different conditions (fractures, hemorrhages, tumors, and organ pathologies).
Different Planes: Learners will practice interpreting CT images from axial, sagittal, and coronal planes.
Documentation & Discussion: Learners will document and discuss their findings with the instructor, refining their diagnostic skills

Experiential-Learning 26.4 : Hands on training in Interpretation and radiodiagnosis of MRI findings

Duration of activity 4 hours
Activity: Demonstration (2 hours)
Activity 1: Introduction and Overview (30 minutes)
Introduction to MRI Imaging (10 minutes)
Brief lecture on the basics of MRI imaging, the different types of sequences (T1, T2, FLAIR), and common conditions visualized in MRI (e.g., tumors, fractures, inflammation).
Emphasize the importance of independent image identification and decision-making in clinical practice.
Objective of the Session (5 minutes)
Highlight that the focus will be on practicing independent image identification, with support from radiologists for feedback and clarification.
Overview of Assessment Criteria (15 minutes)
Explain that students will be assessed on their ability to independently identify MRI images, provide accurate diagnoses, and justify their reasoning.
Provide clarity on how the session will include both group discussions and individual assessments.

Activity 2: Independent Image Identification (1 hour 30 minutes)
Image Review and Exploration (15 minutes)
Provide students with an initial set of MRI images (from an authentic source like Radiopaedia) without providing any accompanying clinical information.
Ask students to independently identify structures, abnormalities, or pathologies in the images.
Independent Image Identification (1 hour)
Students work individually to review and annotate a diverse set of MRI images (different anatomical regions and pathologies).
Documentation and Reflection (15 minutes)
Students record their thought processes, questions, and challenges they encountered while analyzing the images. This helps to reinforce learning and prepares them for the feedback session.
Activity: Discussion (1 hour)
Activity 1: Group Discussion and Feedback (1 hour)
Peer Discussion (30 minutes)
Students form small groups (3–4 people) to compare their findings. Each student presents one MRI image they analyzed, explains their reasoning, and shares their diagnosis.
Peers and a radiologist provide feedback, suggesting improvements or highlighting common mistakes.
Group discussion encourages deeper understanding and alternative perspectives on image interpretation.
Radiologist Feedback (30 minutes)
A radiologist provides detailed feedback on the group's discussions, clarifying any misconceptions or difficulties.
Activity: Case Diagnosis (1 hour)
Activity 1: Individual Assessment and Reinforcement
Independent Assessment (40 minutes)
Students are given another set of MRI images (similar to those reviewed earlier but with new cases).
Students must:
Identify each image, annotate key findings.
Provide a diagnosis and clinical reasoning for each case, in writing.
This independent assessment will test their ability to make accurate interpretations without immediate peer or radiologist input.
Review and Final Feedback (20 minutes)
Radiologist reviews a few selected student assessments, providing individual or group feedback.
Common errors are discussed, and additional clarifications are given to enhance understanding.
Students reflect on their progress and receive guidance on further improvement in their independent identification skills.
Assessment Methods: Direct Observation of Procedural Skills

Experiential-Learning 26.5 : Interpret the nucliide scanning images / report

Duration of activity 4 hours
Students should be able interpret the reports at least for 5 different conditions and correlate clinically. In case of non-availability of images and report reports may be taken from reliable web sources
Activity : Case Diagnosis (60 minutes)
Activity 1: Basics of Nuclear Imaging
Key Terminology in Imaging Reports (20 minutes)
Understanding Report Components (10 minutes)
Clinical History: Patient’s symptoms and risk factors (e.g., chest pain, cancer history).
Imaging Findings: Descriptions of perfusion, metabolism, or abnormal findings.
Clinical Interpretation: Link imaging findings with diagnosis (ischemia, tumor, etc.).
Activity 2: Report Structure and Basic Interpretation (20 minutes)
Sample Report Interpretation
Example: “Mild reversible ischemia in the anterior wall—likely from LAD stenosis.”
Interpretation: Mild ischemia on stress scan, suggests possible coronary artery disease, need for further tests.
Clinical Correlation (10 minutes)
Apply clinical history to scans.
Example: A patient with a history of hypertension and chest pain shows a reversible defect in the anterior wall—likely LAD stenosis.
Activity: Kinaesthetic Learning (45 minutes)
Activity : Hands-on Image Interpretation
Image Review: PET/SPECT Myocardial Perfusion
Task: Examine sample PET/SPECT scans (e.g., myocardial perfusion).
Step-by-Step:
Identify regions of hypoperfusion (cold spots).
Compare stress vs. rest images.
Classify defects (reversible vs. fixed).
Determine potential affected coronary artery.
Advanced Clinical Correlation
Apply clinical history to scans.
Example: A patient with hypertension and chest pain shows reversible defects in the anterior wall—suggests possible LAD stenosis.
Activity: Discussion (20 minutes)
Activity : Advanced Interpretation and Clinical Decision Making (45 minutes)
Advanced Report Interpretation

Case Review: Complex case studies with combined findings (e.g., oncology or neurology cases).
Interpretation Focus: Look for abnormal tracer uptake (e.g., tumor or metabolic activity).
Discussion: Identify likely diagnoses (e.g., cancer, ischemic heart disease, neurodegenerative conditions).
Final Discussion and Q&A (10 minutes)
Recap steps to interpret reports: abnormal findings, cold/hot spots, linking with clinical history.
Q&A: Address common challenges in interpreting nuclear scans.

Experiential-Learning 26.6 : Interpretation of Vascular imaging through hands on training

Duration of activity 2 hours
Students should be able to interpret reports of at least five different images
Hands-on Interpretation of Vascular Images
Image Review: Ultrasound
Activity: Case Diagnosis (90 minutes)
Activity 1: Identify normal vs. abnormal blood flow (color Doppler).
Activity 2: Assess for stenosis or occlusion (reduced flow in the vessel).
Activity3: Identify plaques or thrombus (visualized as areas of abnormal echogenicity).
Activity 4: Look for vessel wall irregularities (e.g., narrowing, dilation).
Activity 5: Identify aneurysms or arterial dissection (dilated vessels or blood between vessel layers).
Activity 6: Evaluate for evidence of occlusion or thrombosis (absence of contrast in the vessel).
Activity: problem Based Method (30 minutes)
Activity 7: Correlate symptoms (e.g., leg pain, dizziness, stroke) with imaging findings.

Modular Assessment

Assessment method	**Hour**
Instructions: Conduct a structured Modular assessment. The assessment will be for 50 marks. Keep a structured marking pattern. Use different assessment methods in each module for the semester. Keep a record of the structured pattern used for assessment. Calculate the Modular grade point as per Table 6 C. CHOOSE ANY OF THE BELOW ASSESSMENT FOR 50 MARKS 1.Introduction to Imaging Modalities (10 Marks) Formative Assessment Method: Quick Quiz / Interactive Poll	4

Conduct a short quiz at the beginning of the session to assess prior knowledge and give instant feedback on the different imaging modalities.
Question 1: List and briefly describe four common imaging modalities used in medical diagnosis. (4 Marks)
Question 2: Explain the basic principle behind how X-ray imaging works. (3 Marks)
Question 3: What is the primary difference between MRI and CT in terms of their imaging technology? (3 Marks)
2.X-ray and Computed Tomography (CT) (10 Marks)
Formative Assessment Method: Peer Review
Students interpret a sample X-ray or CT scan image and compare their findings with a peer. This method encourages group learning and critical analysis.
Question 1: Describe two advantages of using CT imaging over traditional X-rays. (5 Marks)
Question 2: In what clinical situations would an X-ray be preferred over a CT scan? Provide reasoning. (5 Marks)
3.Magnetic Resonance Imaging (MRI) and Ultrasonography (USG) (10 Marks)
Formative Assessment Method: Practical Demonstration
Students participate to practice identifying common MRI and USG images, and instructors provide feedback on their image interpretation and clinical correlations.
4.Nuclear Imaging (10 Marks)
Formative Assessment Method: Case Study Presentation
Question 1: Explain how nuclear imaging (e.g., PET scan) works and its role in cancer diagnosis. (5 Marks)
Question 2: What is one limitation of nuclear imaging in comparison to other imaging modalities? (5 Marks)
5.Clinical Applications and Interpretation (10 Marks)
Formative Assessment Method: Small Group Discussion
Or
Any practical in converted form can be taken for assessment. (25 marks)
and
Any experiential, such as portfolios / reflections / presentations can be taken as an assessment. (25 marks)

Semester No : 4

Module 27 : Instrumental Diagnosis

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

Define key concepts and terminology related to instrumental diagnosis, including types of instruments and their applications.

Demonstrate hands-on proficiency in using various diagnostic instruments, such as imaging devices, laboratory analyzers, or clinical assessment tools.
Describe and interpret diagnostic data from instruments to accurately identify patient conditions and potential diagnoses.
Integrate findings from instrumental diagnostics with clinical history and examination to form a comprehensive patient assessment.

M 27 Unit 1 Electrocardiogram, Holter monitoring, Coronary Angiogram, Central Venous Pressure and Arterial Pressure measurements

27.1.1.Electrocardiogram
27.1.2. Holter monitor
27.1.3. Coronary Angiogram
27.1.4. Central Venous Pressure
27.1.5. Arterial Pressure measurements

References: 75,76,77,78,79,80,81,82,83,89

3A	3B	3C	3D	3E	3F	3G
CO1,CO4,CO6 ,CO8	Discuss the physiological principles behind ECG recording and its significance in cardiac assessment.	2	Lecture	CC	Knows-how	D,DIS
CO1,CO4,CO6 ,CO8	Analyse and demonstrate standard ECG waveforms, identifying normal and abnormal rhythms and potential cardiac conditions. Describe the purpose and proper application of Holter monitoring in continuous cardiac assessment, Coronary angiogram, Central venous pressure, arterial pressure measurements.	4	Practical Training 27.1	PSY-GUD	Shows-how	D
CO1,CO4,CO6 ,CO8	Analyse and interpret standard ECG waveforms, coronary angiogram, central venous pressure, arterial pressure measurements reports to identifying normal and abnormal and potential cardiac conditions	4	Experiential-Learning 27. 1	PSY-SET	Shows-how	CBL,D

M 27 Unit 2 Spirometry – Pulmonary Function Test (PFT), Nitric Oxide breath test, Urea Breath Test, Bronchoscopy

27.2.1. Spirometry – Pulmonary Function Test (PFT)
27.2.2. Nitric Oxide breath test
27.2.3. Urea Breath Test
27.2.4. Bronchoscopy

References: 98

3A	3B	3C	3D	3E	3F	3G
CO1,CO4,CO6 ,CO8	Describe the principles and purpose of spirometry, pulmonary function tests, nitric oxide breath tests, urea breath tests, and bronchoscopy.	1	Lecture	CC	Does	L&PPT ,L
CO1,CO4,CO6 ,CO8	Demonstrate the differences between spirometry, PFTs, nitric oxide breath tests, urea breath tests, and bronchoscopy in terms of methodology, applications, and interpretation.	2	Practical Training 27.2	PSY-GUD	Does	DIS,D
CO1,CO4,CO6 ,CO8	Apply skills to interpret of reports of Spirometry- PFTs, Nitric oxide breath test, Urea breath test, Bronchoscopy	3	Experiential-Learning 27.2	PSY-MEC	Does	D,CBL,CD

M 27 Unit 3 Scopies and its types

27.3.1. Endoscopy
27.3.2. Rapid Urease Test
27.3.3. Gastroscopy; Colonoscopy
27.3.4. Endoscopic Retrograde cholangiopancreatography (ERCP)
27.3.5. Hysteroscopy Proctoscopy
27.3.6. Cystoscopy
27.3.7. Laparoscopy
27.3.8. Colposcopy
27.3.9. Arthroscopy

References: 92,93,95,96

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

CO1,CO4,CO6,CO8	Discuss the different types of scopies and their applications in medical diagnosis and treatment. Gain knowledge on the procedures, indications, and interpretation of results for endoscopy and its various types, rapid urease test for Helicobacter pylori detection, gastroscopy for examining the stomach and esophagus, colonoscopy for evaluating the colon and rectum, endoscopic retrograde cholangiopancreatography (ERCP) for biliary and pancreatic duct analysis, hysteroscopy for viewing the inside of the uterus, proctoscopy for inspecting the rectum, cystoscopy for bladder examination, laparoscopy for minimally invasive abdominal surgery, colposcopy for cervical examination, and arthroscopy for joint diagnosis and treatment. This objective aims to provide a comprehensive understanding of each procedure's purpose and interpretation.	1	Lecture	CC	Knows-how	PER,DIS
CO1,CO4,CO6,CO8	Demonstrate how to interpret reports of Endoscopy, Rapid Urease test, Colonoscopy, Cholangiopancreatography, Htsteroscopy, Proctoscopy, Cystoscopy, Laproscopy, Colposcopy, Arthroscopy	2	Practical Training 27.3	PSY-GUD	Shows-how	PER,D
CO1,CO4,CO6,CO8	Apply skills to interpret reports of Endoscopy, Rapid Urease test, Colonoscopy, Cholangiopancreatography, Hysteroscopy, Proctoscopy, Cystoscopy, Laprroscopy, Colposcopy, Arthroscopy	3	Experiential-Learning 27.3	PSY-MEC	Does	CBL,PER

M 27 Unit 4 Electroencephalogram(EEG),Polysomnogram, Electromyogram (EMG),and Transcranial magnetic stimulation(TMS)

27.4.1. Electroencephalogram (EEG)
27.4.2. Polysomnogram
27.4.3. Electromyogram (EMG)
27.4.4. Transcranial magnetic stimulation (TMS)

References: 49,63,66,71,74,100

3A	3B	3C	3D	3E	3F	3G
CO1,CO4,CO6,CO8	Discuss and explain the basic principles of Electroencephalogram (EEG), Polysomnogram (PSG), Electromyogram (EMG), and Transcranial Magnetic Stimulation (TMS), and identify the conditions they help diagnose, such as epilepsy,	1	Lecture	CC	Knows-how	L&GD,DIS

	sleep apnea, muscular dystrophy, depression, and stroke recovery.					
CO1,CO4,CO6 ,CO8	Demonstrate how to interpret reports of Electroencephalogram (EEG), Polysomnogram, Electromyogram (EMG), Transcranial magnetic stimulation (TMS) and clinically correlate.	2	Practical Training 27.4	PSY-GUD	Shows-how	LRI,CBL, CD
CO1,CO4,CO6 ,CO8	Apply knowledge and skills to interpret reports of Electroencephalogram (EEG), Polysomnography (PSG), Electromyogram (EMG), and Transcranial Magnetic Stimulation (TMS), and correlate the findings with clinical conditions for accurate diagnosis and treatment planning.	3	Experiential-Learning 27. 4	PSY-SET	Does	LRI,CD

M 27 Unit 5 Slit lamp, Ophthalmoscope,Tonometry,Electroretinogram (ERG), Optometer and Refractometer

27.5.1. Slit lamp
27.5.2. Ophthalmoscope
27.5.3. Tonometry
27.5.4. Electroretinogram (ERG),
27.5.5. Optometer and Refractometer

References: 46,97

3A	3B	3C	3D	3E	3F	3G
CO1,CO4,CO6 ,CO8	Discuss basic principles of slit lamp, ophthalmoscope, tonometry, electroretinogram, optometer and refractometer and their applications in medical diagnosis and treatment. Gain knowledge on the procedures, indications, and interpretation of results.	1	Lecture	CC	Knows-how	CBL,DIS
CO1,CO4,CO6 ,CO8	Demonstrate how to interpret reports of ophthalmoscope, tonometry, electroretinogram, optometer and refractometer and their applications in medical diagnosis and treatment. Gain knowledge on the procedures, indications.	2	Practical Training 27.5	PSY-GUD	Shows-how	D
CO1,CO4,CO6 ,CO8	Apply skills to interpret reports from ophthalmoscope, tonometry, electroretinogram, optometer, and refractometer, and clinically correlate the findings to diagnose and manage ocular conditions effectively.	3	Experiential-Learning 27. 5	PSY-MEC	Does	DIS,CBL, D,LRI

M 27 Unit 6 Anal Manometry

27.6. Anal Manometry

References: 8

3A	3B	3C	3D	3E	3F	3G
CO6,CO8	Discuss Anal mannometry and its applications in medical diagnosis and treatment. Gain knowledge on the procedures, indications, and interpretation of results	1	Lecture	CC	Knows-how	DIS,L_VC
CO1,CO4,CO6,CO8	Demonstrate how to perform and interpret results of Anal mannometry and correlate clinically	2	Practical Training 27.6	PSY-GUD	Shows-how	PER,D,CD
CO1,CO4,CO6,CO8	Apply skills to interpret the results of anal manometry by understanding key parameters, and clinically correlate these findings with gastrointestinal and anorectal conditions for accurate diagnosis and treatment planning.	2	Experiential-Learning 27.6	PSY-SET	Does	DIS,CBL

M 27 Unit 7 Nerve conduction study, Biothesiometry

27.7. Nerve conduction study : Biothesiometry

References: 49,63,66,71,74

3A	3B	3C	3D	3E	3F	3G
CO1,CO4,CO6,CO8	Discuss Nerve conduction study and Biothesiometry and their applications in medical diagnosis and treatment. Gain knowledge on the procedures, indications, and interpretation of results	1	Lecture	CC	Knows-how	BS
CO1,CO4,CO6,CO8	Demonstrate how to perform and interpret results of Nerve conduction study and biothesiometry.	2	Practical Training 27.7	PSY-GUD	Shows-how	D,CBL,CD
CO1,CO4,CO6	Apply skills to interpret the results of Nerve Conduction Study (NCS) and	3	Experiential-	PSY-	Does	CBL

,CO8	Biothesiometry by understanding key parameters such as latency, amplitude, conduction velocity, and vibration thresholds, and correlate these findings with clinical conditions like diabetic neuropathy, Guillain-Barré syndrome, and peripheral neuropathies.		Learning 27.7	MEC		

M 27 Unit 8 Cystometrogram

27.8. Cystometrogram

References: 46,97

3A	3B	3C	3D	3E	3F	3G
CO1,CO4,CO6,CO8	Discuss cystometrogram and its applications in medical diagnosis and treatment. Gain knowledge on the procedures, indications, and interpretation of results	1	Lecture	CC	Knows-how	DIS,Mnt
CO1,CO4,CO6,CO8	Demonstrate how to interpret results of the Cystometrogram and correlate clinically	2	Practical Training 27.8	PSY-GUD	Shows-how	D
CO1,CO4,CO6,CO8	Apply skills to interpret the results of cystometrogram by understanding key parameters and correlate these findings with clinical conditions.	3	Experiential-Learning 27.8	PSY-SET	Does	CD,PER

M 27 Unit 9 Audiometry

27.9. Audiometry

References: 89,99

3A	3B	3C	3D	3E	3F	3G
CO1,CO4,CO6,CO8	Discuss audiometry and their applications in medical diagnosis and treatment. Gain knowledge on the procedures, indications, and interpretation of results	1	Lecture	CC	Knows-how	L&PPT,DIS
CO1,CO4,CO6,CO8	Demonstrate how to perform and/or interpret results of Audiometry and correlate clinically	2	Practical Training 27.9	PSY-GUD	Shows-how	PER,CBL,CD

CO1,CO4,CO6 ,CO8	Apply skills to interpret the results of Audiometry by understanding key parameters and correlate these findings with clinical conditions.	2	Experiential-Learning 27.9	PSY-SET	Does	CBL

Practical Training Activity

Practical Training 27.1 : Demonstration and/or interpretation of ECG,Holter monitoring in continuous cardiac assessment, Coronary angiogram, Central venous pressure, arterial pressure measurements.

Duration of activity 4 hours
Activity: Demonstration (4 hour)
Activity 1: Introduction and Overview (30 minutes)
Objective: Introduce the students or participants to the topics.
Content: Provide a brief explanation of the following:
The role and significance of ECG in cardiac assessment.
How Holter monitoring provides continuous monitoring for cardiac events.
Overview of coronary angiogram, CVP, and arterial pressure measurements in clinical practice.
Highlight how these diagnostic techniques help in the management of cardiac patients.
Activity 2: Basic ECG Principles (30 minutes)
Objective: Familiarize participants with ECG equipment and basic waveform interpretation.
Procedure:
Introduce ECG electrodes and how they are placed on the body (chest, limbs).
Connect the ECG machine, explaining the function of each electrode.
Show the basic components of an ECG waveform (P wave, QRS complex, T wave).
Demonstrate how to measure heart rate, rhythm, and intervals (PR, QRS, QT).
Activity 3: Hands-on ECG Recording and Interpretation (30 minutes)
Objective: Allow participants to record and interpret a basic ECG.
Procedure:
Participants apply electrodes to a volunteer or mannequin.
Record an ECG strip and ask participants to identify key features such as heart rate, rhythm, and any abnormalities.
Discuss various arrhythmias, including atrial fibrillation, ventricular tachycardia, and normal sinus rhythm.
Activity 4: Introduction to Holter Monitoring (30 minutes)
Objective: Explain the concept and purpose of Holter monitoring.

Procedure: Show a Holter monitor device and demonstrate how it is used for continuous ECG recording over 24-48 hours.
Discuss common indications for Holter monitoring, such as unexplained syncope, arrhythmias, or chest pain.
Discuss the process of attaching the monitor, the duration of monitoring, and data analysis.
Activity 5: Demonstration of Holter Monitoring (30 minutes)
Objective: Provide a practical demonstration of Holter monitor application.
Procedure:
Select a volunteer and demonstrate how to apply the Holter monitor's electrodes.
Explain the different settings on the device and how it records continuous data.
Discuss what to expect after the monitoring period and the process of data download and interpretation.
Activity 6: Introduction to Coronary Angiogram (30 minutes)
Objective: Explain the process and clinical indications for coronary angiography.
Procedure:
Show a diagram or video of coronary angiogram to explain the technique.
Discuss the procedure step-by-step (insertion of catheter, contrast injection, X-ray imaging).
Explain how coronary artery blockages are assessed using angiography and its role in diagnosing CAD (coronary artery disease).
Activity 7: Demonstration of Coronary Angiogram (30minutes)
Objective: Provide a basic demonstration of coronary angiogram using video or simulated imaging.
Procedure:
Use a coronary angiogram video or simulation to show the process of contrast injection and image acquisition.
Discuss the identification of stenosis or blockages.
Explain how results are interpreted to determine treatment options (angioplasty, stent placement, bypass surgery).
Activity 8: Introduction to Central Venous Pressure (CVP) (10 minutes)
Objective: Explain CVP measurement and its clinical significance.
Procedure:
Introduce the concept of central venous pressure, its role in assessing fluid status, heart function, and venous return.
Demonstrate the setup of a central venous catheter (CVC) and how it is connected to a pressure transducer.
Explain how to read the CVP waveform, and interpret normal vs. elevated vs. low CVP.
Activity 9: CVP Measurement and Interpretation (10 minutes)
Objective: Allow participants to practice CVP measurement and interpretation.
Procedure:
Demonstrate the correct technique for inserting a central venous catheter (using a mannequin or simulation).
Show how to connect the catheter to a pressure monitor and interpret the waveform.

Discuss the clinical relevance of different CVP values, including fluid overload, hypovolemia, and right heart failure.
Activity 10: Arterial Pressure Measurement and Final Review (10 minutes)
Objective: Demonstrate arterial pressure measurement techniques and provide a final review.
Procedure:
Demonstrate both invasive (using arterial line) and non-invasive (using a sphygmomanometer) techniques for measuring blood pressure.
Discuss the importance of blood pressure monitoring in diagnosing hypertension, hypotension, and shock.
Allow participants to practice using both methods to measure arterial pressure on each other or on a mannequin.
Conclude with a review of all the techniques covered and open the floor for questions.

Practical Training 27.2 : Interpretation and/or demonstration of spirometry, PFTs, nitric oxide breath tests, urea breath tests, and bronchoscopy reports

Duration of activity: 2 hours
Activity: Demonstration (1 hour 15 minutes)
Activity 1: Introduction (15 minutes)
Explain the purpose of each test using a brief PowerPoint presentation or whiteboard.
Show short video clips (2–3 min) explaining each test's methodology.
Display equipment (spirometer, FeNO analyzer, bronchoscope, etc.) and explain its function.
Activity 2: Spirometry (10 minutes)
Show a video or live demonstration of a spirometry test.
Demonstrate proper technique: deep inhalation, forceful exhalation.
Students perform the test on a peer under supervision.
Interpret results:
FEV1/FVC <70% ? Obstructive disease (COPD, asthma).
Low FVC, normal ratio ? Restrictive disease (fibrosis).
Post-bronchodilator response ? Asthma vs. fixed obstruction.
Activity 3: Pulmonary Function Tests (PFTs) (10 minutes)
Show a video/simulator explaining lung volumes & DLCO test.
Demonstrate plethysmography or nitrogen washout (if available).
Students analyze real patient data if no PFT equipment is available.
Interpret results:
Low TLC, VC ? Restrictive lung disease.
Low DLCO ? Emphysema or interstitial lung disease.

High residual volume ? COPD air trapping.
Activity 4: FeNO Breath Test (5 minutes)
Show a video clip of the FeNO test.
Demonstrate exhalation technique into the analyzer.
Students practice test (if device available).
Interpret results:
FeNO >50 ppb ? Eosinophilic airway inflammation (asthma).
FeNO <25 ppb ? Normal or non-inflammatory airway disease.
Activity 5: Urea Breath Test (15 minutes)
Show a video or live demonstration of the labeled urea test.
Explain the breath sample collection process.
Students discuss case-based results instead of real testing.
Interpret results:
High labeled CO2 ? Active H. pylori infection.
Negative test ? No infection or successful eradication.
Activity 6: Bronchoscopy (20 minutes)
Show a simulation or video of bronchoscopy insertion.
Demonstrate handling the bronchoscope (on a mannequin if available).
Students analyze real bronchoscopy images of tumors, infections, inflammation.
Interpret findings:
Tumor, bleeding, obstruction ? Malignancy, foreign body.
Mucosal inflammation ? Chronic bronchitis.
Bronchial lavage results ? Pathogen identification.
Activity: Discussion (45 minutes)
Provide patient case scenarios with test results.
Students work in small groups to diagnose cases.
Discuss why each test was chosen and how results guide treatment.
Teacher provides feedback on reasoning and interpretations.
Summarize key findings and common interpretation errors.
Encourage student questions on clinical applications.

Practical Training 27.3 : Interpretation of Endoscopy, Rapid Urease test, Colonoscopy, Cholangiopancreatography, Hysteroscopy, Proctoscopy, Cystoscopy, Laproscopy,

Colposcopy, Arthroscopy
Duration of activity 2 hour In case of available scopies direct performance of procedure should be done, for others report interpretation is preferred. Activity: Demonstration (15 minutes) Introduction & Overview (15 Minutes) Briefly introduce endoscopic procedures and their diagnostic roles. Highlight the importance of correct interpretation in each procedure. Activity: Kinaesthetic Learning (1 hour 45 minutes) Endoscopy (20 min) Review images of endoscopic procedures (gastroscopy, colonoscopy). Interpret common findings (e.g., ulcers, tumors, inflammation). Rapid Urease Test (10 min) Show results of the urease test. Interpret positive (color change) vs negative results. Colonoscopy (20 min) Examine colonoscopy images for polyps, diverticula, or cancer. Discuss findings and next steps. Interpretation of Advanced Procedures Cholangiopancreatography (5 min) Present images showing bile duct stones or strictures. Interpretation of findings. Hysteroscopy (10 min) Display images of the uterine cavity. Identify abnormal findings like fibroids, polyps. Proctoscopy (10 min) Demonstrate the procedure, look for signs of hemorrhoids, lesions, or other abnormalities. Interpretation of Other Scopies Cystoscopy (10 min) Review images of the bladder. Identify findings like tumors, stones, or cysts. Laparoscopy (5 min)

Analyze laparoscopic images from abdominal procedures.
Recognize issues like adhesions or organ pathology.
Colposcopy (5 min)
Examine colposcopy images of the cervix.
Look for signs of HPV-related changes or precancerous lesions.
Arthroscopy & Wrap-Up 5 minutes
Arthroscopy (5 min)
Review joint images.
Identify tears, damage, or inflammation in joints.
Final Recap & Q&A (5 min)
Summarize key interpretation points for all procedures.
Address any questions or clarifications.

Practical Training 27.4 : Interpretation of reports of Electroencephalogram (EEG), Polysomnogram, Electromyogram (EMG), Transcranial magnetic stimulation (TMS)

Duration of activity: 1 hour
Demonstrate how to interpret reports and correlate clinically. This may be done for real cases in OPD or reports alone may be collected and demonstrated during practical hours
Activity: Demonstration (60 minutes)
Activity 1: Introduction & Overview (20 minutes)
Brief introduction to each diagnostic tool (EEG, PSG, EMG, TMS) and the importance of interpreting their reports.
Activity 2: EEG Report Interpretation (30 minutes)
Introduction to EEG principles and types of brain waves.
Review sample EEG report (focus on identifying key waveforms).
Discussion of abnormalities (spikes, slowing) and clinical correlation.
Activity 3: Polysomnogram (PSG) Report Interpretation (30 minutes)
Introduction to PSG principles (sleep stages, respiratory events).
Review sample PSG report (identifying sleep stages and apnea events).
Discussion of sleep disorders (apnea, RLS, narcolepsy) and interpretation.
Activity 4: EMG Report Interpretation (20 minutes)
Introduction to EMG principles (muscle activity and nerve conduction).
Review sample EMG report (identifying muscle and nerve abnormalities).
Discuss conditions diagnosed (muscular dystrophy, neuropathy, etc.).

Activity 5: TMS Report Interpretation (20 minutes)
Introduction to TMS principles (motor evoked potentials, excitability).
Review sample TMS report (assess MEP responses and thresholds).
Discuss conditions treated/diagnosed (depression, stroke recovery, chronic pain).

Practical Training 27.5 : Interpretation of ophthalmoscope, tonometry, electroretinogram, optometer and refractometer reports and their clinical correlation

Duration of activity 2 hour
Students should be demonstrated how to interpret findings. If facility is available, students may be recruited in nearby eye hospitals for getting practiced. (roughly each step may take 12 minutes)
Activity: Demonstration (120 minutes)
Activity1: Ophthalmoscope: Examine optic disc
Look for swelling, cupping, or pallor (signs of glaucoma, optic neuropathy).
Activity 2: Ophthalmoscope: Assess retinal vessels
Check for narrowing, hemorrhages (indicative of diabetic retinopathy or hypertension).
Activity 3: Ophthalmoscope: Inspect macula
Look for lesions (macular degeneration).
Activity 4: Tonometry: Review IOP value
Normal: 10-21 mmHg; Elevated: Suggests glaucoma.
Activity 5: Tonometry: Identify measurement method
Confirm if Goldman applanation or non-contact tonometry was used.
Activity 6: Electroretinogram (ERG): Assess waveforms
Check for normal a-wave and b-wave; abnormalities suggest retinal disorders.
Activity 7: Electroretinogram (ERG): Identify abnormalities
Missing or delayed waves point to retinitis pigmentosa or other retinal conditions.
Activity 8: Optometer: Review visual acuity
Normal is 20/20; reduced indicates possible refractive errors (myopia, hyperopia).
Activity 9: Refractometer: Check refractive error
erasure myopia (negative diopters), hyperopia (positive diopters), or astigmatism.
Activity 10: Refractometer: Match findings to symptoms
Correlate refractive error with blurred vision or eye strain for corrective lens recommendations.

Practical Training 27.6 : Demonstration and interpretation of Anal mannometry

Duration of activity 2 hours
Students should be taught how to interpret reports. If instruments are available demonstration should be done.
Activity: Demonstration (120 minutes)
Activity 1: Introduction: 10 minutes
Activity 2: Anal manometry Report Interpretation: 50 minutes
Activity 3: Final Correlation and Diagnosis: 30 minutes
Activity 4: Q&A/Recap: 30 minutes

Practical Training 27.7 : Interpretation of Nerve conduction study and biothesiometry reports

Duration of activity 2 hours
Students should be taught how to interpret reports. If instruments are available demonstration should be done.
Step 1: Introduction: 10 minutes
Step 2: NCS Report Interpretation: 50 minutes
Step 3: Biothesiometry Report Interpretation: 30 minutes
Step 4: Final Correlation and Diagnosis: 20 minutes
Step 5: Q&A/Recap: 10 minutes

Practical Training 27.8 : Interpretation of cystometrogram reports

Duration of activity 2 hours
Students should be taught how to interpret reports. If instruments are available, a demonstration should be done
Activity: Demonstration (120 minutes)
Activity 1: Introduction: 10 minutes
Activity 2: Cystometrogram Report Interpretation: 50 minutes
Activity 3: Final Correlation and Diagnosis: 40 minutes
Activity 4: Q&A/Recap: 20 minutes

Practical Training 27.9 : Interpretation of Audiometry reports

Duration of activity 2 hours
Students should be taught how to interpret reports. If instruments are available demonstration should be done.
Activity 1: Introduction: 10 minutes
Activity 2: Audiometry Report Interpretation: 50 minutes

Activity 3: Final Correlation and Diagnosis: 30 minutes
Activity 4: Q&A/Recap: 30 minutes

Experiential learning Activity

Experiential-Learning 27.1 : Hands on training to interpret ECG waveforms, coronary angiogram, central venous pressure, arterial pressure measurements

Duration of activity 4 hours
Real cases or case scenarios may be used, in case of absence of facility videos may be presented and interpretation may be done. Each student should be able to interpret atleast five conditions under each subheading.
Activity: Case Based Diagnosis (1 hour)
Activity 1: Introduction to ECG: Overview of ECG leads, electrodes, and basic waveform components (P wave, QRS complex, T wave). (5 minutes)
Activity 2: Hands-on ECG Setup: Participants place ECG electrodes and record a strip. (40 minutes)
Activity 3: ECG Rhythm Interpretation: Practice identifying normal sinus rhythm and common arrhythmias.(15 minutes)
Pathological Conditions: Interpret 5 conditions: preferably the following
Atrial Fibrillation (AF)
Ventricular Tachycardia (VT)
ST-Elevation Myocardial Infarction (STEMI)
First-Degree AV Block
Premature Ventricular Contractions (PVCs)
Heart Rate Calculation: Hands-on practice with heart rate measurement from ECG strips.
Clinical Application: Students interpret ECGs from case scenarios.
Activity: Demonstration (3 hours)
Activity 1: Introduction to Coronary Angiography: Overview of procedure and coronary arteries. (10 minutes)
Activity 2: Video Demonstration: Show angiogram video of contrast injection and vessel imaging.(15 minutes)
Activity 3: Hands-on Image Interpretation: Participants review angiogram images and identify: (35 minutes)
Normal Coronary Arteries
Single Vessel Disease
Double Vessel Disease
Triple Vessel Disease
Total Occlusion
Clinical Application: Interpret angiograms with varying degrees of stenosis and blockage.

Activity 4: Introduction to CVP: Overview of CVP and its significance. (10 minutes)
Activity 5: CVP Waveform Interpretation: Teach normal and abnormal waveforms (a, c, v waves). (40 minutes)
CVP Interpretation: Identify 5 conditions:
Normal CVP
Elevated CVP (e.g., Right Heart Failure)
Low CVP (e.g., Hypovolemia)
CVP in Shock States
CVP in Pulmonary Embolism
Clinical Application: Students interpret CVP data and correlate with clinical scenarios.
Activity 6: Introduction to Arterial Pressure: Overview of invasive vs. non-invasive blood pressure measurement. (5 minutes)
Activity 7: Non-Invasive Blood Pressure Measurement: Hands-on with sphygmomanometer to measure BP. (20 minutes)
Activity 8: Invasive Arterial Line Setup: Demonstrate the setup for arterial pressure measurement using a simulator/mannequin. (20 minutes)
Activity 9: Waveform Interpretation: Teach interpretation of systolic, diastolic, and dicrotic notch. (10 minutes)
Identify 5 Conditions from Pressure Readings: (5 minutes)
Hypertension
Hypotension (e.g., Shock)
Pulsus Paradoxus (e.g., Pericardial Tamponade)
Elevated Pressure in Left Ventricular Failure
Low Pressure in Hemorrhagic Shock
Clinical Application: Students interpret arterial pressure waveforms and correlate with clinical cases.

Experiential-Learning 27.2 : Hands on training in interpretation of reports of Spirometry - PFTs, Nitric oxide breath test, Urea breath test, Bronchoscopy

Duration of the activity (3 Hours)
Activity: Kinaesthetic Learning (1 hour)
Activity 1: Introduction to Spirometry and PFT (15 min)
Overview of Spirometry: Purpose, parameters (FVC, FEV1, FEV1/FVC ratio)
Introduction to PFT: Lung volumes, capacities, and airflow resistance
Activity 2: Demonstration (10 min)
Correct technique for performing spirometry
Interpretation of the flow-volume curve and identifying abnormal patterns
Activity 3: Practical Session (30 min)
Trainees perform spirometry tests on each other

Analyze and interpret the results (Normal vs Obstructive vs Restrictive patterns)
Compare different cases with abnormal results
Activity 4: Review (5 min)
Discuss key findings from the practical session
Activity: Case Based Learning (35 minutes)
Activity 1: Introduction to Nitric Oxide Breath Test (10 min)
Purpose: Assessing airway inflammation in asthma and COPD
Key interpretation: Elevated fractional exhaled nitric oxide (FeNO) levels
Activity 2: Demonstration (5 min)
Procedure for conducting the nitric oxide test
Expected normal and abnormal results
Activity 3: Practical Session (20 min)
Perform Nitric Oxide Breath Test on volunteers
Interpret results: Elevated FeNO levels, significance in inflammatory diseases
Activity: Demonstration (25 minutes)
Activity 1: Introduction to Urea Breath Test (10 min)
Purpose: Diagnosis of Helicobacter pylori infection
Interpretation: Positive test indicates active infection
Activity 2: Demonstration (5 min)
Show the procedure for Urea Breath Test
Activity 3: Practical Session (10 min)
Practice interpreting Urea Breath Test results from sample cases
Activity : Case Diagnosis (1 hour)
Activity 1: Introduction to Bronchoscopy (15 min)
Indications and types of bronchoscopies (Flexible vs Rigid)
Review of common findings: Infections, tumors, foreign bodies, inflammation
Activity 2: Bronchoscopy Procedure Demonstration (10 min)
Show endoscopic images/video
Discuss key signs to identify during the procedure
Activity 3: Practical Interpretation (20 min)
Examine real or sample bronchoscopic images
Identify normal vs abnormal findings

Activity 4: Case Studies & Discussion (10 min)
Review actual case studies and discuss the interpretation of bronchoscopic findings
Conclusion & Q&A (5 min)
Summarize key points and answer any questions from participants

Experiential-Learning 27.3 : Hands on training to interpret reports of different scopies

Duration of activity 3 hours
Activity: Case Based Learning
Activity 1: Introduction & Overview (30 minutes)
Briefly introduce endoscopic procedures and their diagnostic roles.
Highlight the importance of correct interpretation in each procedure.
Activity 2: Hands-On Interpretation of Procedures (90 minutes)
Endoscopy (30 minutes)
Review images of endoscopic procedures (gastroscopy, colonoscopy).
Interpret common findings (e.g., ulcers, tumors, inflammation).
Rapid Urease Test (30 minutes)
Show results of the urease test.
Interpret positive (color change) vs negative results.
Colonoscopy (30 minutes)
Examine colonoscopy images for polyps, diverticula, or cancer.
Discuss findings and next steps.
Interpretation of Advanced Procedures
Cholangiopancreatography (ERCP) (30 minutes)
Present ERCP images showing bile duct stones or strictures.
Interpretation of findings.
Hysteroscopy (30 minutes)
Display images of the uterine cavity.
Identify abnormal findings like fibroids, polyps.
Proctoscopy (30 minutes)
Do proctoscopy procedure and interpret the findings.
Interpretation of Other Scopes (30 minutes)
Cystoscopy

Review images of the bladder.
Identify findings like tumors, stones, or cysts.
Laparoscopy
Analyze laparoscopic images from abdominal procedures.
Recognize issues like adhesions or organ pathology.
Colposcopy
Examine colposcopy images of the cervix.
Look for signs of HPV-related changes or precancerous lesions.
Arthroscopy & Wrap-Up
Arthroscopy
Review joint images.
Identify tears, damage, or inflammation in joints.
Final Recap & Q&A
Summarize key interpretation points for all procedures.
Address any questions or clarifications.

Experiential-Learning 27.4 : Hands on training to interpret reports of Electroencephalogram, Poysomnogram, Electromyogram and transcranial magnetic stimulation.

Duration of activity 3 hours
Students should be able to interpret at least 5 reports with different clinical conditions.
Electroencephalogram, Polysomnogram, Electromyogram and transcranial magnetic stimulation: (60 minutes)
Final Correlation and Diagnosis: (60 minutes)
Assessment 60 minutes

Experiential-Learning 27.5 : Hands on training in interpretation of reports of ophthalmoscope, tonometry, electroretinogram, optometer and refractometer reports and their clinical correlation.

Duration (3 hours)
Activity: Case Based Learning (60 minutes)
Activity 1: Introduction (10 minutes)
Brief overview of each diagnostic tool: ophthalmoscope, tonometry, electroretinogram, optometer, and refractometer.
Activity 2: Ophthalmoscope Report Interpretation (20 minutes)
Hands-on practice interpreting retinal images, identifying common retinal conditions (e.g., diabetic retinopathy, glaucoma).

