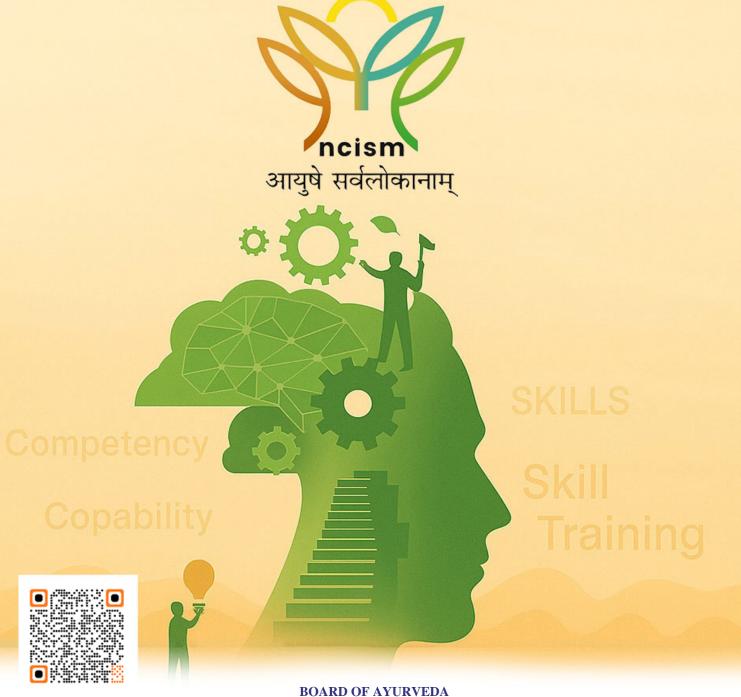# Curriculum for MD/MS Ayurveda
(PRESCRIBED BY NCISM)

अभ्यासात्प्राप्यते दृष्टिः कर्मसिद्धिप्रकाशिनी।

Semester III-VI
Roganidana - Vikritivijnana
(Pathology and Laboratory Diagnosis)
(SUBJECT CODE : AYPG-RN)

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

BOARD OF AYURVEDA
NATIONAL COMMISSION FOR INDIAN SYSTEM OF MEDICINE
NEW DELHI-110026

PREFACE

The field of Roganidana and Vikriti Vijnana in Ayurveda has undergone a significant transformation in line with modern scientific developments in education and clinical practice. The postgraduate curriculum for Applied Basics of Roganidana Vikriti Vijnana has been thoughtfully developed to integrate foundational Ayurveda principles with contemporary diagnostic approaches. This competency - based learning framework emphasises a comprehensive understanding of disease aetiology, pathology, and clinical assessment through the dual lens of Ayurveda and modern advances. By combining classical theories with current advancements, the curriculum ensures that students are equipped with the skills necessary to interpret disease processes holistically, encompassing both ancient wisdom and scientific inquiry.

Core to the Ayurveda perspective is the understanding of disease progression through factors like Dosha Dushti, Srotas Dushti, Dhatu Dushti, and Ama accumulation. The traditional classification and stages of disease, as articulated in the classical texts, require scholars to adopt an analytical mindset rooted in Nidana Panchaka, Kriyakala, Dosha Vikriti, Dhatu Paka, and the concept of Vyadhikshamatva. In today's healthcare environment, there is an increasing emphasis on evidence - based Ayurveda, which encourages validation of these diagnostic concepts using modern tools such as biochemical investigations, imaging technologies, and advanced laboratory diagnostics. The curriculum supports this by fostering advanced clinical judgment while training students to balance classical pathophysiological understanding with modern investigative protocols. This integrative approach empowers scholars to apply their diagnostic skills confidently in a multidisciplinary clinical setting.
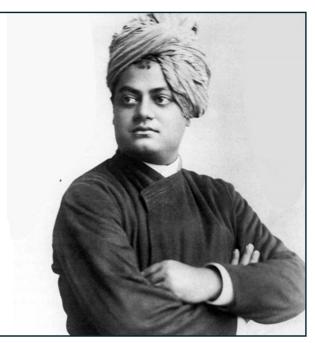
The curriculum is designed in a modular format, with each module focusing on key aspects such as disease pathogenesis, diagnostic frameworks, and disease-assessment tools. A variety of interactive learning strategies are employed - including didactic lectures, practical demonstrations, bedside discussions, case - based learning, simulations, and experiential learning - to promote deep engagement with the subject. This holistic model ensures that postgraduate scholars not only acquire theoretical knowledge but also develop clinical competence and research aptitude. The goal is to produce well - rounded professionals who can serve as expert diagnosticians, educators, and researchers, capable of contributing meaningfully to the evolution of Ayurveda - based diagnostics. Through this integrated and patient - centred curriculum, scholars are prepared to advance the science of Roganidana and Vikriti Vijnana in both academic and clinical domains.

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We want that education by which **character** is formed, **strength of mind** is increased, the **intellect** is expanded, and by which one can **stand on one's own feet.**

-*Swami Vivekananda*

NCISM

(NATIONAL COMMISSION FOR INDIAN SYSTEM OF MEDICINE)
Curriculum MD/ MS Ayurveda
Roganidana - Vikritivijnana (AYPG-RN)
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 (Vyadhi Vijnana I)			
M1 Ayurveda Diagnostic Approach	1	30	25
M2 Lakshana Niroopana 1.1	3	90	75
Paper No : 2 (Vyadhi Vijnana II)			
M9 Lakshana Niroopana 2.1	2	60	50
M10 Lakshana Niroopana 2.2	2	60	50
Paper No : 3 (Vikriti Pareeksha I (Clinical Pathology)			
M17 Rakta Vikriti Vijnana (Haematology)	2	60	50
M18 Dhatwansha Pareeksha (Biochemistry)	2	60	50
Paper No : 4 (Vikriti Pareeksha II (Microbiology and Imaging)			
M25 Fundamentals of Chhaya Evam Vikiran Vijnana	1	30	25
M26 Chhaya Evam Vikiran Vijnana–1 (Radiography & Ultrasonography)	3	90	75
Total	**16**	**480**	**400**
Semester No : 4			
Paper No : 1 (Vyadhi Vijnana I)			
M3 Lakshana Niroopana 1.2	2	60	50
M4 Lakshana Niroopana 1.3	2	60	50

Paper No : 2 (Vyadhi Vijnana II)

M11 Lakshana Niroopana 2.3	2	60	50
M12 Lakshana Niroopana 2.4	2	60	50

Paper No : 3 (Vikriti Pareeksha I (Clinical Pathology)

M19 Rakta-Rasa Pareeksha (Serology)	2	60	50
M20 Mootra and Pureesha Pareeksha (Urine and Stool examination)	2	60	50

Paper No : 4 (Vikriti Pareeksha II (Microbiology and Imaging)

M27 Chhaya Evam Vikiran Vijnana – 2 (CT & MRI)	3	90	75
M28 Fundamentals of Bhuta Vijnana	1	30	25
Total	**16**	**480**	**400**

Semester No : 5

Paper No : 1 (Vyadhi Vijnana I)

M5 Lakshana Niroopana 1.4	2	60	50
M6 Lakshana Niroopana 1.5	2	60	50

Paper No : 2 (Vyadhi Vijnana II)

M13 Lakshana Niroopana 2.5	2	60	50
M14 Lakshana Niroopana 2.6	2	60	50

Paper No : 3 (Vikriti Pareeksha I (Clinical Pathology)

M21 Retasa and Shthivana Pareeksha (Semen and Sputum examination)	2	60	50
M22 Uti Vikriti Vijnana (Histopathology), Kosha - Vikriti Vijnana (Cytology) and Dhatupratiraksha Vijnana (Immunohistochemistry)	2	60	50

Paper No : 4 (Vikriti Pareeksha II (Microbiology and Imaging)

M29 Vyadhikshamatva Pareeksha	1	30	25
M30 Upasargajanya Vyadhi Pareeksha I – Sukshma Bhuta Vinischaya (Bacteriology)	2	60	50
M31 Upasargajanya Vyadhi Pareeksha II – Anu Bhuta Vinischaya (Virology)	1	30	25
Total	**16**	**480**	**400**

Semester No : 6

Paper No : 1 (Vyadhi Vijnana I)

M7 Lakshana Niroopana 1.6	2	60	50

M8 Lakshana Niroopana 1.7	2	60	50
Paper No : 2 (Vyadhi Vijnana II)			
M15 Lakshana Niroopana 2.7	2	60	50
M16 Lakshana Niroopana 2.8	2	60	50
Paper No : 3 (Vikriti Pareeksha I (Clinical Pathology)			
M23 Deh Drava (Cavity fluid examination and Gastric analysis)	2	60	50
M24 Jaiva Anu Vijnana (Molecular biology), Koshika Vansh Vikrii Vijanana (Cytogenetics), Dehadhatu Vikriti Sanketaka (Cancer and Tumour markers), Drut Pareekshan Paddhati (Point of care testing (POCT)	2	60	50
Paper No : 4 (Vikriti Pareeksha II (Microbiology and Imaging)			
M32 Upasargajanya Vyadhi Pareeksha III – Kledaja Bhuta Vinischaya Evam Krimi Vijnana (Mycology & Parasitology)	2	60	50
M33 Recent advancements in Chhaya Evam Vikiran Vijnana, Bhuta and Krimi Vijnana.	2	60	50
Total	**16**	**480**	**400**
Grand Total	**64**	**1920**	**1600**

Credit frame work

AYPG-RN consists of 33 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 Ayurveda 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 syllabus24ayu@ncismindia.org.

Credit Analysis Overview					
Sem/Paper	**Paper No 1**	**Paper No 2**	**Paper No 3**	**Paper No 4**	**Credits**
Semester 3	M-1 | 1 Crs M-2 | 3 Crs	M-9 | 2 Crs M-10 | 2 Crs	M-17 | 2 Crs M-18 | 2 Crs	M-25 | 1 Crs M-26 | 3 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 | 3 Crs M-28 | 1 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 | 1 Crs M-30 | 2 Crs	**16**

				M-31 | 1 Crs	
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-32 | 2 Crs M-33 | 2 Crs	**16**
Credits	**16**	**16**	**16**	**16**	**64**

Semester VI University examination					
Theory			Practical*		
Paper	Marks	Total	Practical Heads	Marks	Total
Paper -1	100	400	Long case or procedure/Major practical as applicable	100	400
			Short case or procedure/Minor practical	50	
Paper -2	100		Spotters	50	
			Assessing teaching ability	20	
Paper -3	100		Assessing presentation skills	20	
			Viva (4 examiners: 20 marks/each examiner)	80	
Paper -4	100		Dissertation Viva	40	
			Logbook (Activity record)	20	
			Practical/Clinical Record	20	
Semester VI University examination – 800 Marks					

* Details in 6H table

Course Code and Name of Course

Course code	Name of Course
AYPG-RN	Roganidana - Vikritivijnana (Pathology and Laboratory Diagnosis)

Table 1 : Course learning outcomes and mapped Program learning outcomes

CO No	A1 Course learning Outcomes (CO) AYPG-RN At the end of the course AYPG-RN, the students should be able to-	B1 Course learning Outcomes mapped with program learning outcomes.
CO1	**Analyse the fundamental principles related to Roganidana and Vikriti Vijnana with contemporary understanding.**	PO1,PO3
CO2	**Interpret findings of diagnostic tests (laboratory and imaging) by applying Ayurveda principles of Roganidana and Vikriti Vijnana.**	PO1,PO2,PO3
CO3	**Evaluate Nidana Panchaka of various Vikara along with contemporary pathological process.**	PO1,PO3,PO8
CO4	**Demonstrate effective clinical examination skills to derive precise diagnosis in Ayurveda and contemporary science.**	PO1,PO2,PO6
CO5	**Execute diagnostic tests (laboratory and imaging) and procedures with compliance to standard protocols.**	PO2,PO3
CO6	**Integrate Artificial Intelligence (AI), Digital Health (DH) and modern advances in Roganidana.**	PO2,PO3,PO7
CO7	**Design and develop diagnostic methods and tools related to Roganidana and Vikriti Vijnana.**	PO2,PO5,PO7
CO8	**Demonstrate empathy, ethical sensitivity, and culturally appropriate communication with patients and dependents.**	PO4,PO6,PO8

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

Paper No : 1 (Vyadhi Vijnana 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 Ayurveda Diagnostic Approach** **This module analyzes Ayurveda diagnostic principles by exploring Trividha Pramana, distinguishing Sapeksha and Vyavachedaka Nidana, and integrating Trividha Bodhya Sangraha to establish accurate disease identification, with contemporary integration to enhance precision and applicability in clinical practice.** **• M1U1 Trividha Pramana Pareeksha.** 1. Structured approach to patient history taking. 2. Structured approach to clinical examination. **• M1U2 Sapeksha and Vyavachedaka Nidana.** 1. Differential diagnosis based on patient's history. 2. Differential diagnosis based on examination findings.	1	5	10	15	30

	• **M1U3 Vyadhi Vinischaya based on Trividha Bodhya Sangraha.** 1. Etiological diagnosis of the condition. 2. Pathological diagnosis of the condition. 3. Clinical diagnosis of the condition.						
2	**M-2 Lakshana Niroopana 1.1** **This module analyzes clinical features of diseases like Jwara, Rajayakshma, and Krimi, integrating classical signs with contemporary diagnostics.** • **M2U1 Jwara.** 1. Spectrum of symptoms of Jwara. 2. Pathogenesis of Jwara. 3. Nature of Jwara. • **M2U2 Rajayakshma.** 1. Risk factors of Rajayakshma. 2. Progression of Rajayakshma. 3. Manifestation of Rajayakshma. • **M2U3 Krimi.** 1. Symptomatic patterns of Krimi. 2. Pathophysiological basis of Krimi.	3	15	30	45	90

	3. Clinical course of Krimi.				
		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 Lakshana Niroopana 1.2** **This module analyzes the clinical features of Raktapitta, Kushta, and Pandu - Kamala spectrum of disorders, correlates classical and contemporary diagnostic perspectives, and creates integrated clinical approaches for effective diagnosis.** **• M3U1 Raktapitta.** 1. Collective symptomatology of Raktapitta. 2. Pathological dynamics of Raktapitta. 3. Clinical expression of Raktapitta. **• M3U2 Kushta – Visarpa, Kshudra Roga (Twak adhishtana), Shwitra, Sheetapitta, Udarda, Kotha, Utkotha.** 1. Spectrum of dermatological manifestations of Kushta and allied conditions.	2	10	20	30	60

2. Pigmentary system abnormality.

3. Ayurveda pathology components.

4. Site-specific pathology.

5. Clinical differentiation of Kushta and allied conditions – Visarpa, Kshudra Roga (Twak Adhishtana), Shwitra, Sheetapitta, Udarda, Kotha, Utkotha.

   • **M3U3 Pandu, Haleemaka, Kamala, and Kumbhakamala.**
1. Spectrum of clinical features of Pandu, Haleemaka, Kamala, and Kumbhakamala.

2. Pathophysiological continuum.

3. Dosha–Dhatu involvement.

4. Other components in Pandu, Haleemaka, Kamala, and Kumbhakamala.

4	**M-4 Lakshana Niroopana 1.3**	2	10	20	30	60
	This module analyzes the pathogenesis of digestive and abdominal disorders through Ayurveda principles, evaluates their clinical variations by site and Dosha involvement, correlates them with modern gastrointestinal conditions, and creates integrated diagnostic strategies. • **M4U1 Ashraddha/ Anannabhilasha/ Abhaktachanda/ Arochaka/ Bhaktadvesha, Bhojyanam Avarodha/ Bhojyoparodha, Pratyadhmana, Ajeerna, Amlapitta, Chhardi.** 1. Gastrointestinal symptoms.					

2. Underlying disturbances in functional digestive pathologies.

3. Ashraddha/ Anannabhilasha/ Abhaktachanda/ Arochaka/ Bhaktadvesha.

4. Bhojyanam Avarodha/ Bhojyoparodha.

5. Pratyadhmana, Ajeerna, Amlapitta, Chhardi.

• M4U2 Gulma, Shoola, Parinama Shoola, Annadrava Shoola, Parshwa Shoola, Kukshi Shoola, Vit Shoola, Anna Shoola, Mootra Shoola, Antar Vidradhi, Adho Nabhi Gata Koshta Bhedha Lakshana, Baddhagudodara, Parisravi Udara Lakshana.
1. Spectrum of abdominal pain presentations.

2. Underlying derangement in functional and structural pathology.

3. Site-specific pathology correlations.

4. Differential diagnosis in conditions such as:

- Gulma
- Shoola (Parinama Shoola, Annadrava Shoola, Parshwa Shoola, Kukshi Shoola, Vit Shoola, Anna Shoola, Mootra Shoola)
- Antar Vidradhi
- Adho Nabhi Gata Koshta Bhedha Lakshana
- Baddhagudodara
- Parisravi Udara Lakshana.

		4	20	40	60	120

Semester No : 5						
2A **Modu le Nu mber**	**2B** **Modules & units**	**2C** **Num ber of Credi ts**	**Notional Learning hours**			
			2D **Lectures**	**2E** **Practical Training**	**2F** **Experiential Learning including Modular Assessment**	**2G** **Total**
5	**M-5 Lakshana Niroopana 1.4** **This module analyzes the classical principles on pathogenesis of musculoskeletal and joint disorders like Sandhigata Vata, Amavata, and other Vatashrita Roga, and Stambha-Graha conditions, evaluates their clinical features and progression, correlates them with rheumatological and neuromuscular disorders, and creates integrative diagnostic approaches combining Ayurveda and contemporary perspectives.** **• M5U1 Sandhigata Vata, Amavata, Vatarakta, Kroshtuka Sheersha, Sandhiga Sannipata Jwara.** 1. Clinical patterns of joint involvement. 2. Etiopathogenesis of joint disorders. 3. Differentiation of: • Sandhigata Vata • Amavata	2	10	20	30	60

- Vatarakta
- Kroshtuka Sheersha
- Sandhigata Sannipata Jwara.

• M5U2 Amsa Shosha, Avabahuka, Vatakantaka, Padakantaka.

1. Musculoskeletal-related impairments.

2. Site-specific aggravation patterns.

3. Clinical presentation of:

- Amsa Shosha
- Avabahuka
- Vatakantaka
- Padakantaka.

4. Associated functional limitations.

5. Underlying pathogenesis.

• M5U3 Hanustambha, Manyastambha, Katigraha.

1. Clinical features of Hanustambha.

2. Clinical features of Manyastambha.

3. Clinical features of Katigraha.

4. Musculoskeletal and associated contributing factors.

5. Pathogenesis underlying these conditions.

	6. Impact on functional mobility.					
6	**M-6 Lakshana Niroopana 1.5**	2	10	20	30	60

This module analyzes the Ayurveda principles of disorders like Hikka, Shwasa, Kasa, and Kshata - Ksheena/ Urakshata - Urdhwa Nabhi Gata Koshta Bheda Lakshana/ Pranavaha Sroto Viddha Lakshana, evaluates their clinical features and progression, correlates them with respiratory and thoracoabdominal conditions, and creates integrative diagnostic strategies using Ayurveda and contemporary principles.

• M6U1 Hikka.
1. Risk factors of Hikka.

2. Contributing factors of Hikka.

3. Clinical presentation of Hikka.

4. Underlying pathophysiology of Hikka.

• M6U2 Shwasa, Kasa.
1. Symptomatology of Shwasa and Kasa.

2. Pathophysiological mechanisms of Shwasa and Kasa.

3. Progression of respiratory conditions.

4. Differentiation of Shwasa and Kasa.

• M6U3 Kshata - Ksheena/ Urakshata - Urdhwa Nabhi Gata Koshta Bheda

Lakshana/ Pranavaha Sroto Viddha Lakshana.

1. Clinical indicators of Kshata-Ksheena and Urakshata.

2. Pathological progression of Urdhwa Nabhi Gata Koshta Bheda Lakshana.

3. Pathological progression of Pranavaha Sroto Viddha Lakshana.

4. Site-specific symptomatology.

		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
7	**M-7 Lakshana Niroopana 1.6** **This module analyzes the pathogenesis and types of Gata Vata and Avarana Vata, evaluates their clinical features, correlates them with contemporary science, and creates integrated diagnostic strategies.** **• M7U1 Gata Vata.** 1. Site-specific clinical manifestations of Gata Vata conditions.	2	10	20	30	60

	2. Pathogenesis of Gata Vata conditions.					
	3. Diagnostic differentiation of Gata Vata conditions.					
	• **M7U2 Avarana Vata.**					
	1. Mechanisms of Avarana of Vata.					
	2. Impairments caused by Avarana of Vata.					
	3. Pathogenesis of Avarana of Vata.					
	4. Clinical implications across systems.					
8	**M-8 Lakshana Niroopana 1.7** **This module analyzes the Ayurveda basis of Phiranga, Upadamsha, Klaibya, and Vandhyatva, evaluates their clinical features and causes, correlates them with reproductive and venereal disorders, and creates integrated diagnostic approaches.** • **M8U1 Phiranga, Upadamsha.** Clinical presentation of Phiranga 1. Pathology of Phiranga. 2. Clinical presentation of Upadamsha. 3. Pathology of Upadamsha. 4. Etiology of Phiranga and Upadamsha.	2	10	20	30	60

5. Progression of Phiranga and Upadamsha. 6. Relevance within communicable and sexually transmitted disorders. **• M8U2 Klaibya.** 1. Clinical features of Klaibya. 2. Etiological factors of Klaibya. 3. Pathological components of Klaibya. 4. Implications on reproductive health. 5. Implications on psychological health. **• M8U3 Vandhyatva.** 1. Clinical determinants of Vandhyatva. 2. Etiopathogenesis of Vandhyatva. 3. Types of Vandhyatva. 4. Reproductive health implications. 5. Associated systemic and psychosocial impact.						
		4	**20**	**40**	**60**	**120**
		16	**80**	**160**	**240**	**480**
Paper No : 2 (Vyadhi Vijnana 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 Lakshana Niroopana 2.1** **This module analyzes the Ayurveda pathology of metabolic and nutritional disorders, nephrological diseases like Sthoulya, Karshya, Shosha, and Prameha, evaluates their clinical features and progression, correlates them with conditions such as obesity, emaciation, and diabetes, and creates integrative approaches for diagnosis using classical and contemporary principles.** • **M9U1 Sthoulya, Karshya, Shosha.** 1. Clinical features of Sthoulya. 2. Clinical features of Karshya. 3. Clinical features of Shosha. 4. Metabolic indicators of physiological imbalance. 5. Nutritional dynamics influencing these conditions. • **M9U2 Prameha.**	2	10	20	30	60

	1. Spectrum of clinical features of Prameha.					
	2. Metabolic disturbances associated with Prameha.					
	3. Nephrological disease associations with Prameha.					
	4. Pathophysiological basis integrating metabolic and renal aspects.					
	5. Ayurveda–contemporary correlation in Prameha.					

10	**M-10 Lakshana Niroopana 2.2**
	
	This module analyzes the pathogenesis of altered level of consciousness and mental disorders like Mada, Murcha, Unmada, and Vishada, evaluates their clinical features, correlates them with neuropsychiatric conditions, and creates integrated diagnostic approaches.
	
	  • M10U1 Mada, Murcha, Sanyasa.
	1. Gradation of altered consciousness.
	
	2. Clinical presentation of each level.
	
	3. Pathogenesis underlying altered states.
	
	4. Prognostic significance of gradation.
	
	5. Ayurveda–contemporary correlation.
	
	  • M10U2 Unmada, Atatwabhinivesha, Vishada.
	1. Psychological presentations of Unmada.
		2	10	20	30	60

2. Behavioral features of Unmada.

3. Clinical indicators of Atatwabhinivesha.

4. Symptomatology of Vishada.

5. Pathological components and implications for differential diagnosis of mental health disorders.

		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
11	**M-11 Lakshana Niroopana 2.3** **This module analyzes the pathogenesis of glandular and neoplastic conditions like Granthi, Arbudha, Galaganda, Yavaprakhya, Andhalaji, Kacchapika, Panasika, Granthi Visarpa, Rakta Granthi/ Mutra Granthi, Vatashteela, evaluates their clinical features, correlates them with diagnoses such as tumors and lymphadenopathy, and creates integrative diagnostic strategies using classical and contemporary approaches.**	2	10	20	30	60

• **M11U1 Granthi, Arbudha, Apachi.**
1. Clinical features of Granthi.

2. Pathology of Granthi.

3. Clinical features of Arbuda.

4. Pathology of Arbuda.

5. Clinical features and pathology of Apachi.

6. Genesis, progression, and differential diagnosis across all three conditions.

• **M11U2 Yavaprakhya, Andhalaji, Kacchapika, Panasika, Granthi Visarpa, Rakta Granthi/ Mootra Granthi, Vatashteela.**
1. Structural enlargements.

2. Nodular growths.

3. Pathogenesis of Yavaprakhya.

4. Clinical differentiation of Andhalaji and Kacchapika.

5. Clinical differentiation of Panasika and Granthi Visarpa.

6. Pathological features of Rakta Granthi/ Mootra Granthi.

7. Clinical aspects of Vatashteela.

• **M11U3 Galaganda, Gandamala.**
Clinical features of Galaganda

	1. Clinical features of Gandamala.					
	2. Site of manifestation of Galaganda.					
	3. Site of manifestation of Gandamala.					
	4. Pathogenesis of Galaganda.					
	5. Pathogenesis of Gandamala.					
	6. Differential diagnosis between Galaganda and Gandamala.					
12	**M-12 Lakshana Niroopana 2.4** **This module analyzes gastrointestinal and ano - rectal disorders such as Anaha, Atisara, Grahani, Arshas, and Parikartika through Ayurveda perspectives, evaluates their clinical progression, correlates them with digestive conditions, and creates integrated diagnostic approaches.** **• M12U1 Anaha, Adhmana, Atopa, Atisara, Grahani, Visoochika, Alasaka, Vilambika, Pravahika, Nisaraka, Vit Vibandha.** 1. Symptom profile of Anaha, Adhmana, and Atopa. 2. Clinical features of Atisara and Pravahika. 3. Diagnostic indicators of Grahani and Vilambika. 4. Symptomatic expressions of Visoochika and Alasaka. 5. Pathological features of Nisaraka and Vit Vibandha.	2	10	20	30	60

6. Composite manifestations of digestive disturbances in related conditions.

   • **M12U2 Arshas, Parikartika, Sannirudhaguddha, Gudabhramsha.**
1. Clinical manifestations of Arshas.

2. Anatomical alterations in Arshas.

3. Clinical manifestations of Parikartika.

4. Anatomical alterations in Sannirudhaguddha.

5. Clinical manifestations of Gudabhramsha.

6. Anatomical alterations in Gudabhramsha.

		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 Lakshana Niroopana 2.5** **This module analyzes the pathogenesis of seizure - related disorders like**	2	10	20	30	60

Akshepaka and Apasmara, evaluates their clinical features, correlates them with neurological conditions, and creates integrative diagnostic approaches.

• M13U1 Akshepaka, Apatanaka, Dandapatanaka, Antarayama, Bahirayama, Apantantraka, Vrunayama.
1. Neuro-muscular features of Akshepaka.

2. Seizure-like manifestations in Apatanaka.

3. Convulsive patterns of Dandapatanaka.

4. Muscular rigidity in Antarayama.

5. External spasmodic features of Bahirayama.

6. Neuromotor signs of Apantantraka.

7. Paralytic and spasmodic symptoms in Vrunayama.

• M13U2 Apasmara.
1. Pathogenesis of Apasmara linked to Dosha imbalance and Manovaha Srotodushti.

2. Sudden and episodic loss of consciousness.

3. Abnormal involuntary movements during episodes.

4. Presence of prodromal symptoms such as aura or premonitory signs.

5. Post-episode confusion, disorientation, or fatigue aiding differential diagnosis.

| 14 | **M-14 Lakshana Niroopana 2.6** | 2 | 10 | 20 | 30 | 60 |

This module analyzes the pathogenesis of cardiac, inflammatory, abscess, and abdominal disorders through Ayurveda principles, evaluates their clinical features and progression, correlates them with contemporary conditions, and creates integrated diagnostic strategies.

• M14U1 Hrut Shoola, Hrudroga.
1. Clinical expressions of Hrut Shoola.

2. Underlying mechanism of Hrut Shoola.

3. Clinical expressions of Hrudroga.

4. Underlying mechanism of Hrudroga.

5. Site-specific manifestations and progression.

• M14U2 Shotha.
1. Clinical patterns of Shotha.

2. Pathogenesis of Shotha.

3. Classification of Shotha.

4. Progression of Shotha.

• M14U3 Shopha, Bahya Vidradhi, Asthi Majja Paripaka.
1. External inflammatory presentations in Shopha.

2. Deep-seated tissue involvement in Bahya Vidradhi.

3. Asthi-Majja Paripaka progression and pathogenesis.

• M14U4 Udara, Pleeha Roga.
1. Progressive abdominal distension in Udara.

2. Organ-specific involvement in Pleeha Roga.

3. Clinical staging and interpretation.

		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 Lakshana Niroopana 2.7** **This module analyzes neurological and motor disorders like Pakshagata, Ardita, Gridhrasi, and Padaharsha, evaluates their clinical features and progression, correlates them with neurological conditions, and creates integrative diagnostic approaches.** **• M15U1 Ekanga Roga, Pakshagata, Sarvanga Roga, Ardita, Adharanga Vata, Vepathu Vata, Khanja and Pangu.**	2	10	20	30	60

1. Clinical spectrum of Ekanga Roga.

2. Neuromuscular manifestations in Pakshagata.

3. Site-specific affliction in Sarvanga Roga.

4. Functional disability in Ardita.

5. Clinical features of Adharanga Vata.

6. Neuromuscular signs in Vepathu Vata.

7. Locomotor impairment in Khanja.

8. Mobility limitation in Pangu.

• M15U2 Gridhrasi, Vishwachi.
1. Neuromuscular symptoms of Gridhrasi.

2. Neuromuscular symptoms of Vishwachi.

• M15U3 Padaharsha, Padadaha.
1. Localized sensory disturbances in Padaharsha.

2. Localized sensory disturbances in Padadaha.

16	**M-16 Lakshana Niroopana 2.8** **This module analyzes urinary disorders like Mootra Shoola, Ashmari, and Mootraghata through classical principles, evaluates their clinical features and**	2	10	20	30	60

complications, correlates them with urological conditions, and creates integrated diagnostic strategies.

   • M16U1 Mootra Shoola, Ashmari, Mootrakrichra, Tuni.
1. Mootra Shoola – features and differential diagnosis.

2. Ashmari – clinical signs and diagnostic distinctions.

3. Mootrakrichra – symptom profile and differential considerations.

4. Tuni – manifestations and clinical differentiation.

   • M16U2 Mootraghata.
1. Obstructive patterns observed in Mootraghata.