Activity 3: Clinical Correlation for Ophthalmoscope (10 minutes)
Discuss how ophthalmoscope findings relate to conditions like hypertension and retinal diseases.
Activity 4: Tonometry Report Interpretation (10 minutes)
Practice reading intraocular pressure (IOP) readings from tonometry reports, identifying normal vs. abnormal pressures.
Activity 5: Clinical Correlation for Tonometry (10 minutes)
Correlate IOP readings with glaucoma diagnosis and discuss risk factors.
Activity: Demonstration (30 minutes)
Activity 1: Electroretinogram (ERG) Report Interpretation (30 minutes)
Demonstrate reading ERG waves, identify retinal dysfunctions, and interpret responses to light stimuli.
Activity: Discussion (90 minutes)
Activity 1: Clinical Correlation for ERG (10 minutes)
Discuss how ERG results assist in diagnosing conditions like retinitis pigmentosa and macular degeneration.
Activity 2: Optometer Report Interpretation (20 minutes)
Hands-on practice interpreting refractive error measurements and identifying visual acuity deficits.
Activity 3: Clinical Correlation for Optometer (10 minutes)
Discuss how optometer results relate to conditions like myopia, hyperopia, and astigmatism.
Activity 4: Refractometer Report Interpretation (20 minutes)
Practice reading refractive index reports and correlating them with prescription lenses.
Activity 5: Clinical Correlation for Refractometer (10 minutes)
Understand how refractometer readings guide corrective lens prescriptions and vision correction treatments.
Activity 6: Case Studies & Discussion (20 minutes)
Apply all tools in a simulated case study, interpreting results collectively, and discussing clinical implications for diagnosis and treatment.

Experiential-Learning 27.6 : Anal Manometry Interpretation and Clinical Correlation: An Experiential Learning Approach

Total learning hours - 2 hours
Students should be able to interpret and / perform five cases with Ano rectal diseases. In case of non availability of real cases, scenario may be taken and report interpretation and clinical correlation should be done.
Activity: Case Based Learning
Activity 1: Introduction to Anal Manometry (10 minutes)
Provide an overview of anal manometry, its purpose, and its role in assessing anorectal function. Introduce key parameters: resting pressure, squeeze pressure, and anal canal compliance.
Activity 2: Understanding Key Parameters (15 minutes)

Explain the key parameters in anal manometry:
Resting pressure
Squeeze pressure
Maximum voluntary contraction
Anal canal compliance
Provide examples of normal and abnormal values.
Activity 3: Hands-on Practice with Anal Manometry Data (20 minutes)
Allow participants to interpret real anal manometry data, focusing on the key parameters. Discuss normal ranges and identify abnormal readings.
Activity 4: Clinical Correlation with Gastrointestinal and Anorectal Conditions (15 minutes)
Discuss the clinical implications of abnormal results, such as constipation, fecal incontinence, Hirschsprung's disease, or rectal prolapse. Emphasize how anal manometry can aid in diagnosing these conditions.
Activity 5: Case Study Discussion – Part 1 (20 minutes)
Present a case study with anal manometry results. Have participants interpret the data and correlate it with the patient's clinical symptoms.
Activity 6: Case Study Discussion – Part 2 (15 minutes)
In groups, have participants propose a diagnosis based on the interpreted results and discuss potential treatment options or next steps in management.
Activity 7: Interpreting Variations in Patient Conditions (15 minutes)
Provide examples of how anal manometry results can vary depending on the patient's condition (e.g., age, gender, comorbidities). Discuss how to adjust interpretation accordingly.
Activity 8: Wrap-up and Q&A (10 minutes)
Summarize key takeaways, review important clinical correlations, and address any questions or concerns. Provide additional resources for further study.

Experiential-Learning 27.7 : Hands on training to interpret reports of Nerve Conduction Study (NCS) and Biothesiometry

Duration of activity 3 hours
Students should be able to interpret and/or perform Nerve Conduction Study (NCS) and Biothesiometry for atleast five patients in a series.
Activity: Case based Learning (3 hours)
Activity 1: NCS Report Interpretation: 60 minutes
Activity 2: Biothesiometry Report Interpretation: 60 minutes
Activity 3: Final Correlation and Diagnosis: 60 minutes

Experiential-Learning 27.8 : Hands on training in interpretation of reports of cystometrogram

Duration of activity 3 hours
Students should be able to interpret at least 5 reports with different clinical conditions.
Activity: Case Diagnosis (3 hours)
cystometrogram Report Interpretation: 60 minutes
Final Correlation and Diagnosis: 60 minutes
Assessment 60 minutes

Experiential-Learning 27.9 : Apply skills to interpret audiometry results by analyzing key parameters such as air conduction, bone conduction, and speech thresholds, and effectively correlate these findings with clinical conditions to guide accurate diagnosis and treatment planning

Duration of activity: 2 hours (for Audiometry Interpretation)
Activity: Case Based Learning
Activity 1: Introduction to Audiometry (10 minutes)
Provide an overview of audiometry, its purpose, and its role in assessing hearing function. Introduce key parameters: air conduction, bone conduction, speech reception threshold (SRT), and pure tone audiometry.
Activity 2: Understanding Key Parameters (15 minutes)
Explain the key audiometric parameters:
Air conduction
Bone conduction
Speech reception threshold (SRT)
Pure tone average (PTA)
Discuss normal ranges and what deviations can indicate regarding hearing loss.
Activity 3: Hands-on Practice with Audiometry Data (20 minutes)
Allow participants to review and interpret real audiometry results, focusing on air conduction, bone conduction, and speech testing. Discuss how to identify conductive, sensorineural, and mixed hearing loss.
Activity 4: Clinical Correlation with Hearing Conditions (15 minutes)
Discuss the clinical significance of audiometry results, correlating them with conditions such as sensorineural hearing loss, conductive hearing loss, presbycusis, tinnitus, and ear infections.
Activity 5: Case Study Discussion – Part 1 (20 minutes)
Present a case study with audiometry results. Have participants interpret the data and correlate it with the patient's clinical symptoms (e.g., difficulty hearing in noisy environments, history of ear infections).
Activity 6: Case Study Discussion – Part 2 (15 minutes)

In groups, have participants propose a diagnosis based on the interpreted audiometry results and discuss potential treatment options or next steps in management (e.g., hearing aids, surgery, further diagnostic tests).
Activity 7: Interpreting Variations in Patient Conditions (15 minutes)
Provide examples of how audiometry results may vary by patient factors, such as age, occupation, or comorbidities. Discuss how to adjust interpretation based on these factors (e.g., age-related hearing loss vs. noise-induced hearing loss).
Activity 8: Wrap-up and Q&A (10 minutes)
Summarize key takeaways, review the importance of clinical correlation in audiometry interpretation, and address any questions. Provide additional resources for further learning on audiometry and hearing assessments.

Modular Assessment

Assessment method	**Hour**
Instructions: Conduct a structured Modular assessment. The assessment will be for 50 marks. Keep a structured marking pattern. Use different assessment methods in each module for the semester. Keep a record of the structured pattern used for assessment. Calculate the Modular grade point as per Table 6 C. CHOOSE ANY OF THE BELOW ASSESSMENT FOR 50 MARKS 1.Echo Cardio Gram (ECG), Holter Monitor, Coronary Angiogram, Central Venous Pressure, and Arterial Pressure Measurements (10 Marks) Formative Assessment Method: Case Study Review Provide students with case studies of ECG, Holter monitor, and coronary angiogram results. Students analyze and discuss findings in small groups. Question 1: Describe the main difference between a standard ECG and a Holter monitor in terms of usage and data collection. (4 Marks) Question 2: Explain the clinical significance of measuring Central Venous Pressure (CVP) in critically ill patients. (3 Marks) Question 3: What is the role of coronary angiography in diagnosing coronary artery disease? (3 Marks) 2.Spirometry – Pulmonary Function Test (PFT), Nitric Oxide Breath Test, Urea Breath Test, and Bronchoscopy (10 Marks) Formative Assessment Method: Peer Review Students assess each other's interpretation of spirometry and breath test results and provide feedback. Question 1: Explain how spirometry is used to diagnose obstructive vs. restrictive lung diseases. (5 Marks) Question 2: What is the purpose of the Urea Breath Test in diagnosing Helicobacter pylori infection? (5 Marks) 3.Scopies and Their Types (10 Marks) Formative Assessment Method: OSCE (Observed Structured Clinical Examination) Students demonstrate their knowledge of different scopes and related procedures by interpreting images or videos of endoscopic procedures. Question 1: Describe the procedure and diagnostic use of Gastroscopy. (5 Marks) Question 2: What is the role of ERCP in the management of biliary tract disorders? (5 Marks)	4

4.Electroencephalogram (EEG), Polysomnogram, Electromyogram (EMG), and Transcranial Magnetic Stimulation (TMS) (10 Marks)
Formative Assessment Method: Small Group Discussion
Students work in groups to interpret EEG or EMG results and correlate them with potential neurological conditions.
Question 1: What does an EEG measure and how is it useful in diagnosing epilepsy? (5 Marks)
Question 2: How does TMS work, and in which neurological conditions is it typically used? (5 Marks)
5.Slit Lamp, Ophthalmoscope, Tonometry, Electroretinogram (ERG), Optometer, and Refractometer (5 Marks)
Formative Assessment Method: Image Interpretation
Students interpret images of the eye using slit lamp or ophthalmoscope findings and discuss their clinical relevance.
Question 1: How is tonometry used to diagnose glaucoma? (3 Marks)
Question 2: What does an ERG measure and how is it used in the diagnosis of retinal disorders? (2 Marks)
6.Anal Mannometry (5 Marks)
Formative Assessment Method: Case-based Learning
Students interpret an anal manometry report and discuss its clinical significance in gastrointestinal disorders.
Question 1: Explain the principle of anal manometry and its use in diagnosing anorectal dysfunctions. (5 Marks)
Or
Any practical in converted form can be taken for assessment. (25 marks)
and
Any experiential, such as portfolios / reflections / presentations can be taken as an assessment. (25 marks)

Module 28 : Lab Diagnosis of biological samples

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

Acquire and associate the knowledge of Physical, Chemical, Microbiological, Sero and Immuno techniques for diagnosis
Interpret the results for differential diagnosis and categorize the disease.
Apply appropriate lab investigation based on the clinical manifestations.
Recognize and apply safety protocols in the laboratory, including biohazard management, infection control, and proper waste disposal

M 28 Unit 1 Instrumentation and Diagnostic Techniques

28.1.1. Laboratory safety Protocols
28.1.2. Devices used to measure, test and evaluate infectious disease
28.1.3. Coomon devices determining the presence of pathogen in the specimen
28.1.4. Helps to manage and treat the patients by detecting, quantifying specific pathogens

References: 21,22,24,27,30

3A	3B	3C	3D	3E	3F	3G
CO4,CO6,CO7	Describe the Principles of Basic Techniques and Laboratory Safety. Describe the various levels of biosafety system and BMW Management. Good laboratory practice (GLP), Quality Control, National Accreditation Board for Labs (NABL), External Quality Assessment Scheme (EQAL), Internal Quality Assessment Scheme (IQAL).	1	Lecture	CAP	Knows-how	L,L&PPT
CO4,CO6,CO7	Investigate and appraise the applications of Optical Techniques, Electrochemistry and Chemical Sensors; Radioimmunoassay (RIA) including vitamins, electrochemiluminescence immunoassay (ECLIA), Chemiluminescence immunoassay (CLIA) Techniques, Electrophoresis, Chromatography, Mass Spectrometry	2	Experiential-Learning 28.1	PSY-MEC	Knows-how	D
CO4,CO6,CO7	Analyse the Sample Preparation for Mass Spectrometry Applications in Infectious Disease and Pathogens Identification Investigate various analytical devices used in laboratory diagnosis, including homogenizer, ultracentrifugation, sonication, electroporation, colorimetry, spectrophotometry, microplate reader, Blood culture system (aerobic and anaerobic), CO2 Incubator, turbidimetry, liquid handling systems	1	Experiential-Learning 28.2	PSY-MEC	Shows-how	DL
CO4,CO6,CO7	Describe, Develop and Validate Small Molecule Analytes by Liquid Chromatography-Tandem Mass Spectrometry	1	Lecture	CAP	Shows-how	L,L&PPT
CO4,CO6,CO7	Describe the Enzyme and Rate Analysis, Immunochemical Techniques, Their Application in Clinical Diagnostics Cytometry	1	Lecture	CAP	Shows-how	L&PPT ,L_VC,L
CO4,CO6,CO7	Demonstrate flow cytometry (FACS) and thermocycler, electroporator,	10	Practical	CAP	Does	D

	ultracentrifugation and perform the Electrophoresis, blotting, and gel documentations,and advanced microscopes		Training 28.1			

M 28 Unit 2 Clinical Chemistry

28.2.1. Analytes
28.2.2. Amino Acids, Peptides, and Proteins
28.2.3. Serum Enzymes, Enzymes of the Red Blood Cell
28.2.4. Carbohydrates
28.2.5. Lipids, Lipoproteins, Apolipoproteins, and Other Cardiovascular Risk Factors
28.2.6. Electrolytes and Blood Gases
28.2.7. Vitamins and Trace Elements
28.2.8. Porphyrins and the Porphyrias
28.2.9. Liver Function Tests
28.2.10. Renal Function Tests
28.2.11. Serum ferritin
28.2.12. Serum Transferrin
28.2.13. Total iron -binding capacity (TIBC)
28.2.14. Vitamin B12
28.2.15. Vitamin D
28.2.16. Serum Homocysteine
28.2.17. Protein Electrophoresis
28.2.18. Hormonal Assays
28.2.19. Cardiac enzymes
28.2.20. Metabolic Panel

References: 22,24,27,30,33,36,88

3A	3B	3C	3D	3E	3F	3G
CO4,CO6,CO7	Discuss the fundamental concepts of clinical chemistry, including the analysis of analytes such as amino acids, proteins, carbohydrates, and lipids, as well as electrolytes and blood gases.	2	Lecture	CAP	Shows-how	L,L&PPT

CO4,CO6,CO7	Perform and interpret various tests, including liver function tests (Gamma GT), lipid profiles, renal function tests (RFT), Metabolic Panel, serum assays for ferritin, transferrin, vitamins, Porphyrins and the Porphyrias, and Total Iron Binding Capacity (TIBC)	3	Practical Training 28.2	PSY-MEC	Does	
CO4,CO6,CO7	Investigate and Perform various tests, including liver function tests (Gamma GT), lipid profiles, renal function tests (RFT), Metabolic Panel, serum assays for ferritin, transferrin, vitamins, Porphyrins and the Porphyrias, and Total Iron Binding Capacity (TIBC)	3	Experiential-Learning 28.3	PSY-MEC	Knows-how	DIS,LRI
CO4,CO6,CO7	Analyse and interpret Serum Homocysteine, Hormonal assays, Serum Enzymes, Enzymes of the Red Blood Cell, Lipids, Lipoproteins, Apolipoproteins, and Other Cardiovascular Risk Factors	3	Practical Training 28.3	PSY-MEC	Does	D

M 28 Unit 3 Urine Analysis

28.3.1. Urine routine
28.3.2. Urine cast, crystals, Parasite and deposits
28.3.3. Urine microalbumin / Proteins
28.3.4. Vanillylmandelic acid; Metanephrine
28.3.5. Urine for Chyle

References: 22,25,85,88,91

3A	3B	3C	3D	3E	3F	3G
CO4,CO6,CO7	Investigate the methods of sample collection, safety handling of the sample, common contaminations and urine for Chyle test Analyse the physical characteristics of urine, including color, clarity, odor, and specific gravity and microscopic analysis-Urine cast, crystals, Parasite and deposits	1	Experiential-Learning 28.4	CAP	Knows-how	D
CO4,CO6,CO7	Identify the significance of urine examination using urine analyser in clinical practice. Conduct and interpret standard chemical tests using dipstick and methods to detect key	1	Experiential-Learning 28.	PSY-MEC	Knows-how	D

	constituents such as glucose, protein, ketones, and bilirubin, Urine microalbumin / Proteins, Vanillylmandelic acid; Metanephrine		5			

M 28 Unit 4 Stool Analysis

28.4.1. Ova
28.4.2. Cysts
28.4.3. Occult blood
28.4.4. Bacteria

References: 21,22,24,26,84,91

3A	3B	3C	3D	3E	3F	3G
CO4,CO6,CO7	Investigate the methods of sample collection, safety handling of the sample, common contaminations, significance of stool analysis in diagnosing gastrointestinal disorders. Analyse the physical characteristics of stool, including color, consistency, odor, and presence of visible blood or mucus and microscopic analysis for ova, cyst and bacteria	1	Experiential-Learning 28.6	PSY-MEC	Knows-how	D
CO4,CO6,CO7	Analyse and Correlate stool analysis findings with potential clinical conditions, such as infections, malabsorption syndromes, and inflammatory bowel disease.	1	Experiential-Learning 28.7	CAN	Knows-how	DIS

M 28 Unit 5 Blood Coagulation Assays

28.5.1. Disorders monitored with coagulation tests
28.5.2. Disseminated Intravascular coagulation
28.5.3. Fibrinogen test
28.5.4. Platelet count and Function
28.5.5. D-dimer test

References: 22,24,86,88,91

3A	3B	3C	3D	3E	3F	3G
CO4,CO6,CO7	Describe the Tests used to monitor: International Normalized Ratio - Activated Thromboplastin Time - Thromboplastin Time - Fibrinogen test - Platelet count and Functions - Immature Platelet Fraction - Fibrin Degradation Products and D-dimer test	1	Lecture	CAN	Knows-how	L
CO4,CO6,CO7	Analyse the Tests used to monitor: International Normalized Ratio - Activated Thromboplastin Time - Thromboplastin Time - Fibrinogen test - Platelet count and Functions - Immature Platelet Fraction - Fibrin Degradation Products and D-dimer test	2	Experiential-Learning 28.8	PSY-MEC	Knows-how	CD
CO4,CO6,CO7	Identify abnormalities and their potential clinical significance in various bleeding or thrombotic disorders	1	Experiential-Learning 28.9	PSY-MEC	Knows-how	

M 28 Unit 6 Microbiological Diagnosis

28.6.1. Differential staining methods to diagnose the growing organisms
28.6.2. Culture of Organism growth
28.6.3. Microscopy - Hanging drop / Parasites

References: 21,23,28,84,85,86,87,91

3A	3B	3C	3D	3E	3F	3G
CO4,CO6,CO7	Describe the Differential staining methods to diagnose the growing organisms - Gram Staining, Acid Fast Staining, Polyphosphate granule staining, Capsule staining, Spore staining and Flagellar staining Describe the Culture of Organism from Blood, Throat, Sputum, Spinal Fluid, Stool, Urine, Genital tract culture, Wound & Abscess samples including Drug resistance assays	2	Lecture	CC	Knows-how	CBL,D
CO4,CO6,CO7	Perform the Differential staining methods to diagnose the growing organisms - Gram Staining, Acid Fast Staining, Polyphosphate granule staining, Capsule staining, Spore staining and Flagellar staining Examine the Culture of Organism from Blood, Throat, Sputum, Spinal Fluid, Stool,	1	Practical Training 28.4	PSY-MEC	Knows-how	CBL

	Urine, Genital tract culture, Wound & Abscess samples including Drug resistance assays					
CO4,CO6,CO7	Analyse the lab reports of differential staining methods to diagnose the growing organisms - Gram Staining, Acid Fast Staining, Polyphosphate granule staining, Capsule staining, Spore staininga and Flagellar staining.Analyse the Culture of Organism from Blood, Throat, Sputum, Spinal Fluid, Stool, Urine, Genital tract culture, Wound & Abscess samples including Drug resistance assays	3	Experiential-Learning 28.10	PSY-MEC	Knows-how	DL
CO4,CO6,CO7	Demonstrate Bacterial Isolation & Identification tests- Biochemical tests-conventional methods-IMViC, Bacitracin Test, Coagulase Test and Triple Sugar Iron agar test Perform Microscopy - Hanging drop / Parasites; Fluorescent Microscopy, Quantitative Buffy Coat, Tests for Malarial Parasites and Microfilaria and TORCH panel	1	Practical Training 28.5	PSY-MEC	Shows-how	
CO4,CO6,CO7	Analyse the Bacterial Isolation & Identification tests- Biochemical tests-conventional methods-Indole Methylred citrate test, voges proskauer, Bacitracin Test, Coagulase Test and Triple Sugar Iron agar test.Perform Microscopy - Hanging drop / Parasites; Fluorescent Microscopy, Quantitative Buffy Coat, Tests for Malarial Parasites and Microfilaria and TORCH panel	4	Experiential-Learning 28.11	PSY-MEC	Shows-how	D

M 28 Unit 7 Immuno Diagnosis

28.7.1. Applications of serological tests
28.7.2. Types of immunodiagnostic tests

References: 24,26,86,87,88

3A	3B	3C	3D	3E	3F	3G
CO4,CO6,CO7	Describe the principles of immunology and the role of the immunological techniques-types of immunodiagnostic tests: Agglutination; Precipitation; Immunofluorescence Tests; Complement Fixation; Neutralization Tests; Immune complexes; Hemagglutination tests; Antiglobin (Coombs) test, Immunoglobulins (IgG, IgM, IgE); ASO, VDRL Titre Rheumatoid Factor, WIDAL, Mantoux test, Paul-Bunnel, Complement testing, Viral Hepatitis, TPO, Anti CCP in disease detection and diagnosis	2	Lecture	CAP	Shows-how	L&PPT ,L,L_VC

	Describe various types of immunoassays, including enzyme-linked immunosorbent assay (ELISA), western blotting, and radioimmunoassay, autoimmune Disease Panel highlighting their applications and differences. Illustrate the applications of serological tests: - Diagnosis of infectious diseases, Diagnosis of Autoimmune diseases, Blood & HLA typing					
CO4,CO6,CO7	Demonstrate the principles of immunology and the role of the immunological techniques- types of immunodiagnostic tests: Agglutination; Precipitation; Immunofluorescence Tests; Complement Fixation; Neutralization Tests; Immune complexes; Hemagglutination tests; Antiglobin (Coombs) test, Immunoglobulins (IgG, IgM, IgE); ASO, VDRL Titre Rheumatoid Factor, WIDAL, Mantoux test, Paul-Bunnel, Complement testing, Viral Hepatitis, TPO, Anti CCP in disease detection and diagnosis Demonstrate various types of immunoassays, including enzyme-linked immunosorbent assay (ELISA), western blotting, and radioimmunoassay, autoimmune Disease Panel highlighting their applications and differences. Demonstrate the applications of serological tests: - Diagnosis of infectious diseases, Diagnosis of Autoimmune diseases, Blood & HLA typing	2	Practical Training 28.6	PSY-GUD	Shows-how	
CO4,CO6,CO7	Analyse the principles of immunology and the role of the immunological techniques- types of immunodiagnostic tests: Agglutination; Precipitation; Immunofluorescence Tests; Complement Fixation; Neutralization Tests; Immune complexes; Hemagglutination tests; Antiglobin (Coombs) test, Immunoglobulins (IgG, IgM, IgE); ASO, VDRL Titre Rheumatoid Factor, WIDAL, Mantoux test, Paul-Bunnel, Complement testing, Viral Hepatitis, TPO, Anti CCP in disease detection and diagnosis. Analyse the applications of serological tests: - Diagnosis of infectious diseases, Diagnosis of Autoimmune diseases, Blood & HLA typing	3	Experiential-Learning 28.12	PSY-GUD	Shows-how	D
CO4,CO6,CO7	Analyse and interpret results from immunoassays, recognizing positive and negative results and understanding their clinical significance.Correlate immunodiagnostic test results with specific diseases, including autoimmune disorders, infectious diseases, and allergies, Allergic test: RAST and skin prick tests	3	Experiential-Learning 28.13	PSY-GUD	Shows-how	CBL
Practical Training Activity						

Practical Training 28.1 : Advanced Molecular and Cell Biology Techniques
Duration of the activity - 10 hours. It can be carried out either in the inhouse laboratory or by paying a visit to nearby molecular laboratory or molecular diagnostic centre Activity : Demonstration (4 hour 30 minutes) Activity 1: Provide a brief overview of the instruments and techniques to be learned (30 minutes) Activity 2: Demonstrate the Flow Cytometer (FACS) to analyze cell populations and perform immunophenotyping (90 minutes) Activity 3: Perform Polymerase Chain Reaction (PCR) using a Thermocycler to amplify DNA sequences (90 minutes) Activity 4: Demonstrate to use the Electroporator for DNA, RNA, or protein transfer into cells (60 minutes) Activity: Practical (5 hour 30 minutes) Activity 1: Perform ultracentrifugation and gel electrophoresis to separate proteins or nucleic acids based on size and charge (120 minutes) Activity 2: Perform western blotting and southern blotting to analyze proteins and nucleic acids, respectively (60 minutes) Activity 3: Use a Gel Documentation System to capture and analyze images of electrophoresis gels (60 minutes) Activity 4: Use advanced microscopy techniques (e.g., confocal, fluorescence, phase contrast) for cell imaging (60 minutes) Activity 5: Recap the session and discuss the significance of each technique and its real-world applications (30 minutes)
Practical Training 28.2 : Hands on Exposure to the Instrumental analyses of Biological samples
Duration of Activity - 3 hours. Analyze biological samples using autoanalyzer, calorimeter, spectrophotometer, ELISA reader It can be carried out either in the inhouse laboratory or by paying a visit to nearby molecular laboratory or diagnostic center. Activity: Practical (3 hour) Activity 1: Provide an introduction to the session, outlining the clinical significance of the tests being performed and the use of modern laboratory instruments (autoanalyzer's, colorimeters, spectrophotometers, and ELISA readers), Perform and interpret the Gamma GT (Gamma Glutamyl Transferase) test using an autoanalyzer (30 minutes) Activity 2: Perform and interpret a lipid profile using a colorimeter (30 minutes) Activity 3: Perform renal function tests (RFT) using a spectrophotometer (30 minutes) Activity 4: Perform and interpret a basic metabolic panel (BMP) using an autoanalyzer(30 minutes) Activity 5: Perform and interpret tests for ferritin, transferrin, and TIBC using an ELISA reader (30 minutes) Activity 6: Perform and interpret Vitamin B12 and Folate assays using an ELISA reader (20 minutes) Activity 7: Perform and interpret tests for porphyrins to assess porphyria's using a spectrophotometer (10 minutes)
Practical Training 28.3 : Analysis of enzymes, metabolic products and cardiovascular enzymes

Duration of the activity - 3 hours.
using HbA1C analyzer, electrolyte analyzer, spectrophotometry
Activity: Demonstration (3 hour)
Activity 1: Provide a comprehensive introduction to the importance of serum tests in diagnosing cardiovascular risks and metabolic conditions, Demonstrate the students to analyze serum homocysteine levels and explain its clinical significance - (30 minutes)
Activity 2: Explain and demonstrate about hormonal assays and their significance in diagnosing endocrine imbalances that affect cardiovascular health (30 minutes)
Activity 3: Demonstrate to analyze serum enzymes and their clinical significance in diagnosing organ dysfunction and metabolic disorders (30 minutes)
Activity 4: Explain to understand the enzymes associated with red blood cells and their role in diagnosing hematologic and cardiovascular disorders (30 minutes)
Activity 6: Teach the students to analyze lipid profiles and interpret lipid levels in relation to cardiovascular health (30 minutes)
Activity 7: Demonstrate to analyze the role of lipoproteins and apolipoproteins in lipid metabolism and cardiovascular risk, analyze other relevant cardiovascular risk factors and their clinical significance (30 minutes)

Practical Training 28.4 : Staining, Culture and Biochemical Interpretation of Bacterial infections

Duration of the activity - 1 hour
Using microscopes culturing techniques such as pure culture, streak culture and identification of unknown organism using bio-chemical tests, interpretation of case reports
Activity: Practical (60 minutes)
Activity 1: Provide an overview of the practical session, including the importance of differential staining methods and culture techniques for diagnosing bacterial and other infections (5 minutes)
Activity 2: Make the students to perform and analyze different differential staining methods used to diagnose growing organisms (40 minutes)
Activity 3: Allow the students to learn about the culture techniques for various specimens, focusing on sample types and interpretation of culture results with clarification of questions (15 minutes)

Practical Training 28.5 : Identification of Bacteria and Parasites

Duration of the activity - 1 hour
Perform and analyze microbial colony. Identification, viewing, imaging, counting and differentiating bacteria and external parasites
Activity: Practical (60 minutes)
Activity 1: Introduction to Microbial Colony Identification (10 minutes)
Activity 2:Explain and demonstrate to view and image microbial colonies under different magnifications (15 minutes)
Activity 3: Allow the students to count and analyze the number of microbial colonies using colony count plates (10 minutes)
Activity 4: Ask the student to differentiate bacterial species based on their colony morphology and Gram stain results (10 minutes)

Activity 5: Introduce external parasites, including ectoparasites, and demonstrate the techniques for viewing and identifying them (15 minutes)

Practical Training 28.6 : Immunodiagnostic Methods for Disease diagnosis

Duration of the activity - 2 hours
Performing double diffusion, radial immune diffusion, antibody titration, serial dilution, types of ELISA and blotting antigens including web based simulations
Activity: Practical (120 minutes)
Activity 1: Provide an overview of immunological principles and the importance of immunodiagnostic techniques - (10 minutes)
Activity 2: Conduct hands on practical sessions and demonstrate how agglutination reactions are used in diagnostic testing such as Agglutination, precipitation, immunofluorescence, Coombs test, Immunoglobulin testing and disease diagnosis, Serological Testing for Infectious Diseases and Autoimmunity - (90 minutes)
Activity 3: Provide clinical case scenarios & Result Interpretation to apply knowledge to real-world case scenarios - (10 minutes)
Activity 4: Discuss and summaries - (10 minutes)

Experiential learning Activity

Experiential-Learning 28.1 : Exposure to radioactive counter, auto analyzer, mass spectrophotometer, and electrophoretic apparatus

Duration of the activity - 2 hours
Visiting central instrumentation facility and observation of methodology and working principle of instruments
Activity : Demonstration (2 hour)
Activity 1: Demonstration & Observation, hands on exposure of Electrochemistry, optical techniques and immunoassay, electrophoresis and chromatography techniques (60 minutes)
Activity 2: Demonstration of MS principles, sample ionization, and result interpretation (15 minutes)
Activity 3: Case study and discussion (45 minutes)

Experiential-Learning 28.2 : Sophisticated instrumental handling and analysis for infectious disease and pathogen diagnosis

Duration of the activity - 1 hour
visiting central instrumentation facility and advanced clinical labs
Activity: Demonstration Lab (1 hour)
Activity 1: Tour the facility and observe homogenizers, centrifuges, and sonicators in action. Understand their role in preparing samples for further analysis (25 minutes)
Activity 2: Hands-On Interaction with Analytical Devices (10 minutes)
Activity 3: Allow the students to operate the devices with knowledge on proper handling of the devices (25 minutes)

Experiential-Learning 28.3 : Laboratory assays for Liver and Kidney function, Metabolic panel and serum assays

Duration of the activity - 3 hours
Observe lab tests in clinical biochemistry laboratory
Activity: Discussion (25 minutes)
Activity 1: Provide an introduction to the session, highlighting the importance of the tests and their clinical significance and teach students to perform and interpret Gamma Glutamyl Transferase (Gamma GT) test as part of liver function testing (25 minutes)
Activity: Lab Report Interpretation (2 hour 35 minutes)
Activity 1: Perform and interpret a lipid profile to evaluate lipid levels and assess cardiovascular risk (30 minutes)
Activity 2: Perform and interpret renal function tests (e.g., creatinine, urea, uric acid) to assess kidney function (25 minutes)
Activity 3: Perform a metabolic panel to evaluate basic metabolic functions, including electrolytes and kidney function (30 minutes)
Activity 4:Teach participants how to perform and interpret serum ferritin, transferrin, and TIBC tests to assess iron metabolism (30 minutes)
Activity 5:Perform serum assays for vitamin B12 and folate to assess nutritional status and its impact on metabolic functions (20 minutes)
Activity 6:Teach participants how to perform and interpret porphyrin assays to assess for porphyrias (20 minutes)

Experiential-Learning 28.4 : Sample handling, contamination and chyle methods, urine analysis, microscopy.

Duration of the activity - 1 hour
Observe clinical pathology laboratory experiments related to urine samples
Activity: Demonstration (60 minutes)
Activity 1: Provide an overview of urine examination and its role in clinical diagnostics (5 minutes)
Activity 2: Demonstration of urine sample collection and safety handling of urine samples, common contaminants in urine samples (20 minutes)
Activity 3: Demonstrate chyle test in urine (10 minutes)
Activity 4: Microscopic analysis and physical characteristics of urine (25 minutes)

Experiential-Learning 28.5 : Analyse Urine examination using urine analyser, Standard chemical tests using dipstick and the Methods to detect key constituents such as glucose, protein, ketones, and bilirubin, Urine microalbumin / Proteins, Vanillylmandelic acid and Metanephrine

Duration of the activity - 1 hour.
Scholars will be exposed to automated urine analyzer and standard physical and chemical examination. It can be carried out either in the inhouse laboratory or by paying a visit to nearby microbiology laboratory or diagnostic center.

Activity: Demonstration (60 minutes)
Activity 1: Provide an overview of urine examination in clinical practice and its relevance in diagnosing various conditions (10 minutes)
Activity 2: Demonstration of Urine Analyzer (10 minutes)
Activity 3: Conduct and interpret standard chemical tests using dipsticks (15 minutes)
Activity 4: Explain and demonstrate the process for detecting microalbumin and urine proteins (10 minutes)
Activity 5: Discuss and demonstrate the detection of VMA and metanephrines in urine with case based interpretation (15 minutes)

Experiential-Learning 28.6 : Sample collection methods, safety, contamination, stool analysis and its significance.

Duration of the activity - 1 hour
Observation in clinical pathology stool analysis
Activity: Demonstration (60 minutes)
Activity 1: Provide an overview of stool analysis and its relevance in diagnosing gastrointestinal (GI) disorders (5 minutes)
Activity 2: Demonstrate and explain the correct methods for collecting stool samples for analysis (15 minutes)
Activity 3: Safety handling of stool sample, common contaminants (15 minutes)
Activity 4: Physical characteristics of stool and microscopic analysis (25 minutes)

Experiential-Learning 28.7 :

- Examine Physical characteristics of stool, including color, consistency, odour, and presence of visible blood or mucus, microscopic analysis for ova, cyst and bacteria
- Correlate stool analysis findings with potential clinical conditions such as infections, malabsorption syndromes, and inflammatory bowel disease

Duration of the activity - 1 hour
Correlation of stool report
Activity: Discussions (1 hour)
Activity 1: Provide an overview of the purpose of stool analysis and its relevance in diagnosing different clinical conditions (10 minutes)
Activity 2: Discuss how stool findings can correlate with bacterial, viral and parasitic infections (15 minutes)
Activity 3: Stool analysis findings in malabsorption syndromes (15 minutes)
Activity 4: Stool Analysis Findings in Inflammatory Bowel Disease with case based learning (20 minutes)

Experiential-Learning 28.8 : Exposure to hemostasis and blood coagulation status
Duration of the activity - 2 hours Understand the clotting, bleeding, fibrin formation and bleeding disorders Activity: Case Diagnosis (120 minutes) Activity 1: Provide an overview of the session and explain the importance of monitoring tests in assessing coagulation status (10 minutes) Activity 2: Explain the tests involved in Monitoring Coagulation and Platelet Function Tests (50 minutes) Activity 3: Demonstrate the students about Monitoring Platelet Function, Immature Platelets, and Fibrin Degradation Products (60 minutes)
Experiential-Learning 28.9 : Exposure on abnormalities and their potential clinical significance in bleeding or thrombotic disorders
Duration of the activity - 1 hour Understand the thrombotic condition through lab findings Activity: Early Clinical Exposure (60 minutes) Activity 1: Introduce the session and its importance in clinical practice with an overview of bleeding and thrombotic disorders (10 minutes) Activity 2: Explain the students about the relevant laboratory tests used to diagnose bleeding and thrombotic disorders (15 minutes) Activity 3: Allow the students to work through case studies to apply their knowledge in identifying abnormalities and discussing their clinical significance (30 minutes) Activity 4: Review the main laboratory tests and their clinical significance in bleeding and thrombotic disorders (5 minutes)
Experiential-Learning 28.10 : Hands on training in staining methods, isolation and culture of microbes
Duration of the activity - 3 hours Cell membrane, flagella, capsule, granules will be identified. Interpretation of various cultivation techniques Activity: Demonstration Lab (3 hours) Activity 1: Provide an overview of differential staining methods and the importance of culture techniques for diagnosing infections (30 minutes) Activity 2: Analyzing differential staining methods to diagnose growing organisms through various staining methods with discussions on lab report analysis (60 minutes) Activity 3: Describing the culture of organisms from various specimens with lab report review and discussion (60 minutes) Activity 4: Summarize key points from the session and address any questions (30 minutes)
Experiential-Learning 28.11 : Hands on training in Bacterial & Parasite Isolation & Identification
Duration of the activity - 4 hours. Bacterial identification, identification of different organisms including parasites. It can be carried out either in the inhouse laboratory or by paying a visit to nearby microbiology laboratory or diagnostic centre

Activity: Practical (1 hour 45 minutes)
Activity 1: Provide an introduction to bacterial isolation, identification tests, and microscopy techniques - (15 minutes)
Activity 2: Perform and understand key biochemical tests used for bacterial identification (75 minutes)
Activity 3: Provide knowledge to the students to analyze the results and identify bacterial species(15 minutes)
Activity: Demonstration (2 hour 15 minutes)
Activity 1: Demonstrate the microscopy techniques for Parasite Detection such as Hanging drop method, Fluorescent microscopy, QBC, Malarial Parasite and Microfilaria Identification - (90 minutes)
Activity 2: Demonstrate the use of serological tests for TORCH infections - (30 minutes)
Activity 3: Review key concepts and summaries with discussions and questions (15 minutes)

Experiential-Learning 28.12 : Exposure to Identify and understand Bacterial, Viral and Auto-immune diseases

Duration of the activity - 3 hours
Activity 1: Introduction to Immunoassays to Understand the basics of immunoassays - (30 minutes)
Activity 2: Analyzing Immunoassay results and learn to analyze and interpret results from immunoassays - (60 minutes)
Activity 3: Correlate immunodiagnostic test results with specific diseases - (60 minutes)
Activity 4: Discuss challenges and best practices in interpreting results with discussion - (30 minutes)

Experiential-Learning 28.13 : Analyse the importance and applications of immunological techniques

Duration of the activity - 3 hours.
Describe various types of immunoassays, including enzyme-linked immunosorbent assay (ELISA), western blotting, and radioimmunoassay, autoimmune Disease Panel highlighting their applications and differences
Activity : Demonstration (3 hours)
Activity 1: Provide foundational knowledge of immunology and its relevance to diagnostic tests (30 minutes)
Activity 2: Provide an overview of immunodiagnostic tests to understand various immunodiagnostic tests and their clinical applications (75 minutes)
Activity 3: Demonstrate how serological tests are applied in diagnosing various diseases (45 minutes)
Activity 4: Summary of the main immunodiagnostic tests and their applications through clinical case scenarios (30 minutes)

Modular Assessment

Assessment method	**Hour**

Instructions: Conduct a structured Modular assessment. The assessment will be for 50 marks. Keep a structured marking pattern. Use different assessment methods in each module for the semester. Keep a record of the structured pattern used for assessment. Calculate the Modular grade point as per Table 6 C. CHOOSE ANY OF THE BELOW ASSESSMENT FOR 50 MARKS Total Marks: 50 / Time Duration: 4 Hours 1.VIVA VOCE EXAMINATION (10 Marks) Assessment Structure: Evaluate the ability to interpret laboratory diagnostic findings from various biological samples and formulate differential diagnoses leading to a confined diagnosis. Marking Distribution: Knowledge and Understanding (4 marks) Detailed knowledge of laboratory diagnostic principles Understanding of different biological sample analyses (Blood, Urine, Sputum, CSF, Tissue Biopsy, etc.) Clinical Application (3 marks) Ability to deduce differential diagnosis from lab results Interpretation of pathological changes in different biological samples Communication Skills (3 marks) Clarity in explanation Use of precise medical terminology Logical reasoning in clinical scenarios 2.OBJECTIVE STRUCTURED CLINICAL EXAMINATION (OSCE) (25 Marks) Mark Distribution: Interpretation of Laboratory Findings (10 Marks) Identification of normal and abnormal values Analysis of pathological indicators in biological samples Differential Diagnosis Formulation (5 Marks) Postulation of probable conditions based on lab findings Correlation with clinical symptoms Final Diagnosis Justification (3 Marks) Logical reasoning behind the confined diagnosis Supporting evidence from lab results Pathophysiological Correlation (2 Marks)	4

Understanding disease progression through lab parameters
Laboratory Report Interpretation (2 Marks)
Analysis of findings provided in diagnostic reports
Clinical Decision Making (3 Marks)
Integration of lab findings into treatment planning
3.CLASS PRESENTATION (10 Marks)
Assessment Criteria:
Content (4 marks)
Depth of discussion on laboratory diagnostic modalities
Inclusion of current clinical research
Correlation of lab results with patient diagnosis
Presentation Skills (3 marks)
Clear and concise delivery
Effective use of visual aids (graphs, charts, microscopy images, etc.)
Engagement with audience
Discussion (3 marks)
Handling of audience questions
Application of knowledge in case scenarios
Justification of diagnostic conclusions
4.RECORD KEEPING (5 Marks)
Assessment Criteria:
Clinical Documentation (4 marks)
Accurate recording of lab diagnostic interpretations
Correlation of lab findings with patient symptoms
Integration of laboratory terminology
Written Presentation Skills (1 mark)
Organization and clarity of notes
Use of appropriate medical terminology
5.SAQ AND LAQ ASSESSMENT (10 Marks)
Short Answer Questions (SAQ) (5 Marks)
Interpretation of given lab test results
Formulation of differential diagnoses

Correlation with patient history
Long Answer Questions (LAQ) (5 Marks)
Detailed discussion on a selected laboratory diagnostic modality
Analysis of a case study including lab findings, differential diagnosis, and final diagnosis
Or
Any practical in converted form can be taken for assessment. (25 marks)
and
Any experiential, such as portfolios / reflections / presentations can be taken as an assessment. (25 marks)

Semester No : 5

Module 29 : Laboratory Diagnosis of biological samples by advanced molecular techniques