2. Functional limitations associated with Mootraghata.

3. Mechanism underlying Mootraghata.

4. Stages of progression in Mootraghata.

		4	20	40	60	120
		16	80	160	240	480

Paper No : 3 (Vikriti Pareeksha I (Clinical Pathology)

Semester No : 3

2A Module Nu	2B Modules & units	2C Number of	Notional Learning hours			

mber		Credits	2D Lectures	2E Practical Training	2F Experiential Learning including Modular Assessment	2G Total
17	**M-17 Rakta Vikriti Vijnana (Haematology)** **This module emphasises on Rakta Pareeksha as per Ayurveda, fundamentals of haematology, sampling techniques, preservation of blood samples, advances in sampling, haematological investigations, coagulation study, transfusion medicine, PBS interpretation, bone marrow studies, their interpretation and quality reporting, Significance of haematological testing quality measures in haematology, advanced testing and recent advances in haematology and interpretation of haematological investigations as per Ayurveda.** **• M17U1 Rakta Pareeksha** 1. Shuddha and Ashuddha Rakta. 2. Rakta Dhatu vitiated with Dosha. 3. Utility of Rakta Dhatu Pareeksha in Ayurveda pathology. **• M17U2 Haematological procedures and interpretations** 1. Hemopoiesis, normal and abnormal blood cells. 2. Haematology sampling, equipment's and instruments and their principles with functioning.	2	10	20	30	60

3. Manual, automated procedures and rapid testing in haematology, coagulation studies, blood banking.

4. Interpretation of machine results and PBS observations.

5. Quality measures, trouble shooting and data management.

6. Clinical and therapeutic relevance of haematology investigations.

7. Advance testing and Recent advances in haematology.

• M17U3 Interpretation of haematological tests using fundamental principles of Roganidana - Vikritivijnana
1. Interpretation of haematology investigations by incorporating fundamental principles of Roganidana - Vikritivijnana.

18	**M-18 Dhatwansha Pareeksha (Biochemistry)**	2	10	20	30		60

This module encompasses fundamentals of biochemistry, their sampling and laboratory methods, clinical and therapeutic relevance in interpretations of the investigations, quality measures and assessment, advance testing and recent advances, automation in biochemistry, interpretation of biochemical investigations as per Ayurveda.

• M18U1 Introduction to Biochemistry
1. Metabolism of biochemical molecules, function and importance in health and disease.

• M18U2 Biochemical procedures and their interpretation
1. Principle of biochemical testing.

2. Biochemistry sampling, equipment's and instruments.

3. Manual and automated procedures in biochemistry.

4. Interpretation of results and quality reporting.

5. Quality measures, trouble shooting, data management.

6. Clinical and therapeutic relevance of biochemical investigations.

7. Advanced testing and recent advances in biochemistry.

• M18U3 Interpretation of biochemical tests using fundamental principles of Roganidana - Vikritivijnana
1. Interpretation of biochemistry investigations by incorporating fundamental principles of Roganidana - Vikritivijnana.

		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 Rakta-Rasa Pareeksha (Serology)**	2	10	20	30	60

This module includes fundamentals of serology, their sampling and laboratory methods, clinical and therapeutic relevance in interpretations of the investigations, quality measures and assessment, recent advances, interpretation of serological investigations as per Ayurveda.

   • M19U1 Introduction to serology
1. Purpose of serological testing, sampling and storage.

   • M19U2 Serological procedures and interpretation
1. Procedures sampling and principles of serological testing.

2. Manual and automated procedures in serology.

3. Interpret test result and quality reporting.

4. Quality measures, trouble shooting and data management.

5. Clinical and therapeutic relevance of serological investigations.

6. Advanced testing and automation in serology.

   • M19U3 Interpretation of serology tests using fundamental principles of Roganidana - Vikritivijnana
1. Interpretation of serology investigations by incorporating fundamental principles of Roganidana - Vikritivijnana.

20	**M-20 Mootra and Pureesha Pareeksha (Urine and Stool examination)**	2	10	20	30	60
	This module focuses on urine and stool examination as per Ayurveda and contemporary science, their laboratory methods, clinical and therapeutic					

relevance in Ayurveda and contemporary medical science, interpretations of the investigations, rapid testing, quality measures and assessment.

• **M20U1 Mootra Pareeksha**

1. Physiological background of Mootra and Mootra Pareeksha.

2. Clinical conditions to advise Mootra Pareeksha.

3. Procedure of urine examination in Ayurveda with Mootra Tail Bindu Pareeksha (oil droplet examination of urine).

4. Interpretation of Mootra Pareeksha and Mootra Tail Bindu Pareeksha.

5. Clinical and therapeutic relevance of Mootra Pareeksha.

• **M20U2 Urine examination**

1. Brief physiology of urine formation and composition.

2. Sampling of urine examination.

3. Laboratory techniques and rapid testing of urine examination.

4. Interpretation and reporting of physical, chemical and microscopic observation.

5. Quality measures, troubleshooting.

6. Clinical and therapeutic relevance of urine examination.

7. Interpretation of urine examination by incorporating fundamental principles of Roganidana - Vikritivijnana.

• **M20U3 Pureesha Pareeksha**

1. Physiological background of Pureesha (stool) and Pureesha Pareeksha as per Ayurveda.

2. Clinical conditions to advise Pureesha Pareeksha.

3. Procedure of stool examination in Ayurveda with Jala Nimajjana Pareeksha of Pureesha (water submersion test).

4. Interpretation of Pureesha Pareeksha.

5. Clinical and therapeutic relevance of Pureesha Pareeksha as per Ayurveda.

• **M20U4 Stool examination**
1. Brief physiology of stool formation and composition.

2. Sampling of stool examination.

3. Laboratory techniques and rapid testing of stool examination.

4. Interpretation and reporting of physical, chemical and microscopic observation.

5. Quality measures related to stool examination.

6. Clinical and therapeutic relevance of stool examination.

7. Interpretation of stool examination by incorporating fundamental principles of Roganidana - Vikritivijnana.

		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 Retasa and Shthivana Pareeksha (Semen and Sputum examination)** **This module explores semen and sputum examination as per Ayurveda and contemporary science, their laboratory methods, clinical and therapeutic relevance in Ayurveda and contemporary medical science, interpretations of the investigations, quality measures and assessment, relevance of semen examination in forensic science, semen banking.** **• M21U1 Retasa Pareeksha** 1. Concept of Shuddha Shukra (semen). 2. Analytical parameters of Shuddha Shukra and its examination. 3. Clinical conditions to advise Retasa examination. 4. Laboratory requirements for Retasa (semen) examination. 5. Clinical and therapeutic relevance of Retasa examination. **• M21U2 Semen examination** 1. Brief physiology of Semen formation and composition.	2	10	20	30	60

2. Sampling techniques and laboratory requirements of semen examination.

3. Laboratory techniques of semen examination.

4. Interpretation and reporting of physical, chemical and microscopic observation.

5. Quality measures, troubleshooting, and data management.

6. Clinical, therapeutic, forensic medicinal relevance of semen examination.

7. Semen banking.

8. Interpretation of semen examination by incorporating fundamental principles of Roganidana - Vikritivijnana.

• **M21U3 Sthivana Pareeksha**
1. Clinical conditions relevant in Sthivana Pareeksha.

2. Attributes of abnormal Shthivana in various pathologies.

3. Procedures of Shthivana Pareeksha.

4. Clinical and therapeutic relevance of Sthivana Pareeksha.

5. Interpretation of Shthivana Pareeksha.

• **M21U4 Sputum examination**
1. Brief physiology of sputum formation and composition.

2. Sampling of sputum examination.

3. Laboratory techniques (conventional and automated biological culture systems and

	molecular diagnosis approaches) of sputum examination.					
	4. Interpretation and reporting of physical, chemical and microscopic observation.					
	5. Quality measures related to sputum examination.					
	6. Clinical and therapeutic relevance of sputum examination.					
	7. Interpretation of sputum examination by incorporating fundamental principles of Roganidana - Vikritivijnana.					
22	**M-22 Uti Vikriti Vijnana (Histopathology), Kosha - Vikriti Vijnana (Cytology) and Dhatupratiraksha Vijnana (Immunohistochemistry)** **This module contains key aspects of histopathology, cytology and immunohistochemistry, their techniques, clinical significance, and interpretations and reporting of the investigations, recent advances and interpretation as per Ayurveda.** **• M22U1 Uti Vikriti Vijnana (Histopathology (HPE) - Basic knowledge, techniques and laboratory requirements** 1. Introduction to tissue morphology. 2. Sample procure, grossing, fixing, staining and mounting and preservation procedures. 3. Clinical conditions to suggest HPE testing. 4. Laboratory requirements for HPE set up.	2	10	20	30	60

5. Quality measures, troubleshooting, and data management.

6. Automation in HPE.

• M22U2 Kosha - Vikriti Vijnana (Cytology) - Basic knowledge, techniques and laboratory requirements
1. Introduction to different cell morphology.

2. Sample procure, grossing, fixing, staining and mounting and preservation procedures.

3. Clinical conditions to suggest cytology testing.

4. Laboratory requirements for cytology examinations.

5. Quality measures, troubleshooting, and data management.

6. Automation in cytology.

• M22U3 Dhatupratiraksha Vijnana (Immunohistochemistry (IHC) - Basic knowledge, techniques and laboratory requirements
1. Introduction to immunohistochemistry.

2. Clinical conditions to suggest IHC testing.

3. Sample procure, various staining and localization of biomarkers.

4. Laboratory techniques and staining protocols and identification of IHC markers.

5. Laboratory requirements and automation in IHC set up.

6. Quality measures, troubleshooting, and data management.

7. Clinical and therapeutic relevance of IHC.

• M22U4 Interpretation in Histopathology, Cytology and Immunohistochemistry
1. Interpret the observations.

2. Interpretation of HPE, IHC and cytology examination by incorporating fundamental principles of Roganidana - Vikritivijnana.

		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 Deh Drava (Cavity fluid examination and Gastric analysis)** **This module builds on physiology, composition and functions of cavity fluids and gastric analysis, sampling, quality measures and troubleshooting, advances, clinical and therapeutic relevance in diseases, and interpretations as per Ayurveda.** **• M23U1 Introduction to cavity fluids and gastric fluid** 1. Foundational knowledge of (formation, composition and function) of cavity fluids	2	10	20	30	60

and gastric fluid.

• **M23U2 Fluid examination procedure and interpretation**
1. Sampling, safety precautions and clinical indications.

2. Laboratory techniques of cavity fluid and gastric fluid examination.

3. Interpretation and reporting.

4. Quality measures, troubleshooting, and data management.

5. Clinical and therapeutic relevance of the cavity fluid examination and gastric fluid analysis.

• **M23U3 Interpretation of cavity fluid and Gastric analysis using fundamental principles of Roganidana - Vikritivijnana**
1. Cavity fluid and gastric analysis by incorporating fundamental principles of Roganidana - Vikritivijnana.

• **M23U4 DELET**
DELET THIS UNIT NO 4

| 24 | **M-24 Jaiva Anu Vijnana (Molecular biology), Koshika Vansh Vikrii Vijanana (Cytogenetics), Dehadhatu Vikriti Sanketaka (Cancer and Tumour markers), Drut Pareekshan Paddhati (Point of care testing (POCT)** | 2 | 10 | 20 | 30 | 60 |
| | **This module contains molecular biology studies Cytogenetics and cancer and tumour makers, their laboratory methods and recent advances, clinical significance and interpretations of the investigations.** | | | | | |

• M24U1 Jaiva Anu Vijnana (Molecular biology)
1. Fundamentals of Molecular biology.

2. Concept of Molecular pathology and its assessment techniques.

3. Molecular biology lab set up.

4. Quality measures, troubleshooting and data management.

5. Interpretation of observations.

6. Clinical and therapeutic relevance of molecular biology investigations.

• M24U2 Koshika Vansh Vikriti Vijanana (Cytogenetics)
1. Fundamentals of DNA, RNA, transcription and translation.

2. Cytogenetics lab set up.

3. Preparation of Cell cultures.

4. Prenatal screening and laboratory testing of inborn error of metabolism, FISH technique, forensic science, gender determination and parentage testing.

5. Quality measures, troubleshooting and data management.

6. Interpretation of observations.

7. Clinical and therapeutic relevance of cytogenetics investigations.

• M24U3 Dehadhatu Vikriti Sanketaka (Cancer and Tumour markers)
1. Pathology of cancer, carcinogens and oncogenes, tumour markers.

2. Sampling specifications, principles of laboratory procedures and interpretation of tumour marker testing.

3. Quality measures, troubleshooting and data management.

4. Clinical and therapeutic relevance of cancer and tumour markers.

5. Benefits and limitations in testing.

6. Emerging tumour markers and technologies in testing.

7. Interpretation of cancer and tumour markers by incorporating fundamental principles of Roganidana - Vikritivijnana.

• **M24U4 Drut Pareekshan Paddhati (Point of care testing (POCT)**
1. Concept of POCT.

2. POCT devices and technologies.

3. Quality control and quality assurance, potential errors and troubleshooting strategies.

4. POCT regulations and guidelines.

5. POCT impact on patient care.

6. Comparison with traditional laboratory testing.

		4	20	40	60	120
		16	80	160	240	480

Paper No : 4 (Vikriti Pareeksha II (Microbiology and Imaging)						
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 Fundamentals of Chhaya Evam Vikiran Vijnana** **This module deals with Gross and cross-sectional radio anatomy of various Anga and Shadanga, applied aspects of Ayurveda fundamentals concepts from Rachana Sharir, Roganidana, and Vikriti Vijnana and classical texts) for Ayurveda interpretation, and structured radiology reporting.** • **M25U1 Fundamentals of Chhaya Evam Vikiran Vijanana.** 1. Vikiran Rachana Sharir – Study of gross and cross-sectional radioanatomy of various Anga and Shadanga. 2. Shakha (Urdwa/Adho) – Radiological anatomy of upper and lower limbs. 3. Greeva and Prushata – Radiological anatomy of neck and back. 4. Antaradhi regions – Radiological anatomy of thorax (Urah/Vaksha), abdomen (Udarah), and pelvis (Sronih). 5. Shiro-Greeva – Radiological anatomy of head and neck region.	1	5	10	15	30

	6. Interpretation and patient care – Interpretation of radiological findings using Ayurveda concepts, application in structured reporting, and approach to patient care in radiology.					
26	**M-26 Chhaya Evam Vikiran Vijnana–1 (Radiography & Ultrasonography)**	3	15	30	45	90

M-26 Chhaya Evam Vikiran Vijnana–1 (Radiography & Ultrasonography)

This module offers an overview of diagnostic imaging techniques - radiography, ultrasonography, and doppler - with a focus on imaging principles, anatomical recognition, and Ayurveda interpretation. It integrates modern imaging methods with principles and concepts from Ayurveda, promoting a structured approach to Ayurveda diagnosis.

  • **M26U1 Vikiran Vijnana Siddhant, Yantra Evam Vidhi: Radiography**
1. X-ray: Radiophysics, Equipment, Imaging Systems and Image Processing Techniques.
2. Core principles, imaging Systems & Image Processing techniques in fluoroscopy, mammography and DEXA Scan.

3. Radiographic Rachana (anatomy) of the Shadanga (Shakha (Urdwa/ Adho), Greeva and Prushta, Antaradhi:- Urah/ Vaksha, Antaradhi:- Udarah and Sronih, Shiro-Greeva), its Vikiriti Vinischaya (pathological recognition).

4. Contrast Media – Contrast agent, mechanism of action, dose schedule, route of administration, adverse reactions, and their management.

5. Interpretation of radiographic findings/ densities with Ayurveda principles and concepts, and reporting the results through an integrated approach.

  • **M26U2 Vikiran Vijnana Siddhant, Yantra Evam Vidhi - Ultrasonography**

and doppler

1. Ultrasonography Siddhant: Principles of Ultrasound, acquisition techniques, image quality, and components of ultrasonography imaging systems.
2. Doppler ultrasonography Siddhant, Yantra Evam Vidhi: Principles, types, acquisition techniques and components of doppler imaging systems.
3. Ultrasound elastography: Principles, Techniques, and Clinical Applications.
4. Ultrasonography of Shadanga, Its Rachana Evam Vikriti Vinishcahya (anatomical and pathological recognition).

5. Ayurveda interpretation and reporting of ultrasonography findings.

6. Application of USG-guided procedures in Ayurveda diagnosis.

		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 Chhaya Evam Vikiran Vijnana – 2 (CT & MRI)** **This module covers the principles, techniques, and clinical applications of CT and MRI, with a focus on image acquisition, processing, and the use of contrast media. It emphasizes anatomical recognition of Shadanga, integrates Ayurveda**	3	15	30	45	90

interpretation, and applies guided procedures and patient safety in imaging practices.

• M27U1 Sharira Avayava Anuccheda Drushya: Computed Tomography
1. Computed Tomography Siddhant, Yantra Evam Vidhi: Principles and image reconstruction, image acquisition, processing, and Computed Tomography instrumentation and imaging system.
2. Computed Tomography of Shadanga (Shakha (Urdwa/ Adho), Greeva and Prushata, Antaradhi:- Urah/ Vaksha, Antaradhi:- Udarah and Sronih, Shiro-Greeva), Rachana Evam Vikriti Vinishchaya (anatomical and pathological recognition).

 3. Ayurveda interpretation and reporting of Computed Tomography findings.
4. Contrast Media - The contrast agent, mechanism of action, dose schedule, route of administration, adverse reactions, and their management.
5. Application of CT guided procedures in Ayurveda diagnosis.

• M27U2 Sharira Avayava anuccheda Drushya : Magnetic Resonance Imaging (MRI)
1. Magnetic Resonance Imaging (MRI) Siddhant Yantra Evam Vidhi: MRI principles and concepts of image formation, image acquisition, processing and MRI instrumentation and imaging system.
2. Contrast Media - types, chemical composition, mechanism of action, dose schedule, route of administration, adverse reactions and their management.
3. MRI of Shadanga (Shakha (Urdwa/ Adho), Greeva and Prushata, Antaradhi:- Urah/ Vaksha, Antaradhi:- Udarah and Sronih, Shiro-Greeva, its Rachana Evam Vikriti Vinishchaya (anatomical & pathological recognition).

4. Ayurveda interpretation and reporting of Magnetic Resonance Imaging findings.
5. MRI-guided procedures in Ayurveda diagnosis to enhance clinical accuracy.

28	**M-28 Fundamentals of Bhuta Vijnana**	1	5	10	15	30

This module covers the fundamentals of Bhuta Vijnana, its integration with clinical microbiology, infection dynamics along with Ayurveda and modern approaches to sterilization and disinfection.

  • **M28U1 Fundamentals of Bhuta Vijnana**

1.Fundamentals of Bhuta Vijnana and principles of clinical microbiology.

2.Normal and abnormal human microbiota: Exploration of the human microbiota in health and disease and its Ayurveda perspective.

3.Infection transmission and host factors: Understanding source, transmission pathways and host susceptibility through the Ayurveda framework of Upasargajanya Vyadhi.

4.Healthcare-Associated Infections (HAIs): Classification, Surveillance, and Standard Preventive Measures.

5.Environmental Surveillance and Ayurveda perspectives on Vikrita Vayu and Vikrita Jala with their role in disease spread.

6.Epidemiological patterns of infectious diseases and understanding of Vikrita Desha and Vikrita Kala as contributing factors.

7.Sterilization and disinfection – Sterilization and disinfection in hospitals and clinical settings and its concept in Ayurveda.

		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 Vyadhikshamatva Pareeksha** **This module provides an overview of immune dysfunctions, diagnostic methods, and laboratory evaluations, integrated with Ayurveda concepts of Bala, Vyadhikshamatva, and Oja, for the clinical and laboratory interpretation of immune-related disorders.** **• M29U1 Vyadhikshamatva Pareeksha** 1.Disorders related to Bala, Vyadhikshamatva and Oja: Exploration of immune dysfunctions including Types I–IV hypersensitivity, autoimmune diseases and immunodeficiency with Ayurveda concepts of Bala, Vyadhikshamatva and Oja-Kshaya. 2.Vyadhikshamatva Pareeksha Siddhant, Yantra Evam Vidhi: Immunological Diagnostic Techniques- ELISA, flow cytometry, immunofluorescence, and other techniques for immune status assessment. 3.Rasa Rakta Pareeksha (Serodiagnosis) in relation to Vyadhikshamatva: Laboratory interpretation of immune markers and serological findings. 4.Ayurveda Interpretation of immune-related disorders and associated laboratory tests: Correlating clinical and laboratory findings of immune dysfunctions with	1	5	10	15	30

	Ayurveda fundamental concepts for integrated diagnosis.					
30	**M-30 Upasargajanya Vyadhi Pareeksha I – Sukshma Bhuta Vinischaya (Bacteriology)** **This module provides knowledge of bacterial morphology, identification techniques, clinically important microbes, antimicrobial testing, and integrates laboratory findings with Ayurveda diagnostic principles for comprehensive clinical and laboratory reporting.** **• M30U1 Sukshma Bhuta Vinischaya -Rachana Evam Nidana (Morphology and Identification of bacteria)** 1. Morphology and classification of (Sukshma Bhuta) bacteria, Bacterial taxonomy and bacterial genetics. 2. Specimen collection, direct detection (staining and others) culture media and methods, isolation and identification of (Sukshma Bhuta) bacteria. **• M30U2 Sukshma Bhuta (Bacteria) of medical importance & Ayurveda interpretation** 1.Overview of Sukshma Bhuta (Bacteria) of medical importance including: -Gram positive cocci including Staphylococcus, Streptococcus, Pneumococcus etc, -Gram negative cocci of medical importance including Neisseria etc, -Gram positive bacilli of medical importance including Lactobacillus, Bacillus etc,	2	10	20	30	60

-Gram negative bacilli of medical importance including Vibrios , Pseudomonas etc.,

-Others like Enterobacteriaceae, Mycobacteria, Chlamydia etc.

2. Sukshma Bhuta (Bacteria) Pareeksha Siddhant, Yantra Evam Vidhi : Bacterial culture, antibiotic sensitivity, and Ayurveda formulation testing: Methods for culturing Sukshma Bhuta (bacteria), performing antibiotic sensitivity tests, and evaluating antimicrobial activity of Ayurveda formulations.

3. Ayurveda interpretation and integrated clinical and laboratory reporting of Sukshma Bhuta bacterial infections: Correlating culture results, sensitivity patterns, and Sukshma Bhuta (bacterial) markers with Ayurveda diagnostic principlesfor integrated clinical and laboratory reporting of Sukshma Bhuta bacterial infections.

31	**M-31 Upasargajanya Vyadhi Pareeksha II – Anu Bhuta Vinischaya (Virology)**	1	5	10	15	30

This module covers the fundamentals of virology, clinically important viruses, and integrates laboratory findings with Ayurveda principles for comprehensive evaluation and reporting of viral infections.

 • **M31U1 Anu Bhuta Vinischaya (Virology)**
1. Fundamentals of Anu Bhuta (virology): General properties, classification, genetics, replication mechanisms, and identification methods of viruses.

2. Anu Bhuta (Virus) of medical importance: Overview of clinically significant viruses such as Pox viruses, Herpes viruses, Adeno viruses, Picorna virus, Myxovirus, Enteroviruses, Human immunodeficiency virus, Hepatitis viruses etc.

| | | 4 | 20 | 40 | 60 | 120 |

3. Ayurveda interpretation and integrated clinical and laboratory reporting of Anu Bhuta (viral) Infections: Correlating laboratory findings, viral markers, and serological tests with Ayurveda fundamental principles for integrated patient evaluation.

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
32	**M-32 Upasargajanya Vyadhi Pareeksha III – Kledaja Bhuta Vinischaya Evam Krimi Vijnana (Mycology & Parasitology)** **This module provides an integrated understanding of medical mycology and parasitology with diagnostic methods, clinical relevance, and Ayurveda interpretation of fungal and parasitic diseases through laboratory findings and classical Ayurveda principles for comprehensive clinical reporting.** • **M32U1 Kledaja Bhuta Vinischaya (Mycology)** 1. Fundamentals of Kledaja Bhuta Vinischaya (Medical Mycology): Fundamentals of Kledaja Bhuta (fungi), their classification, morphology, and pathogenic potential. 2. Common Kledaja Bhuta (Fungal) Infections of Clinical Importance: Overview of	2	10	20	30	60

superficial, subcutaneous, systemic, and opportunistic fungal infections.

3. Kledaja Bhuta Pareeksha Siddhant, Yantra Evam Vidhi (Diagnostic Approaches in Mycology): Specimen collection, direct microscopy, culture methods, and identification techniques for Kledaja Bhuta (fungal pathogens).

4. Ayurveda interpretation of laboratory findingsbycorrelating laboratory-confirmed (Kledaja Bhuta) fungal infections with fundamentals of Ayurveda.

- **M32U2 Krimi Vijnana Pareeksha - Parasitology**

1.Introduction to Krimi Vijnana (Medical Parasitology): Overview of medically important parasites, transmission, and clinical relevance.

2. Adrishta Krimi (Protozoal Parasites) of Clinical Importance: General features, classification, life cycle, clinical manifestations and identification methods for Kakeruka (Entamoeba histolytica), Sasula (Entamoeba coli), Antrada(Giardia), Yoni Ashrita Adrishta Krimi (Trichomonas), Raktaja Krimi (Leishmania, Trypanosoma, Plasmodium) etc.

3. Drishta Krimi (Helminths) of Clinical Importance: Classification, characteristics, life cycle, clinical manifestations and identification techniques for Cestodes - Udarada (tapeworms), Trematodes - Basti Ashrit Drishta Krimi(Schistosoma), Yakritashrita Anu Krimi(Fasciola hepatica) and Nematodes - Mahaguda(roundworms).

4. Diagnostic Methods in Krimi Vijnana (Parasitology): Specimen collection, microscopic examination, culture and molecular methods.

5. Ayurveda reporting of Krimi (Parasitic) diseases and laboratory tests: Interpretation and documentation of laboratory findings of parasitic infections in alignment with Ayurveda principles.

33	**M-33 Recent advancements in Chhaya Evam Vikiran Vijnana, Bhuta and Krimi Vijnana.**	2	10	20	30	60
	This module covers recent advances in diagnostic imaging, focusing on quality assurance, radiation safety, and emerging technologies like AI and telemedicine it also includes recent advancements of microbiology and parasitology while highlighting recent integrative approaches combining molecular advancements with Ayurveda principles.					

• M33U1 Recent advancements and Quality assurance in Chhaya Evam Vikiran Vijnana

1. Introduction to Interventional Radiology.

2. Introduction and applications of Nuclear Medicine (SPECT, CT) and molecular imaging, Bone Density Imaging, gastrointestinal imaging and endoscopy, echo-cardiography, angiography.

3. Picture Archiving and Communication System (PACS) and Radiology Information System (RIS) & HIS.

4. Quality Assurance & Regulatory guidelines - safety protocols, biological effects of radiation & principles of radiation protection including ALARA, radiation dosimetry, dose recommendations, radiation protection equipment & regulatory boards.

5. Tele-Radiology, Telemedicine & e-learning tools.

6. AI in diagnostic imaging.

• M33U2 Recent advancements in Bhuta Vijnana (Microbiology and Parasitology)

1.Introduction to molecular biology: Concepts of molecular cloning, gel electrophoresis, DNA sequencing, Western Blotting and ELISA and their clinical applications. 2. Advanced molecular diagnostic tools: Knowledge of Polymerase Chain Reaction (PCR) Real-time PCR (qPCR), Reverse Transcriptase PCR (RT-PCR), Multiplex PCR, Next-Generation Sequencing (NGS), DNA microarrays etc. in microbial and parasitic diagnostics. 3. Microbial ecosystems and host interaction: Microbial ecosystems and their interaction with the human body like gut microbiome, skin microbiome, respiratory microbiome etc. 4. Emerging trends and integrative approaches in Bhuta Vijnana (microbiology and parasitology): Recent developments in integrative strategies combining molecular advances with Ayurveda principles.					
	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 Vyadhi Vijnana 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 : Ayurveda Diagnostic Approach						
Module Learning Objectives **(At the end of the module, the students should be able to)** 1. Interpret the principles and clinical relevance of Trividha Pramana Pareeksha in Ayurveda diagnostics. 2. Analyze Sapeksha and Vyavachedaka Nidana in identifying disease etiology. 3. Apply the concept of Trividha Bodhya Sangraha to establish accurate Vyadhi Vinischaya.						
M 1 Unit 1 Trividha Pramana Pareeksha. 1. Structured approach to patient history taking. 2. Structured approach to clinical examination. **References:** 1,2,3,4,5,7,8,9,10,11,12,13,14,15,16,17,18,28,29,30,34,35,39,40,41,42,43,44,45						
3A	**3B**	**3C**	**3D**	**3E**	**3F**	**3G**
CO1,CO3,CO4	Evaluate Trividha Pramana Pareeksha by integrating it with Trividha, Shadvidha, and contemporary diagnostic approaches, and assess the clinical relevance of Ashtasthana	2	Lecture	CE	Knows-how	L&GD

3A	3B	3C	3D	3E	3F	3G
	Pareeksha for practical diagnostic applications.					
CO1,CO3,CO4	Perform systematic case taking by eliciting accurate patient information.	5	Practical Training 1.1	PSY-GUD	Shows-how	D-BED,CBL,BL,SIM,CD
CO1,CO3,CO4	Perform a comprehensive and structured patient history, general and systemic examination guided by the patient's complaints.	7	Experiential-Learning 1.1	PSY-MEC	Shows-how	SIM,CD,CBL,D-BED

M 1 Unit 2 Sapeksha and Vyavachedaka Nidana. 1. Differential diagnosis based on patient's history.
2. Differential diagnosis based on examination findings.

References: 1,2,3,4,5,7,8,9,10,11,12,13,14,15,16,17,18,19,20,28,29,30,33,34,35,36,37,38,39,40,41,42,43,44,45,46

3A	3B	3C	3D	3E	3F	3G
CO1,CO3,CO4	Analyze Sapeksha and Vyavachedaka Nidana to establish their role in precise disease identification in Ayurveda and correlate Vyavachedaka Nidana with contemporary diagnostic methods to enhance clinical reasoning.	1	Lecture	CAN	Knows-how	PL,CBL,L&GD

M 1 Unit 3 Vyadhi Vinischaya based on Trividha Bodhya Sangraha. 1. Etiological diagnosis of the condition.
2. Pathological diagnosis of the condition.
3. Clinical diagnosis of the condition.