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

Describe the analysis of biological samples using genetic and molecular techniques.
Incorporate relevant patient history and clinical findings when selecting the laboratory tests.
Analyse the results with the clinical and phenotypical manifestation of the disease

M 29 Unit 1 Principles of Genetics and Molecular Biology

29.1.1. Principles of Molecular Biology
29.1.2. Gene expression and Epigenetics
29.1.3. Nucleic acid extraction, characterization
29.1.4. Chromosomal mutations
29.1.5. Gene mutations
29.1.6. Deoxyribonucleic acid / Ribonucleic acid sequencing

References: 21,28,31,40,88,91

3A	3B	3C	3D	3E	3F	3G
CO5,CO6,CO7	Describe the key concepts of genetics and molecular biology. Chromosomal structure and mutations, including the principles of DNA and RNA - transcription, translation and post translational modifications including Epigenetics, detection of inherited diseases: Pattern of Inheritance, Pedigree analysis, molecular detection of inherited diseases, Chromosomal numerical abnormalities and Chromosomal aberrations - Chromosomal morphology and visualizing	1	Lecture	CAP	Knows-how	L&PPT ,L_VC
CO5,CO6,CO7	Perform and/or Interpret the Karyotyping of Human Genomic DNA; chromosomal mutations; presymptomatic and predictive testing, predispositional testing, prenatal testing, preimplantation testing, Amniocentesis, Cordocentesis, newborn screening., Fluorescence in situ Hybridisation (FISH). Gene mutations, Microarrays, Macroarrays.	5	Practical Training 29.1	PSY-MEC	Knows-how	DL,LRI,PER
CO5,CO6,CO7	Describe the Karyotyping of Human Genomic DNA; chromosomal mutations; presymptomatic and predictive testing, predispositional testing, prenatal testing, preimplantation testing, Amniocentesis, Cordocentesis, newborn screening, Fluorescence in situ Hybridisation (FISH). Gene mutations, Microarrays, Macroarrays.	1	Lecture	CAP	Knows-how	L&GD,L &PPT
CO5,CO6,CO7	Analyse and/or Interpret the Karyotyping of Human Genomic DNA; chromosomal mutations; presymptomatic and predictive testing, predispositional testing, prenatal testing, preimplantation testing, Amniocentesis, Cordocentesis, newborn screening, Fluorescence in situ Hybridisation (FISH). Gene mutations, Microarrays, Macroarrays.	1	Experiential-Learning 29.1	AFT-RES	Knows-how	LRI,DL,PL
CO5,CO6,CO7	Examine various methods of DNA /RNA sequencing; Whole exome sequencing	1	Experiential-Learning 29.2	CAP	Knows-how	BS,JC
CO5,CO6,CO7	Describe various methods of DNA /RNA sequencing; Whole exome sequencing.	1	Lecture	CK	Knows-how	L_VC,L&PPT

M 29 Unit 2 Genetic Diagnostics

29.2.1. Deoxyribonucleic acid Polymorphisms
29.2.2. Nucleic Acid Detection and Amplification
29.2.3. Target Amplification
29.2.4. Molecular Oncology
29.2.5. Chromosome and Gene mutations

References: 21,28,31,88

3A	3B	3C	3D	3E	3F	3G
CO5,CO6,CO7	Describe DNA Polymorphisms: Types of Polymorphism, RFLP typing (Genetic mapping, Parentage testing); Random Amplified Polymorphic DNA (RAPD) typing, Bone marrow engraftment testing; SNPs, Gene editting - Clustered Regularly Interspaced Short Palindromic Repeats (CRISPR) technology. Application of gene editting in disease caused due to genetic mutation.	1	Lecture	CC	Knows-how	L&PPT ,L&GD
CO5,CO6,CO7	Analyse DNA Polymorphisms: Types of Polymorphism, RFLP typing (Genetic mapping, Parentage testing); Random Amplified Polymorphic DNA (RAPD) typing, Bone marrow engraftment testing; SNPs	2	Experiential-Learning 29.3	AFT-RES	Knows-how	C_L,DIS, BL,CBL
CO5,CO6,CO7	Demonstrate Nucleic acid extraction, characterization, Detection and Amplification methods: Target Amplification - PCR; Probe Amplification - Multiplex Ligation dependent Probe amplification (MLPA); Signal Amplification - Branched DNA amplification, Cycling probe	10	Practical Training 29.2	CAP	Shows-how	DL
CO5,CO6,CO7	Investigate Nucleic acid extraction, characterization, Detection and Amplification methods: Target Amplification - PCR; Probe Amplification - Multiplex Ligation dependent Probe amplification (MLPA); Signal Amplification - Branched DNA amplification, Cycling probe	2	Experiential-Learning 29.4	AFT-SET	Knows-how	DIS,LS,D ,ML
CO5,CO6,CO7	Describe the Molecular basis of Neoplastic conditions and identify the analytical targets of Molecular testing; Chromosome and Gene mutations in Solid tumours and hematological malignancies - Breast cancer, Lung cancer, Ewing Sarcoma, Rhabdomyosarcoma, Lymphomas and Leukemias.	1	Lecture	CC	Knows-how	L&GD,L &PPT

CO5,CO6,CO7	Analyse the Molecular basis of Neoplastic conditions and identify the analytical targets of Molecular testing; Chromosome and Gene mutations in Solid tumours and hematological malignancies - Breast cancer, Lung cancer, Ewing Sarcoma, Rhabdomyosarcoma, Lymphomas and Leukemias.	2	Experiential-Learning 29.5	AFT-SET	Knows-how	DIS,CBL

M 29 Unit 3 Molecular Diagnostics

29.3.1. Deoxyribonucleic acid Polymorphisms
29.3.2. Molecular detection of inherited diseases
29.3.3. Molecular Oncology
29.3.4. Molecular Tissue typing

References: 21,22,28,31,88

3A	3B	3C	3D	3E	3F	3G
CO5,CO6,CO7	Describe the genomic diagnostics analysis of Molecular Tissue typing with special emphasis on: MHC locus; HLA polymorphisms; DNA based typing; Major Histocompatibility Complex Disease association	2	Lecture	CC	Know	L_VC,L&PPT
CO5,CO6,CO7	Investigate the genomic diagnostics analysis of Molecular Tissue typing with special emphasis on: major histocompatibility complex (MHC) locus; human leukocyte antigens (HLA) polymorphisms; DNA based typing; Major Histocompatibility Complex Disease association.	6	Experiential-Learning 29.6	AFT-RES	Knows-how	JC,TPW

M 29 Unit 4 Biomarker assays

29.4.1. Susceptibility/Risk Biomarkers
29.4.2. Diagnostic Biomarkers
29.4.3. Prognostic Biomarkers
29.4.4. Monitoring Biomarkers
29.4.5. Predictive Biomarkers
29.4.6. Pharmacodynamic/Response Biomarkers

29.4.7. Safety Biomarkers

References: 21,24,86,87,88,91

3A	3B	3C	3D	3E	3F	3G
CO5,CO6,CO7	Describe the various Susceptibility/Risk Biomarkers - BRCA1 and BRCA2 genes; Factor V; Apolipoprotein E (APOE) gene; human papillomavirus (HPV); C-reactive protein (CRP). Describe the various Diagnostic Biomarkers - Sweat chloride; cystic fibrosis transmembrane conductance regulator (CFTR); Galactomannan; Glomerular filtration rate (GFR); Prostate-specific antigen (PSA); C-reactive protein (CRP), Septicemia markers, eg: Procalcitonin.	1	Lecture	CAP	Knows-how	L&PPT ,L&GD
CO5,CO6,CO7	Analyse the various Prognostic Biomarkers - Ki-67; BRAF; Chromosome 17p deletions and TP53; Plasma fibrinogen; Gleason score; Total kidney volume. Describe the various Monitoring Biomarkers - Hemoglobin A1c (HbA1c); Brain natriuretic peptide (BNP); Viral Hepatitis Markers; Coagulation test Panel, Monoclonal protein (M protein); Tumour Markers; B-type natriuretic peptide (BNP) or N-terminal proBNP (NT-proBNP) for Heart failure	1	Experiential-Learning 29.7	AFT-RES	Knows-how	C_L,BL, CBL,DIS
CO5,CO6,CO7	Describe the various Predictive Biomarkers - HER2; EGFR mutation status in non-small cell lung cancer. Describe the various Pharmacodynamic/Response Biomarkers: LDL, Circulating B lymphocytes; Phospho-AKT levels; High-sensitivity C-reactive protein, interleukin-6, fibrinogen, soluble intercellular adhesion molecule-1) and an oxidative stress biomarker (F2-isoprostane); alkaline phosphatase (ALP)	1	Lecture	CC	Know	L&GD,L &PPT
CO5,CO6,CO7	Analyse the various Safety Biomarkers – LFT, Creatinine clearance, Cystatin C; Hepatic aminotransferases and bilirubin; Serum creatinine; Serum potassium; Kim-1, Albumin, Total Protein, ?2 Microglobulin, Urinary Clusterin, Urinary Trefoil Factor 3; HLA-B*1502 allele; Neutrophil count.	1	Experiential-Learning 29.8	AFT-RES	Know	BL,CBL
CO5,CO6,CO7	Describe the various Early and late pregnancy markers - Alpha Feto protein (AFP), Unconjugated estriol, beta HCG, Inhibin A, PAPP A test.	1	Lecture	CC	Know	L&PPT ,L&GD

CO5,CO6,CO7	Analyse the various Early and late pregnancy markers - Alpha Feto protein (AFP), Unconjugated estriol, beta HCG, Inhibin A, PAPP A test.	1	Experiential-Learning 29.9	AFT-RES	Know	BL,CBL, LRI
CO5,CO6,CO7	Analyse and Interpret results from monitoring biomarkers like HbA1c and BNP, as well as predictive biomarkers such as HER2 and EGFR mutation status, to assess clinical significance. Explain the role of pharmacodynamic, response, and safety biomarkers in patient management and therapeutic monitoring.	2	Experiential-Learning 29.10	AFT-RES	Knows-how	BL,LRI,CD

M 29 Unit 5 Point-of-Care Testing

29.5.1. Introduction to rapid, bedside diagnostics
29.5.2. Glucose Monitoring
29.5.3. Ovulation and Pregnancy Testing
29.5.4. Rapid Infectious Disease Tests

References: 21,22,25,26

3A	3B	3C	3D	3E	3F	3G
CO5,CO6,CO7	Demonstrate the principles and applications of rapid, bedside diagnostics, focusing on glucose monitoring techniques, including self-testing and continuous glucose monitoring for diabetes management.	2	Practical Training 29.3	PSY-GUD	Does	DL
CO5,CO6,CO7	Investigate the principles and applications of rapid, bedside diagnostics, focusing on glucose monitoring techniques, including self-testing and continuous glucose monitoring with diagnostic patch device for diabetes assessment.	1	Experiential-Learning 29.11	AFT-SET	Knows-how	LRI,D
CO5,CO6,CO7	Perform and Interpret results from urine-based rapid diagnostic tests for ovulation and pregnancy, as well as rapid infectious disease tests for malaria, COVID-19, and influenza	2	Practical Training 29.4	PSY-MEC	Knows-how	LRI,DL
CO5,CO6,CO7	Examine and Interpret results from urine-based rapid diagnostic tests for ovulation and pregnancy, as well as rapid infectious disease tests for malaria, COVID-19, and	4	Experiential-Learning 29.	AFT-RES	Knows-how	LRI,D

	influenza.		12			
CO4,CO5,CO6	Demonstrate the significance of these diagnostic tools in clinical decision-making and patient care.	1	Practical Training 29.5	PSY-MEC	Shows-how	DIS
CO5,CO6,CO7	Analyse the significance of these diagnostic tools in clinical decision-making and patient care.	2	Experiential-Learning 29.13	AFT-RES	Knows-how	IBL,DIS, Mnt,D

Practical Training Activity

Practical Training 29.1 : Demonstrate the morphological nature of chromosomes

Duration of activity - 5 hours
Activity : Demonstration Lab (30 minutes)
Activity 1: Introduce the basic concepts of karyotyping and types of banding techniques through lecture (15 minutes)
Activity 2: Provide a roadmap of the steps to prepare and analyze a human karyotype (15 minutes)
Activity : Kinaesthetic Learning (2 Hours 30 Minutes)
Activity 3: Provide facilities for Sample culture and cell culture set up with the materials and basic techniques for collecting and culturing cells.(30 minutes)
Activity 4 : Harvesting and Preparing Chromosomes for Banding (60 minutes)
Activity 5 : Provide knowledge to Understand the G-banding technique and how it helps in chromosome identification (60 minutes)
Activity : Lab Report Interpretation (2 Hours)
Activity 6 : Chromosome Analysis and Interpretation through Hands-On Chromosome Analysis (60 minutes)
Activity 7 : Review findings and compare different banding techniques (60 minutes)

Practical Training 29.2 : Exposure to Molecular Biology Techniques: Isolation, Analysis, and Mutation Studies of Nucleic Acids

Duration of activity - 10 Hours
Activity : Demonstration Lab (4 Hours)
Activity1 : Preparation and Isolation of genomic DNA from sources such as blood cells (60 minutes)
Activity 2 : Preparation and Isolation of genomic DNA from epithelium (60 minutes)
Activity 3 : Preparation and Isolation of plasmid DNA form E. coli (60 minutes)
Activity 4 : Plasmid DNA Analysis and Confirmation (60 minutes)
Activity : Practical (6 Hours)

Activity 5 : Spontaneous Mutation Study in Bacterial Model (60 minutes)
Activity 6 : Induced Mutation Study in Bacterial Model (60 minutes)
Activity 7 : Isolation and Identification of mRNA from Eukaryotic Cells (60 minutes)
Activity 8 : mRNA Analysis and Confirmation (60 minutes)
Activity 9 : Data Analysis and Troubleshooting of mRNA and DNA Protocols (60 minutes)
Activity 10 : Review and summary of all the techniques (60 minutes)

Practical Training 29.3 : Bedside diagnostic methods for diabetes management.

Demonstration of the glucose monitoring techniques and its clinical application for glucose monitoring
Duration of the activity - 2 hrs
Step - 1. Introduce the importance of glucose monitoring, types of techniques, and their clinical applications - 15 min
Step - 2. Demonstrate each glucose monitoring technique in detail - 30 min
Step - 3. Allow students to practice performing glucose monitoring techniques and gain experience in accurate result interpretation - 60 min
Step - 4. Help students apply glucose monitoring results to clinical cases and make informed decisions - 20 min
Step - 5. Assess each student's ability to perform glucose monitoring and interpret results - 15 min
Step - 6. Summarize the importance of accurate glucose monitoring and how it impacts patient care - 10 min

Practical Training 29.4 : Perform Rapid diagnostic test methods for ovulation and rapid infectious diseases

Duration of activity - 2 Hours
Activity : Demonstration Bedside (30 minutes)
Activity 1 : Provide a brief overview of the session’s objectives and introduce the urine-based diagnostic tests (10 minutes)
Activity 2 : Demonstrate the steps for using the test kit, including how to collect urine and interpret results (20 minutes)
Activity : Kinaesthetic Learning (50 minutes)
Activity 3 :Allow students to practice performing each test, emphasizing correct technique and interpretation (50 minutes)
Activity : Lab Report Interpretation (40 minutes)
Activity 4 : Assess each student’s practical skills in performing the tests and interpreting results (20 minutes)
Activity 5 :Conduct Group discussion encouraging the students share their experiences and interpretations of the test results (10 minutes)
Activity 6 : Summarize the final discussion and conclusion of the session (10 minutes)

Practical Training 29.5 : Hands on training in Rapid diagnostic tools for clinical decission making.

Duration of activity - 1 hour

Activity: Demonstration (35 Minutes)
Activity 1 : Provide a brief introduction to the session and the importance of rapid diagnostic tools in clinical practice (5 minutes)
Activity 2 : Introduce and demonstrate the use of various rapid diagnostic tools (20 minutes)
Activity 3: Introduce a clinical case study and explain how to use rapid diagnostic tools for accurate diagnosis(10 min)
Activity : Discussion (25 minutes)
Activity 4 :Group activity followed by a group discussion. Groups will present their diagnosis and tool choices(15 minutes)
Activity 5: Summarize the main points: the role of rapid diagnostic tools, their application in clinical cases, and the importance of accurate diagnosis followed by Question & Answer session (10minutes)

Experiential learning Activity

Experiential-Learning 29.1 : Interpret the results of a Karyotyping of Human genomic DNA

Duration of activity - 1 Hour.
Activity : Demonstartion Lab (45 Minutes)
Activity 1 : introduce the key concepts to be covered: Karyotyping, chromosomal mutations, types of genetic testing (presymptomatic, predictive, prenatal, etc.), and techniques like FISH, microarrays and macroarrays (5 Minutes)
Activity 2 : Provide a lecture or slide presentation explaining karyotyping, Highlight common chromosomal abnormalities with clarification session (10 minutes)
Activity 3 : Provide an understanding of various genetic testing methods and their uses(10 minutes)
Activity 4 : Introduce FISH as a technique for visualizing genetic material with advantages and limitations (10 minutes)
Activity 5 : Explain gene mutations and their detection using microarrays and macroarrays(10 minutes)
Activity : Kinaesthetic Learning (10 Minutes)
Activity 6 : Engage participants with practical application of the learned concepts with hands on activity and case discussion (10 minutes)
Activity : Lab Report Interpretation (5 Minutes)
Activity 7 : Summarize key points on the different genetic testing methods, their applications, and how they are used in diagnosing and preventing genetic disorders (5 minutes)

Experiential-Learning 29.2 : Elaborate and explain the methods of Genomic and exome sequencing

Duration of activity - 1 Hour
Activity : Brain Storming (25 Minutes)
Activity 1 : Introduction to DNA/RNA sequencing and whole exome sequencing (5 minutes)
Activity 2 : Short lecture or slide presentations explaining the basics of DNA sequencing, RNA sequencing, and whole exome sequencing, Highlight the differences, cases and technologies involved (10 minutes)

Activity 3 : Encourage participants to think critically and creatively about DNA/RNA sequencing and whole exome sequencing (10 minutes)
Activity : Journal Club (35 Minutes)
Activity 4 : Introduce the concept of a journal club and prepare for discussion and Introduce one or two scientific papers related to DNA/RNA sequencing or whole exome sequencing (15 minutes)
Activity 5 : Divide students into groups to discuss key points identified from the paper (15 minutes)
Activity 6 : Summarize key points and provide additional resources for further reading (5 minutes)

Experiential-Learning 29.3 : Siginificance of DNA Polymorphisms in conditions like Parentage testing and Bone marrow engraftment testing

Duration of activity - 2 Hours
Activity : Blended Learning (1 Hour)
Activity 1 : Provide foundational knowledge on DNA polymorphisms and its role in genetic variation and parentage testing with digital content (30 minutes)
Activity 2 : Examine the role of DNA polymorphisms in bone marrow engraftment testing through case study or research article (15 minutes)
Activity 3 : Short interactive self assessment session (15 minutes)
Activity : Co- Learning (30 minutes)
Activity 4 : Foster co-learning through group interaction, encouraging students to engage with each other's knowledge and ideas (30 minutes)
Activity : Case Based Learning (20 minutes)
Activity 5 : Provide each group with a scenario or case study where they need to determine the genetic testing approach for a specific situation (20 minutes)
Activity : Discussion (10 minutes)
Activity 6 : summarise the session and discuss the conclusion (10 minutes)

Experiential-Learning 29.4 : The molecular techniques involved in Nucleic acid Extraction and amplification.

Duration of activity - 2 hours
Activity : Library Session (30 minutes)
Activity 1 : Introduce and explain the methods of library and self-learning tools will be used to acquire knowledge about nucleic acid extraction and amplification techniques in molecular biology (10 minutes)
Activity 2 : Provide a brief overview of nucleic acid extraction and amplification techniques (20 minutes)
Activity : Demonstration (30 minutes)
Activity 3 : Guide the students in using library resources to deepen their knowledge of nucleic acid extraction and amplification (30 minutes)
Activity : Mobile Learning (30 minutes)
Activity 4 : Allow the students to explore additional resources and engage in self-paced learning through virtual laboratory tools to gain in depth knowledge (30 minutes0
Activity : Discussion (30 minutes)

Activity 5 : Create an Interactive Knowledge Check and Group Discussion (30 minutes)

Experiential-Learning 29.5 : Molecular basis of Neoplastic conditions, analytical targets of mutations for different malignancies.

Duration of activity - 2 Hours
Activity : Case Based Learning (50 minutes)
Activity 1 : Introduce the learning objectives and outline the importance of understanding the molecular basis of neoplastic conditions such as mutations in protooncogenes and oncogenes and tumor suppressor genes (10 minutes)
Activity 2 : Provide the students with real-world exposure to malignancies and their molecular underpinnings with case presentations (40 minutes)
Activity : Discussion (1 Hour 10 minutes)
Activity 3 : Facilitate a quick discussion on the patient exposure and connect it with molecular knowledge (10 minutes)
Activity 4 : Engage participants in a more detailed discussion about the molecular basis of malignancies (60 minutes)

Experiential-Learning 29.6 : Diagnostics analysis of Molecular Tissue typing on diseases associated with HLA polymorphism.

Duration of activity - 6 hours
Activity : Team Project Work (3 Hours)
Activity 1 : Introduce the topic "Molecular Tissue Typing and its relevance in diseases associated with HLA polymorphism" and provide real-world examples of how molecular tissue typing plays a critical role in medical practices, such as organ transplantation and disease susceptibility and the usage of Research tools and techniques (60 minutes)
Activity 2 : Team formation among the students, assign them role of literature search and article collection (60 minutes)
Activity 3 : Provide time for article analysis and summarization (60 minutes)
Activity : Journal Club (3 Hours)
Activity 4 : Guide teams of students to structure their presentation to convey their findings clearly (60 minutes)
Activity 5 : Team presentation of the findings about HLA Polymorphism (60 minutes)
Activity 6 : Provide Reflection and feedback about the presentations to the students (60 minutes)

Experiential-Learning 29.7 : Clinical Applications of Prognostic and Monitoring Biomarkers: A Case-Based Exploration

Duration of activity - 1 hour.
It can be carried out either in the inhouse laboratory or by paying a visit to nearby molecular laboratory or molecular diagnostic centre.
Activity : Blended Learning (25 minutes)
Activity 1 : Establish the topic, introduce blended learning, and connect biomarkers to clinical practice such as Ki-67; BRAF; Chromosome 17p deletions and TP53; Plasma fibrinogen; Gleason score; Total kidney volume. Describe the various Monitoring Biomarkers - Hemoglobin A1c (HbA1c); Brain natriuretic peptide (BNP); Viral Hepatitis

Markers; Coagulation test Panel, Monoclonal protein (M protein); Tumour Markers; B-type natriuretic peptide (BNP) or N-terminal proBNP (NT-proBNP) for Heart failure (10 minutes)
Activity 2 : Provide foundational knowledge on prognostic and diagnostic assessment on monitoring biomarkers via self-paced content (15 minutes)
Activity : Case - Based Learning (22 minutes)
Activity 3 : Apply the knowledge from the online content to real-world clinical cases through group tasks or assignment (22 minutes)
Activity : Co- Learning (13 minutes)
Activity 4 : Create a discussion with the students about the findings from the case studies (8 minutes)
Activity 5 : Summarise the session, gather feedback, and provide further resources for continued learning (5minutes)

Experiential-Learning 29.8 : Clinical Applications of Safety Biomarkers : A Case-Based Exploration

Duration of activity - 1 hour
Activity : Blended Learning (25 minutes)
Activity 1 : Describe the context for blended learning and introduce the clinical relevance of safety biomarkers (10 minutes)
Activity 2 : Provide foundational knowledge on blended learning and safety biomarkers through an online module, including videos and readings (15 minutes)
Activity : Kinaesthetic Learning (20 minutes)
Activity 3 : Engage the students with real-world cases where safety biomarkers are used in clinical trials, applying their blended learning experience (20 minutes)
Activity : Case Based Learning (15 minutes)
Activity 4 : Reflect on the case studies and summarize key learning points from the session (10 minutes)
Activity 5 : Summarise the session and gather feedback from the students for continuous improvement (5 minutes)

Experiential-Learning 29.9 : Clinical Applications of pregnancy markers: A Case-Based Exploration

Duration of the activity - 1 hour
Activity : Blended Learning (25 minutes)
Activity 1 : Introduce pregnancy markers, their clinical relevance, and the blended learning approach (10 minutes)
Activity 2 : Provide a deeper understanding of the specific pregnancy markers and their role in clinical practice(15 minutes)
Activity : Lab Report Interpretation (20 minutes)
Activity 3 : Allow students to practice using pregnancy tests or markers and interpret their results (20 minutes)
Activity : Case- Based Learning (15 minutes)
Activity 4 : Use case studies to guide clinical decision-making based on pregnancy markers (10 minutes)
Activity 5 : Summarize the session and provide time for questions and answers (5 minutes)

Experiential-Learning 29.10 : Illustrating the role of pharmacodynamics of saftey biomarker in Clinical Applications.

Duration of activity - 2 Hours
Activity : Blended Learning(1 Hour)
Activity 1 : Introduce safety biomarkers, their relevance in clinical practice, and the approach of blended learning (15 minutes)
Activity 2 : Provide a detailed overview of key safety biomarkers, their clinical significance, and how they are used in monitoring patient safety (20 minutes)
Activity 3 : Introduce case studies where safety biomarkers are used to assess patient safety and decision-making in clinical settings (25 minutes)
Activity : Lab Report Interpretation (30 minutes)
Activity 4 : Allow students to work with actual or simulated data related to safety biomarkers and practice interpreting the results (30 minutes)
Activity : Case Diagnosis (30 minutes)
Activity 5 : Provide group discussion where students make clinical decisions based on their analysis of biomarkers (20 minutes)
Activity 6 : Summarize key learning points and allow students to reflect on their experience (10 minutes)

Experiential-Learning 29.11 : Exposure to Bedside diagnostic methods for diabetes management.

Duration of activity - 1 Hour 10 minutes
Activity : Demonstration (30 minutes)
Activity 1 : Introduce the topic, explaining the importance of glucose monitoring in clinical settings (10 minutes)
Activity 2 : Demonstrate various glucose monitoring techniques and explain their applications (20 minutes)
Activity : Kinaesthetic Learning (20 minutes)
Activity 3 : Allow students to practice using glucose monitoring tools and devices (20 minutes)
Activity : Lab Report Interpretation (20 minutes)
Activity 4 : Help students understand the clinical application of glucose monitoring and how to interpret the results in a clinical context (10 minutes)
Activity 5 :Conclude the session, summarising the key points, and question and answer session (10 minutes)

Experiential-Learning 29.12 : Hands on training in Rapid diagnostic test methods for ovulation and rapid infectious diseases.

Duration of activity - 4 Hours
Activity : Demonstration (1 Hour 35 Minutes)
Activity 1 : Introduce and explain the importance of urine-based diagnostic tests (20 minutes)
Activity 2. Provide detailed explanations of each urine-based test and its application in diagnosing different conditions (30 minutes)
Activity 3. Demonstrate the step-by-step procedure for performing the test and interpreting the results (45 minutes)
Activity : Kinaesthetic Learning (1 hour 15 minutes)
Activity 1 :. Allow students to practice using the urine-based diagnostic tools for pregnancy, ovulation, malaria, COVID-19, and Influenza (1 Hour 15 minutes)
Activity : Lab Report Interpretation (1 Hour 20 Minutes)

Activity 1 :. Assess students' ability to interpret results and make clinical decisions based on test outcomes (30 minutes)
Activity 2 : Assess each student's proficiency with the tests and their ability to interpret results (30 minutes)
Activity 3: Provide feedback to students on their performance and summarize key takeaways from the session (20 minutes)

Experiential-Learning 29.13 : Active engagement learning for enhanced accuracy in clinical decision making.

Duration of activity - 2 hours
Activity: Inquiry Based Learning (1 Hour)
Activity 1 : Briefly introducing the topic, the importance of inquiry-based learning (IBL), and its role in improving clinical decision-making (15 minutes)
Activity 2 : Encourage students to engage in the learning process through a short activity through a case study or quiz (15 minutes)
Activity 3 :Exploration of various diagnostic tools used in clinical practice.(15minutes)
Activity : Demonstration (25 minutes)
Activity 4 : Demonstrate how inquiry-based learning can help students improve diagnostic skills.???? with a clinical case study or hypotheses (25 minutes)
Activity : Discussion (35 minutes)
Activity 5 : Discussing the real-world application of diagnostic tools and the importance of careful clinical decision-making (20 minutes)
Activity 6 : Summarizing the role of IBL and diagnostic tools in clinical decision-making and Question and answer session (15 minutes)
Activity : Mentoring (15 minutes)
Activity 7 : Mentoring the UG students about the importance of diagnostic tools in clinical decision (15 minutes).

Modular Assessment

Assessment method	**Hour**
Instructions: Conduct a structured Modular assessment. The assessment will be for 50 marks. Keep a structured marking pattern. Use different assessment methods in each module for the semester. Keep a record of the structured pattern used for assessment. Calculate the Modular grade point as per Table 6 C. CHOOSE ANY OF THE BELOW ASSESSMENT FOR 50 MARKS Total Marks: 50 / Time Duration: 4 Hours 1.VIVA VOCE EXAMINATION (10 Marks) Assessment Structure: Evaluate the ability to interpret molecular diagnostic findings from various biological samples and formulate differential diagnoses leading to a confined diagnosis. Marking Distribution: Knowledge and Understanding (4 marks)	4

Detailed knowledge of molecular diagnostic principles
Understanding of advanced techniques (PCR, RT-PCR, NGS, Microarrays, ELISA, etc.)
Clinical Application (3 marks)
Ability to deduce differential diagnosis from molecular lab results
Interpretation of genetic and microbial markers
Communication Skills (3 marks)
Clarity in explanation
Use of precise scientific terminology
Logical reasoning in clinical scenarios
2.OBJECTIVE STRUCTURED CLINICAL EXAMINATION (OSCE) (25 Marks)
Mark Distribution:
Interpretation of Molecular Test Findings (10 Marks)
Identification of normal and abnormal molecular markers
Analysis of genetic and microbial indicators in biological samples
Differential Diagnosis Formulation (5 Marks)
Postulation of probable conditions based on molecular findings
Correlation with clinical symptoms
Final Diagnosis Justification (3 Marks)
Logical reasoning behind the confined diagnosis
Supporting evidence from molecular test results
Pathophysiological Correlation (2 Marks)
Understanding disease progression through molecular parameters
Molecular Report Interpretation (2 Marks)
Analysis of findings provided in diagnostic reports
Clinical Decision Making (3 Marks)
Integration of molecular findings into treatment planning
3.CLASS PRESENTATION (10 Marks)
Assessment Criteria:
Content (4 marks)
Depth of discussion on molecular diagnostic techniques
Inclusion of recent advances and research
Correlation of molecular results with patient diagnosis

Presentation Skills (3 marks) Clear and concise delivery Effective use of visual aids (genetic sequencing charts, graphs, electrophoresis images, etc.) Engagement with audience Discussion (3 marks) Handling of audience questions Application of knowledge in case scenarios Justification of diagnostic conclusions 4.RECORD KEEPING (5 Marks) Assessment Criteria: Clinical Documentation (4 marks) Accurate recording of molecular diagnostic interpretations Correlation of molecular findings with patient symptoms Integration of molecular terminology Written Presentation Skills (1 mark) Organization and clarity of notes Use of appropriate medical terminology 5.SAQ AND LAQ ASSESSMENT (10 Marks) Short Answer Questions (SAQ) (5 Marks) Interpretation of given molecular test results Formulation of differential diagnoses Correlation with patient history Long Answer Questions (LAQ) (5 Marks) Detailed discussion on a selected molecular diagnostic technique Analysis of a case study including molecular findings, differential diagnosis, and final diagnosis Or Any practical in converted form can be taken for assessment. (25 marks) and Any experiential, such as portfolios / reflections / presentations can be taken as an assessment. (25 marks)	
Module 30 : Tissue diagnosis including Immunohistochemistry	

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

Demonstrate the role of immunohistochemistry in specific diseases such as tumor, neurological, autoimmune and infectious diseases.
Describe the techniques for tissue processing and the principles of antibody interactions in immunohistochemistry
Interpret immunohistochemistry results and staining patterns in specific disorders

M 30 Unit 1 Tissue processing and Immunohisto/cyto staining

30.1.1. Tissue processing for Histochemistry
30.1.2. Principles of antibody interactions
30.1.3. Staining protocols

References: 21,22,24,88

3A	3B	3C	3D	3E	3F	3G
CO6,CO7	Describe the essential techniques involved in tissue processing, including fixation, embedding, and sectioning, to prepare samples for histological analysis.	1	Lecture	CC	Knows-how	L&PPT ,L_VC
CO6,CO7	Investigate and Interpret immunohistochemistry results to identify specific antigens in tissues and assess their clinical relevance.	1	Practical Training 30.1	PSY-MEC	Knows-how	LRI,BL,DL
CO6,CO7	Discuss the principles of antibody interactions and staining protocols, highlighting their applications in diagnosing diseases.	1	Lecture	CAP	Knows-how	L&PPT ,L_VC
CO6,CO7	Apply the principles of antibody interactions and staining protocols, highlighting their applications in diagnosing diseases.	1	Practical Training 30.2	PSY-MEC	Knows-how	DL,BL,LRI

M 30 Unit 2 Tumour Diagnosis

30.2.1. Histopathology and immunohistochemistry in tumor diagnosis
30.2.2. Identifying genes, proteins and other tumour markers

References: 21,22,24,88

3A	3B	3C	3D	3E	3F	3G
CO6,CO7	Describe the fundamental concepts of histopathology and the principles of immunohistochemistry as they relate to tumor diagnosis.	1	Lecture	CC	Know	L_VC,L&PPT
CO6,CO7	Describe the clinical significance of these markers in guiding treatment decisions and prognostic assessments.	1	Lecture	CC	Knows-how	L_VC,L&PPT
CO6,CO7	Demonstrate the fundamental concepts of histopathology and the principles of immunohistochemistry as they relate to tumor diagnosis.	1	Practical Training 30.3	PSY-MEC	Does	D,DL,DIS,BL
CO6,CO7	Identify specific tumour markers (e.g., HER2, Ki-67, p53, Keratin 17) in tissue samples to evaluate tumor characteristics.	2	Practical Training 30.4	PSY-MEC	Does	LRI,DL
CO6,CO7	Apply the clinical significance of these markers in guiding treatment decisions and prognostic assessments.	1	Practical Training 30.5	PSY-MEC	Does	BL,DL,DIS
CO6,CO7	Investigate the fundamental concepts of histopathology and the principles of immunohistochemistry as they relate to tumor diagnosis.	1	Experiential-Learning 30.1	AFT-RES	Know	BL,Mnt
CO6,CO7	Identify specific tumour markers (e.g., HER2, Ki-67, p53, Keratin 17) in tissue samples to evaluate tumor characteristics.	3	Experiential-Learning 30.2	AFT-RES	Knows-how	LRI,D,PER,BL

M 30 Unit 3 Infectious Disease Diagnosis

30.3.1. Histopathology and immunohistochemistry in infectious disease diagnosis
30.3.2. Identifying genes, proteins and markers involved in detecting bacterial, viral, fungal, parasitic and other emerging infectious diseases

References: 21,22,23,24,28,84,86,88

3A	3B	3C	3D	3E	3F	3G
CO6,CO7	Describe the immune responses & application of immunohistochemistry in detecting Bacterial, Viral and Fungal Infections	1	Lecture	CC	Knows-how	L&PPT ,L_VC
CO6,CO7	Describe the immune responses & application of immunohistochemistry in detecting Parasitic and other emerging Infections.	1	Lecture	CC	Knows-how	L_VC,L&PPT
CO6,CO7	Apply Matrix-assisted laser desorption ionization–time of flight (MALDI TOF) in detecting pathogens.	2	Practical Training 30.6	PSY-MEC	Does	PL,SIM,LRI
CO6,CO7	Demonstrate the significance and Interpretation of immunohistochemical staining results to in diagnosing infections and guiding treatment strategies.	2	Practical Training 30.7	PSY-MEC	Does	BL,DL
CO6,CO7	Apply Matrix-assisted laser desorption ionization–time of flight (MALDI TOF) in detecting pathogens.	2	Experiential-Learning 30.3	AFT-RES	Knows-how	ML,SIM,PER
CO6,CO7	Interpret immunohistochemical staining results in diagnosing infections and guiding treatment strategies.	2	Experiential-Learning 30.4	AFT-RES	Knows-how	C_L,DIS

M 30 Unit 4 Autoimmune Disorder Diagnosis

30.4.1. Immunohistochemistry in detecting autoimmune disorders
30.4.2. Staining patterns to identify specific immune cells and proteins

References: 21,86,87,88,91

3A	3B	3C	3D	3E	3F	3G
CO6,CO7	Describe the role of immunohistochemistry in detecting immune markers associated with autoimmune disorders such as rheumatoid arthritis and psoriasis.	1	Lecture	CC	Knows-how	L_VC,L&PPT

CO6,CO7	Describe the implications of the findings for diagnosing autoimmune diseases and monitoring treatment responses.	1	Lecture	CC	Knows-how	L&PPT ,L&GD
CO6,CO7	Interpret staining patterns to identify specific immune cells and proteins in affected tissues.	5	Practical Training 30.8	PSY-MEC	Does	PL,DL,LRI
CO6,CO7	Analyse the role of immunohistochemistry in detecting immune markers associated with autoimmune disorders such as rheumatoid arthritis and psoriasis.	3	Experiential-Learning 30.5	AFT-RES	Knows-how	FV,CBL
CO6,CO7	Interpret staining patterns to identify specific immune cells and proteins in affected tissues.	3	Experiential-Learning 30.6	AFT-RES	Knows-how	FV,TPW,BL
CO6,CO7	Assess the implications of these findings for diagnosing autoimmune diseases and monitoring treatment responses.	3	Experiential-Learning 30.7	AFT-RES	Knows-how	CBL

M 30 Unit 5 Neurological Disorder Diagnosis

30.5.1. Applications of immunohistochemistry in the diagnosis of neurological disorders
30.5.2. Interpret immunohistochemical staining results to identify key pathological features in neurological disease diagnosis

References: 21,86,87,88,91

3A	3B	3C	3D	3E	3F	3G
CO6,CO7	Describe the principles and applications of immunohistochemistry in the diagnosis of neurological disorders, particularly neurodegenerative diseases like Alzheimer's.	1	Lecture	CC	Knows-how	L&PPT ,L_VC
CO6,CO7	Describe the significance of these markers in understanding disease progression and guiding therapeutic approaches.	1	Lecture	CC	Knows-how	L&PPT ,L_VC
CO6,CO7	Perform and/or interpret immunohistochemical staining results to identify key pathological features, including amyloid plaques and tau protein tangles in brain tissue.	3	Practical Training 30.9	PSY-MEC	Does	BL,LRI,DL

CO6,CO7	Apply the significance of these markers in understanding disease progression and guiding therapeutic approaches.	2	Practical Training 30.10	PSY-MEC	Does	LRI,DL,BL
CO6,CO7	Analyse the principles and applications of immunohistochemistry in the diagnosis of neurological disorders, particularly neurodegenerative diseases like Alzheimer's.	3	Experiential-Learning 30.8	AFT-RES	Knows-how	BL,JC,DIS
CO6,CO7	Investigate and/or interpret immunohistochemical staining results to identify key pathological features, including amyloid plaques and tau protein tangles in brain tissue.	3	Experiential-Learning 30.9	AFT-RES	Knows-how	DL,Mnt,LS,LRI
CO6,CO7	Analyse the significance of these markers in understanding disease progression and guiding therapeutic approaches.	3	Experiential-Learning 30.10	AFT-RES	Knows-how	BL,TPW,PrBL,DIS

Practical Training Activity

Practical Training 30.1 : Interpreting immunohistochemistry results for disease diagnosis and clinical significance.

Duration of activity - 1 Hour
Activity : Blended Learning (15 minutes)
Activity 1 : Introduction to Immunohistochemistry (IHC) and Its Clinical Relevance (15 minutes)
Activity : Demonstration (20 minutes)
Activity 2 : Demonstrating IHC Staining Results and Interpretation (20 minutes)
Activity : Lab Report Interpretation (25 minutes)
Activity 3 : Hands-on Interpretation of IHC Staining Results (15 minutes)
Activity 4 : Summary of IHC interpretation with discussion(10 minutes)

Practical Training 30.2 : Application of immunohistochemistry (IHC) techniques for antigen detection in tissue sections for disease diagnosis.

Duration of activity - 1 Hour
Activity : Blended Learning (15 minutes)
Activity 1 : Introduction to Antibodies and Their Role in Diagnosis (15 minutes)

Activity : Demonstration Lab (20 minutes)
Activity 2 : Demonstration of Staining Protocols Using Antibodies (20 minutes)
Activity : Lab Report Interpretation (25 minutes)
Activity 3 : Hands-on Activity – IHC Staining and Interpretation (15 minutes)
Activity 4 : Summary and discussion- Question and answer session (10 minutes)

Practical Training 30.3 : Principles of histopathalogy and immunohistochemistry in relation to tumor diagnosis

Duration of activity - 1 Hour
Activity : Blended Learning (15 minutes)
Activity 1 : Introduction to Histopathology and Sample Preparation (15 minutes)
Activity : Demonstration (35 minutes)
Activity 2 : Demonstration of Histopathology Sample Preparation (20 minutes)
Activity 3 : Demonstration of Staining and Slide Preparation (15 minutes)
Activity : Discussion (10 minutes)
Activity 4 : Discussion on Tumor Diagnosis with practical applications, question and answer session (10 minutes)

Practical Training 30.4 : Evaluation of tumor characteristic by specific tumor markers

Duration of activity - 2 Hours
Activity : Demonstration Lab (1 Hour)
Activity 1 : Introduction to Tumor Markers and Their Clinical Significance (15 minutes)
Activity 2 : Techniques for Identifying Tumor Markers (15 minutes)
Activity 3 : Tumor Marker Selection and Clinical Applications (15 minutes)
Activity 4 : Preparation of sample and reagents for hands on procedure (15 minutes)
Activity : Lab Report Interpretation (1 Hour)
Activity 5 : Hands-on Immunohistochemistry (IHC) and results Interpretation (60 minutes)

Practical Training 30.5 : Evaluation of tumor markers for treatment decisions.

Duration of activity - 1 Hour
Activity : Blended Learning (30 minutes)
Activity 1 : Introduction to Tumor Markers and Their Clinical Relevance (15 minutes)
Activity 2 : Briefly explain common methods used to test tumor markers and Introduction to a Clinical Case Study (15 minutes)

Activity : Demonstration Lab (20 minutes)
Activity 3 : Hands-on Activity on Tumor Marker Testing Interpretation and disease treatment discussion based on tumor marker results (20 minutes)
Activity : Discussion (10 minutes)
Activity 4 : Summary and discussion (10 minutes)

Practical Training 30.6 : Infectious disease diagnosis through MALDI-TOF

Duration of activity - 2 Hours
Activity : Peer Learning (45 minutes)
Activity 1 : Introduce the concept of Matrix-Assisted Laser Desorption Ionization–Time of Flight (MALDI TOF) and explain its basic principles (15 minutes)
Activity 2 : Discuss the role of MALDI TOF is used to identify microorganisms based on their unique protein spectra (15 minutes)
Activity 3 : Introduction on MALDI TOF Workflow including sample preparation, matrix application and instrument set up (15 minutes)
Activity : Kinaesthetic Learning (15 minutes)
Activity 5 : Preparing for hands on activity (15 minutes)
Activity : Lab Report Interpretation (1 Hour)
Activity 6 : Hands-on MALDI TOF Analysis and Interpretation (60 minutes)

Practical Training 30.7 : Interpretation of immunohistochemical staining results.

Duration of activity - 2 Hours
Activity : Blended Learning (30 minutes)
Activity 1 : Introduction to Infectious Diseases and the role of Protein Markers (15 minutes)
Activity 2 : Brief introduction on the Diagnostic Methods for Protein Detection in Infectious Diseases (15 minutes)
Activity : Kinaesthetic Learning (30 minutes)
Activity 3 : Hands on activity for preparation of samples and reagents (30 minutes)
Activity : Demonstration Lab (1 Hour)
Activity 4 : Demonstrate the principle of IHC staining for detecting specific antigens and interpretation of results (40 minutes)
Activity 5 : Demonstrate Advanced techniques for the confirmation of specific proteins in infectious disease diagnosis (20 minutes)

Practical Training 30.8 : Interpretation of immunohistochemical staining patterns.

Duration of activity - 5 Hours
Activity : Peer Learning (40 minutes)
Activity 1 : Discuss the importance of staining techniques in histology and immunohistochemistry for identifying immune cells and proteins in tissue samples (20 minutes)

Activity 2 : Introduction to Immune Cells and Protein Markers (20 minutes)
Activity : Demonstration Lab (1 Hour 20 minutes)
Activity 3 : Preparation for Hands-on Activities such as tissue collection, sectioning, and fixation methods (20 minutes)
Activity 4 : Explain the steps of Immunohistochemistry for detecting immune cells and proteins (20 minutes)
Activity 5 : Practical Demonstration to perform IHC staining to detect immune cells in tissue sections and interpretation (40 minutes)
Activity : Lab Report Interpretation (3 Hours)
Activity 6 : Demonstration and Interpretation of Immunofluorescence for Protein Detection (60 minutes)
Activity 7 : Advanced Staining Techniques and Interpretation of Inflammatory Markers (60 minutes)
Activity 8 : Introduce clinical or research case Studies and Data Analysis (60 minutes)

Practical Training 30.9 : Interpretation of immunohistochemical staining patterns.

Duration of activity - 3 Hours
Activity : Blended Learning (1 Hour)
Activity 1 : Introduction to Neurological Disorders and Protein Markers and methods of protein detection (40 minutes)
Activity 2 : Explain the methods of sample preparation, types of antibodies used for detecting specific proteins (20 minutes)
Activity : Demonstration (1 Hour)
Activity 3 : Demonstration of Western blot technique (20 minutes)
Activity 4 : Hands - on western blot activity with a prepared sample (20 minutes)
Activity 5 : Demonstrate the IHC method using brain tissue samples to detect specific proteins (20 minutes)
Activity : Lab Report Interpretation (1 Hour)
Activity 6 : Data interpretation, quantification of protein expression and discussion (60 minutes)

Practical Training 30.10 : Significance of biomarkers in disease progression.

Duration of activity - 2 Hours
Activity : Blended Learning (10 minutes)
Activity 1 : Briefly explain the significance of identifying specific proteins in neurological diseases (10 minutes)
Activity : Demonstration (1 Hour 35 minutes)
Activity 2 : Prepare the sample and other Preparation for Protein Identification (20 minutes)
Activity 3 : Demonstrate the process of extracting proteins from biological samples and perform SDS PAGE (25 minutes)
Activity 4 : Demonstrate the procedure of Western Blotting (30 minutes)
Activity 5 : Demonstrate protein detection and visualization (20 minutes)

Activity : Lab Report Interpretation (15 minutes)
Activity 6 : Data interpretation with question and answer session (15 minutes)

Experiential learning Activity

Experiential-Learning 30.1 : Principles of immunohistochemistry in relation to tumor diagnosis

Duration of activity - 1 Hour
Activity : Blended Learning (40 minutes)
Activity 1 : Introduce and explain the concept of histopathology, its role in diagnosing diseases, especially tumors (10 minutes)
Activity 2 : Fundamental Concepts in Histopathology for Tumor Diagnosis (20 minutes)
Activity 3 : Significance of Histopathology in Clinical Practice, its role in patient management with case studies (10 minutes)
Activity : Mentoring (20 minutes)
Activity 4 : Mentoring approach of PG students to UG students- Explain the fundamental concepts UG students should understand about histopathology in tumor diagnosis (15 minutes)
Activity 5 : Make the UG students summarize the main points: histopathology's role in tumor diagnosis and mentoring tips for them (5 minutes)

Experiential-Learning 30.2 : Identifcation of specific tumor markers

Duration of activity - 3 Hours
Activity : Blended Learning (30 minutes)
Activity 1 : Provide a foundational understanding of tumor markers and their role in cancer diagnosis and prognosis (30 minutes)
Activity : Demonstration (1 Hour 15 minutes)
Activity 2 : Demonstrate the preparation steps before performing the immunohistochemistry assay (30 minutes)
Activity 3 : Explain the step-by-step process of performing immunohistochemistry (IHC) on tissue samples to identify specific tumor markers (45 minutes)
Activity : Lab Report Interpretation (30 minutes)
Activity 4 : Explain the visualization and interpretation of the results of IHC staining (30 minutes)
Activity: Presentation (45 minutes)
Activity 5: Present clinical case studies where the identification of these tumor markers was crucial for diagnosis or treatment (30 minutes)
Activity 6 : Summarise the key learnings on the topic with questions and clarifications (15 minutes)

Experiential-Learning 30.3 : Instrumental application of MALDO-TOF in pathogen detection.

Duration of activity - 2 Hours

Activity : Mobile Learning (35 minutes)
Activity 1 : Provide an overview of the MALDI-TOF mass spectrometry technique and its relevance in pathogen detection (15 minutes)
Activity 2 : Explore the diverse applications of MALDI-TOF in clinical microbiology and pathogen identification (20 minutes)
Activity : Kinaesthetic Learning (50 minutes)
Activity 3 : Provide hands-on learning with models to help participants understand the instrument's components and how it functions (30 minutes)
Activity 4 : Introduce the students to the interpretation of MALDI-TOF data in pathogen detection (20 minutes)
Activity : Simulation (10 minutes)
Activity 5 : Provide sample MALDI-TOF mass spectra from clinical pathogen samples (real or simulated) and ask the students to identify key features of the spectra and explain how these results would guide diagnosis - (10 minutes)
Activity : Presentation (25 minutes)
Activity 6 : Allow Hands-on Data Analysis Practice and Presentation of Findings and Conclusion (25 minutes)

Experiential-Learning 30.4 : Interpretation of immunohistochemical staining patterns.

Duration of activity - 2 Hours
Activity : Co-Learning (1 Hour)
Activity 1 : Introduce the principles of immunohistochemistry and its role in diagnosing infections (15 minutes)
Activity 2 : Discuss the significance of IHC in identifying infections, pathogens, and guiding treatment with lecture and case studies (15 minutes)
Activity 3 : Provide knowledge to the students on how to interpret IHC results and understand the relevance of positive and negative staining patterns (30 minutes)
Activity : Practical (30 minutes)
Activity 4 : Allow the students to practice interpreting IHC staining results on actual tissue slides (30 minutes)
Activity : Discussion (30 minutes)
Activity 5 : Arrange group discussion and summarise the key points on the topic (30 minutes)

Experiential-Learning 30.5 : Role of immunohistochemistry in autoimmune disorders

Duration of activity - 3 Hours
Activity : Case Based Learning (1 Hour)
Activity 1 : Provide foundational knowledge about autoimmune diseases and the role of immune markers in diagnosis such as Anti-nuclear antibodies (ANA) for lupus, rheumatoid factor (RF) for rheumatoid arthritis, anti-CCP for rheumatoid arthritis, anti-dsDNA for lupus (15 minutes)
Activity 2 : Discuss the diagnostic methods, focusing on immune markers and clinical decision-making such as ELISA, Western Blot, imaging along with clinical assessment of symptoms (15 minutes)

Activity 3 : Provide case-based learning, explaining how real-world clinical cases help in understanding diagnostic decision-making (30 minutes)
Activity : Field Visit (1 Hour)
Activity 4 : Transition from the classroom to the field visit location (e.g., laboratory, clinic, or diagnostic facility) to provide knowledge on testing procedures, technology and clinical decision making (60 minutes)
Activity : Flipped Classroom (1 Hour)
Activity 5 : Have the students apply their field visit learnings to clinical cases with peer discussion and summarise the topic (60 minutes)

Experiential-Learning 30.6 : Hands on training in the interpretation of Staining patterns in affected tissues.

Duration of activity - 3 Hours
Activity : Blended Learning (30 minutes)
Activity 1 : Introduce autoimmune disorders and the role of immune markers in diagnosing and monitoring these diseases (15 minutes)
Activity 2 : Provide knowledge on the role of immune markers that are used to diagnose autoimmune disorders and monitor disease progression (15 minutes)
Activity : Field Visit (1 Hour 30 minutes)
Activity 3 : Prepare the students for the field visit by providing context and framing creative writing tasks (30 minutes)
Activity 4 : Transition from the classroom to the field visit location (e.g., laboratory, clinic, or diagnostic facility) (60 minutes)
Activity : Flipped Classroom (1 Hour)
Activity 5 : Allow the students time to write creatively about their field visit experience and integrate the knowledge gained about immune markers in autoimmune disease diagnosis, group sharing and reflection of the field visit (60 minutes)

Experiential-Learning 30.7 : Findings and monitoring treatment responses for autoimmune diseases

Duration of activity - 3 Hours
Activity : Early Clinical Exposure (30 minutes)
Activity 1 : Provide an introduction to autoimmune diseases, their pathophysiology, and the challenges in diagnosis and monitoring (15 minutes)
Activity 2 : Introduce the key diagnostic tools used to detect and monitor autoimmune diseases like Blood tests, imaging, biopsy, clinical symptoms and disease activity markers (15 minutes)
Activity : Case Based Learning (30 minutes)
Activity 3 : Prepare the students for case-based learning by introducing the format and clinical reasoning (30 minutes)
Activity : Flipped Classroom (2 Hours)
Activity 4 : Provide time for group discuss their assigned case in-depth, applying diagnostic reasoning to identify the autoimmune disease and relevant markers for monitoring (60 minutes)
Activity 5 : Expand on case learning by applying concepts to real-world autoimmune disease scenarios, group reflection of their understanding and summarising the final

reflection (60 minutes)

Experiential-Learning 30.8 : Applications of immunohistochemistry in neurodegenerative diseases.

Duration of activity - 3 Hours
Activity : Blended Learning (30 minutes)
Activity 1 : Introduction to Immunohistochemistry (IHC), Provide an overview of the principles of IHC and its importance in diagnosing neurological disorders (15 minutes)
Activity 2 : Provide a brief introduction to common neurological disorders and how IHC is applied in their diagnosis (15 minutes)
Activity : Journal Club (30 minutes)
Activity 3 : Familiarize the students with the concept of a journal club and its role in understanding research papers (30 minutes)
Activity : Discussion (2 Hours)
Activity 4 : Have participants analyze and discuss the articles in their small groups, emphasizing IHC applications in neurological disorders (30 minutes)
Activity 5 : Allow each group presents its findings and insights from the journal article, fostering group learning and discussions (30 minutes)
Activity 6 : Introduce the students to designing surveys and using them to gather opinions or insights on IHC in neurological diagnoses (20 minutes)
Activity 7 : Allow the students to design and distribute surveys to collect opinions on IHC’s applications in diagnosing neurological diseases (40 minutes)

Experiential-Learning 30.9 : Hands on training in Iimmunohistochemistry in neurological disorder diagnosis.

Duration of activity - 3 Hours
Activity : Library Session (60 minutes)
Activity 1 : Introduce IHC as a technique and its role in identifying pathological features in brain tissue (15 minutes)
Activity 2 : Briefly cover common pathological features in brain tissue that can be identified using IHC (15 minutes)
Activity 3 : Introduce the specific IHC markers used to identify pathological features in brain tissue (30 minutes)
Activity : Demonstration Lab (15 minutes)
Activity 4 : Demonstrate the process of preparing brain tissue for IHC staining (15 minutes)
Activity : Mentoring (45 minutes)
Activity 5 : Guide the students through the IHC staining process on brain tissue sections (15 minutes)
Activity 6 : Finalize the staining process and prepare slides for analysis (30 minutes)
Activity : Lab Report Interpretation (1 Hour)
Activity 7 : Interpretation and analysis of Microscopic Examination of Stained Brain Tissue (60 minutes)

Experiential-Learning 30.10 : Exposure to application of markers in Disease progression and therapeutic approaches.

Duration of activity - 3 Hours

Activity : Blended Learning (15 minutes)
Activity 1 : Provide foundational knowledge on disease markers and their role in disease progression and therapy (15 minutes)
Activity : Project Based Learning (45 minutes)
Activity 2 : Provide the project-based learning approach and introduce the task of group formation among the students, assign topics for presentation (25 minutes)
Activity 3 : Allow groups time to research their assigned disease, biomarkers, and therapeutic approaches (20 minutes)
Activity : Team Project Work (1 Hour)
Activity 4 : Develop the project of the groups and Analyse and allocate presentation time for each group (60 minutes)
Activity : Discussion (1 Hour)
Activity 5 : Reflect on the key learnings from the presentations and discuss the role of biomarker (60 minutes)

Modular Assessment

Assessment method	**Hour**
Instructions: Conduct a structured Modular assessment. The assessment will be for 50 marks. Keep a structured marking pattern. Use different assessment methods in each module for the semester. Keep a record of the structured pattern used for assessment. Calculate the Modular grade point as per Table 6 C. CHOOSE ANY OF THE BELOW ASSESSMENT FOR 50 MARKS Total Marks: 50 / Time Duration: 4 Hours 1.VIVA VOCE EXAMINATION (10 Marks) Assessment Structure: Evaluate the ability to interpret histopathological and immunohistochemical findings from tissue samples and formulate differential diagnoses leading to a confined diagnosis. Marking Distribution: Knowledge and Understanding (4 marks) Detailed knowledge of histopathological and immunohistochemical principles Understanding of tissue preparation, staining techniques, and marker interpretation Clinical Application (3 marks) Ability to deduce differential diagnosis from histopathology and IHC results Interpretation of morphological and biomarker variations in tissues Communication Skills (3 marks) Clarity in explanation Use of precise medical and scientific terminology	4

Logical reasoning in clinical scenarios
2.OBJECTIVE STRUCTURED CLINICAL EXAMINATION (OSCE) (25 Marks)
Mark Distribution:
Interpretation of Histopathological Findings (10 Marks)
Identification of normal and abnormal tissue architecture
Recognition of key histological patterns of diseases
Immunohistochemistry (IHC) Marker Analysis (5 Marks)
Understanding the role of IHC in diagnosis
Interpretation of common IHC markers (e.g., Ki-67, p53, HER2, CD markers)
Differential Diagnosis Formulation (3 Marks)
Postulation of probable conditions based on histopathology and IHC findings
Correlation with clinical and radiological data
Final Diagnosis Justification (2 Marks)
Logical reasoning behind the confined diagnosis
Supporting evidence from tissue examination
Pathophysiological Correlation (2 Marks)
Understanding disease progression at the tissue level
Histopathological Report Interpretation (2 Marks)
Analysis of findings provided in pathology reports
Clinical Decision Making (1 Mark)
Integration of histopathology and IHC findings into treatment planning
3.CLASS PRESENTATION (10 Marks)
Assessment Criteria:
Content (4 marks)
Depth of discussion on tissue diagnostic techniques
Inclusion of recent advancements and research in immunohistochemistry
Correlation of histopathology and IHC results with clinical diagnosis
Presentation Skills (3 marks)
Clear and concise delivery
Effective use of visual aids (microscopic images, marker charts, histological slides, etc.)
Engagement with audience
Discussion (3 marks)

Handling of audience questions
Application of knowledge in case scenarios
Justification of diagnostic conclusions
4.RECORD KEEPING (5 Marks)
Assessment Criteria:
Clinical Documentation (4 marks)
Accurate recording of histopathological and IHC interpretations
Correlation of findings with patient symptoms and clinical history
Integration of pathology terminology
Written Presentation Skills (1 mark)
Organization and clarity of notes
Use of appropriate medical terminology
5.SAQ AND LAQ ASSESSMENT (10 Marks)
Short Answer Questions (SAQ) (5 Marks)
Interpretation of given histopathology and IHC test results
Formulation of differential diagnoses
Correlation with patient history
Long Answer Questions (LAQ) (5 Marks)
Detailed discussion on a selected tissue diagnostic technique
Analysis of a case study including histopathology, IHC findings, differential diagnosis, and final diagnosis
Or
Any practical in converted form can be taken for assessment. (25 marks)
and
Any experiential, such as portfolios / reflections / presentations can be taken as an assessment. (25 marks)

Semester No : 6

Module 31 : Cardinal Manifestation and presentation of diseases including approach to a Case

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

Describe fundamental concepts of clinical reasoning and a comprehensive approach to patient history and physical examination for conditions such as pain, fever, jaundice, oedema etc.
Conduct case analyses and targeted assessments for neurological, gastrointestinal, and skin disorders to enhance diagnostic skills.
Integrate clinical history and investigatory findings to follow the appropriate diagnostic algorithms to approach cases with common clinical conditions.

M 31 Unit 1 Brief Introduction to Clinical Reasoning

31.1.Brief Introduction to Clinical Reasoning

References: 53,56,59,66,71,72,73,90

3A	3B	3C	3D	3E	3F	3G
CO1,CO2,CO5,CO7	Describe the fundamental concepts of clinical reasoning and its importance in patient assessment and decision-making.	5	Lecture	CC	Knows-how	L&GD,DIS,PBL
CO1,CO2,CO5,CO6	Conduct case analyses to apply reasoning strategies in real-world scenarios, enhancing their diagnostic skills. Interpret clinical data and patient histories to develop effective treatment plans and evaluate outcomes.	8	Experiential-Learning 31.1	PSY-GUD	Does	CBL,DIS

M 31 Unit 2 How to approach a Case

31.2. History, Physical examination, Algorithm for the diagnosis
31.2.1. Pain
31.2.2. Chest discomfort
31.2.3. Abdominal pain
31.2.4. Head ache
31.2.5. Back and Neck Pain
31.2.6. Alteration in body temperature
31.2.7. Fever with rash

31.2.8. Nervous system dysfunction: Syncope, Fatigue, Neurologic causes of Weakness and Paralysis, Gait disorders, imbalances and falls, Confusion & Delirium
31.2.9. Sleep disorders
31.2.10. Disorders of Eye and Ear Nose Throat
31.2.11. Oral Manifestation of disease
31.2.12. Upper Respiratory Tract and Lower Respiratory Tract (Cough, Dyspnoea)
31.2.13. Alteration in Respiration & Circulatory function
31.2.14. Edema
31.2.15 Nausea, Vomiting, Indigestion
31.2.16. Constipation, Diarrhoea
31.2.17. Unintentional weight loss
31.2.18. Jaundice
31.2.19. Abdominal swelling and ascites
31.2.20. Dysuria
31.2.21. Fluid and electrolyte disturbances
31.2.22. Approach to the patient with a skin disorder including skin manifestations of internal disease and immunologically mediated skin diseases.
31.2.23. Cutaneous drug reactions
31.2.23. Enlargement of lymph nodes

References: 53,56,59,66,71,72,73,89,90

3A	3B	3C	3D	3E	3F	3G
CO1,CO2,CO5 ,CO7	Describe the comprehensive approach to patient history, physical examination and investigations following appropriate diagnostic algorithm for investigating conditions like Pain, Chest discomfort, Abdominal pain, Head ache, Back and Neck Pain, Alteration in body temperature, Fever with rash, Nervous system dysfunction: Syncope, Fatigue, Neurologic causes of Weakness and Paralysis, Gait disorders, imbalances and falls, Confusion & Delirium, Sleep disorders, Disorders of Eye and ENT, Oral Manifestation of disease, URT and LRT (Cough, Dyspnoea), Alteration in Respiration & Circulatory function, Edema, Nausea, Vomiting, Indigestion, Constipation, Diarrhoea, Unintentional weight,loss, Jaundice, Abdominal swelling and ascites, Dysuria, Fluid and electrolyte disturbances, Approach to the patient	5	Lecture	CC	Knows-how	DIS

	with a skin disorder including skin manifestations of internal disease and immunologically mediated skin diseases.Cutaneous drug reactions and Enlargement of lymph nodes.					
CO1,CO2,CO5,CO7	Conduct how to take patient history, physical examination and investigations following appropriate diagnostic algorithm for investigating condition Pain (Abdominal pain, Head ache, Back and Neck Pain)	1	Practical Training 31.1	PSY-GUD	Shows-how	CD,PBL,CBL
CO1,CO2,CO5,CO7	Conduct the approach to patient history, physical examination and investigations following appropriate diagnostic algorithm for investigating conditions like Skin disorder including skin manifestations of systemic disease, Cutaneous drug reactions and Enlargement of lymph nodes	5	Practical Training 31.2	PSY-GUD	Does	D,CD,CBL
CO1,CO2,CO5,CO7	Conduct the approach to patient history, physical examination and investigations following appropriate diagnostic algorithm for investigating conditions Edema, Nausea, Vomiting, Indigestion, Constipation, Diarrhoea, Unintentional weight loss, Jaundice, Abdominal swelling and ascites, Dysuria, Fluid and electrolyte disturbances, Approach to the patient with a skin disorder including skin manifestations of internal disease and immunologically mediated skin diseases, Cutaneous drug reactions, Enlargement of lymph nodes	10	Experiential-Learning 31.2	PSY-GUD	Does	CBL,CD
CO1,CO2,CO5,CO7	Conduct the approach to patient history, physical examination and investigations following appropriate diagnostic algorithm for investigating conditions like Pain, Chest discomfort, Abdominal pain, Head ache, Back and Neck Pain, Alteration in body temperature, Fever with rash, Nervous system dysfunction: Syncope, Fatigue, Neurologic causes of Weakness and Paralysis, Gait disorders, imbalances and falls, Confusion & Delirium, Sleep disorders, Disorders of Eye and ENT, Oral Manifestation of disease, URT and LRT (Cough, Dyspnoea), lteration in Respiration & Circulatory function	8	Experiential-Learning 31.3	PSY-MEC	Does	CD,CBL
CO1,CO2,CO5,CO7	Conduct how to take patient history, physical examination and investigations following appropriate diagnostic algorithm for investigating condition Chest discomfort	2	Practical Training 31.3	PSY-GUD	Shows-how	CBL,CD

CO1,CO2,CO5,CO7	Conduct how to take patient history, physical examination and investigations following appropriate diagnostic algorithm for investigating condition Alteration in body temperature, Fever with rash.	2	Practical Training 31.4	PSY-GUD	Shows-how	CBL,CD
CO1,CO2,CO5,CO7	Conduct how to take patient history, physical examination and investigations following appropriate diagnostic algorithm for investigating condition Nervous system dysfunction: Syncope, Fatigue, Neurologic causes of Weakness and Paralysis, Gait disorders, imbalances and falls, Confusion & Delirium	1	Practical Training 31.5	PSY-GUD	Shows-how	CD,CBL
CO1,CO2,CO5,CO7	Conduct how to take patient history, physical examination and investigations following appropriate diagnostic algorithm for investigating condition Edema, Nausea, Vomiting, Indigestion, Constipation, Diarrhoea, Unintentional weight loss	1	Practical Training 31.6	PSY-GUD	Shows-how	CBL,CD
CO1,CO2,CO5,CO7	Conduct how to take patient history, physical examination and investigations following appropriate diagnostic algorithm for investigating disorders of Eye and ENT, Oral Manifestation of disease, URT and LRT (Cough, Dyspnoea), Alteration in Respiration	1	Practical Training 31.7	PSY-GUD	Shows-how	CD,CBL

	& Circulatory function					
CO1,CO2,CO5 ,CO7	Conduct how to take patient history, physical examination and investigations following appropriate diagnostic algorithm for investigating condition with oedema.	2	Practical Training 31.8	PSY-GUD	Shows-how	CBL
CO1,CO2,CO5 ,CO7	Conduct how to take patient history, physical examination and investigations following appropriate diagnostic algorithm for investigating condition with jaundice.	2	Practical Training 31.9	PSY-GUD	Shows-how	CBL,CD
CO1,CO2,CO5 ,CO7	Conduct how to take patient history, physical examination and investigations following appropriate diagnostic algorithm for investigating condition with abdominal swelling and ascites	2	Practical Training 31.10	PSY-GUD	Shows-how	CD,CBL
CO1,CO2,CO5 ,CO7	Conduct how to take patient history, physical examination and investigations following appropriate diagnostic algorithm for investigating condition with fluid and electrolyte disturbances	1	Practical Training 31.11	PSY-GUD	Shows-how	CBL,CD

Practical Training Activity

Practical Training 31.1 : Diagnosing a condition with pain (Abdominal pain, Head ache, Back and Neck Pain) through examination and following diagnostic algorithm

Duration of activity - 1 Hour
Activity : Case- Based Learning (40 minutes)
Activity 1 : Students will be demonstrated how to approach a case with abdominal swelling and ascites by examination, following diagnostic algorithm and arrive at provisional diagnosis. If real cases are not available scenario may be taken (10 minutes)
Activity 2 : History taking (10 minutes)
Students should take patient histories, focusing on the onset, duration, and pattern of disease and associated symptoms. Students should assess cases through Siddha diagnostic tools.

Activity 3 : Examination of the case (20 minutes)
A comprehensive physical examination should perform to assess the patient's clinical condition.
Activity : Case Diagnosis (20 minutes)
Activity 4 : Detailing diagnostic algorithm (10 minutes)
Activity 5 : Arriving provisional diagnosis (10 minutes)
Interpret findings with trihumoral vitiation and provisional diagnosis.

Practical Training 31.2 : Diagnosing a condition such as Skin disorder including skin manifestations of systemic disease, Cutaneous drug reactions and Enlargement of lymph nodes through examination and following diagnostic algorithm

Duration of activity - 5 Hours
Activity : Demonstration (1 Hour)
Activity 1 : Students will be demonstrated how to approach a case with abdominal swelling and ascites by examination, following diagnostic algorithm and arrive at provisional diagnosis. If real cases are not available scenario may be taken (15 minutes)
Activity 2 : History taking (15 minutes)
Students should take patient histories, focusing on the onset, duration, and pattern of disease and associated symptoms. Students should assess cases through Siddha diagnostic tools.
Activity 3 : Examination of the case (30 minutes)
A comprehensive physical examination should perform to assess the patient's clinical condition.
Activity : Case based Learning (3 hours)
Activity 4: Introduction & Orientation (15 minutes)
Activity 5: Examine skin, identify systemic clues fot Skin Disorders (including systemic signs) (1 hour)
Activity 6:Identify types, assess severity, connect to drug history for Cutaneous Drug Reactions(1 hour)
Activity 7:Examine lymph nodes, interpret findings for Lymph Node Examination (45 minutes)
Activity : Case Diagnosis (1 hour)
Activity 10 : Detailing diagnostic algorithm (30 minutes)
Activity 11: Arriving provisional diagnosis (30 minutes)
Interpret findings with trihumoral vitiation and provisional diagnosis.

Practical Training 31.3 : Diagnosing a condition with Chest discomfort

Duration of activity - 2 Hours
Activity : Case-Based Learning (1 Hour)
Activity 1 : Students will be demonstrated how to approach a case with abdominal swelling and ascites by examination, following diagnostic algorithm and arrive at provisional diagnosis. If real cases are not available scenario may be taken (15 minutes)
Activity 2 : History taking (15 minutes)
Students should take patient histories, focusing on the onset, duration, and pattern of disease and associated symptoms. Students should assess cases through Siddha diagnostic tools.
Activity 3 : Examination of the case (30 minutes)
A comprehensive physical examination should perform to assess the patient's clinical condition.
Activity : Case Diagnosis (1 hour)
Activity 4 : Detailing diagnostic algorithm (30 minutes)
Activity 5 : Arriving provisional diagnosis (30 minutes)
Interpret findings with trihumoral vitiation and provisional diagnosis.

Practical Training 31.4 : Diagnosing a condition with alteration in body temperature, fever with rash through examination and following diagnostic algorithm

Duration of activity - 2 Hours
Activity : Case- Based Learning (1 Hour)
Activity 1 : Students will be demonstrated how to approach a case with abdominal swelling and ascites by examination, following diagnostic algorithm and arrive at provisional diagnosis. If real cases are not available scenario may be taken (15 minutes)
Activity 2 : History taking (15 minutes)
Students should take patient histories, focusing on the onset, duration, and pattern of disease and associated symptoms. Students should assess cases through Siddha diagnostic tools.
Activity 3 : Examination of the case (30 minutes)
A comprehensive physical examination should perform to assess the patient's clinical condition.
Activity : Case Diagnosis (60 minutes)
Activity 4 : Detailing diagnostic algorithm (30 minutes)
Activity 5 : Arriving provisional diagnosis (30 minutes)
Interpret findings with trihumoral vitiation and provisional diagnosis.

Practical Training 31.5 : Diagnosing a condition with fluid and electrolyte disturbances

Duration of activity - 1 Hour
Activity : Case- Based Learning (30 minutes)
Activity 1 : History taking (15 minutes)
Students should take patient histories, focusing on the onset, duration, and pattern of disease and associated symptoms. Students should assess cases through Siddha diagnostic tools.
Activity 2 : Examination of the case (15 minutes)
Activity : Case Diagnosis (30 minutes)
Activity 3 : Detailing diagnostic algorithm (15 minutes)
Activity 4 : Arriving provisional diagnosis (15 minutes)

Practical Training 31.6 : Diagnosing a condition with Nervous system dysfunction: Syncope, Fatigue, Neurologic causes of Weakness and Paralysis, Gait disorders, imbalances and falls, Confusion & Delirium through examination and following diagnostic algorithm

Duration of activity - 1 Hour
Activity : Case- Based Learning (40 minutes)
Activity 1 : Students will be demonstrated how to approach a case with abdominal swelling and ascites by examination, following diagnostic algorithm and arrive at provisional diagnosis. If real cases are not available scenario may be taken (15 minutes)
Activity 2 : History taking (10 minutes)
Students should take patient histories, focusing on the onset, duration, and pattern of disease and associated symptoms. Students should assess cases through Siddha diagnostic tools.
Activity 3 : Examination of the case (15 minutes)
A comprehensive physical examination should perform to assess the patient's clinical condition.
Activity : Case Diagnosis (20 minutes)
Activity 4 : Detailing diagnostic algorithm (10 minutes)
Activity 5 : Arriving provisional diagnosis (10 minutes)
Interpret findings with trihumoral vitiation and provisional diagnosis.

Practical Training 31.7 : Diagnosing a condition with Edema, Nausea, Vomiting, Indigestion, Constipation, Diarrhoea, Unintentional weight lossthrough examination and following diagnostic algorithm

Duration of activity - 1 Hour

Activity : Case- Based Learning (30 minutes)
Activity 1 : Demonstration (10 minutes)
Students will be demonstrated how to approach a case with abdominal swelling and ascites by examination, following diagnostic algorithm and arrive at provisional diagnosis. If real cases are not available scenario may be taken
Activity 2 : History taking (10 minutes)
Students should take patient histories, focusing on the onset, duration, and pattern of disease and associated symptoms. Students should assess cases through Siddha diagnostic tools.
Activity 3 : Examination of the case (10 minutes)
A comprehensive physical examination should perform to assess the patient's clinical condition.
Activity : Case Diagnosis (30 minutes)
Activity 4 : Detailing diagnostic algorithm (15 minutes)
Activity 5 : Arriving provisional diagnosis (15 minutes)
Interpret findings with trihumoral vitiation and provisional diagnosis.

Practical Training 31.8 : Diagnosing disorders of Eye and ENT, Oral Manifestation of disease, URT and LRT (Cough, Dyspnoea), Alteration in Respiration & Circulatory functionthrough examination and following diagnostic algorithm

Duration of activity - 1 Hour
Activity : Case- Based Learning (40 minutes)
Activity 1 : Students will be demonstrated how to approach a case with abdominal swelling and ascites by examination, following diagnostic algorithm and arrive at provisional diagnosis. If real cases are not available scenario may be taken (15 minutes)
Activity 2 : History taking (10 minutes)
Students should take patient histories, focusing on the onset, duration, and pattern of disease and associated symptoms. Students should assess cases through Siddha diagnostic tools.
Activity 3 : Examination of the case (15 minutes)
A comprehensive physical examination should perform to assess the patient's clinical condition.
Activity : Case Diagnosis (20 minutes)
Activity 4 : Detailing diagnostic algorithm (10 minutes)
Activity 5 : Arriving provisional diagnosis (10 minutes)
Interpret findings with trihumoral vitiation and provisional diagnosis.

Practical Training 31.9 : Diagnosing a condition with oedema

Duration of activity - 2 Hours
Activity : Case- Based Learning (1 Hour)
Activity 1 : Students will be demonstrated how to approach a case with abdominal swelling and ascites by examination, following diagnostic algorithm and arrive at provisional diagnosis. If real cases are not available scenario may be taken (15 minutes)
Activity 2 : History taking (15 minutes)
Students should take patient histories, focusing on the onset, duration, and pattern of disease and associated symptoms. Students should assess cases through Siddha diagnostic tools.
Activity 3 : Examination of the case (30 minutes)
A comprehensive physical examination should perform to assess the patient's clinical condition.
Activity : Case Diagnosis (1 hour)
Activity 4 : Detailing diagnostic algorithm (30 minutes)
Activity 5 : Arriving provisional diagnosis (30 minutes)
Interpret findings with trihumoral vitiation and provisional diagnosis.

Practical Training 31.10 : Diagnosing a condition with jaundice

Duration of activity - 2 Hours
Activity : Case- Based Learning (1 Hour)
Activity 1 : Students will be demonstrated how to approach a case with abdominal swelling and ascites by examination, following diagnostic algorithm and arrive at provisional diagnosis. If real cases are not available scenario may be taken (15 minutes)
Activity 2 : History taking (15 minutes)
Students should take patient histories, focusing on the onset, duration, and pattern of disease and associated symptoms. Students should assess cases through Siddha diagnostic tools.
Activity 3 : Examination of the case (30 minutes)
A comprehensive physical examination should perform to assess the patient's clinical condition.
Activity : Case Diagnosis (1 hour)
Activity 4 : Detailing diagnostic algorithm (30 minutes)
Activity 5 : Arriving provisional diagnosis (30 minutes)
Interpret findings with trihumoral vitiation and provisional diagnosis.

Practical Training 31.11 : Diagnosing a condition with abdominal swelling and ascites

Duration of activity - 2 Hours

Activity : Case- Based Learning (1 Hour)
Activity 1 : Students will be demonstrated how to approach a case with abdominal swelling and ascites by examination, following diagnostic algorithm and arrive at provisional diagnosis. If real cases are not available scenario may be taken (15 minutes)
Activity 2 : History taking (15 minutes)
Students should take patient histories, focusing on the onset, duration, and pattern of disease and associated symptoms. Students should assess cases through Siddha diagnostic tools.
Activity 3 : Examination of the case (30 minutes)
A comprehensive physical examination should perform to assess the patient's clinical condition.
Activity : Case Diagnosis (1 hour)
Activity 4 : Detailing diagnostic algorithm (30 minutes)
Activity 5 : Arriving provisional diagnosis (30 minutes)
Interpret findings with trihumoral vitiation and provisional diagnosis.

Experiential learning Activity

Experiential-Learning 31.1 : Interpret case analyses to apply reasoning strategies in real-world scenarios, enhancing their diagnostic skills and patient histories to develop effective treatment plans and evaluate outcomes.

Duration of activity - 8 hours
To practice clinical history taking and physical examination skills in a series of 10 patients with different system involvements.
Activity : Case-Based Learning (5 hours)
Activity 1: Introduction and Preparation(1 hour)
Overview of History Taking (15 minutes)
Introduction to structured history taking (chief complaint, history of present illness, past medical history, family history, social history, and review of systems).
Overview of Physical Examination (15 minutes)
Introduction to systematic physical examination (inspection, palpation, percussion, auscultation).
Patient Assignment (30 minutes)
Students are assigned to work with 10 patients, each with different system involvement (e.g., cardiovascular, respiratory, gastrointestinal).
Activity 2: Clinical History and Physical Examination (3 hours)
Elicit History: Ensure to ask about risk factors, family history, and lifestyle.
Perform Physical Examination: Use appropriate techniques (e.g., cardiovascular auscultation, abdominal palpation).
Activity 3: Documentation and Feedback(1 hour)
Activity 3.1: Write a clear and concise clinical summary for each patient.

Activity 3.2: Document physical examination findings systematically (e.g., normal vs abnormal).
Activity - Discussion (2 hours)
Activity 4: Feedback and Discussion (1 hour)
Activity 4. 1: Present findings for each patient in small groups.
Activity 4. 2: Receive feedback from peers and instructors on history-taking and examination skills.
Activity 5: Reflection and Wrap-up (1 hour)
Activity 5.1: Reflect on the challenges faced during history taking and physical examination.
Activity 5.2: Identify areas for improvement based on feedback received.
Wrap-up Discussion

Experiential-Learning 31.2 : Hands on training on how to take patient history, physical examination and investigations following appropriate diagnostic algorithm for diagnosing conditions part II

Duration of activity - 10 hours
To elicit the clinical history and investigations following appropriate diagnostic algorithm for investigating for a consecutive series of 10 patients with each specific condition:
Activity : Case-Based Learning (6 hours)
Activity 1: Introduction and Preparation(1 hour)
Overview of History Taking (15 minutes)
Introduction to structured history taking (chief complaint, history of present illness, past medical history, family history, social history, and review of systems).
Overview of Physical Examination (15 minutes)
Introduction to systematic physical examination (inspection, palpation, percussion, auscultation).
Patient Assignment (30 minutes)
Students are assigned to work with 5 patients, each with specific clinical condition(e.g.,Edema, Nausea, Vomiting, Indigestion, Constipation, Diarrhoea, Unintentional weight loss, Jaundice, Abdominal swelling and ascites, Dysuria, Fluid and electrolyte disturbances).
Activity 2: Clinical History and Physical Examination (4 hours)
Elicit History: Ensure to ask about risk factors, family history, and lifestyle.
Perform Physical Examination: Use appropriate techniques (e.g., cardiovascular auscultation, abdominal palpation).
Activity 3: Documentation and Feedback(1 hour)
Activity 3.1: Write a clear and concise clinical summary for each patient.
Activity 3.2: Document physical examination findings systematically (e.g., normal vs abnormal).
Activity - Discussion (4 hours)
Activity 4: Feedback and Discussion (2 hours)

Activity 4. 1: Present findings for each patient in small groups.
Activity 4. 2: Receive feedback from peers and instructors on history-taking and examination skills.
Activity 5: Reflection and Wrap-up (2 hours)
Activity 5.1: Reflect on the challenges faced during history taking and physical examination.
Activity 5.2: Identify areas for improvement based on feedback received.
Wrap-up Discussion

Experiential-Learning 31.3 : Hands on training on how to take patient history, physical examination and investigations following appropriate diagnostic algorithm for investigating conditions part I

Duration of activity - 8 hours
To practice clinical history taking and physical examination skills in a series of 10 patients with different system involvements.
Activity : Case-Based Learning (5 hours)
Activity 1: Introduction and Preparation(1 hour)
Overview of History Taking (15 minutes)
Introduction to structured history taking (chief complaint, history of present illness, past medical history, family history, social history, and review of systems).
Overview of Physical Examination (15 minutes)
Introduction to systematic physical examination (inspection, palpation, percussion, auscultation).
Patient Assignment (30 minutes)
Students are assigned to work with 10 patients, each with different system involvement (e.g., cardiovascular, respiratory, gastrointestinal).
Activity 2: Clinical History and Physical Examination (3 hours)
Elicit History: Ensure to ask about risk factors, family history, and lifestyle.
Perform Physical Examination: Use appropriate techniques (e.g., respiratory auscultation, ENT examination, Eye examination etc).
Activity 3: Documentation and Feedback(1 hour)
Activity 3.1: Write a clear and concise clinical summary for each patient.
Activity 3.2: Document physical examination findings systematically (e.g., normal vs abnormal).
Activity - Discussion (2 hours)
Activity 4: Feedback and Discussion (1 hour)
Activity 4. 1: Present findings for each patient in small groups.
Activity 4. 2: Receive feedback from peers and instructors on history-taking and examination skills.
Activity 5: Reflection and Wrap-up (1 hour)
Activity 5.1: Reflect on the challenges faced during history taking and physical examination.
Activity 5.2: Identify areas for improvement based on feedback received.