References: 1,2,3,4,5,6,7,8,9,10,11,12,13,14,15,16,17,18,19,20,21,22,23,24

3A	3B	3C	3D	3E	3F	3G
CO1,CO3,CO4	Analyze the process of Vyadhi Vinischaya by evaluating Vikara Prakriti, Adhishtanantara, and Samutthana Vishesha in comparison with contemporary science, and examine Vyadhi Avastha through Sama–Nirama, Purvaroopa–Roopa–Upadrava, and Sadhya–Asadhya.	2	Lecture	CAN	Knows-how	CBL,L&PPT ,DIS
CO1,CO3,CO4	Demonstrate the systematic approach to conduct differential diagnosis.	5	Practical	PSY-	Shows-	D-BED,C

| | | | | Training 1.2 | GUD | how | D,SIM,D,CBL |
| CO1,CO3,CO4 | Formulate differential diagnoses and integrate clinical inputs into a comprehensive diagnostic impression. | 6 | Experiential-Learning 1.2 | PSY-ORG | Shows-how | CD,PER,SIM,D-BED,CBL |

Practical Training Activity

Practical Training 1.1 : Systematic approach to case taking and examination.

Teacher Instruction:

Step 1: Case Introduction and History Taking - Guide students to obtain a comprehensive and structured history. Emphasize eliciting the history of present illness covering onset, duration, progression, pattern, associated symptoms, modifying factors, past medical and treatment history, travel, immunization history, and sexual history as per Under Graduate Roganidana Vikriti Vijnana Clinical Activity Book (UG RNVV CAB) as case format.

Step 2: Physical Examination - Instruct students to perform a thorough physical examination, beginning with a general examination followed by a systemic examination guided by the patient's history.

Step 3: Diagnostic Investigations - Discuss the selection of appropriate diagnostic tests such as haematology investigations, biochemistry investigation, microbiology investigations, serological tests, pathology & fluid analysis, radiological imaging techniques, ultrasonography and doppler studies, CT and MRI scans, nuclear medicine and PET scans, contrast imaging techniques, cardiac and vascular imaging, bone and breast imaging. Encourage students to identify diagnostic clues from the history and clinical examination to select relevant baseline investigations and subsequent investigation.

Practical Training 1.2 : Systematic approach to conduct differential diagnosis.

Teacher Instruction:

Step 1: As a continuation of above practical training, the teacher will guide students in formulating differential diagnoses - Support students in developing a differential diagnosis framework considering duration, symptom patterns, and systemic involvement.

Step 2: Integrate the learnings with model of diagnostic reasoning strategies in primary health care for clinical diagnosis, integrative model of clinical reasoning, dual process diagnostic reasoning model, hypothetico-deductive model, pattern recognition model, pathway for clinical reasoning model to learn intuitive approach and analytical approaches in clinical decision making.

Step 3: Students are also to be encouraged to make Ayurveda understanding of Vyavachedaka Nidana by identifying Pratyatma Lakshana among Lakshana Samucchaya. Pratyatma Lakshana in association with other Lakshana makes the diagnosis. Further, it is necessary to identify Dosha dominance in a given case by identifying the Pratytama Lakshana related to Dosha Adhikya. During this process of Vyadhi Vinischaya, common clinical presentations are to be differentiated by Purvaroopa/ Roopa/

Upashaya-Anupashaya/ Nirasa Vidhi.

Step 4: Further students are made to understand Vaydhi in terms of Nija/ Agantu, Mridu/ Daruna, Sadhya/ Asadhya, Sharirika/ Manasika, Vataja/ Pittaja/ Kaphaja/ Dvandvaja/ Sannipataja, Sukhasadhya/ Krichrasadhya/ Yapya/ Pratyakhyeya, Amashayasamuttha/ Pakvashayasamuttha, Adhyatmika/ Adhibhoutika/ Adhidaivika, Adibala Pravritta/ Janmabala Pravritta/ Doshabala Pravritta/ Sanghatabala Pravritta/ Kalabala Pravritta/ Daivabala Pravritta/ Svabhavabala Pravritta, Poorva Karmaja/ Pratyutpana Karmaja perspectives. Apply these in determining the diagnosis of the diseases based on Trividha Bodhya Sangraha.

Step 5: Determine the disease diagnosis using Trividha Bodhya Sangraha based on the above details furnished in Step 4.

Experiential learning Activity

Experiential-Learning 1.1 : Comprehensive and structured patient history and examination.

Student Instructions (Subjective and Objective Assessment):

Step 1: Teacher will allot any case from different Srotas, introduce yourself and explain the purpose of the case taking to the patient. Ask about the chief complaints, with attention to onset, duration, progression, and associated symptoms. Inquire into modifying factors, past illnesses, medications, allergies, family history, personal habits, and travel/ immunization history.

Step 2: Document the history chronologically and clearly.

Step 3: Perform general examination and systemic examination of the given case.

Step 4: Record your findings systematically.

Experiential-Learning 1.2 : Systematic approach for differential diagnosis.

Student Instructions (Diagnosis):

Step 1: As a continuation of the previous experiential learning session, utilize model of diagnostic reasoning strategies in primary health care for clinical diagnosis, integrative model of clinical reasoning, dual process diagnostic reasoning model, hypothetico-deductive model, pattern recognition model, pathway for clinical reasoning model to learn intuitive approach and analytical approaches in clinical decision making and formulate list of possible differentials and diagnosis.

Step 2: Apply Ayurveda understanding of Vyavachedaka Nidana by identifying Pratyatma Lakshana among Lakshana Samucchaya. Pratyatma Lakshana in association with other Lakshana makes the diagnosis. Further, it is necessary to identify Dosha dominancy in a given case by identifying the Pratytama Lakshana related to Dosha Adhikya. During this process of Vyadhi Vinischaya, common clinical presentations are to be differentiated by Purvaroopa/ Roopa/ Upashaya-Anupashaya/ Nirasa Vidhi.

Step 3: Further students have to assess Vaydhi in terms of Nija/ Agantu, Mridu/ Daruna, Sadhya/ Asadhya, Sharirika/ Manasika, Vataja/ Pittaja/ Kaphaja/ Dvandvaja/ Sannipataja, Sukhasadhya/ Krichrasadhya/ Yapya/ Pratyakhyeya, Amashayasamuttha/ Pakvashayasamuttha, Adhyatmika/ Adhibhoutika/ Adhidaivika, Adibala Pravritta/ Janmabala Pravritta/ Doshabala Pravritta/ Sanghatabala Pravritta/ Kalabala Pravritta/ Daivabala Pravritta/ Svabhavabala Pravritta, Poorva Karmaja/ Pratyutpana Karmaja perspectives. Apply these in determining the diagnosis of the diseases based on Trividha Bodhya Sangraha.

Step 4: Synthesis the disease diagnosis using Trividha Bodhya Sangraha based on the above details furnished.

Step 5: Present your final diagnostic impression with rationale, using both Ayurveda and contemporary approaches.

Modular Assessment	
Assessment method	**Hour**
Instructions - Conduct a structured modular assessment. The assessment will be for 25 marks. Keep a structured marking pattern. Use different assessment methods in each module for the semester. Keep a record of the structured pattern used for assessment. Calculate the modular grade point as per Table 6C. Theory Based Assessment – 25 Marks. This component includes theory questions designed to assess conceptual clarity, integrative thinking, and the ability to apply learned concepts in clinical, diagnostic, or problem-solving contexts. Questions can be framed from any instructional unit, ensuring alignment with the intended learning outcomes. Or Any practical in converted form can be taken for assessment. (25 Marks). Or Any experiential as portfolio/ reflections/ presentations, can be taken as an assessment. (25 Marks).	2

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 : Lakshana Niroopana 1.1						
Module Learning Objectives **(At the end of the module, the students should be able to)** 1. Analyze how Jwara, and Rajayakshma develop through Dosha and Dhatu imbalance, and compare them with related contemporary conditions. 2. Evaluate the key features of Jwara, Rajayakshma, and Krimi using both Ayurveda and modern diagnostic methods. 3. Create simple diagnostic tools or case models that combine classical knowledge with contemporary clinical tests.						

M 2 Unit 1 Jwara. 1. Spectrum of symptoms of Jwara.
2. Pathogenesis of Jwara.
3. Nature of Jwara.

References: 1,2,3,4,5,6,7,8,9,10,11,12,13,14,15,16,17,18,19,20,21,22,23,24,25,26,27,28,29,30,31,32,33,34,35,36,37,38,39,40,41,42,43,44,45,46

3A	3B	3C	3D	3E	3F	3G
CO1,CO3,CO4	Analyze the Nidana of Jwara in Sushruta Samhita based on Bahya Hetu classifications and correlate them with causative factors in contemporary medical science.	1	Lecture	CAN	Knows-how	L&GD,BL,CBL
CO1,CO3,CO4	Construct the Vidhi Samprapti of Jwara and integrate its subclassifications—Sama and Vishama Jwara—with the concepts of Antarvega and Bahirvega Jwara using insights from contemporary disease mechanisms.	2	Lecture	CS	Knows-how	CBL,L&PPT
CO1,CO3,CO4	Analyze and interpret the pathological events of Antarvega/ Gambhira Jwara and their progression with Abhyantara Visarpa, mapping them parallel to Systemic Inflammatory Response Syndrome (SIRS).	1	Lecture	CAN	Knows-how	BL,LS,L&PPT
CO1,CO3,CO4	Evaluate and correlate Vishama Jwara as Abhishangaja Jwara with febrile patterns in contemporary medicine, analyze the pathogenesis of Sannipata Jwara through Prakriti Sama Samaveta and Vikriti Vishama Samaveta, assess the recurrence and chronicity of Punaravartaka Jwara with relapsing fever syndromes in contemporary science, and appraise Vatabalasaka and Pralepaka Jwara.	2	Lecture	CE	Know	BL,L&GD,CBL
CO1,CO3,CO4	Conceptualize the Samprapti of Jwara across Saama, Pachyamana, and Nirama stages, and interpret the outcomes of Daruna Moksha and Adaruna Moksha in relation to prognosis and disease resolution.	1	Lecture	CS	Know	L&GD
CO1,CO3,CO4 ,CO6	Appraise the spectrum of differential diagnoses for fever, including the identification framework for Fever of Unknown Origin (FUO).	1	Lecture	CE	Knows-how	BL,PER,L_VC
CO2,CO3,CO4	Demonstrate step-by-step assessment of fever case.	10	Practical	PSY-	Shows-	SIM,D-

3A	3B	3C	3D	3E	3F	3G
,CO5			Training 2.1	GUD	how	BED,CBL
CO1,CO3,CO4	Perform a comprehensive history and a focused, system-guided physical examination of a patient with fever, identifying clinical signs that correlate with history to narrow diagnostic possibilities.	6	Experiential-Learning 2.1	PSY-GUD	Shows-how	SIM,D-BED,RLE,CD,CBL
CO1,CO2,CO3,CO4	Select and interpret diagnostic investigations for fever, correlate them with biomedical indicators, and construct differential diagnoses by integrating clinical pattern recognition with Ayurveda diagnostic principles.	5	Experiential-Learning 2.2	CAN	Shows-how	SIM,CD,D-BED,CBL
CO1,CO2,CO3,CO4	Assess FUO through history, examination, and investigations with periodic review, apply clinical reasoning to identify the cause, and recognize red flag signs to guide urgent care.	6	Experiential-Learning 2.3	PSY-GUD	Shows-how	CD,D-BED,SIM,CBL

M 2 Unit 2 Rajayakshma. 1. Risk factors of Rajayakshma.
2. Progression of Rajayakshma.
3. Manifestation of Rajayakshma.

References: 1,2,3,4,5,6,7,8,9,10,11,12,13,14,15,16,17,18,19,20,21,22,23,24,25,26,27,28,29,30,31,32,33,34,35,36,37,38,39,40,41,42,43,44,45,46

3A	3B	3C	3D	3E	3F	3G
CO1,CO3,CO4	Appraise the Nidana of Rajayakshma by distinguishing the role and interplay of Pradhanika Hetu and Vyabhichari Hetu in disease causation.	1	Lecture	CE	Knows-how	DIS,CBL
CO1,CO3,CO4	Analyze the understanding of Triroopa, Shadroopa, and Ekadasharoopa of Rajayakshma.	1	Lecture	CAN	Know	L&GD,SDL,LS
CO1,CO3,CO4	Evaluate the Ayatana Vishesha associated with Rajayakshma and correlate it with the principle of Avyadhi Sahani to understand Adhishtana and disease progression.	1	Lecture	CE	Knows-how	L&GD,PL,PBL
CO1,CO3,CO4	Synthesize the pathogenesis of Rajayakshma through the perspective of Roga Samuhanam and reconstruct its clinical understanding by integrating classical Ayurveda	1	Lecture	CS	Know	SDL,LS,BS,L&G

						D
CO1,CO3,CO4,CO6	Analyze contemporary spectrum of chronic, multisystem disorders such as pulmonary and extrapulmonary tuberculosis and primary complex, primary and secondary immunodeficiency diseases, malignancy-associated cachexia, and other immunocompromised states.	1	Lecture	CAN	Know	BL,L&GD
CO2,CO3,CO4,CO5	Demonstrate the clinical assessment of fever in an immunocompromised patient.	10	Practical Training 2.2	PSY-GUD	Shows-how	SIM,CBL,D-BED
CO1,CO3,CO4	Elicit history and perform targeted examination in immunocompromised patients with fever, correlating signs with systemic symptoms.	6	Experiential-Learning 2.4	PSY-GUD	Shows-how	CBL,CD,SIM,D-BED,RP
CO1,CO2,CO3,CO4	Select diagnostic tests and formulate differential diagnoses for fever in immunocompromised patients using symptom patterns and Ayurveda principles.	5	Experiential-Learning 2.5	PSY-GUD	Shows-how	RP,D-BED,CD,CBL,SIM

M 2 Unit 3 Krimi.1. Symptomatic patterns of Krimi.
2. Pathophysiological basis of Krimi.
3. Clinical course of Krimi.

References: 1,2,3,4,5,6,7,8,9,10,11,12,13,14,15,16,17,18,19,20,21,22,23,24,25,26,27,28,29,30,31,32,33,34,35,36,37,38,39,40,41,42,43,44,45,46

3A	3B	3C	3D	3E	3F	3G
CO1,CO3,CO4	Describe the Sanjata Krimi Lakshana and analyze its classical presentation in the context of contemporary parasitic and helminthic infestations.	1	Lecture	CE	Knows-how	L&GD,CBL,ML
CO1,CO3,CO4,CO6	Analyze the manifestation across various systems with infestations by helminthiasis, protozoal infections, and dermatophytosis.	1	Lecture	CAN	Knows-how	L&GD,CBL,BL
CO2,CO3,CO4,CO5	Demonstrate the stepwise clinical assessment of intestinal infestation.	10	Practical Training 2.3	PSY-GUD	Shows-how	SIM,RP,D-BED,CB

						L
CO1,CO3,CO4	Elicit a structured history and perform a thorough general, abdominal, and perianal examination in patients suspected of intestinal infestation.	6	Experiential-Learning 2.6	PSY-GUD	Shows-how	D-BED,CBL,SIM,RP,CD
CO1,CO2,CO3,CO4	Select and interpret diagnostic investigations to confirm Krimi infestation and formulate differential diagnoses for intestinal infestation.	5	Experiential-Learning 2.7	PSY-GUD	Shows-how	CBL,CD,D-BED,SIM,RP

Practical Training Activity

Practical Training 2.1 : Clinical assessment of fever case.

Teacher Instructions:
Step 1: Case Introduction and History Taking - Guide students to systematically obtain a detailed history, particularly history of present illness including onset, duration, severity, course, different characters of fever, timing of fever, modifying factors if any, other clinical features associated and their elaboration, past medical history, treatment history, travel history, and immunization history.
Step 2: Physical Examination - Instruct students to perform a thorough physical examination, beginning with a general assessment followed by a system-specific examination guided by the patient's history.
Step 3: Diagnostic Investigations - Discuss the selection of appropriate diagnostic tests based on clinical findings from history and examination. Encourage interpretation of baseline investigations in relation to clinical data, and identify clues that may prompt the need for further, more specific investigations. and correlate them with clinical observations.
Step 4: Formulating Differential Diagnoses - Support students in developing a differential diagnosis framework considering duration, symptom patterns, and systemic involvement. Encourage inclusion of Ayurveda understanding such as Nija/ Agantu, Sama/ Vishama, Eka/ Dwandwa/ Sannipata, Bahirvega/ Antarvega, Sheetapoorva/ Dahapoorva, Swatantra/ Paratantra, Saama/ Pachyamana/ Nirama/ Jeerna/ Punaravartaka, Daruna Moksha/ Adaruna Moksha perspectives. Also demonstrate Avastha (Purvaroopa, Roopa and Upadrava as well as Ama, Pachyamana and Pakva Avastha as applicable).
Step 5: Clinical Reasoning and Diagnostic Synthesis - Help students synthesize information from above data to arrive at a probable diagnosis, integrating both Ayurveda and contemporary perspectives.

Practical Training 2.2 : Clinical assessment of fever in an immunocompromised patient.

Teacher Instruction:
Step 1: Case Introduction and History Taking - Guide students to systematically obtain a detailed history, particularly history of present illness including onset, duration,

severity, course of the symptom, characters, timing of symptoms, modifying factors if any, past medical history, treatment history and immunization history.

Step 2: Details of personal history, occupational history and socioeconomic history as Ayatana Vishesha focusing on the causation of lowered heath status and immunocompromised state.

Step 3: Physical Examination - Teach students to perform physical examination particularly a general examination and history based focused systemic examination in specific.

Step 4: Diagnostic Investigations - Discuss the selection of appropriate diagnostic tests based on clinical findings from history and examination. Encourage interpretation of baseline investigations in relation to clinical data, and identify clues that may prompt the need for further, more specific investigations and correlate them with clinical observations.

Step 5: Differential Diagnosis Formulation - Encourage students to generate a differential diagnosis based on history, physical examination and investigation. The differential diagnosis may be based on fever, persistent cough (usually >2 weeks), weight loss, night sweats, anorexia, hemoptysis, and malaise as key indicators. Encourage inclusion of Ayurveda understanding such as the Srotas involved, Triroopi-Shadroopi-Ekadasharoopi and even Ayatana Vishesha. Also demonstrate Avastha (Purvaroopa, Roopa and Upadrava as applicable).

Step 6: Clinical Reasoning and Synthesis - Guide students to integrate clinical findings and investigation results to arrive at the most likely diagnosis as per Ayurveda and Contemporary science.

Practical Training 2.3 : Clinical assessment of intestinal infestation.

Teacher Instruction:

Step 1: Case Introduction and History Taking - Guide students to obtain a comprehensive and structured history on colicky abdominal pain, altered appetite, diarrhoea, bloating, nausea, vomiting, and anal itching, etc. Emphasize eliciting the history of present illness covering onset, duration, progression, pattern, associated symptoms, modifying factors, past medical and treatment history, and travel history.

Step 2: Physical Examination - Instruct students to perform a thorough physical examination, beginning with a general assessment followed by a system-specific examination guided by the patient's history.

Step 3: Diagnostic Investigations - Discuss the selection of appropriate diagnostic tests based on clinical findings from history and examination. Encourage students to identify diagnostic clues from baseline investigations and correlate them with clinical observations.

Step 4: Formulating Differential Diagnoses - Support students in developing a differential diagnosis framework for the complaints of colicky abdominal pain, altered appetite, diarrhoea, bloating, nausea, vomiting, and anal itching, etc. considering duration, symptom patterns, and systemic involvement. Encourage inclusion of Ayurveda understanding such as Aupasargika and Abhishanga, perspectives as well as Vyadhi Vinischaya based on the Lakshana Samucchaya. Also demonstrate the Avastha (Purvaroopa, Roopa, and Upadrava).

Step 5: Clinical Reasoning and Diagnostic Synthesis - Help students synthesize information from history, examination, and investigations to arrive at a probable diagnosis, integrating insights from both Ayurveda and contemporary biomedical perspectives.

Experiential learning Activity

Experiential-Learning 2.1 : Subjective and objective assessment of fever case.

Student Instructions (Subjective Assessment):

Step 1: Teacher will provide a real case or simulated case of fever.

Step 2: Elicit the chief complaint with duration and elaborate history of present illness.

Step 3: Record relevant past medical history, treatment history, personal history, occupational history, travel exposure, and immunization details.

Step 4: Document findings in a structured format (customized RNVV UG CAB/ SOAP Note).

Step 5: The student should draw an etiological diagnosis, and or Srotas/ system involved.

Student Instructions (Objective Assessment):

Step 1: As a continuation to previous experiential learning session of fever, begin with general examination of the given case.

Step 2: Conduct targeted systemic examination based on chief complaints.

Step 3: Note abnormal findings and correlate with history.

Step 4: Document systemic clues using clinical templates.

Step 5: The student should draw a pathological diagnosis, and or Srotas/ system involved.

Experiential-Learning 2.2 : Planning for investigations and diagnosis of fever.

Student Instructions (Planning for Diagnostics):

Step 1: As a continuation to previous experiential learning session of fever, begin with identifying minimum baseline tests required for the given case.

Step 2: Justify the selection of baseline investigation based on history and examination.

Step 3: Interpret the reports and correlate them with the history and clinical findings to arrive at a diagnosis.

Step 4: Further justify the need of ordering and interpreting subsequent investigations for a precise diagnosis.

Step 5: Classify investigations as confirming, excluding, or narrowing diagnoses.

Student Instructions (Diagnosis):

Step 1: As a continuation to previous experiential learning session of fever, based on clinical findings considering duration, symptom patterns, and systemic involvement, list few differential diagnoses.

Step 2: Apply diagnostic reasoning strategies in primary health care for clinical diagnosis, integrative model of clinical reasoning, dual process diagnostic reasoning model, hypothetico-deductive model, pattern recognition model, pathway for clinical reasoning model to learn intuitive approach and analytical approaches in clinical decision making as applicable to arrive at a diagnosis of the given case.

Step 3: Based on the relevant history and examination identify the Pratyatma Lakshana, Pradhana Dosha (Shareerika and Manasika), Pradhana Srotas, Dushya Dushti (Dhatu, Upadhatu, Manas, Indriya, Avayava and Mala – Vruddhi/ Kshaya/ Dushti), Sroto Dushti Lakshana (Atipravrtti, Sanga, Vimarga Gamana, Siraja Granthi/ Kutila Sira/ Margavarana), Sa Agni Ama (Jatharagni – Vishama/ Teekshna/ Manda, Dhatvagni – Manda and Bhutagni – Manda), and Niragni Ama (Dushta Dosha, Sanchita Mala – Bahir Mukha Shareera Chidra Upalepita Mala/ Saama Dhatu/ Puyaroopi Mala/ Malaroopi Dushta Dosha/ Anya Mala - Specify), Anubandha Dosha. Also, identify Avastha

(Purvaroopa, Roopa and Upadrava as applicable as well as Ama, Pachyamana and Pakva Avastha).

Step 4: Recognize the condition using Ayurveda understandings like Nija/ Agantu, Sama/ Vishama, Eka/ Dwandwa/ Sannipata, Bahirvega/ Antarvega, Sheetapurva/ Dahapurva, Swatantra/ Paratantra, Saama/ Pachyamana/ Nirama/ Jeerna/ Punaravartaka, Daruna Moksha/ Adaruna Moksha perspectives (Eg. of a diagnosis: Agantu-Sama-Bahirvega-Dahapurvaka-Swatantra-Vata Jwara).

Step 5: Present differential diagnosis in class or clinical rounds.

Experiential-Learning 2.3 : Initial review for FUO, assessing its causes and redflags.

Student Instructions (Initial Review for FUO):

Step 1: Teacher will provide a real case or simulated case to take detailed history including symptom chronology, travel, exposure, comorbidities, and past interventions.

Step 2: Perform a structured general and systemic examination.

Step 3: Review baseline investigation panel.

Step 4: Reassess history and clinical signs after 48–72 hours or after new developments.

Student Instructions (Assessing cause of FUO):

Step 1: As a continuation to previous experiential learning session, collate and organize all clinical and diagnostic data.

Step 2: Use a diagnostic grid to match symptoms and lab patterns with possible causes.

Step 3: Update differentials based on evolving evidence and re-evaluation.

Step 4: Correlate Ayurveda perspectives such as Swatantra/ Paratantra, Dhatugata, Naveena/ Jeerna Jwara, etc.

Student Instructions (FUO Redflags):

Step 1: Conduct a survey in hospital setting (OPD/ IPD) to recognize danger signs.

Step 2: Chart and monitor red flags during every visit or follow-up.

Step 3: Note the clinical response or progression post-intervention.

Step 4: Highlight how these signs help in early escalation and prognosis.

Experiential-Learning 2.4 : Subjective and objective assessment of immunocompromised patient with fever.

Student Instructions (Subjective Assessment):

Step 1: Teacher will allot a real case or simulated case for interviewing a patient with suspected or known immunocompromise and fever.

Step 2: Record history of present illness - onset, duration, course of the symptom, character, severity, modifying factors, associated symptoms,

Step 3: Record past history (comorbidities), treatment history (steroid therapy/ frequent antibiotic therapy), family history, personal history (suppression of natural urges/ diet and nutrition/ sexual history), occupational history (physical and mental stress) and socioeconomic history (suppression of natural urges, and psychological stress).

Step 4: Interpret these in light of Ayatana Vishesha resulting in immunocompromised state.

Student Instructions (Objective Assessment):

Step 1: As a continuation to previous experiential learning session conduct a general examination.

Step 2: Perform system-specific examination based on history.

Step 3: Identify subtle clues and evidences involving different systems.

Step 4: Document findings in a system-wise format to discern the underlying system/ Srotas.

Experiential-Learning 2.5 : Planning for investigation and diagnosis of fever in immunocompromised patient.

Student Instructions (Planning for Investigation):

Step 1: As a continuation to previous experiential learning session list baseline investigations.

Step 2: Interpret the baseline investigation results and if necessary order specific tests based on history and systemic examination.

Step 3: Interpret findings and correlate with symptoms and physical signs to confirm the diagnosis and system/ Srotas involved.

Student Instructions (Diagnosis):

Step 1: As a continuation to previous experiential learning session list key clinical symptoms: fever, cough >2 weeks, weight loss, anorexia, hemoptysis.

Step 2: Create a differential diagnosis list.

Step 3: Use Ayurveda understandings like Srotodusti, Dosha involvement, and Rogibala. Also, identify Avastha (Purvaroopa, Roopa and Upadrava as applicable).

Step 4: Include classifications such as Triroopi, and Shadroopi, and Ekadasha Roopi.

Experiential-Learning 2.6 : Subjective and objective assessment of patient suspected of intestinal infestation.

Student Instructions (Subjective Assessment):

Step 1: Teacher will allot a real case or simulated case with key complaints: colicky abdominal pain, altered appetite, nausea, bloating, vomiting, diarrhoea, anal itching, etc.

Step 2: Clarify onset, duration, progression, aggravating/ relieving factors, and time of day.

Step 3: Take past history of similar episodes, medication use, treatment history, dietary habits (faulty food habits).

Step 4: Explore travel history, personal hygiene, and exposure to contaminated food/ water.

Step 5: Record the subjective assessment in a self-designed format.

Student Instructions (Objective Assessment):

Step 1: As a continuation of the previous experiential learning session, begin with general examination.

Step 2: Perform system-specific examination based on history.

Step 3: Identify subtle clues and evidences involving different systems.

Step 4: Document findings in a system-wise format to discern the underlying system/ Srotas.

Experiential-Learning 2.7 : Planning for investigation and diagnosis of intestinal infestation.

Student Instructions (Planning for Investigation):

Step 1: As a continuation to previous experiential learning session list baseline investigations.

Step 2: Interpret the baseline investigation results and if necessary order specific tests based on history and systemic examination.

Step 3: Interpret findings and correlate with symptoms and physical signs to confirm the diagnosis and system/ Srotas involved.

Student Instructions (Diagnosis):

Step 1: List differentials for the complaints of colicky abdominal pain, altered appetite, nausea, bloating, vomiting, diarrhoea, anal itching, etc.

Step 2: Apply diagnostic reasoning strategies in primary health care for clinical diagnosis, integrative model of clinical reasoning, dual process diagnostic reasoning model, hypothetico-deductive model, pattern recognition model, pathway for clinical reasoning model to learn intuitive approach and analytical approaches in clinical decision making as applicable to arrive at a diagnosis of the given case.

Step 3: Identify Pratyatma Lakshana supported by Lakshana Samucchaya. It should also include various aspects of the disease such as Vyadhi Hetu, Dushta Dosha - Dushya, Vyadhi Swabhava, Sadhya Asadhya, Anubandhya and Anubandha. Also, identify Avastha (Purvaroopa, Roopa and Upadrava as applicable).

Step 4: Present the diagnosis in a clinical summary format.

Modular Assessment

Assessment method	Hour
Instructions - Conduct a structured modular assessment. The assessment will be for 75 marks. Keep a structured marking pattern. Use different assessment methods in each module for the semester. Keep a record of the structured pattern used for assessment. Calculate the modular grade point as per Table 6C. Theory Based Assessment – 25 Marks. This component includes theory questions designed to assess conceptual clarity, integrative thinking, and the ability to apply learned concepts in clinical, diagnostic, or problem-solving contexts. Questions can be framed from any instructional unit, ensuring alignment with the intended learning outcomes. And Any practical in converted form can be taken for assessment. (25 Marks). And Any experiential as portfolio/ reflections/ presentations, can be taken as an assessment. (25 Marks).	6

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/	3E Domain/ Sub Domain	3F Level (Does/Shows how/	3G Teaching Learnin g

		Experiential Learning		Knows how/Know w)	g Methods

Module 3 : Lakshana Niroopana 1.2

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

    1. Identify the clinical features, and progression of Raktapitta, Kushta and Pandu-Kamala group of disorders.
    2. Correlate Ayurveda concepts with modern understanding of bleeding, skin, and hepatic-hematologic disorders using clinical and laboratory findings.
    3. Create integrated diagnostic plans by combining classical principles with contemporary clinical approaches.

  M 3 Unit 1 Raktapitta.1. Collective symptomatology of Raktapitta.
2. Pathological dynamics of Raktapitta.
3. Clinical expression of Raktapitta.