Wrap-up Discussion
Modular Assessment

Assessment method	**Hour**
Instructions: Conduct a structured Modular assessment. The assessment will be for 50 marks. Keep a structured marking pattern. Use different assessment methods in each module for the semester. Keep a record of the structured pattern used for assessment. Calculate the Modular grade point as per Table 6 C. CHOOSE ANY OF THE BELOW ASSESSMENT FOR 50 MARKS 1.Brief Introduction to Clinical Reasoning (5 Marks) Formative Assessment Method: Quick Quiz A brief quiz on the principles of clinical reasoning and the approach to disease diagnosis. Immediate feedback will be provided. Question 1: Define clinical reasoning and explain its importance in diagnosing diseases. (5 Marks) 2.History, Physical Examination, and Algorithm for Diagnosis (45 Marks) Formative Assessment Method: Case-Based Learning Students will be given various case scenarios, followed by a structured approach to history taking, physical examination, and diagnosis. Section 1: Common Cardinal Symptoms (30 Marks) Question 1: Pain (5 Marks) Describe the steps you would take to assess a patient with abdominal pain, including key history points, examination techniques, and possible differential diagnoses. Question 2: Chest Discomfort (5 Marks) How would you differentiate between cardiac and non-cardiac chest pain in a patient presenting with chest discomfort? (5 Marks) Question 3: Abdominal Pain (5 Marks) Provide a systematic approach for diagnosing the cause of acute abdominal pain. Include relevant questions to ask during history taking. (5 Marks) Question 4: Headache (5 Marks) What are the key questions to ask a patient presenting with headache to narrow down the differential diagnosis? (5 Marks) Question 5: Back and Neck Pain (5 Marks) Outline your approach to a patient presenting with chronic back and neck pain. What features in the history and examination would raise suspicion for a serious underlying condition? (5 Marks) Section 2: Approach to Specific Symptoms and Signs (15 Marks) Question 6: Fever with Rash (3 Marks) What differential diagnoses should be considered in a patient with fever and a rash? (3 Marks)	4

Question 7: Nervous System Dysfunction (6 Marks)
A patient presents with confusion, fatigue, and a recent episode of syncope. What steps will you take to investigate and diagnose the cause? (6 Marks)
Question 8: Nausea, Vomiting, Indigestion (3 Marks)
What are the possible causes of nausea and vomiting, and how would you approach diagnosis in a patient with this complaint? (3 Marks)
Question 9: Jaundice (3 Marks)
Outline your approach to a patient presenting with jaundice, including important history and physical examination findings. (3 Marks)
Section 3: Special Topics in Diagnosis (5 Marks)
Question 10: Approach to the Patient with Skin Disorders (5 Marks)
How would you approach a patient presenting with skin lesions that may have an internal or immunologically mediated cause? What tests would you consider to investigate further? (5 Marks)
Or
Any practical in converted form can be taken for assessment. (25 marks)
and
Any experiential, such as portfolios / reflections / presentations can be taken as an assessment. (25 marks)

Module 32 : Testing of Pathophysiological states & International Diagnostic Criteria of Various diseases

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

Describe lab testing methodologies for nutritional and metabolic disorders, including diabetes and cardiac functions.
Conduct pathophysiological states for kidney disease, liver dysfunction, and metabolic disorders, focusing on electrolyte imbalance.
Conduct assessment of international diagnostic methods for various disease conditions.
Interpret lab results and clinical evaluations to guide diagnosis and management strategies across various health issues.

M 32 Unit 1 International Diagnostic Criteria of Musculoskeletal , Dermatology and Nutritional diseases

32.1.International Diagnostic / prognostic Criteria and assessment scales of Musculoskeletal , Dermatology and Nutritional diseases
32.1.1. The Assessment of SpondyloArthritis International Society Criteria for Axial Spondyloarthritis (SpA)

32.1.2. The Assessment of SpondyloArthritis International Society Criteria for Peripheral Spondyloarthritis (SpA)
32.1.3. Leiden Clinical Prediction Rule for Undifferentiated Arthritis
32.1.4.American College of Rheumatology (ACR) and the European League Against Rheumatism (EULAR) Gout Classification Criteria
32.1.5. 2021 American College of Rheumatology (ACR) / the European League Against Rheumatism (EULAR) Classification Criteria for Polymyalgia Rheumatica
32.1.6. Ankylosing Spondylitis Disease Activity Score with CRP (ASDAS-CRP)
32.1.7. Ankylosing Spondylitis Disease Activity Score with ESR (ASDAS-ESR)
32.1.8. American College of Rheumatology (ACR) and the European League Against Rheumatism (EULAR) 2010 Rheumatoid Arthritis Classification Criteria
32.1.9. Psoriasis Area and Severity Index (PASI)
32.1.10. Urticaria Activity Score (UAS)
32.1.11. Eczema Area and Severity Index (EASI)
32.1.12. Wound Closure Classification
32.1.13. Malnutrition Universal Screening Tool (MUST)
32.1.14. Nutritional Risk Index (NRI)
32.1.15. Fatty Liver Index

References: 36,38,44,48,49,51,53,54,56,58,63,64,65,66,71

3A	3B	3C	3D	3E	3F	3G
CO3,CO4,CO6	Describe the International diagnostic criteria of Musculoskeletal, Dermatology & Nutritional Conditions.	1	Lecture	CC	Shows-how	PER,C_L,D
CO3,CO5,CO6	Demonstrate how to use international diagnostic criteria for musculoskeletal, dermatological, and nutritional disorders. Analyse biochemical markers and laboratory tests used in disease assessment.	2	Practical Training 32.1	PSY-GUD	Shows-how	CBL,D-BED
CO3,CO5,CO6	Apply critical thinking and analytical skills to assess real-world nutritional case scenarios through international diagnostic criteria. Engage in collaborative learning through discussion and role-playing exercises.	1	Experiential-Learning 32.1	PSY-MEC	Does	CBL
CO3,CO5,CO6	Apply critical thinking and analytical skills to assess real-world Musculoskeletal	1	Experiential-	PSY-	Does	D,CBL,C

	disorders case scenarios through international diagnostic criteria. Engage in collaborative learning through discussion and role-playing exercises.		Learning 32.2	MEC		D
CO3,CO5,CO6	Apply critical thinking and analytical skills to assess real-world Dermatological disorder case scenarios through international diagnostic criteria. Engage in collaborative learning through discussion and role-playing exercises.	1	Experiential-Learning 32.3	PSY-MEC	Does	CBL

M 32 Unit 2 International Diagnostic Criteria of Respiratory and infectious diseases

32.2.1 International Diagnostic / prognostic Criteria and assessment scalesof Respiratory and Infectious diseases

References: 36,38,44,48,51,53,54,56,58,64,65,71

3A	3B	3C	3D	3E	3F	3G
CO3,CO4,CO6	Describe the International diagnostic criteria of Respiratory and Infectious diseases	1	Lecture	CC	Knows-how	D,PER,C_L
CO3,CO5,CO6	Demonstrate how to use international diagnostic criteria for Respiratory and Infectious Diseases. Analyze biochemical markers and laboratory tests used in disease assessment.	2	Practical Training 32.2	PSY-GUD	Does	D,CBL
CO3,CO5,CO6	Apply critical thinking and analytical skills to assess real-world Respiratory diseases through international diagnostic criteria. Engage in collaborative learning through discussion and role-playing exercises.	2	Experiential-Learning 32.4	PSY-MEC	Does	CBL
CO3,CO5,CO6	Apply critical thinking and analytical skills to assess real-world Infectious Diseases case scenarios through international diagnostic criteria. Engage in collaborative learning through discussion and role-playing exercises.	1	Experiential-Learning 32.5	PSY-MEC	Does	CBL,CD,D

M 32 Unit 3 International Diagnostic Criteria of Gasstro instentinal and Cardiovascular diseases

32.3.1 International Diagnostic / prognostic Criteria and assessment scales Criteria of Gasstroinstentinal and Cardiovascular diseases

References: 36,38,44,48,49,51,53,54,56,58,63,64,65,66,71

3A	3B	3C	3D	3E	3F	3G
CO3,CO4,CO6	Describe the International diagnostic criteria of Gastrointestinal and Cardiovascular diseases	1	Lecture	CC	Knows-how	L&PPT , D,PER,C _L
CO3,CO5,CO6	Demonstrate how to use international diagnostic criteria for Gastrointestinal and Cardiovascular diseases. Analyze biochemical markers and laboratory tests used in disease assessment.	2	Practical Training 32.3	PSY-GUD	Does	CD,CBL
CO3,CO5,CO6	Apply critical thinking and analytical skills to assess real-world Gastrointestinal Disorder case scenarios through international diagnostic criteria. Engage in collaborative learning through discussion and role-playing exercises.	1	Experiential-Learning 32. 6	PSY-MEC	Does	CBL
CO3,CO5,CO6	Apply critical thinking and analytical skills to assess real-world Cardio Vascular Disease case scenarios through international diagnostic criteria. Engage in collaborative learning through discussion and role-playing exercises.	1	Experiential-Learning 32. 7	PSY-MEC	Does	CBL

M 32 Unit 4 International Diagnostic Criteria of Neurological and Mental health

32.4.1 International Diagnostic / prognostic Criteria and assessment scales of Neurological and Mental health

References: 49,53,56,71

3A	3B	3C	3D	3E	3F	3G
CO3,CO4,CO6	Describe the International diagnostic criteria of neurological and mental health	1	Lecture	CC	Knows-how	PER,L&PPT ,D,C_L
CO3,CO5,CO6	Demonstrate how to use international diagnostic criteria for Neurological and Mental health. Analyse biochemical markers and laboratory tests used in disease assessment	2	Practical Training 32.4	PSY-GUD	Does	CBL,D

CO3,CO5,CO6	Apply critical thinking and analytical skills to assess real-world Mental Health Disorder case scenarios through international diagnostic criteria. Engage in collaborative learning through discussion and role-playing exercises.	2	Experiential-Learning 32.8	PSY-MEC	Does	CBL,CD

M 32 Unit 5 Endocrinology and Related Disorders including Disorders in pregnancy

32.5.1 International Diagnostic / prognostic Criteria and assessment scales of Endocrinology and Related Disorders including Disorders in pregnancy

References: 36,44,56

3A	3B	3C	3D	3E	3F	3G
CO3,CO5,CO6	Describe the Lab testing of Endocrinology and related disorders, including Disorders in Pregnancy	1	Lecture	CC	Knows-how	D,PER,C_L
CO3,CO5,CO6	Demonstrate the assessment of pathophysiological states in endocrinology and related disorders, including disorders during pregnancy, through the application of diagnostic criteria and the interpretation of specific laboratory investigations, focusing on clinical reasoning and evidence-based decision-making.	2	Practical Training 32.5	PSY-GUD	Does	CBL,LRI
CO3,CO5,CO6	Apply critical thinking and analytical skills to assess real-world Endocrine disorder case scenarios through international diagnostic criteria and lab parameters Engage in collaborative learning through discussion and role-playing exercises.	2	Experiential-Learning 32.9	PSY-MEC	Does	CBL
CO3,CO5,CO6	Apply critical thinking and analytical skills to assess real-world Disorders in Pregnancy case scenarios through international diagnostic criteria. Engage in collaborative learning through discussion and role-playing exercises	1	Experiential-Learning 32.10	PSY-MEC	Does	CBL

M 32 Unit 6 Monoamine-Producing Tumors and Bone and Mineral Metabolism

32.6.1 International Diagnostic / prognostic Criteria and assessment scales of Monoamine - Producing Tumors and Bone and Mineral Metabolism

References: 36,38,44,48,49,51,53,54,56,58,63,64,65,66,71

3A	3B	3C	3D	3E	3F	3G
CO3,CO5,CO6	Describe the lab testing of Monamine - Producing Tumors & Bone and Mineral Metabolism	1	Lecture	CC	Knows-how	C_L,D,PER
CO3,CO5,CO6	Demonstrate the assessment of pathophysiological states related to monoamine-producing tumors and bone and mineral metabolism disorders, by applying diagnostic criteria and interpreting relevant laboratory investigations to make accurate clinical diagnoses.	2	Practical Training 32.6	PSY-GUD	Shows-how	CBL,D,LRI
CO3,CO5,CO6	Apply critical thinking and analytical skills to assess real-world Monoamine-Producing Tumor case scenarios through international diagnostic criteria and lab parameters. Engage in collaborative learning through discussion and role-playing exercises.	1	Experiential-Learning 32.11	PSY-MEC	Does	CBL
CO3,CO5,CO6	Apply critical thinking and analytical skills to assess real-world Bone and mineral metabolism disorder case scenarios through international diagnostic criteria and lab parameters. Engage in collaborative learning through discussion and role-playing exercises.	2	Experiential-Learning 32.12	PSY-MEC	Does	CBL

M 32 Unit 7 Liver Disease including Gastric, Pancreatic, and Intestinal Function

32.7.1 International Diagnostic / prognostic Criteria and assessment scales of Liver Disease including Gastric, Pancreatic, and Intestinal Function

References: 36,51,53,54,56,58,64,65

3A	3B	3C	3D	3E	3F	3G
CO3,CO5,CO6	Describe the Lab testing of liver disease & gastric, pancreatic and intestinal function	1	Lecture	CC	Knows-how	C_L,D
CO3,CO5,CO6	Demonstrate the ability to identify how liver diseases such as cirrhosis, hepatitis, and fatty liver disease impact the synthesis of proteins, bile production, and nutrient metabolism, subsequently affecting gastric, pancreatic, and intestinal functions.	2	Practical Training 32.7	PSY-GUD	Does	CBL,LRI,D

	Demonstrate an understanding of the interconnection between liver dysfunction and complications like portal hypertension, gastric ulcers, and pancreatitis, as well as their effects on overall digestive health. Demonstrate proficiency in interpreting laboratory findings and clinical symptoms, relating these to the pathophysiological changes in liver disease and predicting potential complications across the gastrointestinal system.					
CO3,CO5,CO6	Apply critical thinking and analytical skills to assess real-world Pancreatic disorder case scenarios through international diagnostic criteria and lab parameters. Engage in collaborative learning through discussion and role-playing exercises.	1	Experiential-Learning 32.13	PSY-MEC	Does	CBL
CO3,CO5,CO6	Apply critical thinking and analytical skills to assess real-world Liver disease scenarios through international diagnostic criteria and lab parameters. Engage in collaborative learning through discussion and role-playing exercises.	2	Experiential-Learning 32.14	PSY-MEC	Does	CBL
CO3,CO5,CO6	Apply critical thinking and analytical skills to assess real-world Gastric and Intestinal Disorder case scenarios through international diagnostic criteria and lab parameters. Engage in collaborative learning through discussion and role-playing exercises.	2	Experiential-Learning 32.15	PSY-MEC	Does	CBL

M 32 Unit 8 Kidney Disease and Disorders of Water, Electrolytes, and Acid–Base Metabolism

32.8.1 International Diagnostic / prognostic Criteria and assessment scales of Kidney Disease and Disorders of Water, Electrolytes, and Acid–Base Metabolism

References: 36,38,44,48,53,54,56,58,64,65

3A	3B	3C	3D	3E	3F	3G
CO3,CO5,CO6	Describe the Lab testing for Kidney disease & Disorders of water, electrolytes and acid-base metabolism	1	Lecture	CC	Knows-how	C_L,PER, DIS
CO3,CO5,CO6	Demonstrate the assessment of kidney diseases and disturbances in water, electrolytes, and acid-base balance using international diagnostic criteria, focusing on clinical presentation and laboratory investigations. Demonstrate the ability to interpret key lab results such as serum creatinine, GFR, electrolytes, and arterial blood gases to diagnose various renal disorders. Demonstrate critical thinking in correlating laboratory data with	2	Practical Training 32.8	PSY-GUD	Does	LRI,CBL, D

	clinical symptoms, identifying potential complications, and proposing suitable treatment or management strategies.					
CO3,CO5,CO6	Apply critical thinking and analytical skills to assess real-world Kidney Disease case scenarios through international diagnostic criteria and lab para meters. Engage in collaborative learning through discussion and role-playing exercises.	2	Experiential-Learning 32.16	PSY-GUD	Does	CBL
CO3,CO5,CO6	Apply critical thinking and analytical skills to assess real-world Water, electrolytes, and acid-base metabolism disorders case scenarios through international diagnostic criteria and lab parameters. Engage in collaborative learning through discussion and role-playing exercises.	1	Experiential-Learning 32.17	PSY-MEC	Does	CBL

M 32 Unit 9 Diabetes Mellitus and Cardiac Function

32.9.1 International Diagnostic / prognostic Criteria and assessment scales of Diabetes Mellitus and Cardiac Function

References: 36,53,56,64,65

3A	3B	3C	3D	3E	3F	3G
CO3,CO4,CO6	Describe the lab testing of Diabetes Mellitus & Cardiac function icluding use of skin patch sensors in monitoring sugar level. Computational techniques used for diagnosis of conditions like Diabetes.	1	Lecture	CC	Knows-how	C_L,DIS,PER
CO3,CO5,CO6	Demonstrate the ability to assess and analyze the pathophysiological states of Diabetes Mellitus and its effects on cardiac function, focusing on the underlying mechanisms of diabetic cardiomyopathy and related cardiovascular complications. Interpret clinical signs, laboratory results, and diagnostic criteria to understand the interplay between chronic hyperglycemia and its impact on heart health. Use critical thinking to evaluate patient outcomes, predict potential complications, and propose appropriate management and treatment strategies for individuals with concurrent diabetes and cardiac dysfunction.	2	Practical Training 32.9	PSY-GUD	Does	D,LRI,CBL
CO3,CO5,CO6	Apply critical thinking and analytical skills to assess real-world Diabetes Mellitus case	1	Experiential-	PSY-	Does	CBL

	scenarios through international diagnostic criteria and lab parameters. Engage in collaborative learning through discussion and role-playing exercises.		Learning 32.18	MEC		

M 32 Unit 10 Lab testing of Nutritional problems

32.10.1 Lab testing of Nutritional problems

References: 53,56,64,65

3A	3B	3C	3D	3E	3F	3G
CO3,CO4,CO6	Describe the lab testing methods for nutritional problems.	1	Lecture	CC	Knows-how	PER,C_L, DIS
CO3,CO5,CO6	Demonstrate the ability to assess and diagnose nutritional problems through relevant lab testing, including evaluating biomarkers for deficiencies and excesses in vitamins, minerals, and macronutrients. Develop the skills to interpret lab results to guide nutritional interventions and management strategies for various deficiencies and imbalances.	2	Practical Training 32.10	PSY-GUD	Shows-how	LRI
CO3,CO5,CO6	Apply skills to interpret laboratory results and / or perform diagnostic testing for nutritional problems by understanding key biomarkers and clinical indicators, and correlate these findings with underlying nutritional deficiencies, metabolic imbalances, and related diseases for accurate diagnosis and treatment planning.	1	Experiential-Learning 32.19	PSY-MEC	Does	CBL,CD

Practical Training Activity

Practical Training 32.1 : Assessment of International Diagnostic Criteria for Musculoskeletal, Dermatology and Nutritional diseases

Duration of activity- 2 hours
Activity: Demonstration (20 minutes)
Activity 1: Introduction (20 minutes) – Teacher Led
Brief overview of diagnostic approaches in musculoskeletal, dermatological, and nutritional diseases. Explanation of key criteria like ASAS Criteria for Peripheral Spondyloarthritis (SpA), Leiden Clinical Prediction Rule for Undifferentiated Arthritis, Albumin creatinine ratio (ACR) / EULAR Gout Classification Criteria, EULAR /

ACR Classification Criteria for Polymyalgia Rheumatica, Ankylosing Spondylitis Disease Activity Score with CRP (ASDAS-CRP), Ankylosing Spondylitis Disease Activity Score with ESR (ASDAS-ESR), ACR / EULAR 2010 Rheumatoid Arthritis Classification Criteria, Psoriasis Area and Severity Index (PASI), Urticaria Activity Score (UAS)
Eczema Area and Severity Index (EASI), Wound Closure Classification, Malnutrition Universal Screening Tool (MUST), Nutritional Risk Index (NRI), Fatty Liver Index, Adult Treatment Panel III, ROTTERDAM criteria for the diagnosis of PCOS. and laboratory tests like Musculoskeletal Disorders: ESR, CRP, Rheumatoid Factor (RF), ANA, Bone Density Scan (DEXA), Dermatological Disorders: Skin biopsy, immunofluorescence, vitamin levels, autoimmune markers, Nutritional Disorders: Serum albumin, vitamin/mineral assays, lipid profiles, glucose levels. Assignment of students into three groups, each focusing on one category of diseases.
Activity: Case- Based Learning (1 hour 40 minutes)
Activity 2: Practical Case-Based Learning (60 minutes) – Student Led
Research & Diagnostic Criteria Identification (20 minutes)
Case Study Analysis (20 minutes)
Role-Playing & Presentation (20 minutes)
Activity 3: Discussion & Reflection (30 minutes) – Whole Class
Each group discusses the challenges they faced in diagnosis.
The teacher provides expert insights and corrections.
Discussion on advancements in molecular diagnostics and imaging techniques.
Activity 4: Wrap-Up & Summary (10 minutes) – Teacher Led
Key takeaways on the role of biochemical markers in disease diagnosis.
Importance of standardized international diagnostic criteria.
Short Q&A session to clarify doubts.
Assessment & Takeaways:
Teacher Evaluation:
Accuracy of diagnosis using international criteria.
Understanding of biochemical markers and lab tests.
Engagement in discussions and role-playing.
Student Learning Outcomes:
Ability to assess clinical cases using diagnostic criteria.
Practical experience in interpreting lab results.
Improved problem-solving and clinical decision-making skills.

Practical Training 32.2 : Assessment of International Diagnostic Criteria for Respiratory and Infectious Diseases.

Duration of activity: 2 hours

Activity: Demonstration (20 minutes)
Activity 1: Introduction (20 minutes) – Teacher Led
Brief overview of diagnostic approaches in Respiratory and Infectious Diseases. Key diagnostic criteria include the Global Initiative for Chronic Obstructive Lung Disease (GOLD) Criteria for COPD, Global Initiative for Asthma (GINA) Guidelines for Asthma, WHO and CDC Case Definitions for Tuberculosis, Influenza, and COVID-19, American Thoracic Society (ATS) and Infectious Diseases Society of America (IDSA) Guidelines for Pneumonia, Murray-Washington Criteria for Sputum Sample Quality, Light's Criteria for Pleural Effusion, BTS/ATS Guidelines for Interstitial Lung Diseases (ILDs), and Wells' Criteria for Pulmonary Embolism.
Laboratory and imaging tests for respiratory diseases include Pulmonary Function Tests (PFTs) such as spirometry for Asthma & COPD, blood tests like Arterial Blood Gas (ABG), CBC, CRP, and D-dimer, microbiological tests such as sputum culture, Gram stain, and Acid-Fast Bacilli (AFB) stain, imaging techniques including Chest X-ray, High-Resolution CT (HRCT) Scan, and V/Q Scan for Pulmonary Embolism, and serological & molecular tests like PCR for COVID-19, TB CBNAAT (GeneXpert), and Influenza Rapid Antigen Test.
Students are assigned into three groups, each focusing on one category of respiratory diseases: Obstructive Lung Diseases (Asthma, COPD), Infectious & Inflammatory Diseases (TB, Pneumonia, COVID-19, ILDs), and Vascular & Other Respiratory Conditions (Pulmonary Embolism, Pleural Effusion, ARDS).
Activity: Case- Based Learning (1 hour 40 minutes)
Activity 2: Practical Case-Based Learning (60 minutes) – Student Led
Research & Diagnostic Criteria Identification (20 minutes)
Case Study Analysis (20 minutes)
Role-Playing & Presentation (20 minutes)
Activity 3: Discussion & Reflection (30 minutes) – Whole Class
Each group discusses the challenges they faced in diagnosis.
The teacher provides expert insights and corrections.
Discussion on advancements in molecular diagnostics and imaging techniques.
Activity 4: Wrap-Up & Summary (10 minutes) – Teacher Led
Key takeaways on the role of biochemical markers in disease diagnosis.
Importance of standardized international diagnostic criteria.
Short Q&A session to clarify doubts.
Assessment & Takeaways:
Teacher Evaluation:
Accuracy of diagnosis using international criteria.
Understanding of biochemical markers and lab tests.
Engagement in discussions and role-playing.
Student Learning Outcomes:
Ability to assess clinical cases using diagnostic criteria.

Practical experience in interpreting lab results.
Improved problem-solving and clinical decision-making skills.

Practical Training 32.3 : Assessment of International Diagnostic Criteria for Gastrointestinal and Cardiovascular diseases.

Duration of activity: 2 hours
Step 1: Introduction (20 minutes) – Teacher Led
Brief overview of diagnostic approaches in Gastrointestinal and Cardiovascular diseases. Explanation of Key diagnostic criteria include the Rome Criteria for Irritable Bowel Syndrome (IBS), American College of Gastroenterology (ACG) Guidelines for Gastroesophageal Reflux Disease (GERD), the Child-Pugh Score for Liver Disease, the MELD Score for Liver Transplantation, the Revised Atlanta Classification for Acute Pancreatitis, the Duke Criteria for Infective Endocarditis, the Framingham Criteria for Heart Failure, the Global Registry of Acute Coronary Events (GRACE) Score for Acute Coronary Syndrome, and the American Heart Association (AHA) and European Society of Cardiology (ESC) Guidelines for Hypertension and Myocardial Infarction.
Laboratory and imaging tests for gastrointestinal and cardiovascular diseases include liver function tests (LFTs), pancreatic enzyme tests (amylase, lipase), Helicobacter pylori testing, fecal occult blood test (FOBT), endoscopy, colonoscopy, and imaging techniques like abdominal ultrasound and CT/MRI for gastrointestinal disorders. For cardiovascular diseases, tests include ECG, echocardiography, cardiac enzyme tests (troponin, CK-MB), lipid profile, BNP for heart failure, and coronary angiography for ischemic heart disease.
Students are assigned into three groups, each focusing on one category of gastrointestinal and cardiovascular diseases: Gastrointestinal Disorders (GERD, IBS, Peptic Ulcer Disease, Liver Diseases, Pancreatitis), Cardiovascular Disorders (Hypertension, Heart Failure, Myocardial Infarction, Infective Endocarditis), and Vascular & Other Circulatory Conditions (Atherosclerosis, Deep Vein Thrombosis, Peripheral Arterial Disease, Stroke).
Step 2: Practical Case-Based Learning (60 minutes) – Student Led
Research & Diagnostic Criteria Identification (20 minutes)
Case Study Analysis (20 minutes)
Role-Playing & Presentation (20 minutes)
Step 4: Discussion & Reflection (30 minutes) – Whole Class
Each group discusses the challenges they faced in diagnosis.
The teacher provides expert insights and corrections.
Discussion on advancements in molecular diagnostics and imaging techniques.
Step 5: Wrap-Up & Summary (10 minutes) – Teacher Led
Key takeaways on the role of biochemical markers in disease diagnosis.
Importance of standardized international diagnostic criteria.
Short Q&A session to clarify doubts.
Assessment & Takeaways:
Teacher Evaluation:

Accuracy of diagnosis using international criteria.
Understanding of biochemical markers and lab tests.
Engagement in discussions and role-playing.
Student Learning Outcomes:
Ability to assess clinical cases using diagnostic criteria.
Practical experience in interpreting lab results.
Improved problem-solving and clinical decision-making skills.

Practical Training 32.4 : Assessment of International Diagnostic Criteria for Neurological and Mental health

Duration of activity- 2 hours:
Activity : Demonstration (20 minutes)
Activity 1: Introduction (20 minutes) – Teacher Led
Brief overview of diagnostic approaches in Neurological and Mental health. Explanation of key criteria like
Key diagnostic criteria include the DSM-5 and ICD-11 Classification for Psychiatric Disorders, the McDonald Criteria for Multiple Sclerosis, the National Institute of Neurological Disorders and Stroke (NINDS) Criteria for Stroke, the Movement Disorder Society (MDS) Criteria for Parkinson's Disease, the International League Against Epilepsy (ILAE) Classification for Epilepsy, the Glasgow Coma Scale (GCS) for Consciousness Assessment, the Mini-Mental State Examination (MMSE) for Cognitive Impairment, and the Hamilton Depression Rating Scale (HDRS) for Depression.
Laboratory and imaging tests for neurological and mental health disorders include cerebrospinal fluid (CSF) analysis, neuroimaging techniques such as MRI and CT scans, electroencephalography (EEG) for seizure disorders, nerve conduction studies (NCS) and electromyography (EMG) for neuromuscular disorders, and blood tests for metabolic and autoimmune markers. For mental health conditions, assessments involve psychometric evaluations, neurotransmitter level analysis, and genetic testing for predispositions to psychiatric disorders.
Students are assigned into three groups, each focusing on one category of neurological and mental health disorders: Neurodegenerative & Movement Disorders (Alzheimer's Disease, Parkinson's Disease, Multiple Sclerosis), Cerebrovascular & Neurological Conditions (Stroke, Epilepsy, Migraine, Neuropathy), and Psychiatric & Mood Disorders (Depression, Schizophrenia, Bipolar Disorder, Anxiety Disorders).
Activity : Case- Based Learning (1 hour 40 minutes)
Activity 2: Practical Case-Based Learning (60 minutes) – Student Led
Research & Diagnostic Criteria Identification (20 minutes)
Case Study Analysis (20 minutes)
Role-Playing & Presentation (20 minutes)
Activity 3: Discussion & Reflection (30 minutes) – Whole Class
Each group discusses the challenges they faced in diagnosis.
The teacher provides expert insights and corrections.

Discussion on advancements in molecular diagnostics and imaging techniques.
Activity 4: Wrap-Up & Summary (10 minutes) – Teacher Led
Key takeaways on the role of biochemical markers in disease diagnosis.
Importance of standardized international diagnostic criteria.
Short Q&A session to clarify doubts.
Assessment & Takeaways:
Teacher Evaluation:
Accuracy of diagnosis using international criteria.
Understanding of biochemical markers and lab tests.
Engagement in discussions and role-playing.
Student Learning Outcomes:
Ability to assess clinical cases using diagnostic criteria.
Practical experience in interpreting lab results.
Improved problem-solving and clinical decision-making skills.

Practical Training 32.5 : Endocrine and Pregnancy-Related Disorders: Diagnostic and Laboratory Assessment Practicum

Duration of practical- 2 hours
Activity: Case- Based Learning (2 hours)
Activity 1: Introduction and Objective Setting (5 minutes)
Introduce the focus of the session: diagnosing endocrine disorders (e.g., hypothyroidism) and pregnancy-related complications (e.g., preeclampsia) using clinical symptoms, risk factors, and lab results.
Activity 2: Case Study Presentation & Diagnostic Criteria (20 minutes)
Case Presentation (10 minutes): Present two clinical cases – one of hypothyroidism and one of preeclampsia. Include clinical history, symptoms, and risk factors.
Diagnostic Criteria (10 minutes):
Hypothyroidism (5 minutes): TSH elevated, Free T4 decreased. Discuss common symptoms such as fatigue, weight gain, and cold intolerance.
Preeclampsia (5 minutes): Blood pressure ?140/90 mmHg after 20 weeks of gestation, proteinuria ?300 mg/24 hours or +1 on dipstick, and/or signs of end-organ dysfunction.
Activity 3: Lab Investigation Review, Interpretation & Clinical Correlation (50 minutes)
Lab Investigation Review (15 minutes): Provide lab reports for both hypothyroidism and preeclampsia cases including TSH, Free T4, blood pressure, urine protein, platelet count, and liver enzymes.
Interpretation of Lab Results (15 minutes): Students analyze lab data, match findings to diagnostic criteria, and discuss how abnormalities support the diagnosis.
Clinical Correlation and Treatment (20 minutes):

Hypothyroidism (10 minutes): Discuss levothyroxine treatment, dosage titration, and follow-up.
Preeclampsia (10 minutes): Discuss management with antihypertensives, magnesium sulfate, and timing of delivery based on severity.
Activity 4: Diagnostic Application – Case Scenario Analysis (15 minutes)
Divide students into groups. Provide each group with a new case related to either an endocrine disorder or pregnancy-related complication. Ask them to apply diagnostic criteria, interpret lab results, and arrive at a diagnosis. Groups share their findings briefly.
Review and Wrap-Up (5 minutes)
Summarize key points on diagnostic criteria, lab test interpretation, and treatment approaches for hypothyroidism and preeclampsia. Open the floor for questions and clarification.

Practical Training 32.6 : Assessment of pathophysiological states of Monoamine-Producing Tumors and Bone and Mineral Metabolism

Duration of practical 2 hours
Activity: Demonstration (10 minutes)
Activity 1: Introduction and Objective Setting (10 minutes)
Overview: Explain the purpose of the practical session—diagnosing monoamine-producing tumors and bone and mineral metabolism disorders through diagnostic criteria and lab interpretation.
Learning Goals: Students should learn how to assess clinical cases, interpret diagnostic tests, and correlate lab results to make clinical decisions.
Activity: Case- Based Learning (1 hour 50 minutes)
Activity 2: Case Study 1 - Monoamine-Producing Tumors (15 minutes)
Activity 3: Case Study 2 - Bone and Mineral Metabolism Disorders (15 minutes)
Activity 4: Lab Investigation Review and Group Work (20 minutes)
Group Activity: Have students work in small groups to analyze lab results, match them with the diagnostic criteria, and propose a diagnosis for both cases.
Activity 5: Diagnostic Criteria for Monoamine-Producing Tumors (15 minutes)
Activity 6: Diagnostic Criteria for Bone and Mineral Metabolism Disorders (15 minutes)
Activity 7: Clinical Correlation: Monoamine-Producing Tumors (15 minutes)
Case Discussion: Analyze how lab findings correlate with the patient’s symptoms.
Activity 8: Clinical Correlation: Bone and Mineral Metabolism Disorders (15 minutes)
Activity 9: Hands-On Interpretation and Diagnosis (20 minutes)
Interactive Assessment: Present new cases (one for monoamine-producing tumor and one for bone and mineral metabolism disorder).
Have students interpret new lab results, apply diagnostic criteria, and form a diagnosis.
Discuss clinical reasoning in interpreting lab results and diagnosing these conditions.

Practical Training 32.7 : Demonstration and assessment of pathophysiological states of Liver Disease including Gastric, Pancreatic, and Intestinal Function

Duration of practical 2 hours
Activity : Demonstration (40 minutes)
Activity 1: Introduction and Overview (10 minutes)
Briefly introduce the practical session by explaining the relationship between liver disease and its impact on the gastrointestinal system.
Activity 2: Review of Clinical Cases (15 minutes)
Present real or hypothetical patient cases with liver disease.
Provide students with detailed case studies (e.g., a patient with cirrhosis, jaundice, ascites).
Ask students to identify potential gastric, pancreatic, and intestinal dysfunctions based on patient history and clinical symptoms.
Activity 3: Laboratory Analysis of Liver Disease (15 minutes)
Introduce key laboratory tests used to assess liver function.
Provide students with lab results, including liver function tests (ALT, AST, bilirubin, albumin levels).
Have students interpret the results and correlate them with potential pathophysiological impacts on the digestive system.
Activity : Case-based Learning (1 hour 20 minutes)
Activity 4: Demonstration of Impact on Gastric Function (15 minutes)
Examine how liver disease affects gastric function.
Discuss the mechanisms behind portal hypertension, the development of esophageal varices, and its impact on gastric blood flow.
Demonstrate how liver disease can cause gastric ulcers, gastritis, and altered gastric acid secretion.
Show related diagnostic procedures, such as endoscopy, and how to identify gastric bleeding or ulcers in liver disease patients.
Activity 5: Assessment of Pancreatic Function (15 minutes)
Explore the relationship between liver disease and pancreatic dysfunction.
Discuss how liver disease, particularly bile duct obstruction, affects pancreatic enzyme production and secretion.
Have students review case studies of pancreatitis associated with liver disease.
Provide lab results for pancreatic enzymes (amylase, lipase) and have students interpret these in the context of liver disease.
Activity 6: Intestinal Malabsorption Assessment (15 minutes)
Assess how liver disease can lead to malabsorption in the intestines.
Explain how impaired bile secretion affects fat digestion and the absorption of fat-soluble vitamins (A, D, E, K).
Show clinical signs of malabsorption (e.g., steatorrhea) and discuss the diagnostic approach (stool analysis, blood tests).
Ask students to assess the possible long-term effects on nutrient absorption in liver disease patients.
Activity 7: Review of Imaging Techniques (10 minutes)
Understand imaging techniques for diagnosing liver and gastrointestinal complications.
Show images from ultrasound, CT scans, and MRIs that help identify liver disease, ascites, portal hypertension, and other gastrointestinal manifestations.
Have students analyze these images and correlate findings with the clinical case studies presented earlier.

Activity 8: Integration of Findings (15 minutes)
Synthesize information to form a comprehensive understanding of liver disease and its effects on the gastrointestinal system.
Divide students into small groups and ask them to review the case study, lab results, imaging findings, and clinical symptoms.
Ask them to diagnose the level of liver dysfunction and predict how this will impact gastric, pancreatic, and intestinal functions.
Activity 9: Simulation Exercise (20 minutes)
Practice clinical decision-making and critical thinking.
Conduct a simulation where students must make diagnostic decisions based on a patient's symptoms, lab results, and medical history.
Have students identify the underlying liver disease, its effects on gastrointestinal functions, and possible complications.
Activity 10: Discussion and Debrief (10 minutes)
Review key learnings and ensure students understand the pathophysiology and clinical approach to liver disease.
Engage students in a discussion about their findings and experiences during the practical session.
Summarize the key concepts learned: the role of the liver in digestion, the impact of liver dysfunction on gastric, pancreatic, and intestinal functions, and the clinical assessment strategies used.
Provide feedback and address any questions from the students.

Practical Training 32.8 : Assessment of pathophysiological states of Kidney Disease & Disorders of Water, Electrolytes, and Acid-Base Metabolism

Duration of activity 2 hours
Activity: Demonstration (20 minutes)
Activity 1: Introduction to Kidney Diseases and Disorders (10 minutes)
Objective: Provide an overview of kidney diseases and disturbances in fluid, electrolytes, and acid-base balance.
Discuss the functions of the kidneys and how disorders can impact water, electrolytes, and acid-base balance.
Introduce common kidney diseases (e.g., acute kidney injury, chronic kidney disease, nephrotic syndrome) and disturbances like hyperkalemia, hyponatremia, and metabolic acidosis.
Activity 2: Overview of International Diagnostic Criteria (10 minutes)
Objective: Explain the international diagnostic criteria for kidney diseases and metabolic disorders.
Present the criteria for diagnosing kidney diseases (e.g., AKI, CKD) using the KDIGO (Kidney Disease: Improving Global Outcomes) guidelines.
Discuss the diagnostic significance of lab results in electrolyte imbalances and acid-base disorders.
Activity: Case Based Learning (10 minutes)
Activity 3: Review of Clinical Cases (10 minutes)
Objective: Present clinical cases to highlight symptoms and signs of kidney disease and metabolic disorders.
Provide students with detailed case studies (e.g., a patient with acute kidney injury, metabolic acidosis, or hyponatremia).
Ask students to identify potential causes and suggest what tests would be most useful for diagnosis.

Activity: Lab Report Interpretation (1 hour 30 minutes)
Activity 4: Lab Investigations Introduction (10 minutes)
Objective: Introduce the laboratory tests essential for diagnosing kidney diseases and electrolyte imbalances.
Explain how to perform and interpret common lab tests, such as serum creatinine, GFR (glomerular filtration rate), electrolytes (Na+, K+, Cl-, bicarbonate), and arterial blood gases (ABG).
Demonstrate how these lab results help in diagnosing renal function and acid-base status.
Activity 5: Analyzing Serum Creatinine and GFR (15 minutes)
Objective: Demonstrate the interpretation of serum creatinine levels and GFR for kidney disease assessment.
Provide students with examples of serum creatinine levels and calculate GFR using the CKD-EPI formula.
Discuss how to assess kidney function and classify stages of chronic kidney disease (CKD) based on GFR levels.
Activity 6: Electrolyte Imbalance Assessment (15 minutes)
Objective: Teach students to assess electrolyte disturbances (e.g., hyperkalemia, hyponatremia, hypocalcemia) and their relationship to kidney disease.
Present patients with different electrolyte abnormalities.
Have students interpret electrolyte lab results (Na+, K+, Cl-, bicarbonate) and correlate them with potential kidney dysfunction or acid-base disorders.
Activity 7: Acid-Base Disorder Interpretation (15 minutes)
Objective: Guide students in interpreting arterial blood gas (ABG) results to assess acid-base disturbances (e.g., metabolic acidosis, alkalosis).
Provide students with ABG results and ask them to diagnose the type of acid-base disorder (e.g., metabolic acidosis vs. respiratory alkalosis).
Explain how kidney disease can contribute to acid-base imbalances and discuss compensation mechanisms.
Activity 8: Case Study Review and Lab Data Integration (15 minutes)
Objective: Integrate clinical symptoms with laboratory findings for a comprehensive diagnosis.
Provide a complete clinical case (patient history, physical exam findings, lab results).
Ask students to interpret the lab data in the context of the clinical presentation and formulate a diagnosis.
Discuss potential causes of kidney disease or metabolic disorders based on the findings.
Activity 9: Predicting Complications and Management Strategies (10 minutes)
Objective: Discuss potential complications and management strategies for kidney diseases and related metabolic disturbances.
Based on the clinical case and lab results, ask students to predict potential complications (e.g., hyperkalemia leading to arrhythmias, fluid overload leading to pulmonary edema).
Discuss management strategies for addressing these complications (e.g., dialysis, electrolyte correction, fluid management).
Activity 10: Discussion and Debrief (10 minutes)
Objective: Summarize key learning points and reinforce clinical reasoning.
Engage students in a group discussion, allowing them to share their findings and reasoning.
Review the key concepts: interpretation of kidney function tests, electrolyte disturbances, acid-base disorders, and clinical management strategies.