References: 1,2,3,4,5,7,8,9,10,11,12,13,14,15,16,17,18,19,20,21,22,23,24,25,26,27,28,29,30,31,32,33,34,35,36,37,38,39,40,41,42,43,44,45,46

3A	3B	3C	3D	3E	3F	3G
CO1,CO3,CO4	Interpret Raktapitta definitions with Dosha Dushti from the Bruhatrayee and analyze its Lakshana—Purvaroopa, Roopa, and Upadrava—in relation to contemporary clinical conditions.	1	Lecture	CAN	Knows-how	L&GD,PL,TBL
CO1,CO3,CO4	Analyze the etiological factors of Raktapitta, correlate Nidana–Samprapti–Lakshana with its types, and assess Purvaroopa in relation to Vyadhi Swabhava and Asadhya.	1	Lecture	CAN	Knows-how	PBL,L&GD,REC
CO1,CO3,CO4	Justify Rakta Dushti Lakshana in clinical decision-making for Raktapitta-like conditions and interpret differential diagnoses for bleeding disorders using an identification framework.	1	Lecture	CE	Knows-how	L_VC,DSN,CBL

3A	3B	3C	3D	3E	3F	3G
CO2,CO3,CO4,CO5	Demonstrate step-by-step assessment of bleeding disorders.	3	Practical Training 3.1	PSY-GUD	Shows-how	CBL,SIM,RP,CD,D-BED
CO2,CO3,CO4,CO5	Demonstrate how to examine Dushta Rakta, identify signs of abnormal Dosha, and compare them with the history and examination.	3	Practical Training 3.2	PSY-GUD	Shows-how	CBL,DL,SIM,D-BED
CO1,CO3,CO4	Elicit a comprehensive history and perform a structured physical examination in patients with suspected bleeding disorders.	3	Experiential-Learning 3.1	PSY-ADT	Shows-how	PER,CD,CBL,D-BED,SIM
CO1,CO2,CO3,CO4	Select and interpret diagnostic investigations for bleeding disorders and formulate differential diagnoses.	3	Experiential-Learning 3.2	CS	Shows-how	CD,D-BED,SIM,CBL
CO1,CO2,CO3,CO4	Analyze hematological samples from patients with Rakta Pradoshaja Vikara to identify pathological deviations.	2	Experiential-Learning 3.3	CAN	Knows-how	SIM,CBL,LRI,DL

M 3 Unit 2 Kushta – Visarpa, Kshudra Roga (Twak adhishtana), Shwitra, Sheetapitta, Udarda, Kotha, Utkotha. 1. Spectrum of dermatological manifestations of Kushta and allied conditions.
2. Pigmentary system abnormality.
3. Ayurveda pathology components.
4. Site-specific pathology.
5. Clinical differentiation of Kushta and allied conditions – Visarpa, Kshudra Roga (Twak Adhishtana), Shwitra, Sheetapitta, Udarda, Kotha, Utkotha.

References: 1,2,3,4,5,6,7,8,9,10,11,12,13,14,15,16,17,18,19,20,21,22,23,24,25,26,27,28,29,30,31,32,33,34,35,36,37,38,39,40,41,42,43,44,45,46

3A	3B	3C	3D	3E	3F	3G
CO1,CO3,CO4	Analyze Pratyatma Lakshana of dermatological manifestations with primary, secondary, and combined skin lesions, and correlate Hetu, Samprapti, and Lakshana with contemporary science.	1	Lecture	CAN	Knows-how	L&GD,CBL

3A	3B	3C	3D	3E	3F	3G
CO1,CO3,CO4,CO5	Construct a differential diagnostic framework for Shwitra/Kilasa, differentiate Kushta, Visarpa, Visphota, Sheetapitta, Udarda, Kotha, and Utkotha by clinical features, progression, and pathogenesis, and analyze Pratyatma Lakshana, Adhishtana, and Lakshana Samucchaya of Shleepada in correlation with contemporary science.	1	Lecture	CS	Knows-how	L&GD,CD,CBL
CO1,CO3,CO4	Analyze Vidarika as described in Charaka Samhita by mapping it to contemporary disease models and relating it to the spectrum of dermatological conditions including autoimmune, infectious, allergic, inflammatory, pigmentary, parasitic, and cosmetic disorders.	1	Lecture	CAN	Knows-how	BL,CBL,L&GD,PBL
CO2,CO3,CO4,CO5	Demonstrate clinical identification, Dosha Bheda, and differential diagnosis of Kushta, Kshudra roga - Twak Adhishtana, Shwitra, Sheetapitta, Udarda, Kotha, Utkotha, Visarpa, Visphota, Shleepada, Vidarika.	10	Practical Training 3.3	PSY-GUD	Shows-how	CD,DIS,SIM,CBL,D-BED
CO1,CO3,CO4	Elicit a detailed clinical history and perform a structured examination of skin lesions to classify primary, secondary, and mixed lesions.	5	Experiential-Learning 3.4	PSY-GUD	Shows-how	CBL,D-BED,CD,SIM,RP
CO1,CO2,CO3,CO4	Interpret diagnostic investigations for dermatological evaluation and formulate differential diagnoses by synthesizing clinical findings to arrive at a probable diagnosis.	5	Experiential-Learning 3.5	CS	Knows-how	CBL,CD,D-BED,SIM,PER

M 3 Unit 3 Pandu, Haleemaka, Kamala, and Kumbhakamala. 1. Spectrum of clinical features of Pandu, Haleemaka, Kamala, and Kumbhakamala.
2. Pathophysiological continuum.
3. Dosha–Dhatu involvement.
4. Other components in Pandu, Haleemaka, Kamala, and Kumbhakamala.

References: 1,2,3,4,5,7,8,9,10,11,12,13,14,15,16,17,18,19,20,21,22,23,24,25,26,27,28,29,30,31,32,33,34,35,36,37,38,39,40,41,42,43,44,45,46

3A	3B	3C	3D	3E	3F	3G
CO1,CO3,CO4	Analyze the Lakshana of Pandu, Kamala, and Haleemaka, and the Nidana of Pandu and Kamala with their pathophysiological implications.	1	Lecture	CAN	Knows-how	L&GD,REC,SDL
CO1,CO3,CR4	Analyze the Samanya and Vishishta Samprapti of Pandu with biomedical perspectives	1	Lecture	CAN	Knows-	PER,L&P

	and interpret the pathophysiology of Pandu and Haleemaka by correlating their Samprapti and Lakshana with contemporary clinical interpretations.				how	PT ,REC
CO1,CO3,CO4	Construct the pathophysiology of Kamala by correlating Samprapti and Lakshana with contemporary interpretations, and justify the clinical presentation of Kumbha Kamala with contemporary science.	1	Lecture	CS	Knows-how	BL,DIS,C BL,PER
CO1,CO3,CO4 ,CO5	Assess Asadhya Lakshana in Pandu and Kamala with prognostic and clinical implications using Ayurveda and contemporary diagnostics, and appraise differential diagnoses of anaemia within a diagnostic framework.	1	Lecture	CE	Knows-how	CD,PER, CBL,SDL
CO2,CO3,CO4 ,CO5	Demonstrate clinical assessment of Pandu and Haleemaka.	4	Practical Training 3.4	PSY-GUD	Shows-how	CD,D-BE D,SIM,C BL
CO1,CO3,CO4	Elicit a detailed history and perform a targeted physical examination to identify general and system-specific signs of Pandu and Haleemaka.	2	Experiential-Learning 3.6	PSY-GUD	Shows-how	D-BED,C D,SIM,C BL
CO1,CO2,CO3 ,CO4	Interpret baseline and advanced investigations, and formulate differential diagnoses by synthesizing clinical and investigative findings to arrive at a probable diagnosis of Pandu or Haleemaka.	2	Experiential-Learning 3.7	CS	Knows-how	CD,SIM, D-BED,C BL,RP
CO1,CO3,CO4	Elicit a comprehensive history and perform a focused clinical examination to assess signs of Kamala and Kumbhakamala.	2	Experiential-Learning 3.8	PSY-GUD	Shows-how	RP,CBL, SIM,CD
CO1,CO2,CO3 ,CO4	Interpret investigations and formulate differential diagnoses by synthesizing clinical and investigational findings to establish a probable diagnosis of Kamala or Kumbhakamala.	2	Experiential-Learning 3.9	CS	Knows-how	CBL,CD, RP,SIM, D-BED

Practical Training Activity

Practical Training 3.1 : Assessment of bleeding disorders.

Teacher Instruction:

Step 1: Case Introduction and History Taking - Instruct students to methodically collect a detailed patient history, with a particular focus on the history of present illness. This includes information on the onset, duration, severity, and site of bleeding manifestations such as purpura, ecchymosis, or hematoma; progression of symptoms; any modifying factors; associated clinical features and their elaboration; as well as past medical and treatment history.

Step 2: Physical Examination - Train students to conduct a comprehensive physical examination, starting with a general assessment followed by a focused systemic examination guided by the patient's history and presenting complaints.

Step 3: Diagnostic Investigations - Discuss the selection of appropriate diagnostic tests based on clinical findings from history and examination. Encourage interpretation of baseline investigations in relation to clinical data, and identify clues that may prompt the need for further, more specific investigations and correlate them with clinical observations.

Step 4: Formulation of Differential Diagnosis - Encourage students to develop a list of differential diagnoses by integrating information from the history and physical examination. Emphasize consideration of factors such as the site and timing of bleeding, family and drug history, underlying medical conditions (e.g., cirrhosis), nutritional status, and relevant histories like snakebite or infectious diseases. Additionally, guide students to incorporate Ayurveda understanding including Vyadhi Hetu, Dosha involvement, Gati, and whether the condition is Swatantra or Paratantra. Also demonstrate Avastha (Purvaroopa, Roopa and Upadrava as applicable).

Step 5: Clinical Reasoning and Diagnostic Synthesis - Support students in synthesizing clinical findings and investigative results to determine the most probable diagnosis, incorporating both classical and contemporary biomedical perspectives.

Practical Training 3.2 : Assessment of Dushta Rakta.

Teacher Instruction:
 Step 1: Exploring the Dosha Dushta Lakshana - Students are instructed to compile all the literature from various textbooks of Ayurveda related to Dushta Rakta Lakshana. They are analyzed and summarized based on the different physico-chemical properties, organoleptic properties such as Varna, Gandha, Sheetha - Ushna Guna, Skandana Property, Bahala, Picchila, Mamsapeshi Prabha, Sheegra Gaami and Mandha Gaami, Phenilam, Snighdam, Rooksham, Parusham, Vishadam.

Step 2: Integration of Dosha Dushta lakshana with the different analytical procedures: The summarized dushta lakshana are analyzed based on their different physico-chemical properties, organoleptic properties etc. in mere healthy individuals.

Step 3: Evolving the reference range - Based on the observations and results obtained in the sample of healthy individual, a reference range is evolved.

Step 4: Analysing Dosha Dushti - These tests are carried out in the sample obtained by patients of Rakta Pradoshaja Vikara. Results are correlated with reference range and inferred the Dosha Dushti.

Step 5: Clinical Reasoning and Diagnostic Synthesis - Results are clinically correlated with the signs and symptoms of the corresponding patients in whom sample is collected and the Rakta Dushti is established.

Practical Training 3.3 : Clinical assessment of Kushta spectrum of disorders.

Teacher Instruction:
Step 1: Case Introduction and History Taking - Instruct students to methodically collect a detailed patient history, with a particular focus on the history of present illness.

This includes information on the onset, duration, distribution, extension of skin lesion; severity, course and character; modifying factors if any; associated features and their elaboration. Focused attention is to be given to consideration related with the personal history including the Satmya - Asatmya – Viruddha – various forms of physical contact – general medical history - family history - sexual history - treatment history – socioeconomical history – trauma/ injury, occupational history.

Step 2: Physical Examination - Train students to conduct a comprehensive physical examination, starting with a general assessment followed by a focused systemic examination guided by the patient's history and presenting complaints. Detailed understanding of the skin lesions considering the primary, secondary lesion and combined lesions and their significance in making the diagnosis are to be taught.

Step 3: Diagnostic Investigations - Discuss the selection of appropriate investigations to support or confirm the diagnosis, based on history and clinical findings. Encourage interpretation of baseline investigations in relation to clinical data, and identify clues that may prompt the need for further, more specific investigations.

Step 4: Formulation of Differential Diagnosis - Encourage students to develop a list of differential diagnoses by integrating information from the history and physical examination. Emphasize consideration of factors such as the site and distribution of skin lesion, type of skin lesion, progression of skin lesion, symmetry, associated symptoms, severity of skin lesion etc. in considering the differential diagnosis. Additionally, guide students to incorporate Vyadhi Vinischaya based on the various Pratyatma Lakshana supported by Lakshana Samucchaya. It should also include various aspects of the disease such as Vyadhi Hetu, Dushta Dosha - Dushya, Vyadhi Swabhava, Sadhya Asadhya, Anubandhya and Anubandha. Also demonstrate Avastha (Purvaroopa, Roopa and Upadrava as applicable).

Step 5: Clinical Reasoning and Diagnostic Synthesis - Support students in synthesizing clinical findings and investigative results to determine the most probable diagnosis, incorporating both Ayurveda and contemporary perspectives.

Practical Training 3.4 : Clinical assessment of Pandu and Haleemaka.

Teacher Instruction:

Step 1: Case Introduction and History Taking - Guide students to systematically gather a comprehensive patient history, emphasizing the detailed evaluation of the history of present illness particularly fatigue, paraesthesia, loss of appetite, exertional dyspnoea etc. This should include the onset, duration, the course and nature of symptoms; any modifying or triggering factors; and the presence of associated clinical features with its elaboration. Special attention should be given to aspects of general medical background, past treatments, family history, gynaecological history, personal history, socioeconomic history, and occupational history.

Step 2: Physical Examination - Teach students to perform physical examination particularly a general examination and history based focused systemic examination in specific.

Step 3: Diagnostic Investigations - Facilitate discussion on selecting and interpreting relevant diagnostic investigations to support or confirm clinical impressions. Encourage students to correlate findings from baseline investigations with clinical data, and to recognize when further, targeted diagnostic tests are necessary for a more refined evaluation.

Step 4: Formulation of Differential Diagnosis - Encourage students to formulate a comprehensive differential diagnosis by integrating history and clinical findings. Emphasize key diagnostic factors such as the pallor in association with fatigue, exertional dyspnoea, loss of appetite, paraesthesia, ankle oedema etc. Additionally, guide students in applying Ayurveda understanding, including Vyadhi Hetu, Dushya-Dosha involvement, Sadhya or Asadhya and assessment of whether the condition is Anubandhya Vyadhi or Anubandha Vyadhi. Also demonstrate Avastha (Purvaroopa, Roopa and Upadrava as applicable).

Step 5: Clinical Reasoning and Diagnostic Synthesis - Support students in synthesizing clinical information and investigative findings to arrive at the most likely diagnosis

by encouraging a balanced diagnostic approach that integrates Ayurveda understanding with contemporary reasoning.

Experiential learning Activity

Experiential-Learning 3.1 : Subjective and objective assessment of patients with suspected bleeding disorders.

Student Instructions (Subjective Assessment):

Step 1: Take detailed history of bleeding symptoms (purpura, ecchymosis, hematoma, etc.) – onset, duration, site, and recurrence in the allotted real case or simulated case by the teacher.

Step 2: Inquire about associated symptoms, and modifying/ aggravating factors.

Step 3: Record past medical history, treatment history, and family history of bleeding.

Step 4: Present the findings correlating with the history to arrive at a tentative diagnosis.

Student Instructions (Objective Assessment):

Step 1: As a continuation of the above experiential learning session, begin with general examination.

Step 2: Examine skin, oral mucosa, joints, abdomen, and CNS signs.

Step 3: Correlate findings with the clinical history to understand the possible pathology.

Step 4: Document findings in a system-wise format.

Experiential-Learning 3.2 : Planning for investigations and diagnosis of bleeding disorders.

Student Instructions (Planning for Investigation):

Step 1: As a continuation of the above experiential learning session, order baseline test.

Step 2: Interpret the results of baseline investigations and if needed, advise specific investigations.

Step 3: Correlate laboratory results with history and examination.

Step 4: Interpret results in relation to Ayurveda understanding.

Student Instructions (Diagnosis):

Step 1: As a continuation of the above experiential learning session, identify bleeding patterns and associated clinical features.

Step 2: Generate a differential diagnosis list based on symptomatology, lab reports, and clinical risk factors such as drug/ snakebite history, nutritional status, chronic illness, or systemic infections.

Step 3: Correlate with Ayurveda understanding - analyze Vyadhi Hetu, Dosha-Dushya involvement, Srotovaigunya, Gati, and classify the condition as Anubandhya or Anubandha, Swatantra or Paratantra. Also, identify Avastha (Purvaroopa, Roopa and Upadrava as applicable).

Step 4: Present a reasoned integrative diagnosis using structured formats (SOAP, customized RNVV UG CAB), justifying your synthesis with both classical and contemporary perspectives.

Experiential-Learning 3.3 : Hematological study on samples from Rakta Pradoshaja Vikara.

Student Instructions:

Step 1: As demonstrated in the practical learning session students are instructed to conduct assessment in five different cases (real or simulated) related to Raktavaha Srotas, with clinical data showing Dosha Adhikyata.

Step 2: Observe and record physio-chemical and organoleptic features of Dushta Rakta as explained in the practical demonstration.

Step 3: Compare observations gained from the clinical data and physio-chemical and organoleptic features.

Step 4: Identify the predominant Dosha Dushti and formulate a diagnosis.

Experiential-Learning 3.4 : Subjective and objective assessment of dermatological conditions.

Student Instructions (Subjective Assessment):

Step 1: In an allotted real case or simulated case by the teacher, interview the patient about skin complaints: onset, duration, location, spread, and symptom evolution.

Step 2: Document triggering or modifying factors.

Step 3: Note previous systemic illnesses, treatment history, family history of skin diseases, and socio-economic background.

Step 4: Collect detailed personal history (Satmya-Asatmya, Viruddha Ahara, bowel, occupational, various physical contact, sexual history, trauma, menstrual history and hygiene).

Step 5: Record all findings in a structured format integrating Nidana Panchaka and contemporary symptom analysis.

Student Instructions (Objective Assessment):

Step 1: As a continuation of the above experiential learning session, begin with general physical examination, and systemic examination.

Step 2: Conduct assessment of skin with its appendages for primary lesions, secondary, mixed lesions and signs related to appendages.

Step 4: Observe lesion pattern, margins, symmetry, distribution, color, and configuration and correlate with Ayurveda understanding (as per UG RNVV CAB).

Step 5: Summarize the case based on the above subjective and objective assessment.

Experiential-Learning 3.5 : Planning for investigation and diagnosis of dermatological conditions.

Student Instructions (Planning for Investigation):

Step 1: As a continuation of the above experiential learning session, choose basic investigations.

Step 2: Perform tests guided by history.

Step 3: Interpret test results in relation to symptoms and lesion morphology.

Step 4: Correlate investigation patterns with clinical indicators of dermatological diseases mentioned.

Step 5: Identify when to escalate to dermatological or immunological testing for confirmation.

Student Instructions (Diagnosis):

Step 1: As a continuation of the above experiential learning session, based on lesion type, distribution, progression, and symptomatology, list few differential diagnoses.

Step 2: Analyze lesion morphology and associated clinical signs.

Step 3: Identify Pratyatma Lakshana supported by Lakshana Samucchaya. It should also include various aspects of the disease such as Vyadhi Hetu, Dushta Dosha - Dushya, Vyadhi Swabhava, Sadhya Asadhya, Anubandhya and Anubandha. Also, identify Avastha (Purvaroopa, Roopa and Upadrava as applicable).

Step 4: Present the diagnosis in a clinical summary format.

Experiential-Learning 3.6 : Subjective and objective assessment of Pandu and Haleemaka.

Student Instructions (Subjective Assessment):

Step 1: In an allotted real case or simulated case given by the teacher, interview the patient focusing on onset, duration, and progression of key symptoms: fatigue, dyspnoea on exertion, loss of appetite, paraesthesia, menstrual issues (if female).

Step 2: Identify any modifying or aggravating factors like exertion, diet, seasonal influences.

Step 3: Record personal history, gynaecological history, occupational and socioeconomic status.

Step 4: Document past illnesses, medications, family history of anemia or chronic illness.

Step 5: Structure your findings under Nidana Panchaka and contemporary symptom domains.

Student Instructions (Objective Assessment):

Step 1: As a continuation of the above experiential learning session, begin with general examination.

Step 2: Conduct relevant systemic examination derived from the history.

Step 3: Summarise the case based on the subjective and objective assessment.

Experiential-Learning 3.7 : Planning for investigation and diagnosis of Pandu or Haleemaka.

Student Instructions (Planning for Investigation):

Step 1: As a continuation of the above experiential learning session, advise baseline investigations.

Step 2: Interpret values to identify the abnormalities.

Step 3: Identify when additional tests are needed.

Step 4: Prepare a lab-clinical correlation sheet based on the reports with interpretation.

Student Instructions (Diagnosis):

Step 1: As a continuation of the above experiential learning session, analyze presenting features in the context of disease progression.

Step 2: Based on history, physical findings, and investigations, list possible differentials.

Step 3: Identify Ayurveda components such as Pratyatma Lakshana, along with Dushta Dosha, Dushya, Vyadhi Hetu, Sadhya/ Asadhya, and classify the condition as Anubandhya or Anubandha Vyadhi. Also, identify Avastha (Purvaroopa, Roopa and Upadrava as applicable).

Step 4: Synthesize Ayurveda diagnosis, correlating with contemporary evidence.

Step 5: Present a concise case summary that includes differential diagnoses, final diagnosis, and justification.

Experiential-Learning 3.8 : Subjective and objective assessment of Kamala or Kumbhakamala.

Student Instructions (Subjective Assessment):
Step 1: In an allotted real case or simulated case by the teacher, ask about onset, duration, and presentation of yellowish discoloration of skin, sclera, mucosa, and urine.
Step 2: Inquire about associated symptoms and preceding symptoms.
Step 3: Gather detailed medical, family, occupational, travel, and socioeconomic history, including treatment history.
Step 4: Record the personal history focussing on appetite, bowel and habits.
Step 5: Summarise the case based on the subjective assessment.
Student Instructions (Objective Assessment):
Step 1: As a continuation of the above experiential learning session, begin with general examination and systemic examination.
Step 2: Conduct focussed systemic examination of abdomen.
Step 3: Summarise the case based on the subjective and objective assessment.

Experiential-Learning 3.9 : Planning for investigation and diagnosis of Kamala or Kumbhakamala.

Student Instructions (Planning for Investigation):
Step 1: As a continuation of the above experiential learning session, order required base line investigations.
Step 2: Interpret the above reports of baseline investigations.
Step 3: If needed, consider advanced tests.
Step 4: Prepare a lab-clinical correlation sheet based on the reports with interpretation.
Student Instructions (Diagnosis):
Step 1: As a continuation of the above experiential learning session, analyze symptoms recorded during assessment.
Step 2: Based on findings, list differential diagnoses.
Step 3: Identify Ayurveda components such as Pratyatma Lakshana, along with Bahupitta/ Alpapitta Avastha, Vyadhi Hetu, Swatantra (Kamala) or Paratantra (Kumbhakamala), Sadhya/ Asadhya. Also, identify Avastha (Purvaroopa, Roopa and Upadrava as applicable).
Step 4: Synthesize Ayurveda diagnosis, correlating with contemporary evidence.
Step 5: Present a concise case summary that includes differential diagnoses, final diagnosis, and justification.

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 6C. Theory Based Assessment – 25 Marks. This component includes theory questions designed to assess conceptual clarity, integrative thinking, and the ability to apply learned concepts in clinical, diagnostic, or problem-solving contexts. Questions can be framed from any instructional unit, ensuring alignment with the intended learning outcomes. And Any practical in converted form can be taken for assessment. (25 Marks). Or Any experiential as portfolio/ reflections/ presentations, can be taken as an assessment. (25 Marks).							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 4 : Lakshana Niroopana 1.3						
Module Learning Objectives **(At the end of the module, the students should be able to)** 1. Analyze the Dosha and Srotas-based pathogenesis of Ajeerna, Amlapitta, Chhardi, Arochaka, and related digestive disorders. 2. Evaluate the clinical spectrum of Gulma, Shoola, and Antarvidradhi based on site, pain type, and Dosha involvement. 3. Correlate Ayurveda conditions like Parinama Shoola, Annadrava Shoola, and Koshta Bhedha with GI disorders such as ulcers and intra - abdominal infections. 4. Create integrated diagnostic plans using Ayurveda principles and contemporary clinical tools.						

M 4 Unit 1 Ashraddha/ Anannabhilasha/ Abhaktachanda/ Arochaka/ Bhaktadvesha, Bhojyanam Avarodha/ Bhojyoparodha, Pratyadhmana, Ajeerna, Amlapitta, Chhardi. 1. Gastrointestinal symptoms.

2. Underlying disturbances in functional digestive pathologies.

3. Ashraddha/ Anannabhilasha/ Abhaktachanda/ Arochaka/ Bhaktadvesha.

4. Bhojyanam Avarodha/ Bhojyoparodha.

5. Pratyadhmana, Ajeerna, Amlapitta, Chhardi.

References: 1,2,3,4,5,7,8,9,10,11,12,13,14,15,16,17,18,19,20,21,22,23,24,25,26,27,28,29,30,31,32,33,34,35,36,37,38,39,40,41,42,43,44,45,46

3A	3B	3C	3D	3E	3F	3G
CO1,CO3,CO4	Compare and analyze Ajeerna in relation to Avasthapaka and Vipaka, and evaluate Ashraddha, Anannabhilasha, Abhaktachanda, Arochaka, and Bhaktadvesha for their clinical significance in diagnostic reasoning.	1	Lecture	CAN	Knows-how	L&GD,TBL
CO1,CO3,CO4	Analyze Bhojyanam Avarodha, Bhojyoparodha, and Pratyadhmana with clinical and contemporary correlations, and examine the role of Vidahi in the etiopathogenesis of Amlapitta.	1	Lecture	CAN	Knows-how	L&GD,CBL
CO1,CO3,CO4	Analyze the Nidana of Amlapitta by distinguishing Dosha Hetu and Vyadhi Hetu in disease progression, and interpret clinical markers of Amlapitta and its variants to enhance diagnostic clarity.	1	Lecture	CAN	Knows-how	TBL,L&GD,CBL
CO1,CO3,CO4	Analyze the Hetu, Samprapti, and Lakshana of Amlapitta and Chhardi with classical and clinical evidence, along with contemporary scientific descriptions.	1	Lecture	CAN	Knows-how	L&PPT,CBL
CO1,CO3,CO4	Compare and analyze the vomiting reflex from an Ayurveda perspective, differentiate Hrullasa, Praseka, Utklesha, and Chhardi by their distinguishing features, and evaluate the differential diagnoses of appetite disorders.	1	Lecture	CAN	Knows-how	L&GD,LS,CBL
CO1,CO3,CO4	Demonstrate clinical assessment of disorders related to impaired appetite, digestion, and vomiting.	10	Practical Training 4.1	PSY-GUD	Shows-how	SIM,CBL,D-BED,CD
CO1,CO3,CO4	Elicit a comprehensive history and perform a focused clinical examination in patients	7	Experiential-	PSY-	Shows-	CD,SIM,

	with digestive disorders.		Learning 4.1	GUD	how	D-BED,CBL
CO1,CO2,CO3 ,CO4	Interpret investigations and formulate differential diagnoses to establish a comprehensive diagnosis of digestion-related disorders such as impaired appetite and vomiting.	6	Experiential-Learning 4.2	CE	Knows-how	LRI,CD,SIM,CBL, D-BED

M 4 Unit 2 Gulma, Shoola, Parinama Shoola, Annadrava Shoola, Parshwa Shoola, Kukshi Shoola, Vit Shoola, Anna Shoola, Mootra Shoola, Antar Vidradhi, Adho Nabhi Gata Koshta Bhedha Lakshana, Baddhagudodara, Parisravi Udara Lakshana.1. Spectrum of abdominal pain presentations.

2. Underlying derangement in functional and structural pathology.

3. Site-specific pathology correlations.

4. Differential diagnosis in conditions such as:

- Gulma
- Shoola (Parinama Shoola, Annadrava Shoola, Parshwa Shoola, Kukshi Shoola, Vit Shoola, Anna Shoola, Mootra Shoola)
- Antar Vidradhi
- Adho Nabhi Gata Koshta Bhedha Lakshana
- Baddhagudodara
- Parisravi Udara Lakshana.

References: 1,2,3,4,5,7,8,9,10,11,12,13,14,15,16,17,18,19,20,21,22,23,24,25,26,27,28,29,30,31,32,33,34,35,36,37,38,39,40,41,42,43,44,45,46

3A	3B	3C	3D	3E	3F	3G
CO1,CO3,CO4	Discuss and describe Gulma and Shoola in relation to Dosha Dushti and Adhisthana, and the pathogenesis of Vidradhi through Dosha–Dushya involvement with correlation to Vrana Shopha.	1	Lecture	CC	Knows-how	CBL,L&PPT
CO1,CO3,CO4	Analyze Nichaya Gulma in comparison with Vidradhi through Sapeksha Nidana, and differentiate the Hetu, Samprapti, and Lakshana of Gulma, Shoola, and Vidradhi.	1	Lecture	CAN	Knows-how	L&GD,CBL
CO1,CO3,CO4	Analyze Sapeksha Nidana across different Avastha of Gulma and Vidradhi/ Shopha, and	1	Lecture	CAN	Knows-how	DIS,L&G

						how	D,BL
CO1,CO3,CO4	Correlate abdominal pain in Baddhagudodara with stages of intestinal obstruction and its etiologies, and analyze pain patterns in Adho Nabhi Koshta Viddha, Chidrodara, and Parisravi Udara with stages of intestinal perforation using Ayurveda and contemporary perspectives.	1	Lecture	CAN	Knows-how		L&GD,CBL,PBL
CO1,CO3,CO4	Analyze Mootrashoola in the context of Mootravaha Srotovikara and correlate it with contemporary urological disorders, and examine the differential diagnoses for abdominal pain.	1	Lecture	CAN	Knows-how		L&GD,CD,CBL
CO1,CO2,CO3,CO4	Demonstrate the clinical assessment of abdominal pain.	10	Practical Training 4.2	PSY-GUD	Shows-how		CBL,SIM,D-BED,CD
CO1,CO3,CO4	Elicit a detailed history and perform a targeted physical examination in patients presenting with abdominal pain.	7	Experiential-Learning 4.3	PSY-GUD	Shows-how		CD,CBL,SIM,D-BED
CO1,CO2,CO3,CO4	Interpret relevant investigations and differential diagnoses by integrating clinical and investigational findings to establish a probable diagnosis in patients with abdominal pain.	6	Experiential-Learning 4.4	CAN	Knows-how		CBL,SIM,D-BED,CD

Practical Training Activity

Practical Training 4.1 : Clinical assessment of disorders related to impaired appetite, digestion, and vomiting.

Teacher Instructions:
Step 1: Case Introduction and History Taking - Instruct students to methodically obtain a comprehensive patient history, with a particular focus on a thorough evaluation of the history of present illness - especially symptoms like heartburn, regurgitation, altered taste, loss of appetite, vomiting, etc. Each symptom should be explored in detail, such as its location, onset, duration, progression, and nature as applicable; the timing and severity; any aggravating or relieving factors; and the presence of related clinical features, with clear elaboration. Emphasize the importance of carefully assessing past medical history, family history, personal habits, previous treatments, socioeconomic background, and occupational influences. Special focus should be placed on dietary history, incorporating the principles of Ashta Aharavidhi Vishesha Ayatana. Additionally, guide students to identify and analyze improper dietary behaviors such as Adhyashana, Vishamashana, Samashana, Anashana, Ajeerna Bhojana, Asatmya bhojana and Vidahi Bhojana.