Answer any remaining questions and provide feedback on students' performance during the practical.

Practical Training 32.9 : Assessment of pathophysiological states of Diabetes Mellitus & Cardiac Function

Duration of activity 2 hours
Activity: Demonstration (10 minutes)
Activity 1: Introduction to Diabetes Mellitus and Cardiac Disease (10 minutes)
Objective: Provide an overview of the pathophysiology and international diagnostic criteria for Diabetes Mellitus and Cardiac Disease.
Diabetes Mellitus Criteria: Discuss the diagnostic criteria set by the World Health Organization (WHO) and American Diabetes Association (ADA), such as:
Fasting Blood Glucose (FBG) ? 126 mg/dL (7.0 mmol/L)
Oral Glucose Tolerance Test (OGTT): 2-hour plasma glucose ? 200 mg/dL (11.1 mmol/L)
Hemoglobin A1c (HbA1c) ? 6.5%
Cardiac Disease Criteria: Present diagnostic criteria for common cardiac diseases:
Hypertension: WHO and American College of Cardiology (ACC) criteria for diagnosing hypertension (BP ? 130/80 mmHg).
Acute Myocardial Infarction (MI): Diagnosis based on European Society of Cardiology (ESC) and American Heart Association (AHA) criteria, including elevated cardiac biomarkers (e.g., troponin), ECG changes, and clinical presentation.
Case Based Learning (10 minutes)
Activity 2: Case Study Review of Diabetes and Cardiac Disease (10 minutes)
Objective: Review clinical case studies to demonstrate the application of international diagnostic criteria.
Present a clinical scenario of a diabetic patient with possible cardiac complications (e.g., chest pain, dyspnea, and fatigue).
Have students apply the ADA criteria to assess diabetes and the ESC/AHA criteria for diagnosing potential cardiac issues.
Activity 3: Review of Diagnostic Tests for Diabetes Mellitus (15 minutes)
Objective: Introduce laboratory investigations for diagnosing and monitoring Diabetes Mellitus.
HbA1c: Discuss the significance of HbA1c in diagnosing and monitoring diabetes (? 6.5% as per ADA criteria).
Fasting Blood Glucose (FBG): Explain that an FBG ? 126 mg/dL is diagnostic of diabetes (as per ADA and WHO).
Provide sample lab results and have students interpret them in light of ADA diagnostic criteria.
Discuss the importance of monitoring for complications such as diabetic retinopathy, neuropathy, and nephropathy.
Activity 4: Review of Diagnostic Tests for Cardiac Disease (15 minutes)
Objective: Review diagnostic tests used in assessing cardiac disease.
ECG: Discuss AHA and ESC criteria for diagnosing arrhythmias and heart ischemia (e.g., ST elevation, Q waves, and prolonged QT intervals).
Cardiac Biomarkers: Explain the role of troponins in diagnosing myocardial infarction, referencing ESC and AHA guidelines.
Discuss echocardiography for diagnosing heart failure and assessing ejection fraction, referring to international heart failure criteria (e.g., AHA/ACC).

Lab Report Interpretation (1 hour 40 minutes)
Activity 5: Measuring and Interpreting Blood Glucose and HbA1c (20 minutes)
Objective: Teach students how to assess blood glucose and HbA1c levels using international criteria.
Have students measure blood glucose levels and calculate HbA1c.
Discuss the interpretation of these levels according to ADA criteria (e.g., an HbA1c of ? 6.5% indicates diabetes, 5.7–6.4% indicates prediabetes).
Relate how poor glucose control impacts the cardiac health of diabetic patients.
Activity 6: Blood Pressure and Lipid Profile Assessment (20 minutes)
Discuss how hypertension and dyslipidemia are risk factors for both diabetes complications and cardiovascular disease.
Activity 7: Electrocardiogram (ECG) Interpretation (20 minutes)
Activity 8: Treatment Options for Diabetes and Cardiac Disease (20 minutes)
Activity 9: Clinical Integration and Case Discussion (20 minutes)
Facilitate a discussion on the management of such a patient, emphasizing how international diagnostic criteria guide clinical decision-making.

Practical Training 32.10 : Lab testing of Nutritional problems

Duration of practical 2 hours
Activity: Lab Report Interpretation (2 hours)
Activity 1: Introduction to Nutritional Lab Testing and International Diagnostic Criteria (10 minutes)
Objective: Provide an overview of nutritional lab tests used to diagnose common nutritional problems, including international diagnostic criteria.
Activity 2: Overview of Common Nutritional Deficiencies and Excesses (15 minutes)
Activity 3: Introduction to Key Biomarkers and Their Significance (15 minutes)
Activity 4: Understanding and Interpreting Complete Blood Count (CBC) (15 minutes)
Activity 5: Interpreting Serum Iron and Ferritin Levels (20 minutes)
Activity 6: Interpreting Vitamin D and Calcium Lab Results (20 minutes)
Activity 7: Analyzing Vitamin B12 and Folate Levels (20 minutes)
Activity 8: Analysis of Macronutrient Levels (15 minutes)
Activity 9: Case Studies and Interpretation of Lab Results (20 minutes)
Activity 10: Discussion of Nutritional Interventions and Management (20 minutes)

Experiential learning Activity

Experiential-Learning 32.1 : Hands on training to assess the International Diagnostic Criteria of Nutritional Problems

Duration of activity- 1 hour
Activity: Case Based Learning (1 hour)
Activity 1: Introduction (10 minutes) - Instructor Led
Briefly explain nutritional problems (e.g., malnutrition, obesity, micronutrient deficiencies).
Overview of international diagnostic criteria (e.g., WHO, ESPEN (European Society for Clinical Nutrition and Metabolism) and ASPEN (American Society for Parenteral and Enteral Nutrition) , ICD-10 classification).
The Kellgren and Lawrence system of radiographic grading scale, Duckett jones criteria etc. may be used
Divide students into small groups (3-5 per group).
Activity 2: Experiential Activity (30 minutes) - Student Led
Research & Analysis (10 minutes)
Each group is assigned a specific nutritional problem (e.g., protein-energy malnutrition, vitamin deficiencies, obesity).
Students use pre-provided resources or quick research (printed material/internet) to identify diagnostic criteria.
Case Study Application (10 minutes)
Each group is given a real or hypothetical patient case.
They analyze symptoms and match them to diagnostic criteria.
Role-Playing (10 minutes)
One student plays the role of a healthcare provider, another as a patient, and others as observers or note-takers.
The "healthcare provider" elicits symptoms and applies diagnostic criteria to conclude.
Groups discuss and refine their approach based on feedback.
Activity 3: Reflection & Discussion (15 minutes) - Whole Class Each group presents findings (3-5 minutes each).
Instructor provides clarifications and additional insights.
Open discussion on challenges faced and key takeaways.
Activity 4: Wrap-Up & Summary (5 minutes)
Instructor reinforces key points.
Students reflect on how they can apply this knowledge in real-world scenarios.
Assessment & Takeaways:
Active participation in discussions and role-playing.
Ability to correctly apply international diagnostic criteria.
Understanding of the importance of standardized diagnostic frameworks in nutrition.

Experiential-Learning 32.2 : Hands-on training to assess the International Diagnostic Criteria of Musculoskeletal disorders

Duration of activity- 1 hour
Activity: Case Based Learning (1 hour)
Activity 1: Introduction (10 minutes) - Instructor Led
Brief explanation of Musculoskeletal disorders (e.g., rheumatoid arthritis, osteoarthritis, osteoporosis, ankylosing spondylitis, fibromyalgia).
Overview of international diagnostic criteria (e.g., ACR/EULAR criteria for rheumatoid arthritis, WHO criteria for osteoporosis).
Divide students into small groups (3-5 per group).
Activity 2: Experiential Activity (30 minutes) - Student Led
Research & Analysis (10 minutes)
Each group is assigned a specific musculoskeletal disorder. (e.g., rheumatoid arthritis, osteoarthritis, osteoporosis, ankylosing spondylitis, fibromyalgia).
Explanation of diagnostic tools:
Clinical examination (pain assessment, range of motion, joint swelling). Imaging techniques (X-ray, MRI, CT scan). Laboratory tests (ESR, CRP, RF, ANA, bone density scans). Formation of small groups (3-5 students per group)
Students use pre-provided resources or quick research (printed material/internet) to identify diagnostic criteria.
Case Study Application (10 minutes)
Each group is given a real or hypothetical patient case.
They analyze symptoms and match them to diagnostic criteria.
Role-Playing (10 minutes)
One student plays the role of a healthcare provider, another as a patient, and others as observers or note-takers.
The "healthcare provider" elicits symptoms and applies diagnostic criteria to conclude.
Groups discuss and refine their approach based on feedback.
Activity 3: Reflection & Discussion (15 minutes) - Whole Class
Each group presents findings (3-5 minutes each).
Instructor provides clarifications and additional insights.
Open discussion on challenges faced and key takeaways.
Activity 4: Wrap-Up & Summary (5 minutes)
Instructor reinforces key points.
Students reflect on how they can apply this knowledge in real-world scenarios.
Assessment & Takeaways:
Active participation in discussions and role-playing.
Ability to correctly apply international diagnostic criteria.
Understanding of the importance of standardized diagnostic frameworks in Musculoskeletal disorder.

Experiential-Learning 32.3 : Hands-on training to assess the International Diagnostic Criteria of Dermatological disorder

Duration of activity- 1 hour
Activity: Case based learning (1 hour)
Activity 1: Introduction (10 minutes) - Instructor Led
Brief explanation of Dermatology cases (e.g., psoriasis, eczema, melanoma, vitiligo, acne, fungal infections)
Overview of international diagnostic criteria (e.g., WHO, ICD-10, AAD guidelines).
Divide students into small groups (3-5 per group).
Activity 2: Experiential Activity (30 minutes) - Student Led
Research & Analysis (10 minutes)
Each group is assigned a specific dermatological disorder.
Students use pre-provided resources or quick research (printed material/internet) to identify diagnostic criteria.
Case Study Application (10 minutes)
Each group is given a real or hypothetical patient case with images (if applicable).
They analyze symptoms and match them to diagnostic criteria.
Role-Playing (10 minutes)
One student plays the role of a healthcare provider, another as a patient, and others as observers or note-takers.
The "healthcare provider" elicits symptoms and applies diagnostic criteria to conclude.
Groups discuss and refine their approach based on feedback.
Activity 3: Reflection & Discussion (15 minutes) - Whole Class
Each group presents findings (3-5 minutes each).
Instructor provides clarifications and additional insights.
Open discussion on challenges faced and key takeaways.
Activity 4: Wrap-Up & Summary (5 minutes)
Instructor reinforces key points.
Students reflect on how they can apply this knowledge in real-world scenarios.
Assessment & Takeaways:
Active participation in discussions and role-playing.
Ability to correctly apply international diagnostic criteria.
Understanding of the importance of standardized diagnostic frameworks in dermatological conditions.

Experiential-Learning 32.4 : Hands-on training to assess the International Diagnostic Criteria of Respiratory diseases

Duration of activity- 2 hours
Activity: Case Based Learning (2 hours)
Activity 1: Introduction (20 minutes) - Instructor Led
Brief explanation of Respiratory diseases (e.g., Obstructive Lung Diseases (Asthma, COPD), Infectious & Inflammatory Diseases (TB, Pneumonia, COVID-19, ILDs), and Vascular & Other Respiratory Conditions (Pulmonary Embolism, Pleural Effusion, ARDS).
Overview of international diagnostic criteria (e.g., WHO, GOLD, GINA,ATS/ERS criteria ICD-10 classification).
Divide students into small groups (3-5 per group).
Activity 2: Experiential Activity (60 minutes) - Student Led
Research & Analysis (20 minutes)
Each group is assigned a specific respiratory problem (e.g., Asthma, COPD, TB, ILD, Pulmonary Embolism).
Students use pre-provided resources or quick research (printed material/internet) to identify diagnostic criteria.
Case Study Application (20 minutes)
Each group is given a real or hypothetical patient case.
They analyze symptoms and match them to diagnostic criteria.
Role-Playing (20 minutes)
One student plays the role of a healthcare provider, another as a patient, and others as observers or note-takers.
The "healthcare provider" elicits symptoms and applies diagnostic criteria to conclude.
Groups discuss and refine their approach based on feedback.
Activity 3: Reflection & Discussion (30 minutes) - Whole Class
Each group presents findings (3-5 minutes each).
Instructor provides clarifications and additional insights.
Open discussion on challenges faced and key takeaways.
Activity 4: Wrap-Up & Summary (10 minutes)
Instructor reinforces key points.
Students reflect on how they can apply this knowledge in real-world scenarios.
Assessment & Takeaways:
Active participation in discussions and role-playing.
Ability to correctly apply international diagnostic criteria.
Understanding of the importance of standardized diagnostic frameworks in respiratory diseases.

Experiential-Learning 32.5 : Hands-on training to assess the International Diagnostic Criteria of Infectious Diseases.

Duration of activity- 1 hour
Activity: Case Based Learning (1 hour)
Activity 1: Introduction (10 minutes) - Instructor Led
Brief explanation of Infectious diseases (e.g., Influenza, Malaria, Sepsis)
Overview of international diagnostic criteria (e.g., WHO, CDC/ IDSA, ICD-10 classification).
Divide students into small groups (3-5 per group).
Activity 2: Experiential Activity (30 minutes) - Student Led
Research & Analysis (10 minutes)
Each group is assigned a specific infectious problem.
Students use pre-provided resources or quick research (printed material/internet) to identify diagnostic criteria.
Case Study Application (10 minutes)
Each group is given a real or hypothetical patient case.
They analyze symptoms and match them to diagnostic criteria.
Role-Playing (10 minutes)
One student plays the role of a healthcare provider, another as a patient, and others as observers or note-takers.
The "healthcare provider" elicits symptoms and applies diagnostic criteria to conclude.
Groups discuss and refine their approach based on feedback.
Activity 3: Reflection & Discussion (15 minutes) - Whole Class
Each group presents findings (3-5 minutes each).
Instructor provides clarifications and additional insights.
Open discussion on challenges faced and key takeaways.
Activity 4: Wrap-Up & Summary (5 minutes)
Instructor reinforces key points.
Students reflect on how they can apply this knowledge in real-world scenarios.
Assessment & Takeaways:
Active participation in discussions and role-playing.
Ability to correctly apply international diagnostic criteria.
Understanding of the importance of standardized diagnostic frameworks in infectious diseases.

Experiential-Learning 32.6 : Hands on training to assess the International Diagnostic Criteria of Gastrointestinal Disorders

Duration of activity- 1 hour

Activity: Case Based Learning (1 hour)
Activity 1: Introduction (10 minutes) - Instructor Led
Brief explanation of Gastrointestinal Disorders (e.g., Gastroenteritis, Peptic Ulcer Disease, Hepatitis, Irritable Bowel Syndrome, Inflammatory Bowel Disease)
Overview of international diagnostic criteria (e.g., WHO, CDC, ICD-10 classification, Rome Criteria for Functional Gastrointestinal Disorders).
Divide students into small groups (3-5 per group).
Activity 2: Experiential Activity (30 minutes) - Student Led
Research & Analysis (10 minutes)
Each group is assigned a specific gastrointestinal disease.
Students use pre-provided resources or quick research (printed material/internet) to identify diagnostic criteria.
Case Study Application (10 minutes)
Each group is given a real or hypothetical patient case.
They analyze symptoms and match them to diagnostic criteria.
Role-Playing (10 minutes)
One student plays the role of a healthcare provider, another as a patient, and others as observers or note-takers.
The "healthcare provider" elicits symptoms and applies diagnostic criteria to conclude.
Groups discuss and refine their approach based on feedback.
Activity 3: Reflection & Discussion (15 minutes) - Whole Class
Each group presents findings (3-5 minutes each).
Instructor provides clarifications and additional insights.
Open discussion on challenges faced and key takeaways.
Activity 4: Wrap-Up & Summary (5 minutes)
Instructor reinforces key points.
Students reflect on how they can apply this knowledge in real-world scenarios.
Assessment & Takeaways:
Active participation in discussions and role-playing.
Ability to correctly apply international diagnostic criteria.
Understanding of the importance of standardized diagnostic frameworks in gastrointestinal diseases.

Experiential-Learning 32.7 : Hands-on training to assess the International Diagnostic Criteria of Cardio Vascular Diseases

Duration of activity- 1 hour
Activity: Case Based Learning (1 hour)
Activity 1: Introduction (10 minutes) - Instructor Led

Brief explanation of Cardio Vascular diseases (e.g., Coronary Artery Disease, Myocardial Infarction, Heart Failure, Arrhythmias).
Overview of international diagnostic criteria (e.g., WHO, CDC, AHA/ESC Guidelines, Framingham criteria, ICD-10 classification, seattle angina questionnaire).
Divide students into small groups (3-5 per group).
Activity 2: Experiential Activity (30 minutes) - Student Led
Research & Analysis (10 minutes)
Each group is assigned a specific Cardio Vascular Disease.
Students use pre-provided resources or quick research (printed material/internet) to identify diagnostic criteria.
Case Study Application (10 minutes)
Each group is given a real or hypothetical patient case.
They analyze symptoms and match them to diagnostic criteria.
Role-Playing (10 minutes)
One student plays the role of a healthcare provider, another as a patient, and others as observers or note-takers.
The "healthcare provider" elicits symptoms and applies diagnostic criteria to conclude.
Groups discuss and refine their approach based on feedback.
Activity 3: Reflection & Discussion (15 minutes) - Whole Class
Each group presents findings (3-5 minutes each).
Instructor provides clarifications and additional insights.
Open discussion on challenges faced and key takeaways.
Activity 4: Wrap-Up & Summary (5 minutes)
Instructor reinforces key points.
Students reflect on how they can apply this knowledge in real-world scenarios.
Assessment & Takeaways:
Active participation in discussions and role-playing.
Ability to correctly apply international diagnostic criteria.
Understanding of the importance of standardized diagnostic frameworks in Cardio Vascular Disease.

Experiential-Learning 32.8 : Hands-on training to assess the International Diagnostic Criteria of Mental Health Disorders

Duration of activity- 2 hours
Activity: Case Based Learning (40 minutes)
Activity 1: Introduction (20 minutes) - Instructor Led
Brief explanation of Neurological and Mental Health Disorders (e.g., Stroke, Epilepsy, Parkinson’s Disease, Depression, Anxiety, Schizophrenia).
Overview of international diagnostic criteria (e.g., WHO, DSM-5, NIH Stroke Scale for stroke assessment, NIH Stroke Scale, International League Against Epilepsy

Criteria, UK Parkinson’s Disease Society Brain Bank Criteria, GAD criteria, ICD-10 classification).
Divide students into small groups (3-5 per group).
Activity 2: Experiential Activity (20 minutes) - Student Led
Research & Analysis (20 minutes)
Each group is assigned a specific Neurological and Mental Health Disorders.
Students use pre-provided resources or quick research (printed material/internet) to identify diagnostic criteria.
Activity: Case Diagnosis (1 hour 20 minutes)
Activity 3: Diagnosis (40 minutes)
Case Study Application (20 minutes)
Each group is given a real or hypothetical patient case.
They analyze symptoms and match them to diagnostic criteria.
Role-Playing (20 minutes)
One student plays the role of a healthcare provider, another as a patient, and others as observers or note-takers.
The "healthcare provider" elicits symptoms and applies diagnostic criteria to conclude.
Groups discuss and refine their approach based on feedback.
Activity 4: Reflection & Discussion (30 minutes) - Whole Class
Each group presents findings (3-5 minutes each).
Instructor provides clarifications and additional insights.
Open discussion on challenges faced and key takeaways.
Activity 5: Wrap-Up & Summary (10 minutes)
Instructor reinforces key points.
Students reflect on how they can apply this knowledge in real-world scenarios.
Assessment & Takeaways:
Active participation in discussions and role-playing.
Ability to correctly apply international diagnostic criteria.
Understanding of the importance of standardized diagnostic frameworks in Neurological and Mental Health Disorders.

Experiential-Learning 32.9 : Hands-on training to assess the International Diagnostic Criteria of Endocrine disorders and relevant lab parameters

Duration of activity- 2 hours
Activity: Case Based Learning (2 hours)
Activity 1: Introduction (20 minutes) - Instructor Led
Brief explanation of Endocrine disorders (e.g., Diabetes Mellitus, Hypothyroidism, Hyperthyroidism, Cushing’s Syndrome, Addison’s Disease, Polycystic Ovary Syndrome

- PCOS).
Overview of international diagnostic criteria (e.g., WHO, ADA, AACE/ATA criteria, Endocrine Society criteria, Rotterdam criteria, ICD-10 classification, Ludwig scale, ferriman gallwey score hirsutism, berlin sleep apnea questionnaire, Scoff questionnaire).
Divide students into small groups (3-5 per group).
Activity 2: Experiential Activity (60 minutes) - Student Led
Research & Analysis (20 minutes)
Each group is assigned a specific Endocrine disorder.
Students use pre-provided resources or quick research (printed material/internet) to identify diagnostic criteria.
Case Study Application (20 minutes)
Each group is given a real or hypothetical patient case.
They analyze symptoms and match them to diagnostic criteria.
Role-Playing (20 minutes)
One student plays the role of a healthcare provider, another as a patient, and others as observers or note-takers.
The "healthcare provider" elicits symptoms and applies diagnostic criteria to conclude.
Groups discuss and refine their approach based on feedback.
Activity 3: Reflection & Discussion including relevant lab parameters (30 minutes) - Whole Class
Each group presents findings (3-5 minutes each).
Instructor provides clarifications and additional insights.
Open discussion on challenges faced and key takeaways.
Activity 4: Wrap-Up & Summary (10 minutes)
Instructor reinforces key points.
Students reflect on how they can apply this knowledge in real-world scenarios.
Assessment & Takeaways:
Active participation in discussions and role-playing.
Ability to correctly apply international diagnostic criteria.
Understanding of the importance of standardized diagnostic frameworks in Endocrine disorder.

Experiential-Learning 32.10 : Hands-on training to assess the International Diagnostic Criteria of Disorders in Pregnancy

Duration of activity- 1 hour
Activity: Case Based Learning (1 hour)
Activity 1: Introduction (10 minutes) - Instructor Led
Brief explanation of Disorders in Pregnancy (e.g., Gestational Diabetes, Preeclampsia, Eclampsia, Placenta Previa, Postpartum Depression).

Overview of international diagnostic criteria (e.g., WHO, ACOG criteria, ADA criteria, DSM-5 criteria, ICD-10 classification).
Divide students into small groups (3-5 per group).
Activity 2: Experiential Activity (30 minutes) - Student Led
Research & Analysis (10 minutes)
Each group is assigned a specific Disorders in Pregnancy.
Students use pre-provided resources or quick research (printed material/internet) to identify diagnostic criteria.
Case Study Application (10 minutes)
Each group is given a real or hypothetical patient case.
They analyze symptoms and match them to diagnostic criteria.
Role-Playing (10 minutes)
One student plays the role of a healthcare provider, another as a patient, and others as observers or note-takers.
The "healthcare provider" elicits symptoms and applies diagnostic criteria to conclude.
Groups discuss and refine their approach based on feedback.
Activity 3: Reflection & Discussion (15 minutes) - Whole Class
Each group presents findings (3-5 minutes each).
Instructor provides clarifications and additional insights.
Open discussion on challenges faced and key takeaways.
Activity 4: Wrap-Up & Summary (5 minutes)
Instructor reinforces key points.
Students reflect on how they can apply this knowledge in real-world scenarios.
Assessment & Takeaways:
Active participation in discussions and role-playing.
Ability to correctly apply international diagnostic criteria.
Understanding of the importance of standardized diagnostic frameworks in Disorders in Pregnancy.

Experiential-Learning 32.11 : Hands-on training to assess the International Diagnostic Criteria of Monoamine-Producing Tumors and relevant lab parameters.

Duration of activity- 1 hour
Activity: Case Based Learning (1 hour)
Activity 1: Introduction (10 minutes) - Instructor Led
Brief explanation of Monoamine-Producing Tumors. (e.g., Pheochromocytoma, Paraganglioma, Carcinoid Tumors, Medullary Thyroid Carcinoma).
Overview of international diagnostic criteria (e.g., WHO, Endocrine Society criteria, ATA criteria, ICD-10 classification.
Divide students into small groups (3-5 per group).

Activity 2: Experiential Activity (30 minutes) - Student Led
Research & Analysis (10 minutes)
Each group is assigned a specific Monoamine-Producing Tumors.
Students use pre-provided resources or quick research (printed material/internet) to identify diagnostic criteria.
Case Study Application (10 minutes)
Each group is given a real or hypothetical patient case.
They analyze symptoms and match them to diagnostic criteria.
Role-Playing (10 minutes)
One student plays the role of a healthcare provider, another as a patient, and others as observers or note-takers.
The "healthcare provider" elicits symptoms and applies diagnostic criteria to conclude.
Groups discuss and refine their approach based on feedback.
Activity 3: Reflection & Discussion (15 minutes) - Whole Class
Each group presents findings (3-5 minutes each).
Instructor provides clarifications and additional insights.
Open discussion on challenges faced and key takeaways.
Activity 4: Wrap-Up & Summary (5 minutes)
Instructor reinforces key points.
Students reflect on how they can apply this knowledge in real-world scenarios.
Assessment & Takeaways:
Active participation in discussions and role-playing.
Ability to correctly apply international diagnostic criteria.
Understanding of the importance of standardized diagnostic frameworks in Monoamine Producing Tumors.

Experiential-Learning 32.12 : Hands-on training to assess the International Diagnostic Criteria of Bone and mineral metabolism disorder and relevant lab parameters

Duration of activity- 2 hours
Activity: Case Based Learning (2 hours)
Activity 1: Introduction (20 minutes) - Instructor Led
Brief explanation of Bone and mineral metabolism disorders (e.g., Osteoporosis, Osteomalacia, Paget’s Disease, Hyperparathyroidism, Hypoparathyroidism, Rickets).
Overview of international diagnostic criteria (e.g., WHO, AACE, Endocrine Society, ICD-10 classification) and relevant radiological findings in X-ray and Dual-Energy X-ray Absorptiometry (DXA).
Divide students into small groups (3-5 per group).
Activity 2: Experiential Activity (60 minutes) - Student Led

Research & Analysis (20 minutes)
Each group is assigned a specific Bone and mineral metabolism disorders.
Students use pre-provided resources or quick research (printed material/internet) to identify diagnostic criteria.
Case Study Application (20 minutes)
Each group is given a real or hypothetical patient case.
They analyze symptoms and match them to diagnostic criteria.
Role-Playing (20 minutes)
One student plays the role of a healthcare provider, another as a patient, and others as observers or note-takers.
The "healthcare provider" elicits symptoms and applies diagnostic criteria to conclude.
Groups discuss and refine their approach based on feedback.
Activity 3: Reflection & Discussion (30 minutes) - Whole Class
Each group presents findings (3-5 minutes each).
Instructor provides clarifications and additional insights.
Open discussion on challenges faced and key takeaways.
Activity 4: Wrap-Up & Summary (10 minutes)
Instructor reinforces key points.
Students reflect on how they can apply this knowledge in real-world scenarios.
Assessment & Takeaways:
Active participation in discussions and role-playing.
Ability to correctly apply international diagnostic criteria.
Understanding of the importance of standardized diagnostic frameworks in Bone and mineral metabolism disorders.

Experiential-Learning 32.13 : Hands-on training to assess the International Diagnostic Criteria of Pancreatic disorders and relevant lab parameters

Duration of activity- 1 hour
Activity: Case Based Learning (1 hour)
Activity 1: Introduction (10 minutes) - Instructor Led
Brief explanation of Pancreatic disorders. (e.g., Acute Pancreatitis, Chronic Pancreatitis, Pancreatic Cancer, Cystic Fibrosis-related Pancreatic Disease, and Autoimmune Pancreatitis).
Overview of international diagnostic criteria (e.g., Atlanta Classification, Revised Marshall Scoring System, Ranson’s Criteria, WHO Cancer Staging for Pancreatic Cancer).
Divide students into small groups (3-5 per group).
Activity 2: Experiential Activity (30 minutes) - Student Led

Research & Analysis (10 minutes)
Each group is assigned a specific Pancreatic disorders.
Students use pre-provided resources or quick research (printed material/internet) to identify diagnostic criteria.
Case Study Application (10 minutes)
Each group is given a real or hypothetical patient case.
They analyze symptoms and match them to diagnostic criteria.
Role-Playing (10 minutes)
One student plays the role of a healthcare provider, another as a patient, and others as observers or note-takers.
The "healthcare provider" elicits symptoms and applies diagnostic criteria to conclude.
Groups discuss and refine their approach based on feedback.
Activity 3: Reflection & Discussion (15 minutes) - Whole Class
Each group presents findings (3-5 minutes each).
Instructor provides clarifications and additional insights.
Open discussion on challenges faced and key takeaways.
Activity 4: Wrap-Up & Summary (5 minutes)
Instructor reinforces key points.
Students reflect on how they can apply this knowledge in real-world scenarios.
Assessment & Takeaways:
Active participation in discussions and role-playing.
Ability to correctly apply international diagnostic criteria.
Understanding of the importance of standardized diagnostic frameworks in Pancreatic disorders

Experiential-Learning 32.14 : Hands-on training to assess the International Diagnostic Criteria of Liver diseases and relevant lab parameters.

Duration of activity- 2 hours
Activity: Case Based Learning (2 hours)
Activity 1: Introduction (20 minutes) - Instructor Led
Brief explanation of Liver diseases. (e.g., Hepatitis (acute and chronic), Cirrhosis, Non-Alcoholic Fatty Liver Disease (NAFLD), Hepatic Encephalopathy, and Liver Cancer).
Overview of international diagnostic criteria (e.g., AASLD, West haven criteria, WHO, BCLC guidelines).
Divide students into small groups (3-5 per group).
Activity 2: Experiential Activity (60 minutes) - Student Led
Research & Analysis (20 minutes)

Each group is assigned a specific Liver diseases.
Students use pre-provided resources or quick research (printed material/internet) to identify diagnostic criteria.
Case Study Application (20 minutes)
Each group is given a real or hypothetical patient case.
They analyze symptoms and match them to diagnostic criteria.
Role-Playing (20 minutes)
One student plays the role of a healthcare provider, another as a patient, and others as observers or note-takers.
The "healthcare provider" elicits symptoms and applies diagnostic criteria to conclude.
Groups discuss and refine their approach based on feedback.
Activity 3: Reflection & Discussion (30 minutes) - Whole Class
Each group presents findings (3-5 minutes each).
Instructor provides clarifications and additional insights.
Open discussion on challenges faced and key takeaways.
Activity 4: Wrap-Up & Summary (10 minutes)
Instructor reinforces key points.
Students reflect on how they can apply this knowledge in real-world scenarios.
Assessment & Takeaways:
Active participation in discussions and role-playing.
Ability to correctly apply international diagnostic criteria.
Understanding of the importance of standardized diagnostic frameworks in Liver diseases.

Experiential-Learning 32.15 : Hands-on training to assess the International Diagnostic Criteria of Gastric and Intestinal Disorders and relevant lab parameters

Duration of activity- 2 hours
Activity: Case Based Learning (2 hours)
Activity 1: Introduction (20 minutes) - Instructor Led
Brief explanation of Gastric and Intestinal Disorders. (e.g., Peptic Ulcer Disease, Gastroesophageal Reflux Disease - GERD, Irritable Bowel Syndrome - IBS, Inflammatory Bowel Disease - IBD, Celiac Disease).
Overview of international diagnostic criteria (e.g., WHO, Rome IV Criteria, Montreal criteria, M-ANNHEIM Criteria, ACG guidelines, ESPGHAN Criteria, ICD-10 classification).
Divide students into small groups (3-5 per group).
Activity 2: Experiential Activity (60 minutes) - Student Led
Research & Analysis (20 minutes)

Each group is assigned a specific Gastric and Intestinal Disorders.
Students use pre-provided resources or quick research (printed material/internet) to identify diagnostic criteria.
Case Study Application (20 minutes)
Each group is given a real or hypothetical patient case.
They analyze symptoms and match them to diagnostic criteria.
Role-Playing (20 minutes)
One student plays the role of a healthcare provider, another as a patient, and others as observers or note-takers.
The "healthcare provider" elicits symptoms and applies diagnostic criteria to conclude.
Groups discuss and refine their approach based on feedback.
Activity 3: Reflection & Discussion (30 minutes) - Whole Class
Each group presents findings (3-5 minutes each).
Instructor provides clarifications and additional insights.
Open discussion on challenges faced and key takeaways.
Activity 4: Wrap-Up & Summary (10 minutes)
Instructor reinforces key points.
Students reflect on how they can apply this knowledge in real-world scenarios.
Assessment & Takeaways:
Active participation in discussions and role-playing.
Ability to correctly apply international diagnostic criteria.
Understanding of the importance of standardized diagnostic frameworks in Gastric and Intestinal Disorders.

Experiential-Learning 32.16 : Hands-on training to assess the International Diagnostic Criteria of Kidney Diseases and relevant lab parameters

Duration of activity- 2 hours
Activity: Case Based Learning (2 hours)
Activity 1: Introduction (20 minutes) - Instructor Led
Brief explanation of Kidney Diseases. (e.g., Acute Kidney Injury (AKI), Chronic Kidney Disease (CKD), Nephrotic Syndrome, and Glomerulonephritis).
Overview of international diagnostic criteria (e.g., KDIGO, RIFLE, AKIN, and CKD staging guidelines).
Divide students into small groups (3-5 per group).
Activity 2: Experiential Activity (60 minutes) - Student Led
Research & Analysis (20 minutes)
Each group is assigned a specific Kidney Diseases.
Students use pre-provided resources or quick research (printed material/internet) to identify diagnostic criteria.

Case Study Application (20 minutes)
Each group is given a real or hypothetical patient case.
They analyze symptoms and match them to diagnostic criteria.
Role-Playing (20 minutes)
One student plays the role of a healthcare provider, another as a patient, and others as observers or note-takers.
The "healthcare provider" elicits symptoms and applies diagnostic criteria to conclude.
Groups discuss and refine their approach based on feedback.
Activity 3: Reflection & Discussion (30 minutes) - Whole Class
Each group presents findings (3-5 minutes each).
Instructor provides clarifications and additional insights.
Open discussion on challenges faced and key takeaways.
Activity 4: Wrap-Up & Summary (10 minutes)
Instructor reinforces key points.
Students reflect on how they can apply this knowledge in real-world scenarios.
Assessment & Takeaways:
Active participation in discussions and role-playing.
Ability to correctly apply international diagnostic criteria.
Understanding of the importance of standardized diagnostic frameworks in Kidney Diseases

Experiential-Learning 32.17 : Hands-on training to assess the International Diagnostic Criteria of Water, electrolytes, and acid-base metabolism disorders and relevant lab parameters.

Duration of activity- 1 hour
Activity: Case Based Learning (1 hour)
Activity 1: Introduction (10 minutes) - Instructor Led
Brief explanation of Water, electrolytes, and acid-base metabolism disorders. (e.g., hyponatremia, hyperkalemia, hypocalcemia), metabolic acidosis, and alkalosis).
Overview of international diagnostic criteria (e.g., WHO, KDIGO, RIFLE, and ABG interpretation guidelines).
Divide students into small groups (3-5 per group).
Activity 2: Experiential Activity (30 minutes) - Student Led
Research & Analysis (10 minutes)
Each group is assigned a specific Water, electrolytes, and acid-base metabolism disorders.
Students use pre-provided resources or quick research (printed material/internet) to identify diagnostic criteria.
Case Study Application (10 minutes)

Each group is given a real or hypothetical patient case.
They analyze symptoms and match them to diagnostic criteria.
Role-Playing (10 minutes)
One student plays the role of a healthcare provider, another as a patient, and others as observers or note-takers.
The "healthcare provider" elicits symptoms and applies diagnostic criteria to conclude.
Groups discuss and refine their approach based on feedback.
Activity 3: Reflection & Discussion (15 minutes) - Whole Class
Each group presents findings (3-5 minutes each).
Instructor provides clarifications and additional insights.
Open discussion on challenges faced and key takeaways.
Activity 4: Wrap-Up & Summary (5 minutes)
Instructor reinforces key points.
Students reflect on how they can apply this knowledge in real-world scenarios.
Assessment & Takeaways:
Active participation in discussions and role-playing.
Ability to correctly apply international diagnostic criteria.
Understanding of the importance of standardized diagnostic frameworks in Water, electrolytes, and acid-base metabolism disorders.

Experiential-Learning 32.18 : Hands-on training to assess the International Diagnostic Criteria of Diabetes Mellitus and relevant lab parameters

Duration of activity- 1 hour
Activity: Case Based Learning (1 hour)
Activity 1: Introduction (10 minutes) - Instructor Led
Brief explanation of Diabetes Mellitus. (e.g., Type 1 Diabetes, Type 2 Diabetes, Gestational Diabetes, and complications such as Diabetic Ketoacidosis (DKA) and Hyperosmolar Hyperglycemic State).
Overview of international diagnostic criteria (e.g., ADA, WHO, IDF guideline, DKA criteria, HHS criteria, Adult treatment panel III criteria for metabolic syndrome)
Divide students into small groups (3-5 per group).
Activity 2: Experiential Activity (30 minutes) - Student Led
Research & Analysis (10 minutes)
Each group is assigned a specific Diabetes Mellitus.
Students use pre-provided resources or quick research (printed material/internet) to identify diagnostic criteria.
Case Study Application (10 minutes)
Each group is given a real or hypothetical patient case.

They analyze symptoms and match them to diagnostic criteria.
Role-Playing (10 minutes)
One student plays the role of a healthcare provider, another as a patient, and others as observers or note-takers.
The "healthcare provider" elicits symptoms and applies diagnostic criteria to conclude.
Groups discuss and refine their approach based on feedback.
Activity 3: Reflection & Discussion (15 minutes) - Whole Class
Each group presents findings (3-5 minutes each).
Instructor provides clarifications and additional insights.
Open discussion on challenges faced and key takeaways.
Activity 4: Wrap-Up & Summary (5 minutes)
Instructor reinforces key points.
Students reflect on how they can apply this knowledge in real-world scenarios.
Assessment & Takeaways:
Active participation in discussions and role-playing.
Ability to correctly apply international diagnostic criteria.
Understanding of the importance of standardized diagnostic frameworks in Diabetes Mellitus

Experiential-Learning 32.19 : Application of Lab Testing and Interpretation in Nutritional Diagnoses and Clinical Correlation

Duration of activity 1 hour
Activity: Case Based Learning (30 minutes)
Activity 1: Introduction to Nutritional Testing (5 minutes)
Brief overview of common nutritional problems and the importance of laboratory testing.
Introduce key biomarkers used in diagnosing nutritional deficiencies (e.g., albumin, hemoglobin, vitamin levels, serum ferritin, etc.).
Activity 2: Demonstration of Lab Testing Methods (10 minutes)
Observe the students performing simple tests (e.g., blood glucose, hemoglobin, or albumin testing).
Explain proper collection and handling of samples for nutritional assessments.
Activity 3: Interpreting Lab Results (15 minutes)
Provide students with sample lab reports for various nutritional problems (e.g., vitamin D deficiency, iron deficiency anemia).
Guide students in interpreting these results and identifying the key biomarkers.
Activity: Case Diagnosis (30 minutes)
Activity 4: Clinical Correlation and Diagnosis (10 minutes)
Discuss the clinical signs and symptoms that correlate with lab results (e.g., fatigue, pallor, skin changes).

Have students apply lab results to case studies to form differential diagnoses.
Activity 5: Treatment Planning Based on Lab Results (10 minutes)
Guide students in determining appropriate treatment options (e.g., dietary changes, supplementation) based on the lab results.
Discuss the role of dietitians and multidisciplinary teams in managing nutritional problems.
Activity 6: Reflection and Q&A (10 minutes)
Allow time for students to reflect on what they've learned.
Answer any questions and clarify concepts regarding lab testing and nutritional diagnosis.