Step 2: Physical Examination - Teach students to perform physical examination particularly a general examination and history based focused systemic examination in specific.

Step 3: Diagnostic Investigations - Facilitate discussion on selecting and interpreting relevant diagnostic investigations to support or confirm clinical impressions. Encourage students to correlate findings from baseline investigations with clinical data, and to recognize when further, targeted diagnostic tests are necessary for a more refined evaluation.

Step 4: Formulation of Differential Diagnosis - Encourage students to formulate a comprehensive differential diagnosis by integrating history and clinical findings. Emphasize key diagnostic factors such as heartburn, regurgitation, altered taste, loss of appetite, vomiting, etc. Additionally, guide students in applying Ayurveda understanding such as Pratyatma Lakshana, Vyadhi Vinischaya, Vyadhi Hetu, Vidhi Samprapti, Anubandhya and Anubandha Dosha, Sadhya or Asadhya and assessment of whether the condition is Anubandhya Vyadhi or Anubandha Vyadhi. Also demonstrate Avastha (Purvaroopa, Roopa and Upadrava as applicable).

Step 5: Clinical Reasoning and Diagnostic Synthesis - Support students in synthesizing clinical information and investigative findings to arrive at the most likely diagnosis. Encourage a balanced diagnostic approach that integrates Ayurveda understanding with contemporary reasoning to enhance clinical decision-making.

Practical Training 4.2 : Clinical assessment of abdominal pain.

Teacher Instructions:

Step 1: Case Introduction and History Taking - Guide students to systematically gather a complete patient history, with particular emphasis on the detailed assessment of the history of present illness - specifically in cases of abdominal pain. Encourage evaluation based on site, onset, character, radiation, associated symptoms, timing, modifying factors, and severity of pain. Attention should also be given to previous episodes, relevant negative history, and other systemic symptoms that may be related. Highlight the importance of thoroughly reviewing past medical and surgical history, treatment history, family history, socioeconomic background, personal habits, and occupational factors.

Step 2: Physical Examination - Teach students to perform physical examination particularly a general examination and history based focused systemic examination in specific.

Step 3: Diagnostic Investigations - Facilitate discussion on selecting and interpreting relevant diagnostic investigations to support or confirm clinical impressions. Encourage students to correlate findings from baseline investigations with clinical data, and to recognize when further, targeted diagnostic tests are necessary for a more refined evaluation.

Step 4: Formulation of Differential Diagnosis - Encourage students to develop a well-rounded differential diagnosis by correlating clinical findings with patient history. Stress the importance of evaluating key features of abdominal pain - site, onset, character, radiation, associated symptoms, timing, modifying factors, and severity. Additionally, guide student to apply Ayurveda understanding using Lakshana Samucchaya to determine Vyadhi Vinischaya, identifying the Pratyatma Lakshana, Vyadhi Hetu if any, assess the Srotas involved, recognize Anubandhya and Anubandha Dosha, and evaluate the Sadhya or Asadhya. Also demonstrate Avastha (Purvaroopa, Roopa and Upadrava as applicable).

Step 5: Clinical Reasoning and Diagnostic Synthesis - Support students in synthesizing clinical information and investigative findings to arrive at the most likely diagnosis. Encourage a balanced diagnostic approach that integrates Ayurveda principles with contemporary reasoning to enhance clinical decision-making.

Experiential learning Activity
Experiential-Learning 4.1 : Subjective and objective assessment of patients with digestive disorders.
Student Instructions (Subjective Assessment): Step 1: Teacher will allot a real case or simulated case to whom you should ask about symptoms: heartburn, regurgitation, altered taste, anorexia, bloating, nausea, heaviness, vomiting, etc. Step 2: Explore onset, duration, progression, timing, severity, and relieving/ aggravating factors. Step 3: Record past medical history, family history, personal habits, previous treatments, and occupational or socioeconomic influences. Step 4: Take detailed dietary history, assessing Adhyashana, Vishamashana, Samashana, Ajeerna bhojana, Asatmya/ Vidahi Ahara, etc. Also, identify Avastha (Purvaroopa, Roopa and Upadrava as applicable). Step 5: Analyze food intake using Ashta Aharavidhi Vishesha Ayatana. Step 6: Summarise the Nidana based on Dosha Hetu and Vyadhi Hetu, Utpataka Hetu and Vyanjaka Hetu. Student Instructions (Objective Assessment): Step 1: As a continuation to the previous experiential learning, start with general examination. Step 2: Perform systemic assessment with special emphasize on abdominal examination. Step 3: Evaluate signs of Agni Dushti and Ama. Step 4: Summarise the case based on subjective and objective assessment.
Experiential-Learning 4.2 : Planning for investigation and diagnosis for digestion-related disorders.
Student Instructions (Planning for Investigation): Step 1: As a continuation to the previous experiential learning, recommend basic tests along with its interpretation. Step 2: Select subsequent tests if needed considering assessment of diagnosis and complications. Step 3: Match lab findings with clinical complaints. Step 5: Summarise the case based on the assessments conducted till now. Student Instructions (Diagnosis): Step 1: As a continuation to the previous experiential learning, correlate symptoms such as heartburn, regurgitation, altered taste, anorexia, heaviness, nausea, vomiting with various clinical possibilities. Step 2: Apply diagnostic reasoning strategies in primary health care for clinical diagnosis, integrative model of clinical reasoning model, dual process diagnostic reasoning model, hypothetico-deductive model, pattern recognition model, pathway for clinical reasoning model to learn intuitive approach and analytical approaches in clinical decision making as applicable to arrive at a diagnosis of the given case. Step 3: Identify the Pratyatma Lakshana, Anubandhya/ Anubandha Dosha, Dushya, and affected Srotas. Also, identify Avastha (Purvaroopa, Roopa and Upadrava as

applicable).

Step 4: Determine the Vidhi Samprapti.

Step 5: Summarise the case with subjective and objective assessment to confirm the diagnosis.

Experiential-Learning 4.3 : Subjective and objective assessment of abdominal pain.

Student Instructions (Subjective Assessment):

Step 1: Take focused history of real case or simulated case allotted by the teacher with abdominal pain. Explore abdominal pain in relation to site, onset, character, radiation, associated symptoms, timing, modifying factors, and severity of pain.

Step 2: Ask about previous episodes, systemic symptoms, and relevant negative findings, past medical/ surgical history, family history, addictions, and occupational and socioeconomic background.

Step 3: Assess relevant Dosha Hetu, Vyadhi Hetu, Ubhaya Hetu, Utpataka and Vyanjaka Hetu, Pradhanika and Vyabhichari Hetu if applicable from the subjective assessment.

Step 4: Present the findings correlating with the history to arrive at a tentative diagnosis considering UG RNVV CAB as basic format.

Student Instructions (Objective Assessment):

Step 1: As a continuation of the above experiential learning session, conduct general physical examination.

Step 2: Perform systemic assessment with special emphasize on abdominal examination.

Step 3: Document signs with interpretation in the case sheet.

Experiential-Learning 4.4 : Planning for investigation and diagnosis of abdominal pain.

Student Instructions (Planning for Investigation):

Step 1: As a continuation of the above experiential learning session, choose baseline investigations and interpret the results.

Step 2: Select subsequent tests if needed considering assessment of diagnosis and complications.

Step 3: Interpret lab/ imaging results and correlate with presenting symptoms and physical findings.

Step 4: Document correlation for each investigation with possible causes and interpretation.

Student Instructions (Diagnosis):

Step 1: As a continuation of the above experiential learning session, use pain analysis to generate differential diagnoses.

Step 2: Apply diagnostic reasoning strategies in primary health care for clinical diagnosis, integrative model of clinical reasoning, dual process diagnostic reasoning model, hypothetico-deductive model, pattern recognition model, pathway for clinical reasoning model to learn intuitive approach and analytical approaches in clinical decision making as applicable to arrive at a diagnosis of the given case.

Step 3: Identify the Pratyatma Lakshana, Anubandhya/ Anubandha Dosha, Dushya, and affected Srotas. Also, identify Avastha (Purvaroopa, Roopa and Upadrava as applicable).

Step 4: Synthesize all findings and establish the most likely diagnosis.

Step 5: Evaluate prognosis and present a summary of the diagnosis with justification.

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 6C. Theory Based Assessment – 25 Marks. This component includes theory questions designed to assess conceptual clarity, integrative thinking, and the ability to apply learned concepts in clinical, diagnostic, or problem-solving contexts. Questions can be framed from any instructional unit, ensuring alignment with the intended learning outcomes. And Any practical in converted form can be taken for assessment. (25 Marks). Or Any experiential as portfolio/ reflections/ presentations, can be taken as an assessment. (25 Marks).	4

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 : Lakshana Niroopana 1.4						
Module Learning Objectives **(At the end of the module, the students should be able to)** 1. Analyze the Dosha, Dhatu, and Srotas-based pathogenesis of joint and related disorders such as Sandhigata Vata, Amavata, Vatarakta, Kroshtuka Sheersha,						

Avabahuka, Vatakantaka, Padakantaka, Hanustambha, Manyastambha, and Katigraha.

2. Evaluate the clinical stages, signs, and complications of these disorders with reference to Samprapti Bheda, chronicity, and prognosis.

3. Correlate classical descriptions with musculoskeletal and related conditions like arthritis, gout, spondylosis, sciatica, and frozen shoulder using clinical and diagnostic findings.

4. Create comprehensive diagnostic strategies integrating Ayurveda principles with modern investigations.

M 5 Unit 1 Sandhigata Vata, Amavata, Vatarakta, Kroshtuka Sheersha, Sandhiga Sannipata Jwara. 1. Clinical patterns of joint involvement.

2. Etiopathogenesis of joint disorders.

3. Differentiation of:

- Sandhigata Vata
- Amavata
- Vatarakta
- Kroshtuka Sheersha
- Sandhigata Sannipata Jwara.

References: 1,2,3,4,5,6,7,8,9,10,11,12,13,14,15,16,17,18,19,20,21,22,23,24,25,26,27,28,29,30,31,32,33,34,35,36,37,38,39,40,41,42,43,44,45,46

3A	3B	3C	3D	3E	3F	3G
CO1,CO3,CO4	Analyze the Lakshana of Sandhigata Vata with other Sandhigata Vikara, and examine the Nidana, Samprapti, and Lakshana of Amavata in correlation with contemporary science.	2	Lecture	CAN	Knows-how	REC,CBL ,L&GD
CO1,CO3,CO4	Analyze the Nidana, Samprapti, Vidhi Samprapti, Asadhya Lakshana, and Avasthika Samprapti of Vatarakta in relation to contemporary science.	2	Lecture	CAN	Knows-how	TBL,L& GD,CBL, REC,PBL
CO1,CO3,CO4	Appraise Sandhigata Vata, Amavata, and Vatarakta; appraise Kroshtuka Sheersha in relation to contemporary science; and appraise Sandhiga Sannipata Jwara with reference	2	Lecture	CE	Knows-how	CBL,L&P PT ,BL

	to Sandhigata Vikara and contemporary science.					
CO1,CO2,CO3,CO4	Demonstrate clinical assessment and diagnostic reasoning in patients presenting with joint-related disorders.	7	Practical Training 5.1	PSY-GUD	Shows-how	D-BED,SIM,RP
CO1,CO3,CO4	Elicit a structured history and perform a systematic musculoskeletal examination to evaluate joint pain and swelling.	5	Experiential-Learning 5.1	PSY-GUD	Shows-how	D-BED,RP,SIM
CO1,CO2,CO3,CO4	Interpret diagnostic investigations and formulate integrative differential and final diagnoses for joint pain with or without swelling.	4	Experiential-Learning 5.2	CS	Shows-how	LRI,RP,SIM,D-BED

M 5 Unit 2 Amsa Shosha, Avabahuka, Vatakantaka, Padakantaka. 1. Musculoskeletal-related impairments.

2. Site-specific aggravation patterns.

3. Clinical presentation of:

- Amsa Shosha
- Avabahuka
- Vatakantaka
- Padakantaka.

4. Associated functional limitations.

5. Underlying pathogenesis.

References: 1,2,3,4,5,6,7,8,9,10,11,12,13,14,15,16,17,18,19,20,21,22,23,24,25,26,27,28,29,30,31,32,33,34,35,36,37,38,39,40,41,42,43,44,45,46

3A	3B	3C	3D	3E	3F	3G
CO1,CO3,CO4	Evaluate Amsa Shosha and Avabahuka with Bruhatrayi and contemporary perspectives, and Vata Kantaka and Pada Kantaka with contemporary science.	1	Lecture	CE	Knows-how	CBL,L&GD
CO1,CO3,CO4	Synthesize clinical findings to develop a differential diagnosis distinguishing: Shoulder joint pain and pain in the foot region.	1	Lecture	CE	Knows-how	LS,PBL,L&GD

3A	3B	3C	3D	3E	3F	3G
CO1,CO2,CO3,CO4	Demonstrate comprehensive clinical assessment of upper and lower limb musculoskeletal disorders.	6	Practical Training 5.2	PSY-GUD	Shows-how	LRI,RP,SIM,D-BED
CO1,CO3,CO4	Elicit a comprehensive history and perform a systemic musculoskeletal examination to evaluate joint pain with or without swelling in the shoulder, elbow, wrist, hip, ankle, or foot.	5	Experiential-Learning 5.3	PSY-GUD	Shows-how	SIM,RP,CBL,D-BED
CO1,CO2,CO3,CO4	Interpret investigations for joint pain with or without swelling, and develop differential diagnoses to synthesize a final diagnosis for individual joints.	4	Experiential-Learning 5.4	PSY-GUD	Knows-how	SIM,RP,CBL,D-BED,TBL

M 5 Unit 3 Hanustambha, Manyastambha, Katigraha. 1. Clinical features of Hanustambha.
2. Clinical features of Manyastambha.
3. Clinical features of Katigraha.
4. Musculoskeletal and associated contributing factors.
5. Pathogenesis underlying these conditions.
6. Impact on functional mobility.

References: 1,2,3,4,5,6,7,8,9,10,11,12,13,14,15,16,17,18,19,20,21,22,23,24,25,26,27,28,29,30,31,32,33,34,35,36,37,38,39,40,41,42,43,44,45,46

3A	3B	3C	3D	3E	3F	3G
CO1,CO3,CO4	Analyze Hanustambha, Manyastambha, and Katigraha as described in Bruhatrayi, and correlate their clinical features with contemporary scientific perspectives.	2	Lecture	CAN	Knows-how	L&GD,RP,L_VC
CO1,CO2,CO3,CO4	Demonstrate clinical assessment of musculoskeletal disorders (Hanustambha, Manyastambha, Katigraha).	7	Practical Training 5.3	PSY-GUD	Shows-how	PBL,D-BED,SIM,RP
CO1,CO3,CO4	Elicit a structured clinical history and perform a systemic musculoskeletal examination in patients with Hanustambha, Manyastambha, and Katigraha.	4	Experiential-Learning 5.5	PSY-GUD	Shows-how	SIM,D-BED,L_VC,CBL

CO1,CO2,CO3,CO4	Interpret investigations and formulate differential and final diagnoses for musculoskeletal disorders such as Hanustambha, Manyastambha, and Katigraha.	4	Experiential-Learning 5.6	PSY-GUD	Shows-how	LRI,SIM,CBL,D-BED,PER

Practical Training Activity

Practical Training 5.1 : Clinical assessment in patients presenting with joint-related disorders.

Teacher Instruction:

Step 1: Case Introduction and History Taking - Instruct students to systematically collect a comprehensive patient history, with focused attention on the detailed evaluation of the history of joint pain with or without swelling. Key aspects to explore include the site, onset, course, character, associated symptoms, modifying factors, and severity. Emphasize the need to assess past medical history, treatment history, relevant negative history, family history, socioeconomic background, occupational history and personal history.

Step 2: Physical Examination - Teach students to perform physical examination particularly a general examination and history based focused systemic examination in specific.

Step 3: Diagnostic Investigations - Facilitate discussion on selecting and interpreting relevant diagnostic investigations to support or confirm clinical impressions. Encourage students to correlate findings from baseline investigations with clinical data, and to recognize when further, targeted diagnostic tests are necessary for a more refined evaluation.

Step 4: Formulation of Differential Diagnosis - Encourage students to develop a well-rounded differential diagnosis by correlating clinical findings with patient history. Stress the importance of evaluating key features of joint pain with or without swelling such as the site, onset, course, character, associated symptoms, modifying factors, and severity. Additionally, guide them to apply Ayurveda understanding using Lakshana samucchaya to determine Vyadhi Vinischaya, identify the Vyadhi Hetu if any, recognize Anubandhya and Anubandha Dosha, Srotas involved and evaluate the Sadhya or Asadhya. Also demonstrate Avastha (Purvaroopa, Roopa and Upadrava as applicable).

Step 5: Clinical Reasoning and Diagnostic Synthesis - Support students in synthesizing clinical information and investigative findings to arrive at the most likely diagnosis. Encourage a balanced diagnostic approach that integrates Ayurveda understanding with contemporary biomedical reasoning to enhance clinical decision-making.

Practical Training 5.2 : Clinical assessment of upper and lower limb musculoskeletal disorders.

Teacher Instruction:

Step 1: Case Introduction and History Taking - Instruct students to systematically collect a comprehensive patient history, with focused attention on the detailed evaluation of the history of shoulder joint/ elbow joint / pain around wrist joint/ hip joint pain/ pain around ankle and foot with or without swelling. Key aspects to explore include the site, onset, course, character, associated symptoms, modifying factors, and severity. Emphasize the need to assess past medical history, treatment history, relevant negative history, family history, socioeconomic background, occupational history and personal history.

Step 2: Physical Examination - Teach students to perform physical examination particularly a general examination and history based focused systemic examination in

specific.

Step 3: Diagnostic Investigations - Facilitate discussion on selecting and interpreting relevant diagnostic investigations to support or confirm clinical impressions. Encourage students to correlate findings from baseline investigations with clinical data, and to recognize when further, targeted diagnostic tests are necessary for a more refined evaluation.

Step 4: Formulation of Differential Diagnosis - Encourage students to develop a well-rounded differential diagnosis by correlating clinical findings with patient history. Stress the importance of evaluating key features of history of shoulder joint / elbow joint / pain around the wrist joint/ hip joint pain/ pain around ankle and foot with or without swelling such as the site, onset, course, character, associated symptoms, modifying factors, and severity. Additionally, guide them to apply Ayurveda understanding using Lakshana samucchaya to determine Vyadhi Vinischaya, identify the Vyadhi Hetu if any, recognize Anubandhya and Anubandha Dosha, Srotas involved and evaluate the Sadhya or Asadhya. Also demonstrate Avastha (Purvaroopa, Roopa and Upadrava as applicable).

Step 5: Clinical Reasoning and Diagnostic Synthesis - Support students in synthesizing clinical information and investigative findings to arrive at the most likely diagnosis. Encourage a balanced diagnostic approach that integrates Ayurveda understanding with contemporary biomedical reasoning to enhance clinical decision-making.

Practical Training 5.3 : Clinical assessment of musculoskeletal disorders (Hanustambha, Manyastambha, Katigraha).

Teacher Instruction:

Step 1: Case Introduction and History Taking - Instruct students to systematically collect a comprehensive patient history, with focused attention on the detailed evaluation of the history of inability to move the joint / movement disorders of neck/ back ache with stiffness. Key aspects to explore include the site, onset, course, character, associated symptoms, modifying factors, and severity. Emphasize the need to assess past medical history, treatment history, relevant negative history, family history, socioeconomic background, occupational history and personal history.

Step 2: Physical Examination - Teach students to perform physical examination particularly a general examination and history based focused systemic examination in specific.

Step 3: Diagnostic Investigations - Facilitate discussion on selecting and interpreting relevant diagnostic investigations to support or confirm clinical impressions. Encourage students to correlate findings from baseline investigations with clinical data, and to recognize when further, targeted diagnostic tests are necessary for a more refined evaluation.

Step 4: Formulation of Differential Diagnosis - Encourage students to develop a well-rounded differential diagnosis by correlating clinical findings with patient history. Stress the importance of evaluating key features of history of inability to move the joint/ movement disorders of neck/ back ache with stiffness such as the site, onset, course, character, associated symptoms, modifying factors, and severity. Additionally, guide them to apply Ayurveda understanding using Lakshana samucchaya to determine Vyadhi Vinischaya, identify the Vyadhi Hetu if any, recognize Anubandhya and Anubandha Dosha, Srotas involved and evaluate the Sadhya or Asadhya. Also demonstrate Avastha (Purvaroopa, Roopa and Upadrava as applicable).

Step 5: Clinical Reasoning and Diagnostic Synthesis - Support students in synthesizing clinical information and investigative findings to arrive at the most likely diagnosis. Encourage a balanced diagnostic approach that integrates Ayurveda understanding with contemporary biomedical reasoning to enhance clinical decision-making.

Experiential learning Activity

Experiential-Learning 5.1 : Subjective and objective assessment of joint pain and swelling.

Student Instructions (Subjective assessment):

Step 1: Teacher will allot a real case or simulated case with the complaint of joint pain with or without swelling. Elicit details such as site, onset, course, character, aggravating/ relieving factors, associated symptoms, and severity

Step 2: Review past medical/ surgical history, treatment history, family history, occupational, socioeconomic, and personal background.

Step 3: Assess relevant Dosha Hetu, Vyadhi Hetu, Ubhaya Hetu, Utpataka and Vyanjaka Hetu, Pradhanika and Vyabhichari Hetu and Srotas involved if applicable from the subjective assessment.

Step 4: Present the findings correlating with the history to arrive at a tentative diagnosis considering UG RNVV CAB as basic format.

Student Instructions (Objective Assessment):

Step 1: As a continuation of the above experiential learning session, begin with general examination.

Step 2: Perform a comprehensive systemic assessment based on the associated systemic symptoms and past medical history or comorbidities.

Step 3: Document signs and interpretations in the case sheet.

Experiential-Learning 5.2 : Planning for investigation and diagnosis of joint pain with or without swelling.

Student Instructions (Planning for Investigation):

Step 1: As a continuation of the above experiential learning session, recommend basic investigations along with result interpretation.

Step 2: Select subsequent tests if needed considering assessment of diagnosis and complications.

Step 3: Interpret lab/ imaging results and correlate with presenting symptoms and physical findings.

Step 4: Document correlation for each investigation with possible causes and interpretation.

Student Instructions (Diagnosis):

Step 1: As a continuation of the above experiential learning session, and based on history, examination, and investigations, list differential diagnoses.

Step 2: Based on history and examination, list possible diagnosis through diagnostic reasoning strategies in primary health care for clinical diagnosis, integrative model of clinical reasoning, dual process diagnostic reasoning model, hypothetico-deductive model, pattern recognition model, pathway for clinical reasoning model to learn intuitive approach and analytical approaches in clinical decision making as applicable to arrive at a diagnosis of the given case.

Step 3: Apply Ayurveda diagnostic reasoning using Lakshana Samucchaya, considering the comorbidities, systemic symptoms, and past medical history understand the Vyadhi Vinischaya, Vyadhi Hetu if any, Srotas involved, Dosha-Dushya Samurchana, and Anubandhya/ Anubandha Dosha/ Vyadhi, and Sadhya or Asadhya. Also assess Avastha (Purvaroopa, Roopa and Upadrava as applicable).

Step 4: Synthesize all findings and establish the most likely diagnosis.

Step 5: Evaluate prognosis and present a summary of the diagnosis with justification.

Experiential-Learning 5.3 : Subjective and objective assessment of joint pain localized to the shoulder, elbow, wrist, hip, ankle, or foot, with or without swelling.

Student Instructions (Subjective Assessment):

Step 1: Teacher will allot a real case or simulated case with pain with or without swelling on the shoulder, elbow, wrist, hip, ankle, or foot. Explore the site, onset, course, character, aggravating and relieving factors, associated symptoms, and severity.

Step 2: Review past medical history, surgical history, medications, treatment history, family history, and personal/ occupational/ social background.

Step 3: Assess relevant Dosha Hetu, Vyadhi Hetu, Ubhaya Hetu, Utpataka and Vyanjaka Hetu, Pradhanika and Vyabhichari Hetu and Srotas involved if applicable from the subjective assessment.

Step 4: Present the findings correlating with the history to arrive at a tentative diagnosis considering UG RNVV CAB as basic format.

Student Instructions (Objective Assessment):

Step 1: As a continuation of the above experiential learning session, begin with general examination.

Step 2: Perform a comprehensive systemic assessment based on the associated systemic symptoms and past medical history or comorbidities.

Step 3: Document signs and interpretations in the case sheet.

Experiential-Learning 5.4 : Planning for investigation and diagnosis of joint pain with or without swelling.

Student Instructions (Planning for investigation):

Step 1: As a continuation of the above experiential learning session, recommend basic investigations along with result interpretation.

Step 2: Select subsequent tests if needed considering assessment of diagnosis and complications.

Step 3: Interpret lab/ imaging results and correlate with presenting symptoms and physical findings.

Step 4: Document correlation for each investigation with possible causes and interpretation.

Student Instructions (Diagnosis):

Step 1: As a continuation of the above experiential learning session and based on findings, list differential diagnoses.

Step 2: Based on history and examination, list possible diagnosis through diagnostic reasoning strategies in primary health care for clinical diagnosis, integrative model of clinical reasoning, dual process diagnostic reasoning model, hypothetico-deductive model, pattern recognition model, pathway for clinical reasoning model to learn intuitive approach and analytical approaches in clinical decision making as applicable to arrive at a diagnosis of the given case.

Step 3: Apply Ayurveda diagnostic reasoning using Lakshana Samucchaya, considering the comorbidities, systemic symptoms, and past medical history understand the Vyadhi Vinischaya, Vyadhi Hetu if any, Srotas involved, Dosha-Dushya Samurchana, and Anubandha/ Anubandhya Dosha/ Vyadhi, and Sadhya or Asadhya. Also assess Avastha (Purvaroopa, Roopa and Upadrava as applicable).

Step 4: Synthesize all findings and establish the most likely diagnosis.

Step 5: Evaluate prognosis and present a summary of the diagnosis with justification.

Experiential-Learning 5.5 : Subjective and objective aassessment of musculoskeletal disorders (Hanustambha, Manyastambha, Katigraha).

Student Instructions (Subjective Assessment):

Step 1: Teacher will allot a real case or simulated case with complaints of musculoskeletal disorders. Explore onset, course, site, character, radiation, associated symptoms, modifying/ aggravating factors, and severity.

Step 2: Record past illness, trauma, occupational strain, habits, treatment history, and family history.

Step 3: Assess relevant Dosha Hetu, Vyadhi Hetu, Ubhaya Hetu, Utpataka and Vyanjaka Hetu, Pradhanika and Vyabhichari Hetu and Srotas involved if applicable from the subjective assessment.

Step 4: Present the findings correlating with the history to arrive at a tentative diagnosis considering UG RNVV CAB as basic format.

Student Instructions (Objective Assessment):

Step 1: As a continuation of the above experiential learning session, begin with general examination.

Step 2: Perform a comprehensive systemic assessment based on the associated systemic symptoms and past medical history or comorbidities.

Step 3: Document signs and interpretations in the case sheet.

Experiential-Learning 5.6 : Planning for investigation and diagnosis of musculoskeletal disorders (Hanustambha, Manyastambha, Katigraha).

Student Instructions (Planning for investigation):

Step 1: As a continuation of the above experiential learning session, recommend basic investigations along with result interpretation.

Step 2: Select subsequent tests if needed considering assessment of diagnosis and complications.

Step 3: Interpret lab/ imaging results and correlate with presenting symptoms and physical findings.

Step 4: Document correlation for each investigation with possible causes and interpretation.

Student Instructions (Diagnosis):

Step 1: As a continuation of the above experiential learning session, based on findings, list differential diagnoses.

Step 2: Based on history and examination, list possible diagnosis through diagnostic reasoning strategies in primary health care for clinical diagnosis, integrative model of clinical reasoning, dual process diagnostic reasoning model, hypothetico-deductive model, pattern recognition model, pathway for clinical reasoning model to learn intuitive approach and analytical approaches in clinical decision making as applicable to arrive at a diagnosis of the given case.

Step 3: Apply Ayurveda diagnostic reasoning using Lakshana Samucchaya, considering the comorbidities, systemic symptoms, and past medical history understand the Vyadhi Vinischaya, Vyadhi Hetu if any, Srotas involved, Dosha-Dushya Samurchana, and Anubandhya/ Anubandha Dosha/ Vyadhi, and Sadhya or Asadhya. Also assess Avastha (Purvaroopa, Roopa and Upadrava as applicable).

Step 4: Synthesize all findings and establish the most likely diagnosis.

Step 5: Evaluate prognosis and present a summary of the diagnosis with justification.

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	4

methods in each module for the semester. Keep a record of the structured pattern used for assessment. Calculate the modular grade point as per Table 6C.

Theory Based Assessment – 25 Marks. This component includes theory questions designed to assess conceptual clarity, integrative thinking, and the ability to apply learned concepts in clinical, diagnostic, or problem-solving contexts. Questions can be framed from any instructional unit, ensuring alignment with the intended learning outcomes.

And

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

Or

Any experiential as portfolio/ 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 : Lakshana Niroopana 1.5						
Module Learning Objectives **(At the end of the module, the students should be able to)** 1. Analyze the Dosha, Srotas, and structural basis of respiratory and related disorders such as Hikka, Shwasa, Kasa, and Kshata-Ksheena, including their samprapti and progression. 2. Evaluate classical diagnostic features and clinical signs like Koshta Bhedha Lakshana/ Urdhwa Nabhi Gata Lakshana, Pranavaha Sroto Viddha Lakshana linking them to chronic, acute respiratory conditions, and Trauma. 3. Correlate Ayurveda disease patterns with conditions like hiccups, asthma, COPD, pulmonary trauma, and pleural disorders using both symptomatology and investigative tools. 4. Create integrated diagnostic models combining Ayurveda principles with contemporary clinical assessment strategies.						

M 6 Unit 1 Hikka.1. Risk factors of Hikka.