Modular Assessment

Assessment method	**Hour**
Instructions: Conduct a structured Modular assessment. The assessment will be for 50 marks. Keep a structured marking pattern. Use different assessment methods in each module for the semester. Keep a record of the structured pattern used for assessment. Calculate the Modular grade point as per Table 6 C. CHOOSE ANY OF THE BELOW ASSESSMENT FOR 50 MARKS 1.International Diagnostic Criteria of Musculoskeletal, Dermatology, and Nutritional Diseases (10 Marks) Formative Assessment Method: Case Study Analysis Students will be provided with case scenarios involving musculoskeletal, dermatological, and nutritional diseases. They will identify relevant diagnostic criteria and apply them to the cases. Question 1: Based on the ASAS Criteria, explain how you would diagnose Axial Spondyloarthritis (SpA) in a patient presenting with lower back pain and stiffness. (5 Marks) Question 2: Explain the clinical relevance of the Psoriasis Area and Severity Index (PASI) in evaluating the severity of psoriasis. (5 Marks) 2.International Diagnostic Criteria of Respiratory and Infectious Diseases (8 Marks) Formative Assessment Method: Group Discussion and Debate Students engage in group discussions, where they debate and present the diagnostic criteria for common respiratory and infectious diseases. Question 1: Describe the diagnostic criteria for Chronic Obstructive Pulmonary Disease (COPD) and how it guides treatment decisions. (4 Marks) Question 2: How do diagnostic criteria for Tuberculosis (TB) differ across regions, and what are the key factors to consider in the diagnosis? (4 Marks) 3.International Diagnostic Criteria of Gastrointestinal and Cardiovascular Diseases (8 Marks) Formative Assessment Method: Peer-Reviewed Case Presentation Students present case scenarios involving gastrointestinal or cardiovascular diseases, and peer review helps assess the application of diagnostic criteria. Question 1: Based on the 2010 ACR/EULAR Classification Criteria, how would you diagnose Rheumatoid Arthritis in a patient presenting with morning stiffness and joint swelling? (4 Marks)	4

Question 2: How do the diagnostic criteria for Heart Failure help differentiate between acute and chronic heart failure in clinical practice? (4 Marks)
4.International Diagnostic Criteria of Neurological and Mental Health Disorders (6 Marks)
Formative Assessment Method: Diagnostic Algorithm Walkthrough
Students will walk through diagnostic algorithms for common neurological and mental health disorders in a practical session, receiving real-time feedback from instructors.
Question 1: Explain the criteria for diagnosing Alzheimer's Disease and the role of biomarkers in confirming the diagnosis. (3 Marks)
Question 2: Describe how the diagnostic criteria for major depressive disorder are used to differentiate it from other mood disorders. (3 Marks)
5.Endocrinology and Related Disorders Including Pregnancy (5 Marks)
Formative Assessment Method: Interactive Q&A
Students answer rapid-fire questions on endocrine disorders and the criteria used for diagnosing conditions such as diabetes, thyroid disorders, and pregnancy-related complications.
Question 1: What is the diagnostic criterion for gestational diabetes, and why is it important to screen pregnant women for this condition? (3 Marks)
Question 2: Describe the diagnostic criteria for hyperthyroidism and how it influences treatment decisions. (2 Marks)
6.Kidney Disease, Electrolyte Disorders, and Metabolic Disorders (5 Marks)
Formative Assessment Method: Case Simulation and Interactive Lab Results
Students are provided with laboratory test results of kidney function, electrolytes, and acid-base status and are tasked with interpreting the results using diagnostic criteria.
Question 1: How would you diagnose acute kidney injury based on laboratory results and clinical presentation? (3 Marks)
Question 2: What are the diagnostic criteria for metabolic acidosis, and how can it affect kidney function? (2 Marks)
7.Diabetes Mellitus and Cardiac Function (5 Marks)
Formative Assessment Method: Practical Case Analysis
Students analyze a clinical case that involves both diabetes mellitus and cardiovascular issues, applying diagnostic criteria to identify comorbidities.
Question 1: How would you assess the risk of cardiovascular disease in a diabetic patient using diagnostic criteria? (3 Marks)
Question 2: Explain how the HbA1c test is used to diagnose diabetes and monitor its management, including its limitations. (2 Marks)
8.Lab Testing of Nutritional Problems (3 Marks)
Formative Assessment Method: Lab Report Interpretation
Students will analyze laboratory results related to nutritional deficiencies and present their findings in a short written report.
Question 1: What laboratory tests are typically used to assess malnutrition and nutritional status, and what do the results indicate about the patient's condition? (3 Marks)
Or
Any practical in converted form can be taken for assessment. (25 marks)
and

Any experiential, such as portfolios / reflections / presentations can be taken as an assessment. (25 marks)	

Table 4 : Practical Training Activity

(*Refer table 3 of similar activity number)		
Practical No*	**Practical name**	**Hours**
1.1	Diagnosing Murai Suram	2
1.2	Diagnosing Maaral Suram / Pitha Suram (Dengue fever)	2
1.3	Diagnosing Kulir Suram (fever with chills)	2
1.4	Diagnosing Ilaippu Noil varum Suram	2
1.5	Diagnosis of Neerkkuluvan Ammai Noi	4
1.6	Diagnosis of Thattammai Noi	4
1.7	Diagnosis of Poottuthaal ammai Noi	4
2.1	Diagnosis of Mulai Mookkadaippu Noi	2
2.2	Diagnosing Kural Kammal due to Malignant causes	3
2.3	Diagnosis of Neer Mookadaippu Noi	1
2.4	Diagnosing Kural Kammal due to Infectious causes	2
2.5	Diagnosing Kural Kammal due to Non - Malignant tumour causes through the Siddha diagnostic parameters in a prescribed case sheet format.	2

2.6	Diagnosing Irumal Noi (cough with Infectious origin)	2
2.7	Diagnosing Iraippu Noi and development of Siddha diagnostic report.	2
2.8	Diagnosing Ilaippu Noi and Siddha lab report preparation.	2
2.9	Diagnosing Irumal associated with Putru Noi through the Siddha and modern diagnostic parameters in a prescribed case sheet format and development of Siddha lab report.	4
3.1	Diagnosing Aiyya Thamaraga Noi (Myocardial Infarction) based on Siddha and Modern Parameters	3
3.2	Diagnosing Vali Thamaraga Noi (Rheumatic Heart Disease) based on Siddha and Modern Parameters through prescribed case sheet format.	2
3.3	Diagnosing Azhal Thamaraga Noi (Angina Pectoris) based on Siddha and Modern Parameters through prescribed case sheet format.	3
3.4	Diagnosing Athi Kuruthi Azhutham through prescribed case sheet format	3
3.5	Diagnosing Secondary hypertension through Siddha and Modern techniques	3
3.6	Diagnosing Vatha Paandu Noi through prescribed case sheet format.	3
3.7	Diagnosing Pitha Paandu Noi through prescribed case sheet format.	3
4.1	Diagnosing as well as developing line of treatment for Suvai Inmai and Neer Vetkai as per the prescribed case sheet format	1
4.2	Diagnosing Seriyamai through the Siddha diagnostic parameters in a prescribed case sheet format.	2
4.3	Diagnosis of Maantham through prescribed case sheet format	2
4.4	Diagnosing Gunmam and its sub types through prescribed case sheet format.	8
4.5	Assessment tool for Gunmam	7
5.1	Diagnosing Vali Kalleeral Noi	3
5.2	Diagnosing Aiyya Kalleeral noi through prescribed case sheet format	4
5.3	Diagnosing Azhal Kalleeral noi	3
5.4	Diagnosing kaamalai noi (Jaundice) with infectious etiology	3

5.5	Diagnosing kaamalai noi (Jaundice) with infectious etiology	3
5.6	Diagnosing Peruvayiru through the Siddha diagnostic parameters in a prescribed case sheet format.	4
6.1	Diagnose Perunkazhichal, Ninakkazhichal, Kaduppukazhichal through prescribed case sheet format	6
6.2	Diagnosing Eruvai Mulai Noi through prescribed case sheet format.	7
6.3	Diagnosing different types of Powthiram condition through prescribed case sheet format	7
7.1	Diagnosing Thandagavaatham/ Vathasthambam (Lumbar spondylosis/ Sciatica) through Siddha diagnostic parameters in a prescribed case sheet format.	2
7.2	Diagnosing Ceganavatham (Cervical Spondylosis) through Siddha diagnostic parameters in a prescribed case sheet format.	2
7.3	Diagnosing Pakkavatham/ Patchavatham (Hemiplegia) through Siddha diagnostic parameters in a prescribed case sheet format.	2
7.4	Diagnosing Arpudha Vatham (Facial palsy) through Siddha diagnostic parameters in a prescribed case sheet format.	2
7.5	Diagnosing Mudangu Vatham (Ankylosing Spondylosis) through Siddha diagnostic parameters in a prescribed case sheet format.	2
7.6	Diagnosing Nadukku Vatham (Parkinsonism) through Siddha diagnostic parameters in a prescribed case sheet format.	2
7.7	Diagnosing Vali Keel Vaayu and/ or Azhal Keel Vaayu through Siddha diagnostic parameters in a prescribed case sheet format.	3
7.8	Diagnosing Aiyya Keel Vaayu and / or Vali Azhal Keel Vaayu through Siddha diagnostic parameters in a prescribed case sheet format.	2
7.9	Diagnosing Dhoora Soolai through Siddha diagnostic parameters in a prescribed case sheet format.	2
7.10	Diagnosing Nithamba Soolai through Siddha diagnostic parameters in a prescribed case sheet format.	1
8.1	Diagnosing Vanni Pitham through Siddha diagnostic parameters in a prescribed case sheet format.	2
8.2	Diagnosing Uratha Pitham through Siddha diagnostic parameters in a prescribed case sheet format.	2
8.3	Diagnosing Eri Pitham through Siddha diagnostic parameters in a prescribed case sheet format.	2
8.4	Diagnosing Kaya Pitham through Siddha diagnostic parameters in a prescribed case sheet format.	2
8.5	Diagnosing Karappan Pitham through Siddha diagnostic parameters in a prescribed case sheet format.	2

8.6	Hands-on training to diagnose Vanni Pitham	2
8.7	Diagnosing Kaba Noikal through Siddha diagnostic parameters in a prescribed case sheet format.	8
9.1	Diagnosis of Mandai Karappan.	2
9.2	Diagnosis of Peenisam noi.	2
9.3	Diagnosis of Moolai Kuruthi kasivu.	2
9.4	Diagnosis of Moolai Vippuruthi.	2
9.5	Diagnosis of Pitha Kaasam.	2
9.6	Diagnosis of Naaga padalam.	2
9.7	Diagnosis of Sevi Mandham (Tinnitus).	2
9.8	Diagnosis of Naasiga Peedam (Nasal Polyp) .	2
9.9	Diagnosis of Naakku Puttru.	2
9.10	Diagnosis of Vaai puttru Noi.	2
10.1	Diagnosis of Karba Vippuruthi.	6
10.2	Diagnosis of Ratha Vippuruthi.	6
10.3	Diagnosis of Marbu Puttru.	4
10.4	Diagnosis of Purastha kola Puttru .	4
11.1	Diagnosis of Sala kirigai.	4
11.2	Diagnosis of Valippu Noi.	2
11.3	Diagnosis of Kudiveri Noi.	2
11.4	Diagnosis of Paithiyam Noi.	4

11.5	Diagnosis of Soothiga Vaatham.	4
11.6	Diagnosis of Anda Vaayu(Hernia).	4
12.1	Diagnosis of Kalladaippu.	3
12.2	Diagnosis of Sathaiadaippu(Prostatomegaly).	3
12.3	Diagnosis of Chottu Neer(Atonic Bladder).	2
12.4	Diagnosis of Neer Churukku(Urinary incontinence).	2
12.5	Diagnosis of Chunna mana Neer.	3
12.6	Diagnosis of Neerizhivu.	3
12.7	Diagnosis of Mega kattigal / Pilavaigal.	4
13.1	Diagnosis of Penkuri Noi eg. Bicornuate Uterus	4
13.2	Diagnosis of Pooputhadai.	2
13.3	Diagnosis of Soothagavali .	2
13.4	Diagnosis of Kongai Nogal.	2
13.5	Diagnosis of Perumbadu.	2
13.6	Diagnosis of Vellai Paduthal / Yoni Kasivu .	2
13.7	Diagnosis of Yoni Thabidham (Cervicitis).	2
13.8	Diagnosis of Karuppai Katti (Uterine Fibroids).	2
13.9	Diagnosis of Sinaippai Neerkatti .	2
14.1	Diagnosis of Aan Maladu .	2
14.2	Diagnosis of Pen Maladu.	2

14.3	Diagnosis of Sool Vanthi .	2
14.4	Diagnosis of Sool Valippu(Eclampsia).	2
14.5	Diagnosis of Karuchthaivu.	4
14.6	Diagnosis of Pura karuppaSool .	4
14.7	Diagnosis of Thoora Soolai /Nithamba Soolai .	4
15.1	Diagnosis of Mael moochu Vatham (Muscular Dystrophy).	2
15.2	Diagnosis of Sirakkamba Vatham(Cerebral Palsy).	2
15.3	Diagnosis of Paal Maantham (Lactose Intolerance) .	2
15.4	Diagnosis of Seriya Maantham.	2
15.5	Diagnosis of Aama Kanam .	2
15.6	Diagnosis of Lasuna Thaabidham .	2
15.7	Diagnosis of Bala Karappan .	2
15.8	Diagnosis of Akkaram(Malnutrition).	1
15.9	Diagnosis of Suram .	1
15.10	Diagnosis of Kudal kirumigal .	2
15.11	Diagnosis of Kutham Adithalal .	2
16.1	Diagnosis of Padarthamarai .	4
16.2	Diagnosis of Kalanjagapadai .	4
16.3	Diagnosis of Karappan .	3
16.4	Diagnosis ofVenkuttam .	3

16.5	Diagnosis of Kirandhi .	2
16.6	Diagnosis of Puzhuvettu .	2
16.7	Diagnosis of Katti/Kazhalai.	2
17.1	Histopathological diagnosis of various forms of cell injury.	5
17.2	Histopathological interpretation of inflammatory features	3
17.3	Histopathological analysis of Hemodynamic changes	5
17.4	Histological diagnosis of malnutrition	2
17.5	Histopathological interpretation of benign and malignant cells	5
18.1	Histopathological diagnosis of respiratory diseases	10
18.2	Histopathological diagnosis of orbital tumours	4
18.3	Histopathological diagnosis of Ear Nose Throat (ENT) diseases	6
19.1	Peripheral blood features in anaemia	8
19.2	Histopathological diagnosis of hematological malignancies and splenomegaly	7
19.3	Histopathological analysis of cardiac diseases	5
20.1	Histopathological diagnosis of upper gastro intestinal diseases	6
20.2	Histopathological diagnosis of lower gastro intestinal diseases	4
20.3	Histopathological diagnosis of Gastro intestinal tumours	4
20.4	Histopathological analysis of hepatobiliary diseases	6
21.1	Histological assessment of renal and urothelial diseases	6
21.2	Histological analysis of male genital diseases	7

21.3	Histological study of female genital diseases	7
22.1	Gross identification of cerebrovascular diseases	5
22.2	Histological diagnosis of cerebro vascular diseases	5
22.3	Gross identification of Musculoskeletal diseases	5
22.4	Histological diagnosis of musculoskeletal diseases	5
23.1	Histopathological analysis of Diabetic complications and Gout	2
23.2	Histopathological study of Pituitary diseases	4
23.3	Histopathological study of thyroid disorders and tumours	6
23.4	Histological dignosis of adrenal diseases and tumours	4
23.5	Callibrate the histological diagnosis of parathyroid diseases	4
24.1	Histological study of the disorders of Hair, Nail, Sweat, Sebaceouus glands and Melanocytes	3
24.2	Histopathological diagnosis of infectious skin diseases	3
24.3	Vascular and Genodermatoses- histological diagnoses	3
24.4	Histological diagnosis of inflammatory skin disorders	2
24.5	Histological diagnosis of skin manifestations in endocrine, renal, hepatic,metabolic diseases and metastatic malignancies	4
24.6	Histopathological diagnosis of cutaneous malignancies	5
25.1	General Examination and Elicitation of case history	2
25.2	Examination of skin, and appendages	2
25.3	Examination of Respiratory System	2
25.4	Examination of Cardiovascular System	2

25.5	Examination of GIT and abdomen	2
25.6	Examination of Uro-genital system and Gynaecological Examinations, Partogram	2
25.7	Ano rectal Examination	2
25.8	Musculoskeletal examination	4
25.9	Examination of Breast	2
26.1	Identification of X Rays and interpret common abnormalities	4
26.2	Conduct and/or interpret USG examination	4
26.3	Interpretation of CT images	4
26.4	Arrive at the appropriate radiological diagnosis with the MRI Scan images	2
26.5	Interpretation of the PET (Positron Emission Tomography) and SPECT (Single Photon Emission Computed Tomography), and radionuclide : myocardial perfusion studies	4
26.6	Interpreting the report / image findings of Arteriogram, Lymphangiogram and Venography	2
27.1	Demonstration and/or interpretation of ECG,Holter monitoring in continuous cardiac assessment, Coronary angiogram, Central venous pressure, arterial pressure measurements.	4
27.2	Interpretation and/or demonstration of spirometry, PFTs, nitric oxide breath tests, urea breath tests, and bronchoscopy reports	2
27.3	Interpretation of Endoscopy, Rapid Urease test, Colonoscopy, Cholangiopancreatography, Hysteroscopy, Proctoscopy, Cystoscopy, Laproscopy, Colposcopy, Arthroscopy	2
27.4	Interpretation of reports of Electroencephalogram (EEG), Polysomnogram, Electromyogram (EMG), Transcranial magnetic stimulation (TMS)	2
27.5	Interpretation of ophthalmoscope, tonometry, electroretinogram, optometer and refractometer reports and their clinical correlation	2
27.6	Demonstration and interpretation of Anal mannometry	2
27.7	Interpretation of Nerve conduction study and biothesiometry reports	2
27.8	Interpretation of cystometrogram reports	2

27.9	Interpretation of Audiometry reports	2
28.1	Advanced Molecular and Cell Biology Techniques	10
28.2	Hands on Exposure to the Instrumental analyses of Biological samples	3
28.3	Analysis of enzymes, metabolic products and cardiovascular enzymes	3
28.4	Staining, Culture and Biochemical Interpretation of Bacterial infections	1
28.5	Identification of Bacteria and Parasites	1
28.6	Immunodiagnostic Methods for Disease diagnosis	2
29.1	Demonstrate the morphological nature of chromosomes	5
29.2	Exposure to Molecular Biology Techniques: Isolation, Analysis, and Mutation Studies of Nucleic Acids	10
29.3	Bedside diagnostic methods for diabetes management.	2
29.4	Perform Rapid diagnostic test methods for ovulation and rapid infectious diseases	2
29.5	Hands on training in Rapid diagnostic tools for clinical decission making.	1
30.1	Interpreting immunohistochemistry results for disease diagnosis and clinical significance.	1
30.2	Application of immunohistochemistry (IHC) techniques for antigen detection in tissue sections for disease diagnosis.	1
30.3	Principles of histopathalogy and immunohistochemistry in relation to tumor diagnosis	1
30.4	Evaluation of tumor characteristic by specific tumor markers	2
30.5	Evaluation of tumor markers for treatment decisions.	1
30.6	Infectious disease diagnosis through MALDI-TOF	2
30.7	Interpretation of immunohistochemical staining results.	2
30.8	Interpretation of immunohistochemical staining patterns.	5

30.9	Interpretation of immunohistochemical staining patterns.	3
30.10	Significance of biomarkers in disease progression.	2
31.1	Diagnosing a condition with pain (Abdominal pain, Head ache, Back and Neck Pain) through examination and following diagnostic algorithm	1
31.2	Diagnosing a condition such as Skin disorder including skin manifestations of systemic disease, Cutaneous drug reactions and Enlargement of lymph nodes through examination and following diagnostic algorithm	5
31.3	Diagnosing a condition with Chest discomfort	2
31.4	Diagnosing a condition with alteration in body temperature, fever with rash through examination and following diagnostic algorithm	2
31.5	Diagnosing a condition with fluid and electrolyte disturbances	1
31.6	Diagnosing a condition with Nervous system dysfunction: Syncope, Fatigue, Neurologic causes of Weakness and Paralysis, Gait disorders, imbalances and falls, Confusion & Delirium through examination and following diagnostic algorithm	1
31.7	Diagnosing a condition with Edema, Nausea, Vomiting, Indigestion, Constipation, Diarrhoea, Unintentional weight lossthrough examination and following diagnostic algorithm	1
31.8	Diagnosing disorders of Eye and ENT, Oral Manifestation of disease, URT and LRT (Cough, Dyspnoea), Alteration in Respiration & Circulatory functionthrough examination and following diagnostic algorithm	1
31.9	Diagnosing a condition with oedema	2
31.10	Diagnosing a condition with jaundice	2
31.11	Diagnosing a condition with abdominal swelling and ascites	2
32.1	Assessment of International Diagnostic Criteria for Musculoskeletal, Dermatology and Nutritional diseases	2
32.2	Assessment of International Diagnostic Criteria for Respiratory and Infectious Diseases.	2
32.3	Assessment of International Diagnostic Criteria for Gastrointestinal and Cardiovascular diseases.	2
32.4	Assessment of International Diagnostic Criteria for Neurological and Mental health	2
32.5	Endocrine and Pregnancy-Related Disorders: Diagnostic and Laboratory Assessment Practicum	2

32.6	Assessment of pathophysiological states of Monoamine-Producing Tumors and Bone and Mineral Metabolism	2
32.7	Demonstration and assessment of pathophysiological states of Liver Disease including Gastric, Pancreatic, and Intestinal Function	2
32.8	Assessment of pathophysiological states of Kidney Disease & Disorders of Water, Electrolytes, and Acid-Base Metabolism	2
32.9	Assessment of pathophysiological states of Diabetes Mellitus & Cardiac Function	2
32.10	Lab testing of Nutritional problems	2

Table 5 : Experiential learning Activity

(*Refer table 3 of similar activity number)		
Experiential learning No*	**Experiential name**	**Hours**
1.1	Diagnosis of Murai Suram and / or Maaral Suram.	3
1.2	Diagnostic trial protocol for Sura noikal	5
1.3	Diagnosis of Kulir Suram / and Ilaippu noiyil varum Suram (Fever with chillness and Fever phythisis)	3
1.4	Diagnostic algorithm for Suram Noi (febrile illnesses)	4
1.5	Mukkutra Noi a 360-degree approach.	3
1.6	Diagnostic algorithm and Siddha lab report preparation for selected types of Ammai Noi (Kuluvan, Poottu thaal ammai / Thattammai)	3
1.7	Compendium on Ammai Noikal	5
2.1	Hands-on practice to diagnose different types of Mookkadaippu (Neer Mookkadaippu / Mulai Mookkadaippu)	3
2.2	Hands on training in diagnosing Kural Kammal in malignant conditions	3
2.3	Hands on training in diagnosing Kural Kammal in non - malignant conditions	2
2.4	360-degree approch to diagnose Nurai Iral Putru Noi (CA Lung) through Siddha and Modern parameters along with Siddha	4
2.5	Diagnostic trial protocol for Nurai eral Noikal	4
2.6	Application of diagnostic techniques used in Modern and Siddha for Iraippu Noi.	5
2.7	Hands-on practice to diagnose Irumal noi with an infectious cause and generation of Siddha lab report .	3
2.8	Compedium of Nurai eral Noikal in Siddha	2
3.1	Hands-on training to diagnose Vali Thamaraga Noi (Rheumatic Heart Disease).	2
3.2	Compedium of Iruthaya Noigal in Siddha	2

3.3	Hands-on training to diagnose Aiyya Thamaraga Noi (Myocardial Infarction).	2
3.4	Diagnosing Azhal Thamaraga Noi hands on training	2
3.5	Diagnostic trial protocol for Iruthaya noigal	2
3.6	Hands-on practice to diagnose Athi Kuruthi Azhutham (Primary and Secondary hypertension)	2
3.7	Diagnostic trial protocol for Athi Kuruthi Azhutham	2
3.8	Diagnostic accuracy testing of Siddha tools in Athi Kuruthi Azhutham.	3
3.9	Diagnostic Alogorithm development for Raththa Pitham.	1
3.10	Diagnostic algorithm for Paandu Noi	4
3.11	Diagnosing Anemia with Advanced Diagnostic Techniques	3
3.12	Diagnostic algorithm for Sobai Noi	1
4.1	Diagnostic algorithm for Suvai Inmai and Neer Vetkai	2
4.2	Hands-on training to diagnose of Seriyamai	3
4.3	Diagnostic Algorithm for Vikkal (Hiccups)	2
4.4	Developing line of treatment including effect of varmam for Vikkal through analysis of Trihumoural vitiation with a thorough literature search.	2
4.5	Analyse causes of Vikkal	1
4.6	Applying diagnostic techniques in Siddha and modern to develop line of treatment for Vaanthi.	3
4.7	Developing Udal Thee Assessment Tool	5
4.8	Decoding types of Gunmam	3
4.9	Yakkai Ilakkanam analysis for developing optimal treatment outcomes.	4

4.10	Dignosing and developing line of treatment for Kudal Pidipu through literature search	1
5.1	Analysing cause for development of Kalleeral Noi	2
5.2	Diagnostic algorithm for Kalleeral Noi	2
5.3	Hands-on training to diagnose of Kalleeral noi.	4
5.4	Analyze Tri humoural Variation in different types of Kaamalai	4
5.5	Yakkai Ilakkanam analysis for developing optimal treatment outcomes.	4
5.6	Diagnostic algorithm for Kaamalai (Jaundice)	2
5.7	Compendium of Peruvayiru Noi (Ascites)	5
5.8	Diagnostic Algorithm for Peruvayiru (Ascites)	3
6.1	Integrating Gut Dysbiosis and Kirumi Noikal: An Experiential Exploration of Modern and Siddha Perspectives on Microbial Imbalances	4
6.2	Diagnostic algorithm for diarrhoeal diseases in Siddha	4
6.3	Hands on training to diagnose different types of Eruvai Mulai Noikal.	5
6.4	Hands on training in diagnosing and developing line of treatment for Powthira noi	5
6.5	Siddha pharmacodynamics for different Karanool preparations.	8
7.1	Compendium of Vatha Noikal	4
7.2	Yakkai Ilakkanam analysis for Vatha Noikal	4
7.3	Diagnostic trial protocol for Vatha Noikal	5
7.4	Hands-on training to diagnose Vatha Noikal (Thandagavatham and/ or Vathasthambam and/ or Ceganavatham)	4
7.5	Hands-on training to diagnose Vaatha Noigal (Nadukku Vaatham and/ or Mudangu Vaatham)	3
7.6	Trihumoral theory and five elements theory analysis for Keel Vaayu	3

7.7	Hands-on training to diagnose Soolai	3
8.1	Compendium of Pitha Noikal	4
8.2	Hands-on training to diagnose Pitha Noikal (Vanni Pitham)	2
8.3	Hands-on training to diagnose Pitha Noikal (Uratha Pitham and Eri pitham)	4
8.4	Hands-on training to diagnose Pitha Noikal (Eri Pitham and Uratha pitham)	4
8.5	Compendium of Kaba Noikal	4
8.6	Hands-on training to diagnose Kaba Noikal (Virana Kaba Noi)	4
8.7	Hands-on training to diagnose Kaba Noikal (Suronitha Kaba Noi).	4
9.1	Mandai Noi decoded with pathological conditions.	3
9.2	Siddha and Pharmacogenomics interpretation in diagnosis of Mandai Vali.	3
9.3	Moolai Noi Classifications with corresponding pathologic conditions.	2
9.4	Lab Interpretation for Moolai Vippuruthi.	2
9.5	Ocular diagnostic tools for assessment of various ocular Diseases.	2
9.6	Vizhi neer parisodhanai with metabolomics and thega Ilakkanam.	2
9.7	Observe the Myopia Biomarkers,Myopia in Yaakai ilakkanam.	2
9.8	Lab Interpretation for Sevi Mandham ,(Hard of hearing),Kathiraichel (Tinnitus) .	2
9.9	Siddha and Pharmacogenomics interpretation in diagnosis of Sevi Mandham.	2
9.10	Siddha and Pharmacogenomics interpretation in diagnosis of Peenisam.	2
9.11	Staging of Dental pathology in accordance with yaakai Ilakkanam.	2

9.12	Diagnosis of vaineer parisodhanai with Salivary pH .	2
10.1	Vippuruthi Noi and Tumour types.	2
10.2	Yakkai Ilakkanam and Genetic sequence mutation in Vippuruthi Noi.	3
10.3	Role of Next-generation sequencing in Haematological Malignancy.	2
10.4	Lab Interpretation for Vippuruthi Noi.	3
10.5	Circulating Tumour DNA and tumour mutation burden.	2
10.6	Siddha and Pharmaco genomics interpretation in diagnosis of Vippuruthi Noi.	3
10.7	Siddha and Pharmacogenomics interpretation in diagnosis of Puttru noi.	3
10.8	Puttru Noi Classifications and Tumour types an analogus study.	2
10.9	Pancha Patchi Interpretation for Puttru Noi.	2
10.10	Maruthuva Jothidam interpretation for Puttru Noi.	2
10.11	Lab Interpretation for Puttru Noi.	2
11.1	Interpretation of Kirigai from Classical texts.	1
11.2	Lab Interpretation for Kirigai Noi.	2
11.3	Siddha Genomics and Pharmacogenomics Interpretation in Diagnosis of Kirigai.	3
11.4	Lab Interpretation for Valippu Noi.	2
11.5	AUDIT score & Yakkai Ilakkanam Interpretation.	1
11.6	Siddha and Pharmacogenomics interpretation in diagnosis of valippu.	3
11.7	EEG Findings of Valippu Noi .	1
11.8	Biomarkers of alcohol in urine with Siddha Uroscopic findings.	1

11.9	Psychiatry Diagnostic Rating Scales in Ula Pirazhvu Noigal.	2
11.10	Siddha and Pharmacogenomics interpretation in diagnosis of Unmatham/Biramai noi.	2
11.11	Siddha and Pharmacogenomics interpretation in diagnosis of Mathaazhivu and Soothiga vaatham.	2
11.12	Blood based Biomarker for Alzheimer's disease.	2
11.13	Mental Status Examination in Yaakai Ilakkanam.	2
11.14	Vaayu Roga Nidhaanam with pathologic conditions.	2
12.1	Morpho-constitutional analysis of Urinary Stones.	1
12.2	Urine color observations & Siddha Uroscopic findings.	1
12.3	Lab Interpretation for Sathaiadaippu Noi.	2
12.4	Siddha and Pharmacogenomics Interpretation in diagnosis of kalladaippu.	3
12.5	Siddha and Pharmacogenomics interpretation in diagnosis of ChottuNeer.	3
12.6	Chottu Neer and Neer Surukku with various types of Bladder dysfunction.	3
12.7	Siddha and Pharmacogenomics interpretation in diagnosis of Neerizhivu.	3
12.8	Lab Interpretation for Neerizhivu Noi.	3
12.9	Lab Interpretations for Acute Kidney Disease (AKD) and Chronic kidney Disease (CKD).	2
12.10	ICD- 10 codes for carbuncle.	2
12.11	Specific Gravity of Urine and Siddha Uroscopy.	3
13.1	Aan Kuri Noigal & Penkuri Noigal with pathology conditions	3
13.2	Siddha and Pharmacogenomics interpretation in diagnosis of Kuri noigal.	3

13.3	Lab Interpretation for Pooputhadai .	3
13.4	Lab Interpretation for Kongai Noi.	2
13.5	Siddha and Pharmacogenomics interpretation in diagnosis of Pooputhadai.	2
13.6	Maruthuva Jothidam in Perumpaadu and Soothaga Thadai.	3
13.7	Siddha and Pharmacogenomics interpretation in diagnosis of Vellai noi.	3
13.8	Pirappu Uruppugalil Thambitham in various pathological conditions..	1
13.9	Yoni Rogangal types in modern pathological conditions.	2
13.10	Van Kazhalaigal and Maravai Kattigal with Tumour pathology	2
13.11	Lab Interpretation for Van Kazhalaigal and Maravai Kattigal .	2
14.1	Lab Interpretation for Aan Maladu .	2
14.2	Lab Interpretation for Pen Maladu .	2
14.3	Siddha and Pharmacogenomics interpretation in diagnosis of Maldu.	2
14.4	Naadi Interpretation for gestational woman of Second trimester.	3
14.5	Naadi Interpretation for gestational woman of third trimester.	3
14.6	Karuchidaivu with various pathological conditions.	4
14.7	Pancha Patchi analysis of Karuchithaivu.	4
14.8	Maruthuva Jothidam in Karuchithaivu	2
14.9	Lab Interpretation for Karuchithaivu .	2
14.10	Lab Interpretation for Akkrama Soothagam (Anovulary cycle) .	2
15.1	Lab Interpretation for Thasai Vatham.	3

15.2	Lab Interpretation for Sirakamba Vatham.	3
15.3	Siddha and Pharmacogenomics interpretation in diagnosis of Thasai vadham.	3
15.4	Siddha and Pharmacogenomics interpretation in diagnosis of Sirakamba vadham.	2
15.5	Kanam with Pediatric pathologic conditions	3
15.6	Siddha and Pharmacogenomics interpretation in diagnosis of Lasuna Thabitham.	3
15.7	Lab Interpretation for Bala Karappan.	3
15.8	Siddha and Pharmacogenomics interpretation in diagnosis of Bala Karappan .	3
15.9	Kudal Kirumigal with Pediatric pathologic worm Infestation conditions.	1
15.10	Diagnostic screening methods of Neonatal Jaundice.	1
15.11	Lab Interpretation for Kudal Kirumigal /Kudal Pithukkam / Kutham Adithalal .	1
16.1	Kutta Noi and Kalanjagapadai/Sethil Uthir Noi types with dermatological pathology	2
16.2	Lab Interpretation for Kutta Noi .	3
16.3	Siddha and Pharmacogenomics interpretation in diagnosis of Kalanjagapadai Noi.	3
16.4	Pancha Patchi for Kutta Noi	2
16.5	Siddha and Pharmacogenomics interpretation in diagnosis of Karappan Noi,	3
16.6	Kirandhi types with modern concepts.	2
16.7	Lab Interpretation for Karappan .	3
16.8	Dermatological Scales and Karappan Noi	2
16.9	Siddha and Pharmacogenomics Interpretation in diagnosis of Venkuttam.	3

16.10	Siddha and Pharmacogenomics interpretation in diagnosis of Puzhuvettu.	3
17.1	Exploration of cell responses to etiological factors in clinical scenarios	3
17.2	Visual representation of inflammatory processes	2
17.3	Clinical analysis of thrombosis with Wells' criteria and Oedema	2
17.4	Radiation and Industrial exposure- Clinical impacts	3
17.5	Comprehensive evaluation of obesity causes and their clinical implications	3
17.6	Karyotype Interpretation for Genetic Disorders Diagnosis	2
17.7	Assessment of etiology and inheritance pattern in patients with genetic disorders Exploration of online genomic databases	4
17.8	Literary review on epidemiology of cancer and carcinogenesis	7
18.1	Clinical analysis of the underlying causes and risk factors of lung diseases Assessment of Chronic Obstructive Pulmonary Disease (COPD) prognosis by BODE index Indian Association of Respiratory Care-Webinar participation	10
18.2	Deep Pathological Knowledge Acquisition Through Ophthalmologist Shadowing Clinicopathological interpretation of ophthalmic diseases	8
18.3	Case based analysis of otolaryngological diseases	8
19.1	Analysis of etiological factors of anaemia	5
19.2	Case based learning of Leukemia	5
19.3	Case based study of bleeding disorders and splenomegaly	6
19.4	Assessment of cardio vascular risk with Framingham Risk Score	10
20.1	Pathophysiological demonstration of gastric mucosal injury	3
20.2	Data analysis of Crohn's and Ulcerative colitis	3
20.3	Critical appraisal of grading and stagings in gastrointestinal malignancies	6

20.4	Structured approach ensuring a comprehensive understanding of cholelithiasis pathology through targeted literature review and analysis	4
20.5	Comprehensive understanding of the pathophysiology of fatty liver disease , hepatitis ,cirrhosis	4
20.6	Comprehensive understanding of the pathophysiology of Non Alcoholic Fatty Liver Disease , hepatitis and hepatocellular carcinoma	6
21.1	Clinico pathological assessment of renal and urothelial diseases	10
21.2	Comparative analysis of acute and chronic cystitis Disease progression and potential complications of benign prostate hyperplasia. Gleason scoring: Interpreting prostate cancer pathology	7
21.3	Potential clinical implications of adenomyosis pathology Visual demonstration of the pathogenesis of common cervicitis-causing organisms. Patient education for the early detection and prevention of cervical cancer. Clinical implications of the Nottingham Histologic Score (NHS) in breast cancer.	9
22.1	Comprehensive evaluation of both modifiable and non-modifiable risk factors in stroke patients Systematic approach of stroke patients by TOAST (Trial of Org 10172 in Acute Stroke Treatment)criteria	3
22.2	Patient education on prognosis and care plans in stroke.	2
22.3	Bio markers in Immune mediated neuropathies	2
22.4	Behavioral and Psychiatric Symptoms in Alzheimer's and Parkinson's Disease	2
22.5	Neurotransmitters in Neurological and Psychiatric diseases	4
22.6	Peripheral neuropathy - Experiential learning	5
22.7	Symposium on Spectrum of Musculo skeletal diseases	8
23.1	Patient education on diabetic complications Analytics of bone mineral density disorders in post menopausal women	4
23.2	Pituitary dysfunction -Analysis in real patients	6
23.3	Patient centered approach of thyroid disorders and tumours	6
23.4	Differential diagnosis of Adrenal tumours and Hyper adrenal states	6

23.5	Hyper and Hypo parathyroidism- Poster presentation	4
24.1	Etiology of alopecia Comprehensive understanding of vitiligo pathogenesis and the potential for emerging therapeutic targets.	4
24.2	Clinical presentations correlating with the microscopic evidence of pathogenesis in infectious skin diseases	3
24.3	Psychosocial influence in dermatological disorders Precise terminology and clinical-histological correlation in vascular dermatoses,	3
24.4	Analysis of pathology of inflammatory skin diseases	6
24.5	Cutaneous manifestations in systemic diseases	5
24.6	Appreciate the pathological views on cutaneous malignancies	5
25.1	Elicitation of the case history and general examination	3
25.2	Analysis of conditions related to Skin and Appendages through examination	3
25.3	Developing Expertise in Respiratory System Examination through Experiential Learning	3
25.4	Hands-On Exploration of Cardiovascular System Examination: An Experiential Learning Approach	3
25.5	Examination of GIT and Abdomen in Various Clinical Scenarios	3
25.6	Comprehensive Uro-Genital and Gynaecological Examinations: A Hands-On Approach to Clinical Skills	3
25.7	Comprehensive Ano - rectal examinations: A Hands-On Approach to Clinical Skills	3
25.8	Comprehensive Musculoskeletal and Neurological Examinations: A Hands-On Approach to Clinical Skills	3
25.9	Examination of Breast in various benign and malignant conditions in different age groups	2
26.1	Hands-On Experience in Observing and Interpreting X-Ray Findings	6
26.2	Performing and/or interpretation of findings of Ultrasonogram Ultrasonography (USG), Doppler USG, Echocardiogram (ECG), Intravenous Ultrasound (IVUS), Endoanal Ultrasound, Liver Elastography, Trans Vaginal Sonography for ovulation studies	4
26.3	Hand on training in Identification and Interpretation of CT Scan findings.	6

26.4	Hands on training in Interpretation and radiodiagnosis of MRI findings	4
26.5	Interpret the nucliide scanning images / report	4
26.6	Interpretation of Vascular imaging through hands on training	2
27.1	Hands on training to interpret ECG waveforms, coronary angiogram, central venous pressure, arterial pressure measurements	4
27.2	Hands on training in interpretation of reports of Spirometry - PFTs, Nitric oxide breath test, Urea breath test, Bronchoscopy	3
27.3	Hands on training to interpret reports of different scopies	3
27.4	Hands on training to interpret reports of Electroencephalogram, Poysomnogram, Electromyogram and transcranial magnetic stimulation.	3
27.5	Hands on training in interpretation of reports of ophthalmoscope, tonometry, electroretinogram, optometer and refractometer reports and their clinical correlation.	3
27.6	Anal Manometry Interpretation and Clinical Correlation: An Experiential Learning Approach	2
27.7	Hands on training to interpret reports of Nerve Conduction Study (NCS) and Biothesiometry	3
27.8	Hands on training in interpretation of reports of cystometrogram	3
27.9	Apply skills to interpret audiometry results by analyzing key parameters such as air conduction, bone conduction, and speech thresholds, and effectively correlate these findings with clinical conditions to guide accurate diagnosis and treatment planning	2
28.1	Exposure to radioactive counter, auto analyzer, mass spectrophotometer, and electrophoretic apparatus	2
28.2	Sophisticated instrumental handling and analysis for infectious disease and pathogen diagnosis	1
28.3	Laboratory assays for Liver and Kidney function, Metabolic panel and serum assays	3
28.4	Sample handling, contamination and chyle methods, urine analysis, microscopy.	1
28.5	Analyse Urine examination using urine analyser, Standard chemical tests using dipstick and the Methods to detect key constituents such as glucose, protein, ketones, and bilirubin, Urine microalbumin / Proteins, Vanillylmandelic acid and Metanephrine	1
28.6	Sample collection methods, safety, contamination, stool analysis and its significance.	1

28.7	Examine Physical characteristics of stool, including color, consistency, odour, and presence of visible blood or mucus, microscopic analysis for ova, cyst and bacteria Correlate stool analysis findings with potential clinical conditions such as infections, malabsorption syndromes, and inflammatory bowel disease	1
28.8	Exposure to hemostasis and blood coagulation status	2
28.9	Exposure on abnormalities and their potential clinical significance in bleeding or thrombotic disorders	1
28.10	Hands on training in staining methods, isolation and culture of microbes	3
28.11	Hands on training in Bacterial & Parasite Isolation & Identification	4
28.12	Exposure to Identify and understand Bacterial, Viral and Auto-immune diseases	3
28.13	Analyse the importance and applications of immunological techniques	3
29.1	Interpret the results of a Karyotyping of Human genomic DNA	1
29.2	Elaborate and explain the methods of Genomic and exome sequencing	1
29.3	Siginificance of DNA Polymorphisms in conditions like Parentage testing and Bone marrow engraftment testing	2
29.4	The molecular techniques involved in Nucleic acid Extraction and amplification.	2
29.5	Molecular basis of Neoplastic conditions, analytical targets of mutations for different malignancies.	2
29.6	Diagnostics analysis of Molecular Tissue typing on diseases associated with HLA polymorphism.	6
29.7	Clinical Applications of Prognostic and Monitoring Biomarkers: A Case-Based Exploration	1
29.8	Clinical Applications of Safety Biomarkers : A Case-Based Exploration	1
29.9	Clinical Applications of pregnancy markers: A Case-Based Exploration	1
29.10	Illustrating the role of pharmacodynamics of saftey biomarker in Clinical Applications.	2
29.11	Exposure to Bedside diagnostic methods for diabetes management.	1

29.12	Hands on training in Rapid diagnostic test methods for ovulation and rapid infectious diseases.	4
29.13	Active engagement learning for enhanced accuracy in clinical decision making.	2
30.1	Principles of immunohistochemistry in relation to tumor diagnosis	1
30.2	Identifcation of specific tumor markers	3
30.3	Instrumental application of MALDO-TOF in pathogen detection.	2
30.4	Interpretation of immunohistochemical staining patterns.	2
30.5	Role of immunohistochemistry in autoimmune disorders	3
30.6	Hands on training in the interpretation of Staining patterns in affected tissues.	3
30.7	Findings and monitoring treatment responses for autoimmune diseases	3
30.8	Applications of immunohistochemistry in neurodegenerative diseases.	3
30.9	Hands on training in Iimmunohistochemistry in neurological disorder diagnosis.	3
30.10	Exposure to application of markers in Disease progression and therapeutic approaches.	3
31.1	Interpret case analyses to apply reasoning strategies in real-world scenarios, enhancing their diagnostic skills and patient histories to develop effective treatment plans and evaluate outcomes.	8
31.2	Hands on training on how to take patient history, physical examination and investigations following appropriate diagnostic algorithm for diagnosing conditions part II	10
31.3	Hands on training on how to take patient history, physical examination and investigations following appropriate diagnostic algorithm for investigating conditions part I	8
32.1	Hands on training to assess the International Diagnostic Criteria of Nutritional Problems	1
32.2	Hands-on training to assess the International Diagnostic Criteria of Musculoskeletal disorders	1
32.3	Hands-on training to assess the International Diagnostic Criteria of Dermatological disorder	1

32.4	Hands-on training to assess the International Diagnostic Criteria of Respiratory diseases	2
32.5	Hands-on training to assess the International Diagnostic Criteria of Infectious Diseases.	1
32.6	Hands on training to assess the International Diagnostic Criteria of Gastrointestinal Disorders	1
32.7	Hands-on training to assess the International Diagnostic Criteria of Cardio Vascular Diseases	1
32.8	Hands-on training to assess the International Diagnostic Criteria of Mental Health Disorders	2
32.9	Hands-on training to assess the International Diagnostic Criteria of Endocrine disorders and relevant lab parameters	2
32.10	Hands-on training to assess the International Diagnostic Criteria of Disorders in Pregnancy	1
32.11	Hands-on training to assess the International Diagnostic Criteria of Monoamine-Producing Tumors and relevant lab parameters.	1
32.12	Hands-on training to assess the International Diagnostic Criteria of Bone and mineral metabolism disorder and relevant lab parameters	2
32.13	Hands-on training to assess the International Diagnostic Criteria of Pancreatic disorders and relevant lab parameters	1
32.14	Hands-on training to assess the International Diagnostic Criteria of Liver diseases and relevant lab parameters.	2
32.15	Hands-on training to assess the International Diagnostic Criteria of Gastric and Intestinal Disorders and relevant lab parameters	2
32.16	Hands-on training to assess the International Diagnostic Criteria of Kidney Diseases and relevant lab parameters	2
32.17	Hands-on training to assess the International Diagnostic Criteria of Water, electrolytes, and acid-base metabolism disorders and relevant lab parameters.	1
32.18	Hands-on training to assess the International Diagnostic Criteria of Diabetes Mellitus and relevant lab parameters	1
32.19	Application of Lab Testing and Interpretation in Nutritional Diagnoses and Clinical Correlation	1

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
SIDPG- NN	4	100 x 4 Papers = 400	400	800

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

Credit frame work

SIDPG- NN consists of 32 modules totaling 64 credits, which correspond to 1920 Notional Learning Hours. Each credit comprises 30 Hours of learner engagement, distributed across teaching, practical, and experiential learning in the ratio of 1:2:3. Accordingly, one credit includes 5 hours of teaching, 10 hours of practical training, 13 hours of experiential learning, and 2 hours allocated for modular assessment, which carries 25 marks.