2. Contributing factors of Hikka.

3. Clinical presentation of Hikka.

4. Underlying pathophysiology of Hikka.

References: 1,2,3,4,5,6,7,8,9,10,11,12,13,14,15,16,17,18,19,20,21,22,23,24,25,26,27,28,29,30,31,32,33,34,35,36,37,38,39,40,41,42,43,44,45,46

3A	3B	3C	3D	3E	3F	3G
CO1,CO3,CO4	Analyze the mechanism and Samprapti of Hikka, evaluate the Nidana, Samprapti, and Lakshana of Pancha Hikka with contemporary correlations, and differentiate acute and persistent hiccups.	2	Lecture	CAN	Knows-how	DIS,PBL, CBL
CO1,CO2,CO3 ,CO4	Demonstrate clinical assessment of hiccup.	5	Practical Training 6.1	PSY-GUD	Shows-how	CBL,SIM ,D-BED
CO1,CO3,CO4	Elicit a comprehensive history and perform focused physical and systemic examination in patients with hiccup.	4	Experiential-Learning 6.1	PSY-GUD	Shows-how	CBL,PER ,CD,D-BED,SIM
CO1,CO2,CO3 ,CO4	Interpret diagnostic investigations and apply differential diagnoses to establish an integrative diagnosis of hiccup.	4	Experiential-Learning 6.2	PSY-GUD	Knows-how	LRI,PBL, SIM,CD, CBL

M 6 Unit 2 Shwasa, Kasa.1. Symptomatology of Shwasa and Kasa.

2. Pathophysiological mechanisms of Shwasa and Kasa.

3. Progression of respiratory conditions.

4. Differentiation of Shwasa and Kasa.

References: 1,2,3,4,5,6,7,8,9,10,11,12,13,14,15,16,17,18,19,20,21,22,23,24,25,26,27,28,29,30,31,32,33,34,35,36,37,38,39,40,41,42,43,44,45,46

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

3A	3B	3C	3D	3E	3F	3G
CO1,CO3,CO4	Evaluate the Pratyatma Lakshana of Pancha Shwasa, analyze the Samprapti of Tamaka Shwasa in relation to Hikka Shwasa and Samanya Shwasa, and correlate the clinical entities of Pancha Shwasa with contemporary conditions.	2	Lecture	CE	Knows-how	L&GD,SDL,CBL
CO1,CO3,CO4	Analyze Shwasa and Kasa as secondary manifestations in systemic diseases, evaluate the Nidana, Purvaroopa, and Kasabhede Yukti of Kasa, and correlate Kshataja and Kshayaja Kasa with contemporary science.	2	Lecture	CAN	Knows-how	CBL,TBL,L&PPT,BS
CO1,CO3,CO4	Analyze the Vyavacchedaka Nidana of Kaphaja Kasa and Tamaka Shwasa, Pancha Kasa based on Shthivana, Kshataja Kasa and Urakshata, and Kshayaja Kasa and Rajayakshma, and evaluate the differential diagnosis of cough and breathlessness.	1	Lecture	CAN	Knows-how	TBL,BL,L&GD
CO1,CO2,CO3,CO4	Demonstrate clinical assessment of breathlessness and cough.	5	Practical Training 6.2	PSY-GUD	Shows-how	CBL,D-BED,SIM
CO1,CO3,CO4	Elicit a comprehensive history and perform a focused clinical examination in patients presenting with breathlessness and cough.	4	Experiential-Learning 6.3	PSY-GUD	Shows-how	SIM,D-BED,CD,CBL
CO1,CO2,CO3,CO4	Interpret relevant investigations and apply differential diagnoses to establish an integrative diagnosis of cough and breathlessness.	4	Experiential-Learning 6.4	PSY-GUD	Knows-how	SIM,PBL,D-BED,CD,CBL

M 6 Unit 3 Kshata - Ksheena/ Urakshata - Urdhwa Nabhi Gata Koshta Bheda Lakshana/ Pranavaha Sroto Viddha Lakshana.1. Clinical indicators of Kshata-Ksheena and Urakshata.
2. Pathological progression of Urdhwa Nabhi Gata Koshta Bheda Lakshana.
3. Pathological progression of Pranavaha Sroto Viddha Lakshana.
4. Site-specific symptomatology.

References: 1,2,3,4,5,6,7,8,9,10,11,12,13,14,15,16,17,18,19,20,21,22,23,24,25,26,27,28,29,30,31,32,33,34,35,36,37,38,39,40,41,42,43,44,45,46

3A	3B	3C	3D	3E	3F	3G
CO1,CO3,CO4	Analyze the pathogenesis of Kshata Ksheena/ Urakshata by delineating the roles of	1	Lecture	CAN	Knows-	L&GD,C

					how	BL
CO1,CO3,CO4	Synthesize and correlate the classical Lakshana of Kshata Ksheena/ Urakshata with relevant clinical presentations in contemporary pulmonary or thoracic pathology, establishing translational significance.	1	Lecture	CS	Knows-how	L&PPT ,CBL
CO1,CO3,CO4	Analyze the symptomatology of Urdhwa Nabhi Gata Koshta Bheda/ Pranavaha Sroto Viddha Lakshana with contemporary diagnostic frameworks and differentiate blunt and sharp chest injuries.	1	Lecture	CAN	Knows-how	TBL,L& GD,PER, CBL
CO1,CO2,CO3 ,CO4	Demonstrate clinical assessment of blunt injury to the chest.	5	Practical Training 6.3	PSY-GUD	Shows-how	SIM,CD, D-BED,R P,CBL
CO1,CO2,CO3 ,CO4	Demonstrate clinical assessment of sharp injury to the chest.	5	Practical Training 6.4	PSY-GUD	Knows-how	SIM,PER, CBL,D-BED,CD
CO1,CO3,CO4	Elicit a comprehensive history and perform a focused physical examination in patients with blunt chest trauma.	3	Experiential-Learning 6.5	PSY-GUD	Shows-how	SIM,PBL, CBL,D-BED,CD
CO1,CO2,CO3 ,CO4	Interpret relevant investigations and apply differential diagnoses to establish an integrative diagnosis of blunt chest trauma.	2	Experiential-Learning 6.6	PSY-GUD	Knows-how	CBL,PBL ,D-BED,S IM,CD
CO1,CO3,CO4	Elicit a comprehensive history and perform a focused physical examination in patients with sharp chest trauma.	3	Experiential-Learning 6.7	PSY-GUD	Shows-how	D-BED,P ER,SIM, CBL,CD
CO1,CO2,CO3 ,CO4	Interpret relevant investigations and apply differential diagnoses to establish an integrative diagnosis of sharp chest trauma.	2	Experiential-Learning 6.8	PSY-GUD	Knows-how	SIM,D-B ED,CD,C BL
Practical Training Activity						

Practical Training 6.1 : Clinical assessment of hiccup.

Teacher Instruction:

Step 1: Case Introduction and History Taking - Instruct students to systematically collect a comprehensive patient history, with focused attention on the detailed evaluation of the history of present illness - particularly in patient of hiccup. Key aspects to explore include the onset, timing, frequency, course, associated symptoms, modifying factors, severity and other systemic complaints. Emphasize the need to assess past medical and surgical history, treatment history, relevant negative history, family history, socioeconomic background, and personal history.

Step 2: Physical Examination - Teach students to perform physical examination particularly a general examination and history based focused systemic examination in specific.

Step 3: Diagnostic Investigations - Facilitate discussion on selecting and interpreting relevant diagnostic investigations to support or confirm clinical impressions. Encourage students to correlate findings from baseline investigations with clinical data, and to recognize when further, targeted diagnostic tests are necessary for a more refined evaluation.

Step 4: Formulation of Differential Diagnosis - Encourage students to develop a well-rounded differential diagnosis by correlating clinical findings with patient history. Stress the importance of evaluating key features of hiccup in relation to onset, timing, frequency, course, associated symptoms, modifying factors, severity and other systemic complaints. Additionally, guide them to apply Ayurveda diagnostic understanding using Lakshana samucchaya to determine Vyadhi Vinischaya, Vyadhi Hetu if any, assess the Srotas involved, recognize Anubandhya and Anubandha Dosha, and evaluate the Sadhya or Asadhya. Also demonstrate Avastha (Purvaroopa, Roopa and Upadrava as applicable).

Step 5: Clinical Reasoning and Diagnostic Synthesis - Support students in synthesizing clinical information and investigative findings to arrive at the most likely diagnosis. Encourage a balanced diagnostic approach that integrates Ayurveda understanding with contemporary reasoning to enhance clinical decision-making.

Practical Training 6.2 : Clinical assessment of breathlessness and cough.

Teacher Instruction:

Step 1: Case Introduction and History Taking - Instruct students to systematically collect a comprehensive patient history, with focused attention on the detailed evaluation of the history of present illness - particularly in patient of shortness of breath, cough, orthopnoea and oedema. Key aspects to explore include the onset, timing, course, character, frequency if any, modifying factors, severity, type of breathing and cough and other systemic complaints. Emphasize the need to assess past medical and surgical history, treatment history, relevant negative history, family history, socioeconomic background, and personal history.

Step 2: Physical Examination - Teach students to perform physical examination particularly a general examination and history based focused systemic examination in specific.

Step 3: Diagnostic Investigations - Facilitate discussion on selecting and interpreting relevant diagnostic investigations to support or confirm clinical impressions. Encourage students to correlate findings from baseline investigations with clinical data, and to recognize when further, targeted diagnostic tests are necessary for a more refined evaluation.

Step 4: Formulation of Differential Diagnosis - Encourage students to develop a well-rounded differential diagnosis by correlating clinical findings with patient history.

Stress the importance of evaluating key features of shortness of breath, cough, orthopnoea and oedema in relation to onset, timing, course, character, frequency if any, modifying factors, severity, type of breathing and cough and other systemic complaints. Additionally, guide them to apply Ayurveda diagnostic understanding using Lakshana samucchaya to determine Vyadhi Vinischaya, Vyadhi Hetu if any, assess the Srotas involved, recognize Anubandhya and Anubandha Dosha, and evaluate the Sadhya or Asadhya. Also demonstrate Avastha (Purvaroopa, Roopa and Upadrava as applicable).

Step 5: Clinical Reasoning and Diagnostic Synthesis - Support students in synthesizing clinical information and investigative findings to arrive at the most likely diagnosis. Encourage a balanced diagnostic approach that integrates Ayurveda understanding with contemporary reasoning to enhance clinical decision-making.

Practical Training 6.3 : Clinical assessment of blunt injury to the chest.

Teacher Instruction:

Step 1: Case Introduction and History Taking - Enable students to elicit a focused history from a patient with blunt chest trauma, emphasizing the mechanism of injury, time since trauma, presence of chest pain, difficulty in breathing, and prior medical or surgical history.

Step 2: Physical Examination - Train students to perform a thorough chest examination, identifying signs of chest wall Injuries and pulmonary injuries.

Step 3: Diagnostic Investigations - Facilitate discussion on selecting and interpreting relevant diagnostic investigations to support or confirm clinical impressions. Encourage students to correlate findings from baseline investigations with clinical data, and to recognize when further, targeted diagnostic tests are necessary for a more refined evaluation.

Step 4: Formulation of Differential Diagnosis - Support students in forming a differential diagnosis that includes flail chest, simple rib fracture, pulmonary contusion, pneumothorax, and other thoracic injuries, based on clinical and radiological findings. Additionally, guide them to apply Ayurveda diagnostic principles using Lakshana samucchaya to determine Vyadhi Vinischaya, and evaluate the Sadhya or Asadhya.

Step 5: Clinical Reasoning and Diagnostic Synthesis - Encourage students to integrate history, examination findings, and investigation results to confirm the diagnosis and differentiate it from other thoracic injuries in a non-critically ill trauma patient.

Practical Training 6.4 : Clinical assessment of sharp injury to the chest.

Teacher Instruction:

Step 1: Case Introduction and History Taking - Equip students to obtain a focused and concise trauma history using the SAMPLE approach (Symptoms, Allergies, Medications, Past history, Last meal, Events), with emphasis on mechanism of injury, timeline, and rapid identification of red flag symptoms like dyspnea, chest pain, or altered consciousness.

Step 2: Physical Examination - Train students to perform a prioritized physical examination using the primary (ABCDE) and secondary trauma survey, identifying immediate threats to life such as tracheal deviation, open chest wounds, paradoxical chest movement, distended neck veins, or absent breath sounds.

Step 3: Diagnostic Investigations - Guide students to initiate essential bedside and emergency investigations including chest X-ray, extended FAST (eFAST), arterial blood gas, and ECG, aiming to rapidly detect tension pneumothorax, hemothorax, pericardial effusion, or pulmonary contusion.

Step 4: Formulation of Differential Diagnosis - Help students recognize and list life-threatening conditions associated with chest trauma such as tension pneumothorax,

massive hemothorax, cardiac tamponade, flail chest with respiratory failure, and myocardial contusion. Additionally, guide them to apply Ayurveda understanding using Lakshana samucchaya to determine Vyadhi Vinischaya, and evaluate the Sadhya or Asadhya.

Step 5: Clinical Reasoning and Diagnostic Synthesis - Enable students to synthesize clinical and investigation findings in real-time to prioritize diagnoses and guide immediate management decisions, integrating trauma protocols (e.g., ATLS) to stabilize the patient.

Experiential learning Activity

Experiential-Learning 6.1 : Subjective and objective assessment in patients with hiccup.

Student Instructions (Subjective Assessment):

Step 1: Teacher will allot a real case or simulated case of hiccup, where you have to interact about the onset, timing, frequency, and duration of hiccups.

Step 2: Explore associated symptoms, modifying or triggering factor.

Step 3: Take detailed past medical/ surgical history, treatment history, family history, and socioeconomic/ occupational background.

Step 3: Assess relevant Dosha Hetu, Vyadhi Hetu, Ubhaya Hetu, Utpataka and Vyanjaka Hetu, Pradhanika and Vyabhichari Hetu if applicable from the subjective assessment.

Step 4: Present the findings correlating with the history to arrive at a tentative diagnosis considering UG RNVV CAB as basic format.

Student Instructions (Objective Assessment):

Step 1: As a continuation of the above experiential learning session, begin with general examination.

Step 2: Perform a comprehensive systemic assessment based on the associated systemic symptoms and past medical history or comorbidities.

Step 3: Document signs with interpretation in the case sheet.

Experiential-Learning 6.2 : Planning for investigation and diagnosis in hiccup.

Student Instructions (Planning for Investigation):

Step 1: As a continuation of the above experiential learning session, recommend basic investigations along with result interpretation.

Step 2: Select subsequent tests if needed considering assessment of diagnosis and complications.

Step 3: Interpret lab/ imaging results and correlate with presenting symptoms and physical findings.

Step 4: Document correlation for each investigation with possible causes and interpretation.

Student Instructions (Diagnosis):

Step 1: As a continuation of the above experiential learning session, identify and document the pattern of hiccup: onset, timing, frequency, duration, associated symptoms, aggravating/ relieving factors, and systemic complaints.

Step 2: Based on history and examination, list possible diagnosis through diagnostic reasoning strategies in primary health care for clinical diagnosis, integrative model of clinical reasoning, dual process diagnostic reasoning model, hypothetico-deductive model, pattern recognition model, pathway for clinical reasoning model to learn intuitive approach and analytical approaches in clinical decision making as applicable to arrive at a diagnosis of the given case.

Step 3: Apply Ayurveda diagnostic reasoning using Lakshana Samucchaya, considering the comorbidities, systemic symptoms, and past medical history understand the Vyadhi Hetu if any, Srotas involved, Dosha-Dushya Samurchana, and Anubandhya/ Anubandha Dosha/ Vyadhi, and Sadhya or Asadhya. Also demonstrate Avastha (Purvaroopa, Roopa and Upadrava as applicable).

Step 4: Synthesize all findings and establish the most likely diagnosis.

Step 5: Evaluate prognosis and present a summary of the diagnosis with justification.

Experiential-Learning 6.3 : Subjective and objective assessment in patients presenting with breathlessness and cough.

Student Instructions (Subjective Assessment):

Step 1: Teacher will allot a real case or simulated case of breathlessness and cough, etc. are to be elaborated in terms of onset, duration, type of breathing and coughing, orthopnoea, and associated oedema in relation to onset, timing, course, character, frequency if any, modifying factors, severity, type of breathing and cough and other systemic complaints.

Step 2: Document modifying factors, severity, diurnal variation, and any systemic symptoms.

Step 3: Take detailed past medical/ surgical history, drug history, immunization history, personal history, family history, and assess socioeconomic and occupational background.

Step 4: Assess relevant Dosha Hetu, Vyadhi Hetu, Ubhaya Hetu, Utpataka and Vyanjaka Hetu, Pradhanika and Vyabhichari Hetu if applicable from the subjective assessment.

Step 5: Present the findings correlating with the history to arrive at a tentative diagnosis considering UG RNVV CAB as basic format.

Student Instructions (Objective Assessment):

Step 1: As a continuation of the above experiential learning session, begin with general examination.

Step 2: Perform a comprehensive systemic assessment based on the associated systemic symptoms and past medical history or comorbidities.

Step 3: Document signs with interpretation in the case sheet.

Experiential-Learning 6.4 : Planning for investigation and diagnosis in patients with cough and breathlessness.

Student Instructions (Planning for Investigation):

Step 1: As a continuation of the above experiential learning session, recommend basic investigations along with result interpretation.

Step 2: Select subsequent tests if needed considering assessment of diagnosis and complications.

Step 3: Interpret lab/ imaging results and correlate with presenting symptoms and physical findings.

Step 4: Document correlation for each investigation with possible causes and interpretation.

Student Instructions (Diagnosis):

Step 1: As a continuation of the above experiential learning session, analyze symptoms such as cough, dyspnoea, orthopnoea, and edema in terms of onset, character, frequency, aggravating factors, and systemic associations.

Step 2: Based on history and examination, list possible diagnosis through diagnostic reasoning strategies in primary health care for clinical diagnosis, integrative model of clinical reasoning model, dual process diagnostic reasoning model, hypothetico-deductive model, pattern recognition model, pathway for clinical reasoning model to learn intuitive approach and analytical approaches in clinical decision making as applicable to arrive at a diagnosis of the given case.

Step 3: Apply Ayurveda diagnostic reasoning using Lakshana Samucchaya, considering the comorbidities, systemic symptoms, and past medical history understand the Vyadhi Hetu if any, Srotas involved, Dosha-Dushya Samurchana, and Anubandhya/ Anubandha Dosha/ Vyadhi, and Sadhya or Asadhya. Also demonstrate Avastha (Purvaroopa, Roopa and Upadrava as applicable).

Step 4: Synthesize all findings and establish the most likely diagnosis.

Step 5: Evaluate prognosis and present a summary of the diagnosis with justification.

Experiential-Learning 6.5 : Subjective and objective assessment in patients with blunt chest trauma.

Student Instructions (Subjective Assessment):

Step 1: Teacher will allot a real case or simulated case with chest pain secondary to trauma.

Step 2: Document modifying factors, severity, mechanism of injury, time since trauma, presence of chest pain, difficulty in breathing, and prior medical or surgical history

Step 3: Take detailed past medical/ surgical history, drug history, personal history, family history, and assess socioeconomic and occupational background.

Step 4: Assess relevant Dosha Hetu, Vyadhi Hetu, Ubhaya Hetu, Utpataka and Vyanjaka Hetu, Pradhanika and Vyabhichari Hetu and Srotas involved if applicable from the subjective assessment.

Step 5: Present the findings correlating with the history to arrive at a tentative diagnosis considering UG RNVV CAB as basic format.

Student Instructions (Objective Assessment):

Step 1: As a continuation of the above experiential learning session, begin with general examination.

Step 2: Perform a comprehensive systemic examination. Perform a thorough chest examination, identifying signs of chest wall injuries & pulmonary injuries.

Step 3: Document signs with interpretation in the case sheet.

Experiential-Learning 6.6 : Planning for investigation and diagnosis for blunt chest trauma.

Student Instructions (Planning for Investigation):

Step 1: As a continuation of the above experiential learning session, recommend basic investigations along with result interpretation.

Step 2: Select subsequent tests if needed considering assessment of diagnosis and complications.

Step 3: Interpret lab/ imaging results and correlate with presenting symptoms and physical findings.

Step 4: Document correlation for each investigation with possible causes and interpretation.

Student Instructions (Diagnosis):

Step 1: Analyze symptoms of post traumatic chest pain in terms of onset, character, frequency, aggravating factors, and systemic associations.

Step 2: Based on history and examination, list possible diagnosis through diagnostic reasoning strategies in primary health care for clinical diagnosis, integrative model of

clinical reasoning, dual process diagnostic reasoning model, hypothetico-deductive model, pattern recognition model, pathway for clinical reasoning model to learn intuitive approach and analytical approaches in clinical decision making as applicable to arrive at a diagnosis of the given case to confirm flail chest, simple rib fracture, pulmonary contusion, pneumothorax, and other thoracic injuries, based on clinical and radiological findings.

Step 3: Apply Ayurveda diagnostic reasoning using Lakshana Samucchaya, considering the comorbidities, systemic symptoms, and past medical history understand the Vyadhi Vinischaya, Vyadhi Hetu if any, Srotas involved, Dosha-Dushya Samurchana, and Anubandhya/ Anubandha Dosha/ Vyadhi, and Sadhya or Asadhya. Also assess Avastha (Purvaroopa, Roopa and Upadrava as applicable).

Step 4: Synthesize all findings and establish the most likely diagnosis.

Step 5: Evaluate prognosis and present a summary of the diagnosis with justification.

Experiential-Learning 6.7 : Subjective and objective assessment in patients with sharp chest trauma.

Student Instructions (Subjective assessment):

Step 1: Obtain a structured history using the SAMPLE approach (Symptoms, Allergies, Medications, Past history, Last meal, Events), focusing on mechanism of injury, time since trauma, and red flag symptoms like dyspnoea, chest pain, bleeding, or altered sensorium.

Step 2: Document site and type of penetrating object, if known, entry/ exit wounds, and associated trauma (e.g., fall, stab, gunshot).

Step 3: Record past history, comorbidities, prior chest conditions or interventions, drug history, immunization (e.g., tetanus), and occupational risks.

Step 4: Assess Dosha Hetu, Vyadhi Hetu, Ubhaya Hetu, Utpataka Hetu, Vyanjaka Hetu, and Srotas Dushti based on Ayurveda assessment principles.

Step 5: Present findings using UG RNVV CAB format, correlating mechanism and presentation to initiate early prioritization of severity.

Student Instructions (Objective Assessment):

Step 1: As a continuation of the above experiential learning session, begin with general examination.

Step 2: Perform a comprehensive systemic assessment based on the associated systemic symptoms and past medical history or comorbidities.

Step 3: Document signs with interpretation in the case sheet.

Experiential-Learning 6.8 : Planning for investigation and diagnosis for sharp chest trauma.

Student Instructions (Planning for Investigation):

Step 1: As a continuation of the above experiential learning session, recommend basic investigations along with result interpretation.

Step 2: Select subsequent tests if needed considering assessment of diagnosis and complications.

Step 3: Interpret lab/ imaging results and correlate with presenting symptoms and physical findings.

Step 4: Document correlation for each investigation with possible causes and interpretation.

Student Instructions (Diagnosis):

Step 1: Analyze symptoms in terms of onset, character, frequency, aggravating factors, and systemic associations.

Step 2: Based on history and examination, list possible diagnosis through diagnostic reasoning strategies in primary health care for clinical diagnosis, integrative model of

clinical reasoning, dual process diagnostic reasoning model, hypothetico-deductive model, pattern recognition model, pathway for clinical reasoning model to learn intuitive approach and analytical approaches in clinical decision making as applicable to arrive at a diagnosis of the given case.

Step 3: Apply Ayurveda diagnostic reasoning using Lakshana Samucchaya, considering the comorbidities, systemic symptoms, and past medical history understand the Vyadhi Hetu if any, Srotas involved, Dosha-Dushya Samurchana, and Anubandhya/ Anubandha Dosha/ Vyadhi, and Sadhya or Asadhya. Also assess Avastha (Purvaroopa, Roopa and Upadrava as applicable).

Step 4: Synthesize all findings and establish the most likely diagnosis.

Step 5: Evaluate prognosis and present a summary of the diagnosis with justification.

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 6C. Theory Based Assessment – 25 Marks. This component includes theory questions designed to assess conceptual clarity, integrative thinking, and the ability to apply learned concepts in clinical, diagnostic, or problem-solving contexts. Questions can be framed from any instructional unit, ensuring alignment with the intended learning outcomes. And Any practical in converted form can be taken for assessment. (25 Marks). Or Any experiential as portfolio/ reflections/ presentations, can be taken as an assessment. (25 Marks).	4

Semester No : 6

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 7 : Lakshana Niroopana 1.6

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

1. Analyze the pathogenesis of Gata Vata and Avarana Vata based on classical principles.
2. Evaluate the clinical features, types, and progression patterns of Gata Vata and Avarana Vata.
3. Correlate these conditions with contemporary pathological understanding.

M 7 Unit 1 Gata Vata. 1. Site-specific clinical manifestations of Gata Vata conditions.
2. Pathogenesis of Gata Vata conditions.
3. Diagnostic differentiation of Gata Vata conditions.

References: 1,2,3,4,5,6,7,8,9,10,11,12,13,14,15,16,17,18,19,20,21,22,23,24,25,26,27,28,29,30,31,32,33,34,35,36,37,38,39,40,41,42,43,44,45,46

3A	3B	3C	3D	3E	3F	3G
CO1,CO3,CO4	Analyze Snayu and Snayugata Vata in relation to neurological disorders and correlate various systemic manifestations of a. Koshtagata, Sarvangagata, Amashayagata, Pakwashayagata, Gudagata Vata b. Tvachagata, Raktagata, Mamsa-Medhogata, Asthi-Majjagata, Asthigata and Majjagata Vata, Shukragata Vata c. Sandhigata, and Siragata Vata with contemporary clinical perspectives.	5	Lecture	CAN	Knows-how	BS,CBL,TBL,L&PPT
CO1,CO3,CO4	Demonstrate clinical assessment and interpretation of signs and symptoms of Gata Vata.	7	Practical Training 7.1	PSY-GUD	Shows-how	CBL,SIM,CD
CO1,CO3,CO4	Elicit a structured history and perform a focused physical examination to identify symptoms and signs of Gata Vata.	5	Experiential-Learning 7.1	PSY-GUD	Shows-how	D-BED,CD,SIM,CBL
CO1,CO3,CO4	Interpret diagnostic investigations and apply differential diagnoses to confirm or support	4	Experiential-	PSY-	Knows-	SIM,D-B

	the diagnosis of Gata Vata.		Learning 7.2	GUD	how	ED,CBL,CD

M 7 Unit 2 Avarana Vata. 1. Mechanisms of Avarana of Vata.

2. Impairments caused by Avarana of Vata.

3. Pathogenesis of Avarana of Vata.

4. Clinical implications across systems.

References: 1,2,3,4,5,6,7,8,9,10,11,12,13,14,15,16,17,18,19,20,21,22,23,24,25,26,27,28,29,30,31,32,33,34,35,36,37,38,39,40,41,42,43,44,45,46

3A	3B	3C	3D	3E	3F	3G
CO1,CO3,CO4	Analyze Avarana Vata with reference to Avaraka and Avrita Dosha, correlate Nidana and Samprapti of Margavarana with clinical manifestations, and differentiate Avarana from Gata Vata and Margavarana in contemporary perspectives.	5	Lecture	CAN	Knows-how	L&PPT , BS,TBL, CBL
CO1,CO3,CO4	Demonstrate the clinical assessment and diagnostic interpretation of Avarana conditions, including Murta Avarana and Amurta Avarana.	7	Practical Training 7.2	PSY-GUD	Shows-how	CD,D-BED,SIM,CBL
CO1,CO3,CO4	Demonstrate the clinical identification, reasoning, and differentiation of Margavarana.	6	Practical Training 7.3	PSY-GUD	Shows-how	CBL,D-BED,CD,SIM
CO1,CO3,CO4	Elicit a comprehensive history and perform a systemic examination to identify Avaraka and Avrita, distinguish Murta and Amurta Avarana, and recognize functional or structural signs of specific Avarana.	5	Experiential-Learning 7.3	PSY-GUD	Shows-how	CD,RP,SIM,CBL,D-BED
CO1,CO3,CO4	Apply differential diagnosis and interpret clinical findings to arrive at a provisional diagnosis of Avarana Vata.	4	Experiential-Learning 7.4	PSY-GUD	Knows-how	CBL,SIM,CD,D-BED
CO1,CO3,CO4	Elicit a structured history and perform systemic examination to identify Vata Prakopa and structural or functional blockage in Rasa-Rakta Marga in suspected Margavarana.	4	Experiential-Learning 7.5	PSY-GUD	Shows-how	D-BED,CD,SIM,CBL,TBL

CO1,CO3,CO4	Apply differential diagnosis and interpret clinical findings to identify signs of Margavarana involving Rasa-Rakta Marga.	4	Experiential-Learning 7.6	PSY-GUD	Knows-how	SIM,CD,CBL,D-BED

Practical Training Activity

Practical Training 7.1 : Clinical assessment and interpretation of signs and symptoms of Gata Vata.

Teacher Instruction:

Step 1: Case Introduction and History Taking - The teacher presents selected patient cases with suspected Gata Vata and guides students in eliciting focused histories. The emphasis is to elicit a detailed history focusing on the onset, progression, nature of symptoms and modifying factors suggestive of Vata Dushti, with attention to the site of stagnation - Ashaya, Dhatu, or Avayava.

Step 2: Physical Examination - The teacher demonstrates systematic and relevant physical examination to identify objective clinical signs of Vata Dushti and correlate them with potential sites of stagnation.

Step 3: Diagnostic Investigations - The teacher discusses case-specific investigations - Ayurveda and or contemporary medical science - and explains how findings correlate with the hypothesized site of Vata Dushti. Students interpret results under supervision.

Step 4: Formulation of Differential Diagnosis - Adopting the Case-based group discussion and diagnostic reasoning exercises, the teacher guides students in listing Ayurveda and contemporary differential diagnoses based on the history, examination and clinical and investigational findings, focusing on distinguishing features of site-specific Gata Vata manifestations.

Step 5: Clinical Reasoning and Diagnostic Synthesis - Under the teacher's guidance, students synthesize the history, examination, and investigations to arrive at a provisional diagnosis of Gata Vata. The discussion includes understanding Samprapti based on affected sites, their diagnosis in the given case.

Practical Training 7.2 : Clinical assessment and diagnostic interpretation of Avarana conditions.

Teacher Instruction:

Step 1: Case Introduction and History Taking - The teacher introduces a patient case suspected to have Avarana Vata and guides students to elicit a detailed clinical history. The history focuses on - functional disturbances, structural derangements, identify Avrta and Avaraka.

Step 2: Physical Examination - The teacher demonstrates systematic and relevant physical examination to identify objective clinical signs of Vata/ Vata subtypes vitiation either Avarana by Anya Dosha, Dhatu, Mala, Anna, subtype of Vata with localized structural signs, Systemic or functional signs and symptoms.

Step 3: Diagnostic Investigations - The teacher discusses appropriate case-based investigations: The teacher discusses case-specific investigations and explains how findings correlate with Avarana to Vata/ Vata subtypes either by Anya Dosha, Dhatu, Mala, Anna, subtype of Vata. Students interpret results under supervision.

Step 4: Formulation of Differential Diagnosis - Adopting the Case-based group discussion and diagnostic reasoning exercises, the teacher guides students in listing Ayurveda and contemporary differential diagnoses based on the history, examination and clinical and investigational findings, focusing on distinguishing features of Murta

and Amurta Avarna.

Step 5: Clinical Reasoning and Diagnostic Synthesis - Under the teacher's guidance, students synthesize the history, examination, and investigations to arrive at a provisional diagnosis of Avarana. The discussion includes understanding Samprapti based on the Murta and Amurta Avarna.

Practical Training 7.3 : Clinical identification, reasoning, and differentiation of Margavarana.

Teacher Instructions:

Step 1: Case Introduction and History Taking - The teacher introduces a patient case suspected to have Margavarana and guides students to elicit a detailed clinical history. Emphasis should be given to medical history, family history, personal history, and occupational history. The history focuses on – Rasa Rakta Marga, Vata Prakopa Lakshana and onset of symptoms.

Step 2: Physical Examination - The teacher demonstrates systematic and relevant physical examination to identify objective clinical signs of Vata Prakopa and Rasa Rakta Marga.

Step 3: Diagnostic Investigations - The teacher discusses appropriate case-based investigations: The teacher discusses case-specific investigations and explains how findings correlate with Margavarana to Vata Dosha at different sites of the body.

Step 4: Formulation of Differential Diagnosis - Adopting the case-based group discussion and diagnostic reasoning exercises, the teacher guides students in listing differential diagnoses based on the history, examination and clinical and investigational findings, focusing on distinguishing features of Margavarna with Dhatukshaya.

Step 5: Clinical Reasoning and Diagnostic Synthesis - Under the teacher's guidance, students synthesize the history, examination, and investigations to arrive at a provisional diagnosis of Margavarana. The discussion includes understanding the Vyadhi Samprapti based on the Margavarana.

Experiential learning Activity

Experiential-Learning 7.1 : Subjective and objective assessment of Gata Vata.

Student Instructions (Subjective Assessment):

Step 1: Teacher will allot a real case or simulated case, with suspected Gata Vata.

Step 2: Elicit the history of the onset, progression, nature of symptoms and modifying factors suggestive of Vata Dushti, with attention to the site of stagnation - Ashaya, Dhatu, or Avayava.

Step 3: Assess relevant Dosha Hetu, Vyadhi Hetu, Ubhaya Hetu, Utpataka and Vyanjaka Hetu, Pradhanika and Vyabhichari Hetu and Srotas involved if applicable from the subjective assessment.

Step 4: Present the findings correlating with the history to arrive at a tentative diagnosis considering self-designed format.

Student Instructions (Objective Assessment):

Step 1: As a continuation of the above experiential learning session, begin with general examination.

Step 2: Perform a comprehensive systemic assessment based on the associated systemic symptoms and past medical history or comorbidities.

Step 3: Document signs and interpretations in the case sheet.

Experiential-Learning 7.2 : Planning for investigation and diagnosis of Gata Vata.

Student Instructions (Planning for Investigation):

Step 1: As a continuation of the above experiential learning session, recommend basic investigations along with result interpretation.

Step 2: Select subsequent tests if needed considering assessment of diagnosis and complications.

Step 3: Interpret lab/ imaging results and correlate with presenting symptoms and physical findings.

Step 4: Document correlation for each investigation with possible causes and interpretation.

Student Instructions (Diagnosis):

Step 1: As a continuation of the above experiential learning session, and based on the case, list possible differential diagnoses.

Step 2: Based on history and examination, list possible diagnosis through diagnostic reasoning strategies in primary health care for clinical diagnosis, integrative model of clinical reasoning, dual process diagnostic reasoning model, hypothetico-deductive model, pattern recognition model, pathway for clinical reasoning model to learn intuitive approach and analytical approaches in clinical decision making as applicable to arrive at a diagnosis of the given case.

Step 3: Apply Ayurveda diagnostic reasoning using Lakshana Samucchaya, considering the comorbidities, systemic symptoms, and past medical history understand the Vyadhi Vinischaya, Vyadhi Hetu if any, Srotas involved, Dosha-Dushya Samurchana, and Anubandhya/ Anubandha Dosha/ Vyadhi, and Sadhya or Asadhya. Also assess Avastha (Purvaroopa, Roopa and Upadrava as applicable).

Step 4: Synthesize all findings and establish the most likely diagnosis.

Step 5: Evaluate prognosis and present a summary of the diagnosis with justification.

Experiential-Learning 7.3 : Subjective and objective assessment of functional disturbances and structural derangements to identify Avaraka and Avrita.

Student Instructions (Subjective Assessment):

Step 1: Teacher will allot a real case or simulated case with presenting complaints suggesting functional disturbances and structural derangements to identify Avaraka and Avrita and distinguish between Murta and Amurta Avarana conditions. Explore onset, character, progression, aggravating/ relieving factors and severity.

Step 2: Elicit history indicating Avrita Vata and Avaraka factors.

Step 3: Identify features suggesting Murta Avarana and Amurta Avarana.

Step 4: Present the findings correlating with the history to arrive at a tentative diagnosis considering self-designed format

Student Instructions (Objective Assessment):

Step 1: As a continuation of the above experiential learning session, begin with understanding structural and functional loss either localized or systemic manifestations related with Avrta and Avaraka Vata Dosha.

Step 2: Relate findings with specific Murta Avarana and Amurta Avarana.

Experiential-Learning 7.4 : Diagnosis of Avarana Vata.

Student Instructions (Diagnosis):

Step 1: As a continuation of the above experiential learning session, list differentials involving Vata Avarana.

Step 2: Use Ayurveda methodology - Hetu, Dosha, Dushya, Srotas to analyze each possibility.

Step 3: Categorize case as Murta Avarana if symptoms correlate with anatomical/ structural block or Amurta Avarana for functional obstruction without structural findings.

Step 4: Finalize the diagnosis with supportive Samprapti and justify the decision.

Experiential-Learning 7.5 : Subjective and objective assessment of Margavarana.

Student Instructions (Subjective Assessment):

Step 1: Teacher will allot a real case or simulated case of suspected Margavarana pathology.

Step 2: Elicit details of symptom onset, character, progression, modifying factors and severity. Record medical history,fFamily history, personal history, and occupational history.

Step 3: Identify features of Rasa-Rakta Marga involvement.

Step 4: Explore Hetu such as Guru-Snigdha Ahara, Kapha aggravation, sedentary lifestyle, etc.

Step 5: Present the findings correlating with the history to arrive at a tentative diagnosis considering self-designed format.

Student Instructions (Objective Assessment):

Step 1: As a continuation of above experiential learning session, examine for general signs of Vata aggravation.

Step 2: Assess signs related with Kapha Prakopa or Pitta Prakopa related manifestations.

Step 3: Correlate findings with Srotorodha in Rasa-Rakta Marga.

Experiential-Learning 7.6 : Planning for investigation and diagnosis of Margavarana involving Rasa-Rakta Marga.

Student Instructions (Planning for Investigation):

Step 1: As a continuation of above experiential learning session, recommend baseline investigations.

Step 2: Analyze findings with the Margavarana.

Step 3: Select subsequent tests if needed considering assessment of diagnosis and complications.

Step 4: Document correlation for each investigation with possible causes and interpretation.

Student Instructions (Diagnosis):

Step 1: As a continuation of above experiential learning session, based on history and examination, list possible diagnosis through diagnostic reasoning strategies in primary health care for clinical diagnosis, integrative model of clinical reasoning model, dual process diagnostic reasoning, hypothetico-deductive model, pattern recognition model, pathway for clinical reasoning model to learn intuitive approach and analytical approaches in clinical decision making as applicable to arrive at a diagnosis of the given case.

Step 2: Apply Ayurveda diagnostic reasoning using Lakshana Samucchaya, considering the comorbidities, systemic symptoms, and past medical history understand the Vyadhi Vinischaya, Vyadhi Hetu if any, Srotas involved, and Anubandhya/ Anubandha Dosha/ Vyadhi, and Sadhya or Asadhya.

Step 3: Synthesize all findings and establish the most likely diagnosis.
Step 4: Evaluate prognosis and present a summary of the diagnosis with justification.

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 6C. Theory Based Assessment – 25 Marks. This component includes theory questions designed to assess conceptual clarity, integrative thinking, and the ability to apply learned concepts in clinical, diagnostic, or problem-solving contexts. Questions can be framed from any instructional unit, ensuring alignment with the intended learning outcomes. And Any practical in converted form can be taken for assessment. (25 Marks). Or Any experiential as portfolio/ reflections/ presentations, can be taken as an assessment. (25 Marks).	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 8 : Lakshana Niroopana 1.7						

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

1. Analyze the Ayurveda principles-based pathogenesis of Phiranga, Upadamsha, Klaibya, and Vandhyatva as described in classical texts.
2. Evaluate the clinical features, causes, and types of sexually transmitted infections, reproductive dysfunctions, and infertility from classical and contemporary

perspectives.

3. Correlate Ayurveda concepts with contemporary understanding of venereal diseases, erectile dysfunction, and infertility using diagnostic parameters.
4. Develop diagnostic strategies for Phiranga, Upadamsha, Klaibya, and Vandhyatva integrating Ayurveda principles with contemporary approaches.

M 8 Unit 1 Phiranga, Upadamsha. Clinical presentation of Phiranga
1. Pathology of Phiranga.
2. Clinical presentation of Upadamsha.
3. Pathology of Upadamsha.
4. Etiology of Phiranga and Upadamsha.
5. Progression of Phiranga and Upadamsha.
6. Relevance within communicable and sexually transmitted disorders.

References: 1,2,3,4,5,6,7,8,9,10,11,12,13,14,15,16,17,18,19,20,21,22,23,24,25,26,27,28,29,30,31,32,33,34,35,36,37,38,39,40,41,42,43,44,45,46

3A	3B	3C	3D	3E	3F	3G
CO1,CO3,CO4	Analyze the Pratyatma Lakshana of Upadamsha and evaluate its Nidana with reference to male and female factors and Utpadaka and Vyanjaka Hetu.	3	Lecture	CAN	Knows-how	L&PPT ,BL
CO1,CO3,CO4	Analyze the Pancha Upadamsha and the Nidana and Bheda of Phiranga in relation to contemporary understanding, and correlate them with the clinical attributes of syphilis, gonorrhoea, and herpes simplex type II.	2	Lecture	CAN	Knows-how	BL,L&GD,CBL
CO1,CO2,CO3,CO4	Demonstrate the clinical assessment of Phiranga and Upadamsha.	7	Practical Training 8.1	PSY-GUD	Shows-how	CBL,CD,D-BED
CO1,CO3,CO4	Elicit a comprehensive history and perform a focused physical examination to identify local and systemic signs in patients with genital lesions.	5	Experiential-Learning 8.1	PSY-GUD	Shows-how	D-BED,CD,SIM,CBL
CO1,CO2,CO3	Apply differential diagnosis and interpret clinical and investigative findings of genital	4	Experiential-	PSY-	Knows-how	CBL,SIM

,CO4	and systemic signs.			Learning 8.2	GUD	how	,CD,D-BED

M 8 Unit 2 Klaibya. 1. Clinical features of Klaibya.
2. Etiological factors of Klaibya.
3. Pathological components of Klaibya.
4. Implications on reproductive health.
5. Implications on psychological health.

References: 1,2,3,4,5,6,7,8,9,10,11,12,13,14,15,16,17,18,19,20,21,22,23,24,25,26,27,28,29,30,31,32,33,34,35,36,37,38,39,40,41,42,43,44,45,46

3A	3B	3C	3D	3E	3F	3G
CO1,CO3,CO4	Analyze the dimensions of Klaibya and differentiate its types in relation to contemporary understanding.	2	Lecture	CAN	Knows-how	TBL,LS,CD,CBL
CO1,CO2,CO3,CO4	Demonstrate clinical assessment of Klaibya.	7	Practical Training 8.2	PSY-GUD	Shows-how	D-BED,SIM,CBL,CD
CO1,CO3,CO4	Elicit a comprehensive history and perform systemic and local examinations to evaluate signs of Klaibya in patients with difficulty in conception.	5	Experiential-Learning 8.3	PSY-GUD	Shows-how	D-BED,SIM,CBL,CD
CO1,CO2,CO3,CO4	Apply differential diagnosis and interpret clinical and investigative findings of Klaibya.	4	Experiential-Learning 8.4	PSY-GUD	Knows-how	CBL,CD,LRI,D-BED

M 8 Unit 3 Vandhyatva.1. Clinical determinants of Vandhyatva.
2. Etiopathogenesis of Vandhyatva.
3. Types of Vandhyatva.
4. Reproductive health implications.
5. Associated systemic and psychosocial impact.

References: 1,2,3,4,5,6,7,8,9,10,11,12,13,14,15,16,17,18,19,20,21,22,23,24,25,26,27,28,29,30,31,32,33,34,35,36,37,38,39,40,41,42,43,44,45,46

3A	3B	3C	3D	3E	3F	3G
CO1,CO3,CO4	Analyze the dimensions of Vandhyatva and differentiate its types in relation to contemporary understandings.	3	Lecture	CAN	Knows-how	L&PPT , CBL,L&GD
CO1,CO2,CO3,CO4	Demonstrate clinical evaluation of Vandhyatva.	6	Practical Training 8.3	PSY-GUD	Shows-how	CBL,CD,D-BED,SIM
CO1,CO3,CO4	Elicit a comprehensive clinical history and perform general and systemic examination to assess systemic and local factors contributing to infertility.	4	Experiential-Learning 8.5	PSY-GUD	Shows-how	CBL,D-BED,CD,SIM
CO1,CO2,CO3,CO4	Apply differential diagnosis and interpret clinical and investigative findings of Vandhyatva.	4	Experiential-Learning 8.6	PSY-GUD	Knows-how	D-BED,LRI,PBL,CD,CBL

Practical Training Activity

Practical Training 8.1 : Clinical assessment of Phiranga and Upadamsha.

Teacher Instruction:

Step 1: Case Introduction and History Taking - Instruct students to systematically collect a comprehensive patient history, with focused attention on the detailed evaluation of the history of genital lesions like lump, ulcer/ rash on the body/ fever/ dysuria/ vaginal discharge. Key aspects to explore include the site, onset, course, character, associated symptoms, modifying factors, and severity. Emphasize the need to assess past medical history, treatment history, relevant negative history, family history, socioeconomic background, occupational history, sexual history and personal history.

Step 2: Physical Examination - Teach students to perform physical examination particularly a general examination and history based focused systemic examination in specific.

Step 3: Diagnostic Investigations - Facilitate discussion on selecting and interpreting relevant diagnostic investigations to support or confirm clinical impressions. Encourage students to correlate findings from baseline investigations with clinical data, and to recognize when further, targeted diagnostic tests are necessary for a more refined evaluation.

Step 4: Formulation of Differential Diagnosis - Encourage students to develop a well-rounded differential diagnosis by correlating clinical findings with patient history.

Stress the importance of evaluating key features related to genital lesions like lump, ulcer/ rash on the body/ fever/ dysuria/ vaginal discharge such as the site, onset, course, character, associated symptoms, modifying factors, and severity. Additionally, guide them to apply Ayurveda understanding using Lakshana samucchaya to determine Vyadhi Vinischaya, identify the Vyadhi Hetu if any, recognize Anubandhya and Anubandha Dosha, Srotas involved and evaluate the Sadhya or Asadhya. Also demonstrate Avastha (Purvaroopa, Roopa and Upadrava as applicable).

Step 5: Clinical Reasoning and Diagnostic Synthesis - Support students in synthesizing clinical information and investigative findings to arrive at the most likely diagnosis. Encourage a balanced diagnostic approach that integrates Ayurveda understanding with contemporary biomedical reasoning to enhance clinical decision-making.

Practical Training 8.2 : Clinical assessment of Klaibya.

Teacher Instructions:

Step 1: Case Introduction and History Taking - Instruct students to systematically collect a comprehensive patient history, with focused attention on the detailed evaluation related to the history of difficulty in conception. Key aspects to explore include marital history, infertility history, sexual history, past medical and surgical history, current medication, family history, relevant negative history, socioeconomic history, occupational history and personal history.

Step 2: Physical Examination - Teach students to perform physical examination particularly a general examination and history based focused systemic examination in specific.

Step 3: Diagnostic Investigations - Facilitate discussion on selecting and interpreting relevant diagnostic investigations to support or confirm clinical impressions. Encourage students to correlate findings from baseline investigations with clinical data, and to recognize when further, targeted diagnostic tests are necessary for a more refined evaluation.

Step 4: Formulation of Differential Diagnosis - Encourage students to develop a well-rounded differential diagnosis by correlating clinical findings with patient history. Stress the importance of evaluating key history related to difficulty in conception such as marital history, infertility history, sexual history, past medical and surgical history, current medication, family history, relevant negative history, socioeconomic history, occupational history and personal history. Additionally, guide them to apply Ayurveda understanding using Hetu and Lakshana samucchaya to determine Vyadhi Vinischaya, identify the Vyadhi Hetu if any, recognize Anubandhya and Anubandha Dosha, and evaluate the Sadhya or Asadhya.

Step 5: Clinical Reasoning and Diagnostic Synthesis - Support students in synthesizing clinical information and investigative findings to arrive at the most likely diagnosis. Encourage a balanced diagnostic approach that integrates Ayurveda principles with contemporary biomedical reasoning to enhance clinical decision-making.

Practical Training 8.3 : Clinical evaluation of Vandhyatva.

Teacher Instruction:

Step 1: Case Introduction and History Taking - Instruct students to systematically collect a comprehensive patient history, with focused attention on the detailed evaluation related to the history of difficulty in conceiving. Key aspects to explore include marital history, menstrual history, sexual history, reproductive history, obstetrics history, past medical and surgical history, current medication, family history, relevant negative history, socioeconomic history, occupational history and personal history.

Step 2: Physical Examination - Teach students to perform physical examination particularly a general examination and history based focused systemic examination in

specific.

Step 3: Diagnostic Investigations - Facilitate discussion on selecting and interpreting relevant diagnostic investigations to support or confirm clinical impressions. Encourage students to correlate findings from baseline investigations with clinical data, and to recognize when further, targeted diagnostic tests are necessary for a more refined evaluation.

Step 4: Formulation of Differential Diagnosis - Encourage students to develop a well-rounded differential diagnosis by correlating clinical findings with patient history. Stress the importance of evaluating key history related to difficulty conceiving such as marital history, menstrual History, sexual history, reproductive history, obstetrics history, past medical and surgical history, current medication, family history, relevant negative history, socioeconomic history, occupational history and personal history. Additionally, guide them to apply Ayurveda understanding using Hetu and Lakshana samucchaya to determine Vyadhi Vinischaya, identify the Vyadhi Hetu if any, recognize Anubandhya and Anubandha Dosha, and evaluate the Sadhya or Asadhya.

Step 5: Clinical Reasoning and Diagnostic Synthesis - Support students in synthesizing clinical information and investigative findings to arrive at the most likely diagnosis. Encourage a balanced diagnostic approach that integrates Ayurveda understanding with contemporary biomedical reasoning to enhance clinical decision-making.

Experiential learning Activity

Experiential-Learning 8.1 : Subjective and objective assessment of Phiranga and Upadamsha.

Student Instructions (Subjective Assessment):

Step 1: Teacher will allot a real case or simulated case, introduce the patient with the primary complaints such as genital lump, ulcer, rash, dysuria, vaginal discharge, fever and explore in terms of onset, course, character, location, radiation (if any), associated symptoms, modifying/ aggravating factors, and severity.

Step 2: Record treatment history, personal history, past illnesses (e.g., STIs), and sexual history with sensitivity.

Step 3: Assess relevant Dosha Hetu, Vyadhi Hetu, Ubhaya Hetu, Utpataka and Vyanjaka Hetu, Pradhanika and Vyabhichari Hetu and Srotas involved if applicable from the subjective assessment.

Step 4: Present the findings correlating with the history to arrive at a tentative diagnosis considering a self-designed format.

Student Instructions (Objective Assessment):

Step 1: As a continuation of the above experiential learning session, begin with general examination.

Step 2: Perform a comprehensive systemic assessment based on the associated systemic symptoms and past medical history or comorbidities.

Step 3: Document signs and interpretations in the case sheet.

Experiential-Learning 8.2 : Planning for investigation and diagnosis of genital lesions.

Student Instructions (Planning for Investigation):

Step 1: As a continuation of the above experiential learning session, recommend basic investigations along with result interpretation.

Step 2: Select subsequent tests if needed considering assessment of diagnosis and complications.

Step 3: Interpret lab/ imaging results and correlate with presenting symptoms and physical findings.

Step 4: Document correlation for each investigation with possible causes and interpretation.

Student Instructions (Diagnosis):

Step 1: As a continuation of the above experiential learning session, based on symptoms and signs, list possible diagnoses.

Step 2: Based on history and examination, list possible diagnosis through diagnostic reasoning strategies in primary health care for clinical diagnosis, integrative model of clinical reasoning, dual process diagnostic reasoning model, hypothetico-deductive model, pattern recognition model, pathway for clinical reasoning model to learn intuitive approach and analytical approaches in clinical decision making as applicable to arrive at a diagnosis of the given case.

Step 3: Apply Ayurveda diagnostic reasoning using Lakshana Samucchaya, considering the comorbidities, systemic symptoms, and past medical history understand the Vyadhi Vinischaya, Vyadhi Hetu if any, Srotas involved, Dosha-Dushya Samurchana, and Anubandhya/ Anubandha Dosha/ Vyadhi, and Sadhya or Asadhya. Also assess Avastha (Purvaroopa, Roopa and Upadrava as applicable).

Step 4: Synthesize all findings and establish the most likely diagnosis.

Step 5: Evaluate prognosis and present a summary of the diagnosis with justification.

Experiential-Learning 8.3 : Subjective and objective assessment in a patient presenting with difficulty in conception.

Student Instructions (Subjective Assessment):

Step 1: Teacher will allot a real case or simulated case with the history of difficulty in conception.

Step 2: Elicit details of marital history, infertility history, sexual history, past medical and surgical history, current medication, family history, relevant negative history, socioeconomic history, occupational history and personal history.

Step 3: Assess relevant Dosha Hetu, Vyadhi Hetu, Ubhaya Hetu, Utpataka and Vyanjaka Hetu, Pradhanika and Vyabhichari Hetu and Srotas involved if applicable from the subjective assessment.

Step 4: Present the findings correlating with the history to arrive at a tentative diagnosis considering a self-designed format.

Student Instructions (Objective Assessment):

Step 1: As a continuation of the above experiential learning session, begin with general examination.

Step 2: Perform a comprehensive systemic assessment based on the associated systemic symptoms and past medical history or comorbidities.

Step 3: Document signs and interpretations in the case sheet.

Experiential-Learning 8.4 : Planning for investigation and diagnosis in a case of Klaibya.

Student Instructions (Planning for investigation):

Step 1: As a continuation of the above experiential learning session, recommend basic investigations along with result interpretation.

Step 2: Select subsequent tests if needed considering assessment of diagnosis and complications.

Step 3: Interpret lab/ imaging results and correlate with presenting symptoms and physical findings.

Step 4: Document correlation for each investigation with possible causes and interpretation.

Student Instructions (Diagnosis):

Step 1: As a continuation of the above experiential learning session and based on findings, list differential diagnoses - Klaibya types.

Step 2: Based on history and examination, list possible diagnosis through diagnostic reasoning strategies in primary health care for clinical diagnosis, integrative model of clinical reasoning model, dual process diagnostic reasoning model, hypothetico-deductive model, pattern recognition model, pathway for clinical reasoning model to learn intuitive approach and analytical approaches in clinical decision making as applicable to arrive at a diagnosis of the given case.

Step 3: Apply Ayurveda diagnostic reasoning using Lakshana Samucchaya, considering the comorbidities, systemic symptoms, and past medical history understand the Vyadhi Vinischaya, Vyadhi Hetu if any, Srotas involved, Dosha-Dushya Samurchana, and Anubandhya/ Anubandha Dosha/ Vyadhi, and Sadhya or Asadhya. Also assess Avastha (Purvaroopa, Roopa and Upadrava as applicable).

Step 4: Synthesize all findings and establish the most likely diagnosis.

Step 5: Evaluate prognosis and present a summary of the diagnosis with justification.

Experiential-Learning 8.5 : Subjective and objective assessment in a patient presenting with difficulty in conception.

Student Instructions (Subjective Assessment):

Step 1: Teacher will allot a real case or simulated case with difficulty in conceiving.

Step 2: Elicit marital history, menstrual history, sexual history, reproductive history, obstetrics history, past medical and surgical history, current medication, family history, relevant negative history, socioeconomic history, occupational history and personal history.

Step 3: Assess relevant Dosha Hetu, Vyadhi Hetu, Ubhaya Hetu, Utpataka and Vyanjaka Hetu, Pradhanika and Vyabhichari Hetu and Srotas involved if applicable from the subjective assessment.

Step 4: Present the findings correlating with the history to arrive at a tentative diagnosis considering a self-designed format.

Student Instructions (Objective Assessment):

Step 1: As a continuation of the above experiential learning session, begin with general examination.

Step 2: Perform a comprehensive systemic assessment based on the associated systemic symptoms and past medical history or comorbidities.

Step 3: Document signs and interpretations in the case sheet.

Experiential-Learning 8.6 : Planning for investigation and diagnosis for Vandhyatva.

Student Instructions (Planning for Investigation):

Step 1: As a continuation of the above experiential learning session, recommend basic investigations along with result interpretation.

Step 2: Select subsequent tests if needed considering assessment of diagnosis and complications.

Step 3: Interpret lab/ imaging results and correlate with presenting symptoms and physical findings.

Step 4: Document correlation for each investigation with possible causes and interpretation.

Student Instructions (Diagnosis):

Step 1: List differentials for Vandhyatva.

Step 2: Based on history and examination, list possible diagnosis through diagnostic reasoning strategies in primary health care for clinical diagnosis, integrative model of clinical reasoning, dual process diagnostic reasoning model, hypothetico-deductive model, pattern recognition model, pathway for clinical reasoning model to learn intuitive approach and analytical approaches in clinical decision making as applicable to arrive at a diagnosis of the given case.

Step 3: Apply Ayurveda diagnostic reasoning using Lakshana Samucchaya, considering the comorbidities, systemic symptoms, and past medical history understand the Vyadhi Vinischaya, Vyadhi Hetu if any, Srotas involved, Dosha-Dushya Samurchana, and Anubandhya/ Anubandha Dosha/ Vyadhi, and Sadhya or Asadhya. Also assess Avastha (Purvaroopa, Roopa and Upadrava as applicable).

Step 4: Synthesize all findings and establish the most likely diagnosis.

Step 5: Evaluate prognosis and present a summary of the diagnosis with justification.

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 6C. Theory Based Assessment – 25 Marks. This component includes theory questions designed to assess conceptual clarity, integrative thinking, and the ability to apply learned concepts in clinical, diagnostic, or problem-solving contexts. Questions can be framed from any instructional unit, ensuring alignment with the intended learning outcomes. And Any practical in converted form can be taken for assessment. (25 Marks). Or Any experiential as portfolio/ reflections/ presentations, can be taken as an assessment. (25 Marks).	4

Paper No : 2 Vyadhi Vijnana II

Semester No : 3

Module 9 : Lakshana Niroopana 2.1

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

    1. Analyze the Dosha and Dhatu-based pathogenesis of Sthoulya, Karshya, Shosha, and Prameha.
    2. Evaluate the clinical features, types, and complications of nutritional and metabolic disorders, nephrological diseases from classical and contemporary perspectives.
    3. Correlate classical conditions with diseases like obesity, malnutrition, and diabetes using clinical and investigative findings.
    4. Create integrated diagnostic plans using Ayurveda principles and contemporary strategies.

  M 9 Unit 1 Sthoulya, Karshya, Shosha.1. Clinical features of Sthoulya.
2. Clinical features of Karshya.
3. Clinical features of Shosha.
4. Metabolic indicators of physiological imbalance.
5. Nutritional dynamics influencing these conditions.

References: 1,2,3,4,5,7,8,9,10,11,12,13,14,15,16,17,18,19,20,21,22,23,24,25,26,27,28,29,30,31,32,33,34,35,36,37,38,39,40,41,42,43,44,45,46

3A	**3B**	**3C**	**3D**	**3E**	**3F**	**3G**
CO1,CO3,CO4	Compare and evaluate the Nidana of Sthoulya and Karshya as described in Bruhatrayi and Laghutrayi, and interpret the Samprapti of Sthoulya in correlation with the underlying mechanisms of obesity.	1	Lecture	CE	Knows-how	BL,CBL, L&GD
CO1,CO3,CO4	Evaluate the Lakshana and Upadrava of Sthoulya in relation to their Samprapti, and appraise the Pratyatma Lakshana of Sthoulya and Karshya.	1	Lecture	CAN	Knows-how	PBL,L&P PT ,CBL

3A	3B	3C	3D	3E	3F	3G
CO1,CO3,CO4	Differentiate Karshya as Anubandha Vyadhi in various conditions with reference to Charaka and Bhavaprakasha, and classify the types of Shosha including Vyavaya, Adhwa, Vyayama, Jara, Shoka, Upavasa, Vruna, and Urakshata.	1	Lecture	CAN	Knows-how	SIM,CBL,PBL,L&GD
CO1,CO3,CO4	Integrate etiology, pathogenesis, sequelae, effects of obesity and emaciation.	1	Lecture	CS	Knows-how	L&GD,TBL,BS,BL
CO1,CO2,CO3,CO4	Demonstrate the clinical assessment of weight gain and weight loss.	10	Practical Training 9.1	PSY-GUD	Shows-how	SIM,CBL,CD,D-BED,PBL
CO1,CO3,CO4	Elicit a comprehensive clinical history and perform a structured general and systemic examination in patients presenting with weight gain or weight loss.	7	Experiential-Learning 9.1	PSY-GUD	Shows-how	CD,SIM,D-BED,CBL
CO1,CO2,CO3,CO4	Apply differential diagnosis and interpret clinical and investigative findings of patients presenting with weight gain or weight loss in selected case.	6	Experiential-Learning 9.2	PSY-GUD	Shows-how	SIM,CD,LRI,CBL,D-BED

M 9 Unit 2 Prameha.1. Spectrum of clinical features of Prameha.
2. Metabolic disturbances associated with Prameha.
3. Nephrological disease associations with Prameha.
4. Pathophysiological basis integrating metabolic and renal aspects.
5. Ayurveda–contemporary correlation in Prameha.