Formative Assessment : Module wise Assessment:will be done at the end of each module. Evaluation includes learners active participation to get Credits and Marks. Each Module may contain one or more credits.
Summative Assessment: Summative Assessment (University examination) will be carried out at the end of Semester VI.

6 C : Calculation Method for Modular Grade Points (MGP)

Module Number & Name (a)	Credits (b)	Actual No. of Notional Learning Hours (c)	Attended Number of notional Learning hours (d)	Maximum Marks of assessment of modules (e)	Obtained Marks per module (f)	MGP =d*f/c*e*100
Semester No : 3						
Paper No : 1 (NOI NAADAL AND ITS CONTEMPORARY UNDERSTANDING IN CLINICAL APPLICATIONS I)						
M1 Siddha Febrile Illnesses and Exanthemas and Enanthemas	2	60		50		
M2 Siddha Respiratory Diseases	2	60		50		
Paper No : 2 (NOI NAADAL AND ITS CONTEMPORARY UNDERSTANDING IN CLINICAL APPLICATIONS- II)						
M9 Sira Noi Nithaanam (Cephalic Diseases)	2	60		50		
M10 Puttru Noi Nithaanam (Neoplastic Diseases)	2	60		50		
Paper No : 3 (RECENT ADVANCES AND APPLIED ASPECTS OF PATHOLOGY INCLUDING IMMUNOPATHOLOGY AND HAEMATOLOGY)						
M17 Applications Of Basic Pathology	2	60		50		
M18 Respiratory, Eye and Otolaryngological Diseases	2	60		50		

Paper No : 4 (FUNDAMENTALS AND APPLICATIONS OF DIAGNOSTIC MODALITIES AND THEIR INTERPRETATIONS)						
M25 Clinical and Physical Diagnosis	2	60		50		
M26 Modalities of Diagnostic Imaging	2	60		50		
	16	480		400		
Semester No : 4						
Paper No : 1 (NOI NAADAL AND ITS CONTEMPORARY UNDERSTANDING IN CLINICAL APPLICATIONS I)						
M3 Siddha Cardiovascular Diseases and Diseases of Circulation Including Haematological Conditions	2	60		50		
M4 Siddha Gastro Enterology	2	60		50		
Paper No : 2 (NOI NAADAL AND ITS CONTEMPORARY UNDERSTANDING IN CLINICAL APPLICATIONS- II)						
M11 Ula Pini Nithaanam (Psychiatric Disorders)	2	60		50		
M12 Mega Noi Nithaanam (Genito-Urinary Diseases)	2	60		50		
Paper No : 3 (RECENT ADVANCES AND APPLIED ASPECTS OF PATHOLOGY INCLUDING IMMUNOPATHOLOGY AND HAEMATOLOGY)						
M19 Diseases Of Hematopoietic And Cardio Vascular Diseases	2	60		50		
M20 Gastro Intestinal and Hepato Biliary Diseases	2	60		50		
Paper No : 4 (FUNDAMENTALS AND APPLICATIONS OF DIAGNOSTIC MODALITIES AND THEIR INTERPRETATIONS)						
M27 Instrumental Diagnosis	2	60		50		
M28 Lab Diagnosis of biological samples	2	60		50		
	16	480		400		
Semester No : 5						
Paper No : 1 (NOI NAADAL AND ITS CONTEMPORARY UNDERSTANDING IN CLINICAL APPLICATIONS I)						
M5 Siddha Splenic, Hepato-Biliary and diseases with Ascites	2	60		50		
M6 Diarrhoeal Diseases and Proctology	2	60		50		
Paper No : 2 (NOI NAADAL AND ITS CONTEMPORARY UNDERSTANDING IN CLINICAL APPLICATIONS- II)						
M13 Magalir and Aadavar Noi Nithaanam (Gynaecological and Andrological Diseases)	2	60		50		

M14 Maladu And Karba Noi Nidhaanam (Reproductive Diseases)	2	60		50		
Paper No : 3 (RECENT ADVANCES AND APPLIED ASPECTS OF PATHOLOGY INCLUDING IMMUNOPATHOLOGY AND HAEMATOLOGY)						
M21 Renal, Male and Female Genital Tract Diseases	2	60		50		
M22 Diseases of Neurology and Musculo Skeletal System	2	60		50		
Paper No : 4 (FUNDAMENTALS AND APPLICATIONS OF DIAGNOSTIC MODALITIES AND THEIR INTERPRETATIONS)						
M29 Laboratory Diagnosis of biological samples by advanced molecular techniques	2	60		50		
M30 Tissue diagnosis including Immunohistochemistry	2	60		50		
	16	480		400		
Semester No : 6						
Paper No : 1 (NOI NAADAL AND ITS CONTEMPORARY UNDERSTANDING IN CLINICAL APPLICATIONS I)						
M7 Vatha Noikal – Siddha Ortho–Rheumatology, Neurology and Conditions of Pain	2	60		50		
M8 Siddha – Pitha and Kaba Diseases	2	60		50		
Paper No : 2 (NOI NAADAL AND ITS CONTEMPORARY UNDERSTANDING IN CLINICAL APPLICATIONS- II)						
M15 Baalar Roga Nithaanam (Paediatric Diseases)	2	60		50		
M16 Thol Noi Nithaanam (Dermatological Diseases)	2	60		50		
Paper No : 3 (RECENT ADVANCES AND APPLIED ASPECTS OF PATHOLOGY INCLUDING IMMUNOPATHOLOGY AND HAEMATOLOGY)						
M23 Metabolic and Endocrine Disorders	2	60		50		
M24 Dermatological Disorders	2	60		50		
Paper No : 4 (FUNDAMENTALS AND APPLICATIONS OF DIAGNOSTIC MODALITIES AND THEIR INTERPRETATIONS)						
M31 Cardinal Manifestation and presentation of diseases including approach to a Case	2	60		50		
M32 Testing of Pathophysiological states & International Diagnostic Criteria of Various diseases	2	60		50		

	16	480		400		
MGP = ((Number of Notional learning hours attended in a module) X (Marks obtained in the modular assessment) / (Total number of Notional learning hours in the module) X (Maximum marks of the module)) X 100						

6 D : Semester Evaluation Methods for Semester Grade Point Average (SGPA)

SGPA will be calculated at the end of the semester as an average of all Module MGPs. Average of MGPS of the Semester For becoming eligible for Summative assessment of the semester, student should get minimum of 60% of SGPA

SGPA = Average of MGP of all modules of all papers = add all MGPs in the semester/ no. of modules in the semester

Evaluation Methods for Modular Assessment

Semester No : 3		
Paper No : 1 NOI NAADAL AND ITS CONTEMPORARY UNDERSTANDING IN CLINICAL APPLICATIONS I		
A S.No	**B Module number and Name**	**C MGP**
1	M1.Siddha Febrile Illnesses and Exanthemas and Enanthemas	C1
2	M2.Siddha Respiratory Diseases	C2
Paper No : 2 NOI NAADAL AND ITS CONTEMPORARY UNDERSTANDING IN CLINICAL APPLICATIONS- II		
A S.No	**B Module number and Name**	**C MGP**
3	M9.Sira Noi Nithaanam (Cephalic Diseases)	C3
4	M10.Puttru Noi Nithaanam (Neoplastic Diseases)	C4
Paper No : 3 RECENT ADVANCES AND APPLIED ASPECTS OF PATHOLOGY INCLUDING IMMUNOPATHOLOGY AND HAEMATOLOGY		
A S.No	**B Module number and Name**	**C MGP**
5	M17.Applications Of Basic Pathology	C5
6	M18.Respiratory, Eye and Otolaryngological Diseases	C6
Paper No : 4 FUNDAMENTALS AND APPLICATIONS OF DIAGNOSTIC MODALITIES AND THEIR INTERPRETATIONS		
A S.No	**B Module number and Name**	**C MGP**
7	M25.Clinical and Physical Diagnosis	C7
8	M26.Modalities of Diagnostic Imaging	C8
	Semester Grade point Average (SGPA)	(C1+C2+C3+C4+C5+C6+C7+C8) / Number of modules(8)

Semester No : 4

Paper No : 1 NOI NAADAL AND ITS CONTEMPORARY UNDERSTANDING IN CLINICAL APPLICATIONS I

A S.No	B Module number and Name	C MGP
1	M3.Siddha Cardiovascular Diseases and Diseases of Circulation Including Haematological Conditions	C1
2	M4.Siddha Gastro Enterology	C2

Paper No : 2 NOI NAADAL AND ITS CONTEMPORARY UNDERSTANDING IN CLINICAL APPLICATIONS- II

A S.No	B Module number and Name	C MGP
3	M11.Ula Pini Nithaanam (Psychiatric Disorders)	C3
4	M12.Mega Noi Nithaanam (Genito-Urinary Diseases)	C4

Paper No : 3 RECENT ADVANCES AND APPLIED ASPECTS OF PATHOLOGY INCLUDING IMMUNOPATHOLOGY AND HAEMATOLOGY

A S.No	B Module number and Name	C MGP
5	M19.Diseases Of Hematopoietic And Cardio Vascular Diseases	C5
6	M20. Gastro Intestinal and Hepato Biliary Diseases	C6

Paper No : 4 FUNDAMENTALS AND APPLICATIONS OF DIAGNOSTIC MODALITIES AND THEIR INTERPRETATIONS

A S.No	B Module number and Name	C MGP
7	M27.Instrumental Diagnosis	C7
8	M28.Lab Diagnosis of biological samples	C8
	Semester Grade point Average (SGPA)	(C1+C2+C3+C4+C5+ C6+C7+C8) / Number of modules(8)

Semester No : 5

Paper No : 1 NOI NAADAL AND ITS CONTEMPORARY UNDERSTANDING IN CLINICAL APPLICATIONS I

A S.N	B Module number and Name	C MGP

o		
1	M5.Siddha Splenic, Hepato-Biliary and diseases with Ascites	C1
2	M6.Diarrhoeal Diseases and Proctology	C2

Paper No : 2 NOI NAADAL AND ITS CONTEMPORARY UNDERSTANDING IN CLINICAL APPLICATIONS- II

A S.No	B Module number and Name	C MGP
3	M13.Magalir and Aadavar Noi Nithaanam (Gynaecological and Andrological Diseases)	C3
4	M14.Maladu And Karba Noi Nidhaanam (Reproductive Diseases)	C4

Paper No : 3 RECENT ADVANCES AND APPLIED ASPECTS OF PATHOLOGY INCLUDING IMMUNOPATHOLOGY AND HAEMATOLOGY

A S.No	B Module number and Name	C MGP
5	M21.Renal, Male and Female Genital Tract Diseases	C5
6	M22.Diseases of Neurology and Musculo Skeletal System	C6

Paper No : 4 FUNDAMENTALS AND APPLICATIONS OF DIAGNOSTIC MODALITIES AND THEIR INTERPRETATIONS

A S.No	B Module number and Name	C MGP
7	M29.Laboratory Diagnosis of biological samples by advanced molecular techniques	C7
8	M30.Tissue diagnosis including Immunohistochemistry	C8
	Semester Grade point Average (SGPA)	(C1+C2+C3+C4+C5+ C6+C7+C8) / Number of modules(8)

Semester No : 6

Paper No : 1 NOI NAADAL AND ITS CONTEMPORARY UNDERSTANDING IN CLINICAL APPLICATIONS I

A S.No	B Module number and Name	C MGP
1	M7.Vatha Noikal – Siddha Ortho–Rheumatology, Neurology and Conditions of Pain	C1
2	M8.Siddha – Pitha and Kaba Diseases	C2

Paper No : 2 NOI NAADAL AND ITS CONTEMPORARY UNDERSTANDING IN CLINICAL APPLICATIONS- II

A S.No	B Module number and Name	C MGP
3	M15.Baalar Roga Nithaanam (Paediatric Diseases)	C3
4	M16.Thol Noi Nithaanam (Dermatological Diseases)	C4
Paper No : 3 RECENT ADVANCES AND APPLIED ASPECTS OF PATHOLOGY INCLUDING IMMUNOPATHOLOGY AND HAEMATOLOGY		
A S.No	**B Module number and Name**	**C MGP**
5	M23.Metabolic and Endocrine Disorders	C5
6	M24.Dermatological Disorders	C6
Paper No : 4 FUNDAMENTALS AND APPLICATIONS OF DIAGNOSTIC MODALITIES AND THEIR INTERPRETATIONS		
A S.No	**B Module number and Name**	**C MGP**
7	M31.Cardinal Manifestation and presentation of diseases including approach to a Case	C7
8	M32.Testing of Pathophysiological states & International Diagnostic Criteria of Various diseases	C8
	Semester Grade point Average (SGPA)	(C1+C2+C3+C4+C5+ C6+C7+C8) / Number of modules(8)

S. No	Evaluation Methods
1.	Method explained in the Assessment of the module or similar to the objectives of the module.

6 E : Question Paper Pattern

MD/MS SIDDHA Examination
SIDPG- NN
Sem VI

Time: 3 Hours ,**Maximum Marks:** 100
INSTRUCTIONS: All questions compulsory

		Number of Questions	Marks per Question	Total Marks
Q 1	Application-based Questions (ABQ)	1	20	20
Q 2	Short answer questions (SAQ)	8	5	40

Q 3	Analytical based structured Long answer question (LAQ)	4	10	40
				100

6 F : Distribution for summative assessment (University examination)

S.No	List of Module/Unit	ABQ	SAQ	LAQ
Paper No : 1 (NOI NAADAL AND ITS CONTEMPORARY UNDERSTANDING IN CLINICAL APPLICATIONS I)				
(M-1)Siddha Febrile Illnesses and Exanthemas and Enanthemas (Marks: Range 5-20)				
1	(U-1) Suram (Febrile illnesses)	Yes	Yes	Yes
2	(U-2) Mukkuttra Noi/Sanni noi (Apoplexy)	No	Yes	No
3	(U-3) Ammai Noi (Exanthemas and Enanthemas)	No	Yes	Yes
(M-2)Siddha Respiratory Diseases (Marks: Range 5-20)				
1	(U-1) Siddha Upper Respiratory Tract Diseases	Yes	Yes	Yes
2	(U-2) Siddha Lower Respiratory Tract Diseases	Yes	Yes	Yes
(M-3)Siddha Cardiovascular Diseases and Diseases of Circulation Including Haematological Conditions (Marks: Range 5-20)				
1	(U-1) Thamaraga Noi (Cardiac Diseases)	No	Yes	Yes
2	(U-2) Athi Kuruthi Azhutham noi/Uratha Pitham noi (Hypertension)	No	Yes	No
3	(U-3) Ratha Pitha noi (Haemodynamic/Purpuric conditions)	Yes	Yes	Yes
4	(U-4) Paandu noi (Anaemia and related conditions)	Yes	Yes	Yes
5	(U-5) Sobai noi (Plethora / Anasarca / Swelling / Oedema)	Yes	Yes	Yes
(M-4)Siddha Gastro Enterology (Marks: Range 5-20)				
1	(U-1) Suvaiinmai and Neer Vetkai (Ageusia/Diminished appetite/Polydipsia)	No	Yes	No
2	(U-2) Seriyamai noi (Indigestion)	No	Yes	No
3	(U-3) Vikkal noi (Hiccups)	No	Yes	No
4	(U-4) Vaanthi noi (Emesis)	No	Yes	No
5	(U-5) Maantham noi (Sluggishness)	No	Yes	Yes
6	(U-6) Gunmam noi (Acute and Chronic Abdomen)	Yes	Yes	Yes
7	(U-7) Kudal Pidippu noi (Acute / Chronic Intestinal conditions)	No	Yes	No
(M-5)Siddha Splenic, Hepato-Biliary and diseases with Ascites (Marks: Range 5-20)				
1	(U-1) Kalleeral Noi (Hepatic diseases)	No	Yes	Yes
2	(U-2) Manneeral Noi (Splenic diseases)	No	Yes	Yes
3	(U-3) Kaamaalai noi (Apathy / Loss of libido / Lack of interest)	Yes	Yes	Yes
4	(U-4) Peruvayiru noi (Abdominal enlargement / Ascites)	Yes	Yes	Yes

(M-6)Diarrhoeal Diseases and Proctology (Marks: Range 5-20)				
1	(U-1) Kirumi Noikal	No	Yes	Yes
2	(U-2) Perunkazhichal noi, Ninakkazhichal noi, KaduppuKazhichal noi	Yes	Yes	Yes
3	(U-3) Oozhi Noi	No	Yes	No
4	(U-4) Eruvaai mulai Noi	Yes	Yes	Yes
5	(U-5) Powthiram noi	Yes	Yes	Yes
(M-7)Vatha Noikal – Siddha Ortho–Rheumatology, Neurology and Conditions of Pain (Marks: Range 5-20)				
1	(U-1) Vaatha Noikal	Yes	Yes	Yes
2	(U-2) Keelvaayu Noi (Rheumatological conditions)	No	Yes	Yes
3	(U-3) Soolai Noi (Lancinating Pain)	Yes	Yes	Yes
(M-8)Siddha – Pitha and Kaba Diseases (Marks: Range 5-20)				
1	(U-1) Pitha Noikal	Yes	Yes	Yes
2	(U-2) Kaba Noikal	Yes	Yes	Yes

S.No	List of Module/Unit	ABQ	SAQ	LAQ
Paper No : 2 (NOI NAADAL AND ITS CONTEMPORARY UNDERSTANDING IN CLINICAL APPLICATIONS- II)				
(M-9)Sira Noi Nithaanam (Cephalic Diseases) (Marks: Range 5-20)				
1	(U-1) Utchi/Mandai Noi-46 types (Diseases of the Head)	Yes	Yes	Yes
2	(U-2) Moolai Noi-16 types (Diseases of Brain)	Yes	Yes	Yes
3	(U-3) Kan Noigal-96 types (Diseases of Eye)	Yes	Yes	Yes
4	(U-4) Sevi Noi, Mookku Noi (Diseases of Ear and Nose)	Yes	Yes	No
5	(U-5) Vaai Noi - Uthadu Noi ,Naakku Noi, Pal Noi. (Oral Pathology)	Yes	Yes	No
(M-10)Puttru Noi Nithaanam (Neoplastic Diseases) (Marks: Range 5-20)				
1	(U-1) Vippuruthi Noi (7 types) (Pathological Masses)	No	Yes	Yes
2	(U-2) Puttru and its sub types (Diseases of Tumourous Conditions)	Yes	Yes	No
(M-11)Ula Pini Nithaanam (Psychiatric Disorders) (Marks: Range 5-20)				
1	(U-1) Kirigai noi (18 types) (Psychiatric conditions with Insane Activities)	No	Yes	Yes
2	(U-2) Valippu noi, Kudiveri noi (Seizural Disorders and Alcoholism)	No	Yes	Yes
3	(U-3) Mayakka Noi, Bramai Noi, Unmaatham (Loss of Consciouness,Guidiness,Psycosis)	No	Yes	No
4	(U-4) Matha azhivu noi, Matha noi, Moorchai noi, Abasmaaram, Soothiga Vaatham noi (Dementia,Comatose condition,Hysteria Diseases)	No	Yes	Yes
5	(U-5) Vaayu Roga Nithaanam	No	Yes	No
(M-12)Mega Noi Nithaanam (Genito-Urinary Diseases) (Marks: Range 5-20)				
1	(U-1) Kalladaippu noi, Neeradaippu noi, Sathaiadaippu noi, Neerkattu noi (Nephro calcinosis,Prostatomegaly,Obstructive urinary diseases)	Yes	Yes	No
2	(U-2) Chottuneer noi, Neerchurukku noi, Vellai noi (Biramiyam) (Neurogenic bladder, Urethral pain syndrome, Urogenital conditions causing gleet)	Yes	Yes	Yes
3	(U-3) Meganeer noi(20 types), Neerizhivu noi (Diabetes)	Yes	Yes	Yes
4	(U-4) Meganoi Kattigal (10 types) (Carbuncles/Lumps,Urine admixed urogenital discharge, Low specific gravity Urine)	Yes	Yes	Yes

(M-13)Magalir and Aadavar Noi Nithaanam (Gynaecological and Andrological Diseases) (Marks: Range 5-20)				
1	(U-1) Aann Kuri noigal (23 types) and Penkuri Noigal (21 types) (Penile Diseases,Diseases of Vulva)	No	Yes	Yes
2	(U-2) Pooputhadai,Soothagavali, Kongai Noigal (Ammenorrhea,Dysmenorrhea,Diseases of Breast)	Yes	Yes	No
3	(U-3) Yonikkasivu noigal :1.Vellai paduthal, Perumbadu (Leucorrhoea, Abnormal uterine bleeding)	Yes	Yes	Yes
4	(U-4) Pirappu Uruppugalil Thabitham, Punarchi noigal, Yoni Rogangal - magalir korrukku noi,magalir vellai noi (Pelvic Inflammatory disease,Dyspareunia,Syphilitic Chancre,Leucorrhoea,Diseases of Female genital tract)	No	Yes	Yes
5	(U-5) Van kazhalaigal, Maravai kattigal, Neerkumizh kazhalaigal (Benign and Malignant Tumours and cyst)	Yes	Yes	No
(M-14)Maladu And Karba Noi Nidhaanam (Reproductive Diseases) (Marks: Range 5-20)				
1	(U-1) Maladu noi	Yes	Yes	No
2	(U-2) Sool vanthi,Sool vali,Sool valippu(Hyper emisis gravidarum,Pre Eclampsia,Eclampsia)	No	Yes	No
3	(U-3) Karuchchithaivu,Pura karuppai sool,Pirasava pinkaala noigal,Karba Rogangal(Abortions,Ectopic pregnancy,Post natal diseases,uterine Disorders)	Yes	Yes	No
(M-15)Baalar Roga Nithaanam (Paediatric Diseases) (Marks: Range 5-20)				
1	(U-1) Karuvil thondrum noigal, Balavaatham, Thasaivaatham, Sirakkamba vaatham, Ilam Pillai vaatham, Thodam, Maantham noigal (Congenital Diseases,Myopathy,Autism Spectrum Disorders,Polio myelitis)	No	Yes	Yes
2	(U-2) Kanam, Kakkuvan, Kaasam, Thondai adaippan, Lasuna Thaabidham (Primary complex,Whooping cough,Diphtheria/Croup, Tonsilitis)	No	Yes	Yes
3	(U-3) Karappan noi, Akkaram, Suram Noi, Sanni Noi (Eczematous dermatological conditions,Apthous ulcers,Oral ulcers,Febrile illness,Apoplexy conditions)	No	Yes	Yes
4	(U-4) Oothal Noi, Kaamalai Noi,Kudal kirumi Noigal, Kazhichal Noi, Kudal Yetram,Kutham Adithalal Noi (Oedema/Plethora/Anasarca): (Apathy/Jaundice/Reduced libido):(Worm infestations):(Diarrhral conditions):(Instenal Herniation/Obstruction/Volvulus conditions)	No	Yes	No
(M-16)Thol Noi Nithaanam (Dermatological Diseases) (Marks: Range 5-20)				

1	(U-1) Kutta Noi, Kalanjagapadai / Sethil uthir Noi (Dermatological conditions/Leprosy:Psoriasis)	No	Yes	Yes
2	(U-2) Karappan Noi, Venkuttam Noi, Kirandhi Noi (Eczema ,Leucoderma,Nodular lesions)	Yes	Yes	Yes
3	(U-3) Kaduvan Noi, Katti/Kazhalai, Naga chuttru, Puzhuvettu (Lichen planus/Impetigo,Boils/Lumps,Felon,Alopecia areata)	No	Yes	No

S.No	List of Module/Unit	ABQ	SAQ	LAQ
Paper No : 3 (RECENT ADVANCES AND APPLIED ASPECTS OF PATHOLOGY INCLUDING IMMUNOPATHOLOGY AND HAEMATOLOGY)				
(M-17)Applications Of Basic Pathology (Marks: Range 5-20)				
1	(U-1) Cell Injury	No	Yes	Yes
2	(U-2) Inflammation	No	Yes	Yes
3	(U-3) Hemodynamics	No	Yes	Yes
4	(U-4) Environmental Disorders	No	Yes	Yes
5	(U-5) Nutritional Disorders	No	Yes	Yes
6	(U-6) Genetic and Immunological Disorders	No	Yes	Yes
7	(U-7) Neoplasia	Yes	Yes	Yes
(M-18)Respiratory, Eye and Otolaryngological Diseases (Marks: Range 5-20)				
1	(U-1) Respiratory Diseases	Yes	Yes	Yes
2	(U-2) Ophthalmic Diseases	No	Yes	Yes
3	(U-3) Diseases of Ear, Nose, Throat	No	Yes	Yes
(M-19)Diseases Of Hematopoietic And Cardio Vascular Diseases (Marks: Range 5-20)				
1	(U-1) Haematopoeitic Disorders	Yes	Yes	Yes
2	(U-2) Cardio Vascular System	Yes	Yes	Yes
(M-20) Gastro Intestinal and Hepato Biliary Diseases (Marks: Range 5-20)				
1	(U-1) Diseases of Upper Gastro Intestinal Tract	Yes	Yes	Yes
2	(U-2) Diseases of Lower Gastro Intestinal Tract	Yes	Yes	Yes
3	(U-3) Tumours of Gastro Intestinal Tract	Yes	Yes	Yes
4	(U-4) Hepato Biliary Diseases	Yes	Yes	Yes
(M-21)Renal, Male and Female Genital Tract Diseases (Marks: Range 5-20)				
1	(U-1) Nephrology	Yes	Yes	Yes
2	(U-2) Male Genital Diseases	Yes	Yes	Yes
3	(U-3) Female Genital Diseases	Yes	Yes	Yes
(M-22)Diseases of Neurology and Musculo Skeletal System (Marks: Range 5-20)				
1	(U-1) Neurological Diseases	Yes	Yes	Yes
2	(U-2) Musculo Skeletal Diseases	Yes	Yes	Yes

(M-23)Metabolic and Endocrine Disorders (Marks: Range 5-20)				
1	(U-1) Metabolic Diseases	Yes	Yes	Yes
2	(U-2) Diseases of the Pituitary Gland	Yes	Yes	Yes
3	(U-3) Diseases of the Thyroid Gland	Yes	Yes	Yes
4	(U-4) Diseases of the Adrenal Gland	Yes	Yes	Yes
5	(U-5) Diseases of the Parathyroid Gland	Yes	Yes	Yes
(M-24)Dermatological Disorders (Marks: Range 5-20)				
1	(U-1) Disorders of Hair, Nail and Subcutaneous Tissues	Yes	Yes	Yes
2	(U-2) Infectious Skin Diseases	Yes	Yes	Yes
3	(U-3) Psycho, Neuro, Vascular and Genetic Skin Diseases	Yes	Yes	Yes
4	(U-4) Inflammatory Skin Disorders	Yes	Yes	Yes
5	(U-5) Cutaneous Manifestations in Systemic and Nutritional Diseases	Yes	Yes	Yes
6	(U-6) Tumours of the Skin	Yes	Yes	Yes

S.No	List of Module/Unit	ABQ	SAQ	LAQ
Paper No : 4 (FUNDAMENTALS AND APPLICATIONS OF DIAGNOSTIC MODALITIES AND THEIR INTERPRETATIONS)				
(M-25)Clinical and Physical Diagnosis (Marks: Range 5-20)				
1	(U-1) Types of Diagnosis and Classification of Diseases	Yes	Yes	Yes
2	(U-2) General Examination and Elicitation of case history	Yes	Yes	Yes
3	(U-3) Examination of Skin, Hair and Nails	Yes	Yes	Yes
4	(U-4) Examination of Respiratory system	Yes	Yes	Yes
5	(U-5) Examination of Cardiovascular System	Yes	Yes	Yes
6	(U-6) Examination of Gastro Intestinal Tract and abdomen	Yes	Yes	Yes
7	(U-7) Examination of Uro-genital system and Gynaecological Examinations, Partogram	Yes	Yes	Yes
8	(U-8) Ano - rectal examination	Yes	Yes	Yes
9	(U-9) Musculoskeletal Examination and Nervous system	Yes	Yes	Yes
10	(U-10) Examination of Breast	Yes	Yes	Yes
(M-26)Modalities of Diagnostic Imaging (Marks: Range 5-20)				
1	(U-1) Introduction to Imaging Diagnosis	Yes	Yes	Yes
2	(U-2) X-Ray	Yes	Yes	Yes
3	(U-3) Ultrasonography	Yes	Yes	Yes
4	(U-4) Computed Tomography (CT)scan	Yes	Yes	Yes
5	(U-5) Magnetic Resonance Imaging (MRI), Fistulogram and Sinogram	Yes	Yes	Yes
6	(U-6) Nuclear Imaging	Yes	Yes	Yes
7	(U-7) Arteriograms, Lymphangiography and Venography	Yes	Yes	Yes
(M-27)Instrumental Diagnosis (Marks: Range 5-20)				
1	(U-1) Electrocardiogram, Holter monitoring, Coronary Angiogram, Central Venous Pressure and Arterial Pressure measurements	No	Yes	Yes
2	(U-2) Spirometry – Pulmonary Function Test (PFT), Nitric Oxide breath test, Urea Breath Test, Bronchoscopy	No	Yes	Yes
3	(U-3) Scopies and its types	No	Yes	Yes
4	(U-4) Electroencephalogram(EEG),Polysomnogram, Electromyogram (EMG),and Transcranial magnetic	No	Yes	Yes

	stimulation(TMS)			
5	(U-5) Slit lamp, Ophthalmoscope,Tonometry,Electroretinogram (ERG), Optometer and Refractometer	No	Yes	Yes
6	(U-6) Anal Manometry	Yes	Yes	Yes
7	(U-7) Nerve conduction study, Biothesiometry	No	Yes	Yes
8	(U-8) Cystometrogram	No	Yes	Yes
9	(U-9) Audiometry	No	Yes	Yes
(M-28)Lab Diagnosis of biological samples (Marks: Range 5-15)				
1	(U-1) Instrumentation and Diagnostic Techniques	No	Yes	No
2	(U-2) Clinical Chemistry	No	Yes	No
3	(U-3) Urine Analysis	No	Yes	No
4	(U-4) Stool Analysis	No	Yes	No
5	(U-5) Blood Coagulation Assays	No	Yes	No
6	(U-6) Microbiological Diagnosis	No	Yes	No
7	(U-7) Immuno Diagnosis	No	Yes	No
(M-29)Laboratory Diagnosis of biological samples by advanced molecular techniques (Marks: Range 5-15)				
1	(U-1) Principles of Genetics and Molecular Biology	No	Yes	No
2	(U-2) Genetic Diagnostics	No	Yes	No
3	(U-3) Molecular Diagnostics	No	Yes	No
4	(U-4) Biomarker assays	No	No	Yes
5	(U-5) Point-of-Care Testing	No	Yes	No
(M-30)Tissue diagnosis including Immunohistochemistry (Marks: Range 5-15)				
1	(U-1) Tissue processing and Immunohisto/cyto staining	No	Yes	Yes
2	(U-2) Tumour Diagnosis	No	Yes	Yes
3	(U-3) Infectious Disease Diagnosis	No	Yes	Yes
4	(U-4) Autoimmune Disorder Diagnosis	No	Yes	Yes
5	(U-5) Neurological Disorder Diagnosis	No	Yes	Yes
(M-31)Cardinal Manifestation and presentation of diseases including approach to a Case (Marks: Range 5-20)				
1	(U-1) Brief Introduction to Clinical Reasoning	No	Yes	No

2	(U-2) How to approach a Case	Yes	Yes	Yes
(M-32)Testing of Pathophysiological states & International Diagnostic Criteria of Various diseases (Marks: Range 5-20)				
1	(U-1) International Diagnostic Criteria of Musculoskeletal , Dermatology and Nutritional diseases	Yes	Yes	Yes
2	(U-2) International Diagnostic Criteria of Respiratory and infectious diseases	Yes	Yes	Yes
3	(U-3) International Diagnostic Criteria of Gasstro instentinal and Cardiovascular diseases	Yes	Yes	Yes
4	(U-4) International Diagnostic Criteria of Neurological and Mental health	Yes	Yes	Yes
5	(U-5) Endocrinology and Related Disorders including Disorders in pregnancy	Yes	Yes	Yes
6	(U-6) Monoamine-Producing Tumors and Bone and Mineral Metabolism	Yes	Yes	Yes
7	(U-7) Liver Disease including Gastric, Pancreatic, and Intestinal Function	Yes	Yes	Yes
8	(U-8) Kidney Disease and Disorders of Water, Electrolytes, and Acid–Base Metabolism	Yes	Yes	Yes
9	(U-9) Diabetes Mellitus and Cardiac Function	Yes	Yes	Yes
10	(U-10) Lab testing of Nutritional problems	Yes	Yes	Yes

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

Instructions for the paper setting.

1. University examination shall have 4 papers of 100 marks.

Each 100 marks question paper shall contain:-

- Application Based Question: 1 No (carries 20 marks)
- Short Answer Questions: 8 Nos (each question carries 05 marks)
- Long Answer Questions: 4 Nos (each question carries 10 marks)

2. Questions should be drawn based on the table 6F.
3. Marks assigned for the module in 6F should be considered as the maximum marks. No question shall be asked beyond the maximum marks.
4. Refer table 6F before setting the questions. Questions should not be framed on the particular unit if indicated “NO”.
5. There will be a single application-based question (ABQ) worth 20 marks. No other questions should be asked from the same module where the ABQ is framed.
6. Except the module on which ABQ is framed, at least one Short Answer Question should be framed from each module.
7. Long Answer Question should be analytical based structured questions assessing the higher cognitive ability.
8. Create Blueprint based on instructions 1 to 7

6 H : Distribution of Practical Exam (University Examination)

S.No	Heads	Marks
1	LONG CASE PRACTICAL : Total duration 3 hours (1 question: Either from paper 1 or 2, 1 X 100 marks) - Writing case history (10 marks) - Performance of Siddha examinations (20 marks) - General and systemic examination in Modern medicine. (20 marks) - Relevant investigations and arrival at a diagnosis through clinical pathology, clinical microbiology, biochemistry, sonological investigations, imaging techniques, etc. (20 marks) - Arriving at a diagnosis by interpreting and comparing modern and Siddha diagnostic methods, and analyzing the results of modern diagnostic techniques through the lens of Siddha medicine. (20 marks) - Developing a line of treatment on the basis of Siddha principles. (10 marks)	100
2	**SHORT PRACTICALS** (1 question from paper I and 2, 1 question from paper 3 and 4. Total duration 2 hours) **(2 X 25 = 50marks)** **1.1.Assessment of a patient / case scenario through Pancha patchi, Maruthuva Jothidam and developing line of treatment through Pancha bootham and Suvai. (8 marks)** **1.2.** Interpretation of organ affected through Dasa Naadi,vayukkal and Interpretation of affected Kosam / Adhaaram in the provided case scenario. (7 marks) 1.3. Assessment of Naadi, Neikkuri/ Marana Kuri gunangal with refence to Modern Diagnostic techniques for conditions like, Complications of Diabetes, Chronic Kidney Disease, Coronary Artery Disease, Malignanacy, Tuberculosis or any other grave conditions (10 marks). 2.1. Assessment of diseases through International Diagnostic criteria. (5 marks) 2.2. Analysis of biological samples (10 marks) 2.3. Interpretation of imaging diagnostic techniques.(10 marks)	50
3	**SPOTTERS Total duration - 2 hours (Atleast 2 questions each from Paper 1, 2, & 4 and 4 questions from Paper 3) (10 X 5 = 50)** 1. Interpretation of Udal Thathukkal and its Upa Thathukkal in the provided case scenario. (5 marks) 2. Interpretation of Neikkuri and compare it with Modern diagnostic techniques in conditions like Diabetes, Infertility, Renal diseases.(5 marks) 3 .Identification of provided spotter (Gross / microscopic) along with	50

	mentioning conditions in which similar changes is presented.(5 marks) 4. Identification of DNA bands in Agarose gel / Microscopic identification of ova, cyst in stool. (5 marks) 5. Specify the relevant lab investigation for the given case scenario. (5 marks) 6. Interpretation of provided ECG / Imaging pictures. (5 marks)	
4	ASSESSING TEACHING ABILITIES	25
5	ASSESSING PRESENTATION SKILLS	25
6	VIVA (Four examiners: 4X25 marks)#	100
7	LOG BOOK	25
8	PRACTICAL RECORD Long case: 15 case sheets Short case: 15 case sheets Spotters: 20 case sheets	25
Total Marks		**400**

#No separate marks for dissertation viva.

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Abbreviations

Domain		T L Method		Level	
CK	Cognitive/Knowledge	L	Lecture	K	Know
CC	Cognitive/Comprehension	L&PPT	Lecture with PowerPoint presentation	KH	Knows how
CAP	Cognitive/Application	L&GD	Lecture & Group Discussion	SH	Shows how
CAN	Cognitive/Analysis	L_VC	Lecture with Video clips	D	Does
CS	Cognitive/Synthesis	REC	Recitation		
CE	Cognitive/Evaluation	SY	Symposium		
PSY-SET	Psychomotor/Set	TUT	Tutorial		
PSY-GUD	Psychomotor/Guided response	DIS	Discussions		
PSY-MEC	Psychomotor/Mechanism	BS	Brainstorming		
PSY-ADT	Psychomotor Adaptation	IBL	Inquiry-Based Learning		
PSY-ORG	Psychomotor/Origination	PBL	Problem-Based Learning		
AFT-REC	Affective/ Receiving	CBL	Case-Based Learning		
AFT-RES	Affective/Responding	PrBL	Project-Based Learning		
AFT-VAL	Affective/Valuing	TBL	Team-Based Learning		
AFT-SET	Affective/Organization	TPW	Team Project Work		
AFT-CHR	Affective/ characterization	FC	Flipped Classroom		
		BL	Blended Learning		
		EDU	Edutainment		
		ML	Mobile Learning		
		ECE	Early Clinical Exposure		
		SIM	Simulation		
		RP	Role Plays		
		SDL	Self-directed learning		
		PSM	Problem-Solving Method		
		KL	Kinaesthetic Learning		
		W	Workshops		
		GBL	Game-Based Learning		
		LS	Library Session		
		PL	Peer Learning		
		RLE	Real-Life Experience		
		PER	Presentations		
		D-M	Demonstration on Model		
		PT	Practical		
		X-Ray	X-ray Identification		
		CD	Case Diagnosis		

		LRI	Lab Report Interpretation		
		DA	Drug Analysis		
		D	Demonstration		
		D-BED	Demonstration Bedside		
		DL	Demonstration Lab		
		DG	Demonstration Garden		
		FV	Field Visit		
		JC	Journal Club		
		Mnt	Mentoring		
		PAL	Peer Assisted Learning		
		C_L	Co Learning		
		DSN	Dissection		
		PSN	Prosection		