References: 1,2,3,4,5,7,8,9,10,11,12,13,14,15,16,17,18,19,20,21,22,23,24,25,26,27,28,29,30,31,32,33,34,35,36,37,38,39,40,41,42,43,44,45,46

3A	3B	3C	3D	3E	3F	3G
CO1,CO3,CO4	Analyze the Pratyatma Lakshana of Prameha using the analogy of solvent–solute–solution, and differentiate its various types (Sthula vs. Krusha, Sahaja vs. Apathya Nimittaja, Sa Purvaroopa vs. Apurvaroopa, Adushta Meda vs. Pradushta Meda)	2	Lecture	CAN	Knows-how	LS,L&GD,BS,BL

	while relating them to contemporary science.				
CO1,CO3,CO4	Evaluate the Abhyantara Nidana of Doshaja Prameha, the similarities and dissimilarities in the Samprapti of Prameha and Sthoulya, and the Vimshati Prameha with its contemporary understanding.	2	Lecture	CE	Knows-how	PER,L&GD,BS,PL
CO1,CO3,CO4	Evaluate the Purvaroopa and Upadrava of Prameha in relation to contemporary practice, and assess their relevance to metabolic and nephrological diseases.	2	Lecture	CE	Knows-how	L&GD,PBL,L_VC
CO1,CO2,CO3,CO4	Demonstrate the clinical assessment of polyuria.	10	Practical Training 9.2	PSY-GUD	Shows-how	D-BED,CBL,CD,LRI,SIM
CO1,CO3,CO4	Elicit a comprehensive history and perform a structured general and systemic examination in patients presenting with polyuria.	7	Experiential-Learning 9.3	PSY-GUD	Shows-how	CBL,PBL,D-BED,SIM,CD
CO1,CO2,CO3,CO4	Apply differential diagnosis and interpret clinical and investigative findings of polyuria.	6	Experiential-Learning 9.4	PSY-GUD	Shows-how	SIM,D-BED,CD,LRI,CBL

Practical Training Activity

Practical Training 9.1 : Clinical assessment of weight gain and weight loss.

Teacher Instruction:
Step 1: Case Introduction and History Taking - Instruct students to systematically collect a comprehensive patient history, with focused attention on the detailed evaluation of the history of weight gain and weight loss. Key aspects to explore include the onset, course, character, associated symptoms, and modifying factors. Emphasize the need to assess past medical history, treatment history, relevant negative history, family history, socioeconomic background, occupational history, and personal history.
Step 2: Physical Examination - Teach students to perform physical examination particularly a general examination and history based focused systemic examination in specific.
Step 3: Diagnostic Investigations - Facilitate discussion on selecting and interpreting relevant diagnostic investigations to support or confirm clinical impressions. Encourage students to correlate findings from baseline investigations with clinical data, and to recognize when further, targeted diagnostic tests are necessary for a more refined evaluation.
Step 4: Formulation of Differential Diagnosis - Encourage students to develop a well-rounded differential diagnosis by correlating clinical findings with patient history.

Stress the importance of evaluating key features related to weight gain and weight loss such as the onset, course, character, associated symptoms, and modifying factors. Additionally, guide them to apply Ayurveda understanding using Lakshana samucchaya to determine Vyadhi Vinischaya, identify the Vyadhi Hetu if any, recognize Anubandhya and Anubandha Dosha, Srotas involved and evaluate the Sadhya or Asadhya. Also demonstrate Avastha (Purvaroopa, Roopa and Upadrava as applicable).

Step 5: Clinical Reasoning and Diagnostic Synthesis - Support students in synthesizing clinical information and investigative findings to arrive at the most likely diagnosis. Encourage a balanced diagnostic approach that integrates Ayurveda understanding with contemporary biomedical reasoning to enhance clinical decision-making.

Practical Training 9.2 : Clinical assessment of polyuria.

Teacher Instruction:

Step 1: Case Introduction and History Taking - Instruct students to systematically collect a comprehensive patient history, with focused attention on the detailed evaluation of the history of polyuria. Key aspects to explore include the onset, course, character, associated symptoms, modifying factors, and severity. Emphasize the need to assess past medical history, treatment history, relevant negative history, family history, socioeconomic background, occupational history, and personal history.

Step 2: Physical Examination - Teach students to perform physical examination particularly a general examination and history based focused systemic examination in specific.

Step 3: Diagnostic Investigations - Facilitate discussion on selecting and interpreting relevant diagnostic investigations to support or confirm clinical impressions. Encourage students to correlate findings from baseline investigations with clinical data, and to recognize when further, targeted diagnostic tests are necessary for a more refined evaluation.

Step 4: Formulation of Differential Diagnosis - Encourage students to develop a well-rounded differential diagnosis by correlating clinical findings with patient history. Stress the importance of evaluating key features related to polyuria such as the onset, course, character, associated symptoms, modifying factors, and severity. Additionally, guide them to apply Ayurveda understanding using Lakshana samucchaya to determine Vyadhi Vinischaya, identify the Vyadhi Hetu if any, recognize Anubandhya and Anubandha Dosha, Srotas involved and evaluate the Sadhya or Asadhya. Also demonstrate Avastha (Purvaroopa, Roopa and Upadrava as applicable).

Step 5: Clinical Reasoning and Diagnostic Synthesis - Support students in synthesizing clinical information and investigative findings to arrive at the most likely diagnosis. Encourage a balanced diagnostic approach that integrates Ayurveda understanding with contemporary biomedical reasoning to enhance clinical decision-making.

Experiential learning Activity

Experiential-Learning 9.1 : Subjective and objective assessment in a patient presenting with weight gain and weight loss.

Student Instructions (Subjective Assessment):

Step 1: Teacher will allot a real case or simulated case with the complaint of weight gain or weight loss. Elicit details such as the onset, course, character, associated symptoms, and modifying factors.

Step 2: Review past medical history, treatment history, relevant negative history, family history, socioeconomic background, occupational history, and personal history.

Step 3: Assess relevant Dosha Hetu, Vyadhi Hetu, Ubhaya Hetu, Utpataka and Vyanjaka Hetu, Pradhanika and Vyabhichari Hetu and Srotas involved if applicable from the subjective assessment.

Step 4: Present the findings correlating with the history to arrive at a tentative diagnosis considering UG RNVV CAB as basic format.

Student Instructions (Objective Assessment):

Step 1: As a continuation of the above experiential learning session, begin with general examination.

Step 2: Perform a comprehensive systemic assessment based on the associated systemic symptoms and past medical history or comorbidities.

Step 3: Document signs and interpretations in the case sheet.

Experiential-Learning 9.2 : Planning for investigation and diagnosis for weight gain and weight loss.

Student Instructions (Planning for Investigation):

Step 1: As a continuation of the above experiential learning session, recommend basic investigations along with result interpretation.

Step 2: Select subsequent tests if needed considering assessment of diagnosis and complications.

Step 3: Interpret lab/ imaging results and correlate with presenting symptoms and physical findings.

Step 4: Document correlation for each investigation with possible causes and interpretation.

Student Instructions (Diagnosis):

Step 1: As a continuation of the above experiential learning session, and based on history, examination, and investigations, list differential diagnoses.

Step 2: Based on history and examination, list possible diagnosis through diagnostic reasoning strategies in primary health care for clinical diagnosis, integrative model of clinical reasoning, dual process diagnostic reasoning model, hypothetico-deductive model, pattern recognition model, pathway for clinical reasoning model to learn intuitive approach and analytical approaches in clinical decision making as applicable to arrive at a diagnosis of the given case.

Step 3: Apply Ayurveda diagnostic reasoning using Lakshana Samucchaya, considering the comorbidities, systemic symptoms, and past medical history understand the Vyadhi Vinischaya, Vyadhi Hetu if any, Srotas involved, Dosha-Dushya Samurchana, and Anubandhya/ Anubandha Dosha/ Vyadhi, and Sadhya or Asadhya. Also assess Avastha (Purvaroopa, Roopa and Upadrava as applicable).

Step 4: Synthesize all findings and establish the most likely diagnosis.

Step 5: Evaluate prognosis and present a summary of the diagnosis with justification.

Experiential-Learning 9.3 : Subjective and objective assessment in a patient presenting with polyuria.

Student Instructions (Subjective Assessment):

Step 1: Teacher will allot a real case or simulated case with the complaint of polyuria. Elicit details such as the onset, course, character, associated symptoms, and modifying factors.

Step 2: Review past medical history, treatment history, relevant negative history, family history, socioeconomic background, occupational history, and personal history.

Step 3: Assess relevant Dosha Hetu, Vyadhi Hetu, Ubhaya Hetu, Utpataka and Vyanjaka Hetu, Pradhanika and Vyabhichari Hetu and Srotas involved if applicable from the subjective assessment.

Step 4: Present the findings correlating with the history to arrive at a tentative diagnosis considering UG RNVV CAB as basic format.

Student Instructions (Objective Assessment):

Step 1: As a continuation of the above experiential learning session, begin with general examination.

Step 2: Perform a comprehensive systemic assessment based on the associated systemic symptoms and past medical history or comorbidities.

Step 3: Document signs and interpretations in the case sheet.

Experiential-Learning 9.4 : Planning for investigation and diagnosis for polyuria.
Student Instructions (Planning for Investigation):   Step 1: As a continuation of the above experiential learning session, recommend basic investigations along with result interpretation.   Step 2: Select subsequent tests if needed considering assessment of diagnosis and complications.   Step 3: Interpret lab/ imaging results and correlate with presenting symptoms and physical findings.   Step 4: Document correlation for each investigation with possible causes and interpretation.   Student Instructions (Diagnosis):   Step 1: As a continuation of the above experiential learning session, and based on history, examination, and investigations, list differential diagnoses.   Step 2: Based on history and examination, list possible diagnosis through diagnostic reasoning strategies in primary health care for clinical diagnosis, integrative model of clinical reasoning, dual process diagnostic reasoning model, hypothetico-deductive model, pattern recognition model, pathway for clinical reasoning model to learn intuitive approach and analytical approaches in clinical decision making as applicable to arrive at a diagnosis of the given case.   Step 3: Apply Ayurveda diagnostic reasoning using Lakshana Samucchaya, considering the comorbidities, systemic symptoms, and past medical history understand the Vyadhi Vinischaya, Vyadhi Hetu if any, Srotas involved, Dosha-Dushya Samurchana, and Anubandhya/ Anubandha Dosha/ Vyadhi, and Sadhya or Asadhya. Also assess Avastha (Purvaroopa, Roopa and Upadrava as applicable).   Step 4: Synthesize all findings and establish the most likely diagnosis.   Step 5: Evaluate prognosis and present a summary of the diagnosis with justification.

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 6C. Theory Based Assessment – 25 Marks. This component includes theory questions designed to assess conceptual clarity, integrative thinking, and the ability to apply learned concepts in clinical, diagnostic, or problem-solving contexts. Questions can be framed from any instructional unit, ensuring alignment with the intended learning outcomes. And Any practical in converted form can be taken for assessment. (25 Marks).	4

Or

Any experiential as portfolio/ reflections/ presentations, can be taken as an assessment. (25 Marks).

Module 10 : Lakshana Niroopana 2.2

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

1. Analyze the Dosha and Manovaha Srotas-based pathogenesis of disorders like Mada, Murcha, Sanyasa, Unmada, Atatwabhinivesha, and Vishada.
2. Evaluate the clinical features, stages, and prognosis of altered states of consciousness and mental disturbances using Ayurveda diagnostic parameters.
3. Correlate these conditions with modern neuropsychiatric disorders such as coma, delirium, psychosis, obsessive thinking, and depression.
4. Create diagnostic strategies combining classical principles with contemporary psychiatric and neurological assessments.

M 10 Unit 1 Mada, Murcha, Sanyasa.1. Gradation of altered consciousness.
2. Clinical presentation of each level.
3. Pathogenesis underlying altered states.
4. Prognostic significance of gradation.
5. Ayurveda–contemporary correlation.

References: 1,2,3,4,5,7,8,9,10,11,12,13,14,15,16,17,18,19,20,21,22,23,24,25,26,27,28,29,30,31,32,33,34,35,36,37,38,39,40,41,42,43,44,45,46

3A	3B	3C	3D	3E	3F	3G
CO1,CO3,CO4	Compare and analyze the Nidana, Samprapti, and Lakshana of Mada, Murcha, and Sanyasa, and relate them with contemporary science.	2	Lecture	CAN	Knows-how	CBL,L&GD
CO1,CO3,CO4	Synthesize differential diagnosis of altered level of consciousness.	2	Lecture	CS	Knows-how	PBL,L&GD,CBL,CD

3A	3B	3C	3D	3E	3F	3G
CO1,CO3,CO4	Analyze Vishada as per Ayurveda and contemporary science.	1	Lecture	CE	Knows-how	BL,CBL, L&PPT ,DIS
CO1,CO2,CO3,CO4	Demonstrate clinical assessment of altered state of consciousness.	10	Practical Training 10.1	PSY-GUD	Shows-how	LRI,D-BED,SIM,PBL,BL
CO1,CO3,CO4	Elicit a comprehensive history and perform a focused general and systemic examination, including assessment of higher mental functions, in patients with altered states of consciousness.	7	Experiential-Learning 10.1	PSY-GUD	Shows-how	CBL,SIM ,D-BED,CD
CO1,CO2,CO3,CO4	Apply differential diagnosis and interpret clinical and investigative findings in patients with altered state of consciousness.	6	Experiential-Learning 10.2	PSY-GUD	Shows-how	SIM,CD, D-BED,CBL

M 10 Unit 2 Unmada, Atatwabhinivesha, Vishada.1. Psychological presentations of Unmada.
2. Behavioral features of Unmada.
3. Clinical indicators of Atatwabhinivesha.
4. Symptomatology of Vishada.
5. Pathological components and implications for differential diagnosis of mental health disorders.

References: 1,2,3,4,5,7,8,9,10,11,12,13,14,15,16,17,18,19,20,21,22,23,24,25,26,27,28,29,30,31,32,33,34,35,36,37,38,39,40,41,42,43,44,45,46

3A	3B	3C	3D	3E	3F	3G
CO1,CO3,CO4	Analyze the Pratyatma Lakshana, Nidana, and Samprapti of Unmada, and differentiate its Bheda (Doshaja, Agantuja, Dhatu Kshayaja, and Margavaranaja) in correlation with contemporary understanding.	3	Lecture	CAN	Knows-how	L&PPT , BL,L_VC ,CBL
CO1,CO3,CO4	Evaluate Nidana, Samprapti, and Lakshana of Atatwabhinivesha and relate them with contemporary science.	2	Lecture	CE	Knows-how	BL,SDL, L&GD,CBL

CO1,CO2,CO3,CO4	Demonstrate clinical assessment of Unmada, Atatwabhinivesha, and Vishada.	10	Practical Training 10.2	PSY-GUD	Shows-how	LRI,D-BED,SIM,CBL
CO1,CO2,CO3,CO4	Elicit a comprehensive clinical history and perform a focused systemic and psychiatric examination in patients presenting with obsessions, compulsions, delusions, physical symptoms, or abnormal social behavior.	7	Experiential-Learning 10.3	PSY-GUD	Shows-how	D-BED,SIM,CD,CBL
CO1,CO2,CO3,CO4	Apply differential diagnosis and interpret clinical and investigative findings in patients with psychiatric disturbances.	6	Experiential-Learning 10.4	PSY-GUD	Shows-how	CBL,D-BED,PBL,SIM,CD

Practical Training Activity

Practical Training 10.1 : Clinical assessment of altered state of consciousness.

Teacher Instruction:

Step 1: Case Introduction and History Taking - Instruct students to systematically collect a comprehensive patient history, with focused attention on the detailed evaluation of the history of present illness - particularly in patient presenting with altered state of consciousness. Key aspects to explore include the onset, timing, duration, frequency, characteristics, associated symptoms, modifying factors, and severity. Emphasize the need to assess past medical and surgical history, treatment history, relevant negative history, family history, socioeconomic background, personal history, and occupational exposures.

Step 2: Physical Examination - Teach students to perform physical examination particularly a general examination and systemic examination in particular with higher mental function and Glasgow Coma Scale.

Step 3: Diagnostic Investigations - Facilitate discussion on selecting and interpreting relevant diagnostic investigations to support or confirm clinical impressions. Encourage students to correlate findings from baseline investigations with clinical data, and to recognize when further, targeted diagnostic tests are necessary for a more refined evaluation.

Step 4: Formulation of Differential Diagnosis - Encourage students to develop a well-rounded differential diagnosis by correlating clinical findings with patient history. Stress the importance of evaluating key features of altered state of consciousness, associated symptoms, modifying factors, severity and other relevant history. Additionally, guide them to apply Ayurveda diagnostic understanding using Lakshana Samucchaya to determine Vyadhi Vinischaya, identify the Pratyatma Lakshana, Vyadhi Hetu if any, assess the Srotas involved, recognize Anubandhya and Anubandha Dosha, and evaluate the Sadhya or Asadhya. Also demonstrate Avastha (Purvaroopa, Roopa and Upadrava as applicable).

Step 5: Clinical Reasoning and Diagnostic Synthesis - Support students in synthesizing clinical information and investigative findings to arrive at the most likely diagnosis. Encourage a balanced diagnostic approach that integrates Ayurveda understanding with contemporary reasoning to enhance clinical decision-making.

Practical Training 10.2 : Clinical assessment of Unmada, Atatwabhinivesha, and Vishada.

Teacher Instruction:

Step 1: Case Introduction and History Taking - Instruct students to systematically collect a comprehensive patient history, with focused attention on the detailed evaluation of the history of present illness - particularly in patient presenting with obsessions (unwanted and distressing thoughts or impulses), compulsions (urges to do irrational or apparently useless acts), and delusions (fixed false beliefs) and may determine whether distress is expressed in physical symptoms (eg, headache, abdominal pain), mental symptoms (eg, phobic behavior, depression), or social behavior (eg, withdrawal, rebelliousness). Key aspects to explore include the onset, timing, frequency, characteristics, associated symptoms, modifying factors, and severity. Emphasize the need to assess past medical and surgical history, treatment history, relevant negative history, family history, socioeconomic background, personal history, and occupational exposures.

Step 2: Physical Examination - Teach students to perform physical examination particularly a general examination and systemic examination pertaining to state of consciousness, attitude of the patient, appearance, behavior, attention and concentration, mood and affect, thought and speech, perception, orientation and memory, intellectual capacity, concepts and judgement and insight.

Step 3: Diagnostic Investigations - Facilitate discussion on selecting and interpreting relevant diagnostic investigations to support or confirm clinical impressions. Encourage students to correlate findings from baseline investigations with clinical data, and to recognize when further, targeted diagnostic tests are necessary for a more refined evaluation.

Step 4: Formulation of Differential Diagnosis - Encourage students to develop a well-rounded differential diagnosis by correlating clinical findings with patient history. Stress the importance of evaluating key features of obsessions (unwanted and distressing thoughts or impulses), compulsions (urges to do irrational or apparently useless acts), and delusions (fixed false beliefs) and may determine whether distress is expressed in physical symptoms (eg, headache, abdominal pain), mental symptoms (eg, phobic behavior, depression), or social behavior (eg, withdrawal, rebelliousness) in relation to onset, timing, duration, frequency, characteristics, associated symptoms, modifying factors, severity and other relevant history. Additionally, guide them to apply Ayurveda diagnostic understanding using Lakshana Samucchaya to determine Vyadhi Vinischaya, identify the Pratyatma Lakshana, Vyadhi Hetu if any, assess the Srotas involved, recognize Anubandhya and Anubandha Dosha, and evaluate the Sadhya or Asadhya. Also demonstrate Avastha (Purvaroopa, Roopa and Upadrava as applicable).

Step 5: Clinical Reasoning and Diagnostic Synthesis - Support students in synthesizing clinical information and investigative findings to arrive at the most likely diagnosis. Encourage a balanced diagnostic approach that integrates Ayurveda understanding with contemporary reasoning to enhance clinical decision-making.

Experiential learning Activity

Experiential-Learning 10.1 : Subjective and objective assessment of patients with altered state of consciousness.

Student Instructions (Subjective Assessment):

Step 1: Teacher will allot a real case or simulated case of altered state of consciousness. Ask about onset, timing, duration, frequency, characteristics, associated symptoms, modifying factors, and severity.

Step 2: Explore associated symptoms, review past medical and surgical history, treatment history, relevant negative history, family history, socioeconomic background,

personal history, and occupational exposures.

Step 3: Assess relevant Dosha Hetu, Vyadhi Hetu, Ubhaya Hetu, Utpataka and Vyanjaka Hetu, Pradhanika and Vyabhichari Hetu and Srotas involved if applicable from the subjective assessment.

Step 4: Present the findings correlating with the history to arrive at a tentative diagnosis considering self-designed format.

Student Instructions (Objective Assessment):

Step 1: As a continuation of the above experiential learning session, begin with general examination.

Step 2: Perform a comprehensive systemic assessment based on the associated systemic symptoms and past medical history or comorbidities.

Step 3: Document signs and interpretations in the case sheet.

Experiential-Learning 10.2 : Planning for investigation and diagnosis in patients with altered state of consciousness.

Student Instructions (Planning for Investigation):

Step 1: As a continuation of the above experiential learning session, recommend basic investigations along with result interpretation.

Step 2: Select subsequent tests if needed considering assessment of diagnosis and complications.

Step 3: Interpret lab/ imaging results and correlate with presenting symptoms and physical findings.

Step 4: Document correlation for each investigation with possible causes and interpretation.

Student Instructions (Diagnosis):

Step 1: As a continuation of the above experiential learning session, based on findings, list differential diagnoses for altered state of consciousness.

Step 2: Based on history and examination, list possible diagnosis through diagnostic reasoning strategies in primary health care for clinical diagnosis, integrative model of clinical reasoning, dual process diagnostic reasoning model, hypothetico-deductive model, pattern recognition model, pathway for clinical reasoning model to learn intuitive approach and analytical approaches in clinical decision making as applicable to arrive at a diagnosis of the given case.

Step 3: Apply Ayurveda diagnostic reasoning using Lakshana Samucchaya, considering the comorbidities, systemic symptoms, and past medical history understand the Vyadhi Vinischaya, Vyadhi Hetu if any, Srotas involved, Dosha-Dushya Samurchana, and Anubandhya/ Anubandha Dosha/ Vyadhi, and Sadhya or Asadhya. Also assess Avastha (Purvaroopa, Roopa and Upadrava as applicable).

Step 4: Synthesize all findings and establish the most likely diagnosis.

Step 5: Evaluate prognosis and present a summary of the diagnosis with justification.

Experiential-Learning 10.3 : Subjective and objective assessment in patients presenting with obsessions, compulsions and delusions, relevant physical symptoms, or abnormal social behavior.

Student Instructions (Subjective Assessment):

Step 1: Teacher will allot a real case or simulated case with obsessions, compulsions and delusions, relevant physical symptoms, or abnormal social behavior. Include the onset, timing, frequency, characteristics, associated symptoms, modifying factors, and severity.

Step 2: Assess past medical and surgical history, treatment history, relevant negative history, family history, socioeconomic background, personal history, and occupational exposures.

Step 3: Assess relevant Dosha Hetu, Vyadhi Hetu, Ubhaya Hetu, Utpataka and Vyanjaka Hetu, Pradhanika and Vyabhichari Hetu and Srotas involved if applicable from the subjective assessment.

Step 4: Present the findings correlating with the history to arrive at a tentative diagnosis considering self-designed format.

Student Instructions (Objective Assessment):

Step 1: As a continuation of the above experiential learning session, begin with general examination.

Step 2: Perform a comprehensive systemic assessment based on the associated systemic symptoms and past medical history or comorbidities.

Step 3: Document signs and interpretations in the case sheet.

Experiential-Learning 10.4 : Planning for investigation and diagnosis in patients with psychiatric disturbances.

Student Instructions (Planning for Investigation):

Step 1: As a continuation of the above experiential learning session, recommend basic investigations along with result interpretation.

Step 2: Select subsequent tests if needed considering assessment of diagnosis and complications.

Step 3: Interpret lab/ imaging results and correlate with presenting symptoms and physical findings.

Step 4: Document correlation for each investigation with possible causes and interpretation.

Student Instructions (Diagnosis):

Step 1: As a continuation of the above experiential learning session, based on findings, list differential diagnoses for psychiatric disturbances.

Step 2: Based on history and examination, list possible diagnosis through diagnostic reasoning strategies in primary health care for clinical diagnosis, integrative model of clinical reasoning, dual process diagnostic reasoning model, hypothetico-deductive model, pattern recognition model, pathway for clinical reasoning model to learn intuitive approach and analytical approaches in clinical decision making as applicable to arrive at a diagnosis of the given case.

Step 3: Apply Ayurveda diagnostic reasoning using Lakshana Samucchaya, considering the comorbidities, systemic symptoms, and past medical history understand the Vyadhi Vinischaya, Vyadhi Hetu if any, Srotas involved, Dosha-Dushya Samurchana, and Anubandhya/ Anubandha Dosha/ Vyadhi, and Sadhya or Asadhya. Also assess Avastha (Purvaroopa, Roopa and Upadrava as applicable).

Step 4: Synthesize all findings and establish the most likely diagnosis.

Step 5: Evaluate prognosis and present a summary of the diagnosis with justification.

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 6C.	4

Theory Based Assessment – 25 Marks. This component includes theory questions designed to assess conceptual clarity, integrative thinking, and the ability to apply learned concepts in clinical, diagnostic, or problem-solving contexts. Questions can be framed from any instructional unit, ensuring alignment with the intended learning outcomes.
And
Any practical in converted form can be taken for assessment. (25 Marks).
Or
Any experiential as portfolio/ reflections/ presentations, can be taken as an assessment. (25 Marks).

Semester No : 4

Module 11 : Lakshana Niroopana 2.3

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

1. Analyze the Ayurveda principles in the pathogenesis of Granthi, Arbudha, Apachi, Galaganda, Gandamala, and related glandular or neoplastic conditions.
2. Evaluate the clinical features, differential diagnosis, and prognosis of swellings and growths such as Yavaprakhya, Andhalaji, Kacchapika, Granthi Visarpa, and Vatashteela.
3. Correlate classical descriptions of mass, nodular, and glandular disorders with conditions like tumors, cysts, lymphadenopathy, and thyroid swellings.
4. Create integrative diagnostic protocols combining Ayurveda principles with contemporary investigative and clinical strategies.

M 11 Unit 1 Granthi, Arbudha, Apachi.1. Clinical features of Granthi.
2. Pathology of Granthi.
3. Clinical features of Arbuda.
4. Pathology of Arbuda.
5. Clinical features and pathology of Apachi.
6. Genesis, progression, and differential diagnosis across all three conditions.

References: 1,2,3,4,5,7,8,9,10,11,12,13,14,15,16,17,18,19,20,21,22,23,24,25,26,27,28,29,30,31,32,33,34,35,36,37,38,39,40,41,42,43,44,45,46

3A	3B	3C	3D	3E	3F	3G
CO1,CO3,CO4	Differentiate clinical similarities and dissimilarities of Arbuda and Granthi based on the Pratyatma Lakshana.	1	Lecture	CAN	Knows-how	BS,L&PPT ,DIS
CO1,CO3,CO4	Evaluate Doshaja Granthi and Doshaja Arbuda based on Pratyatma Lakshana and relate them with the contemporary science.	1	Lecture	CE	Knows-how	L&PPT ,PER
CO1,CO3,CO4	Differentiate between Medoja and Siraja Granthi and relate them with the contemporary science.	1	Lecture	CE	Knows-how	PBL,BL, L&GD,CBL
CO1,CO3,CO4	Differentiate between Raktarbuada and Mamsarbuda and understand compare with the contemporary perspectives.	1	Lecture	CAN	Knows-how	CBL,BL, DIS,L_VC,L&PPT
CO1,CO3,CO4	Evaluate Sadhyasadhyata of Arbuda and interpret with the current understanding of prognosis of Tumors and Cysts.	1	Lecture	CE	Knows-how	L&PPT , CBL,PBL ,DIS,BL
CO1,CO3,CO4	Analyze Apachi in relation to contemporary science and examine Granthi Visarpa as described in Charaka Samhita with reference to Granthi and Arbuda.	1	Lecture	CAN	Knows-how	DIS,CBL, L&PPT ,BS
CO1,CO2,CO3 ,CO4	Demonstrate the clinical assessment of colorectal carcinoma.	2	Practical Training 11.1	PSY-GUD	Shows-how	SIM,CD, DG,LRI, CBL
CO1,CO2,CO3 ,CO4	Demonstrate the clinical assessment of gastric carcinoma.	2	Practical Training 11.2	PSY-GUD	Shows-how	CBL,LRI, D-BED,CD,SIM
CO1,CO2,CO3 ,CO4	Demonstrate the clinical assessment of hepatocellular carcinoma.	2	Practical Training 11.3	PSY-GUD	Shows-how	CD,LRI,SIM,D-

					BED,CBL
CO1,CO2,CO3,CO4	Demonstrate the clinical assessment of pancreatic cancer.	2	Practical Training 11.4	PSY-GUD	Shows-how	LRI,CBL,CD,SIM,D-BED
CO1,CO2,CO3,CO4	Demonstrate the clinical assessment of renal cancer.	2	Practical Training 11.5	PSY-GUD	Shows-how	SIM,D-BED,CBL,LRI,CD
CO1,CO2,CO3,CO4	Demonstrate the clinical assessment of thoracic carcinoma.	2	Practical Training 11.6	PSY-GUD	Shows-how	LRI,CBL,CD,SIM,D-BED
CO1,CO2,CO3,CO4	Demonstrate the clinical assessment of brain tumor.	2	Practical Training 11.7	PSY-GUD	Shows-how	SIM,D-BED,CBL,CD,LRI
CO1,CO2,CO3,CO4	Demonstrate the clinical assessment of bone cancer.	1	Practical Training 11.8	PSY-GUD	Shows-how	CBL,SIM,D-BED,CD,LRI
CO1,CO2,CO3,CO4	Demonstrate the clinical assessment of lymphoma.	1	Practical Training 11.9	PSY-GUD	Shows-how	SIM,D-BED,CBL,CD,LRI
CO1,CO2,CO3,CO4	Demonstrate the clinical assessment of leukaemia.	1	Practical Training 11.10	PSY-GUD	Shows-how	CBL,CD,D-BED,LRI,SIM
CO1,CO2,CO3,CO4	Elicit a structured clinical history, perform systemic examination, interpret relevant investigations, and formulate differential and final diagnoses in patients with colorectal carcinoma.	3	Experiential-Learning 11.1	PSY-GUD	Shows-how	LRI,D-BED,CD,SIM,CBL

CO1,CO2,CO3,CO4	Elicit a structured history, perform systemic examination, interpret relevant investigations, and synthesize differential and final diagnoses in patients with gastric carcinoma.	2	Experiential-Learning 11.2	PSY-GUD	Shows-how	CBL,D-BED,SIM,CD,LRI
CO1,CO2,CO3,CO4	Elicit a structured history, perform systemic examination, interpret relevant investigations, and synthesize differential and final diagnoses in patients with hepatocellular carcinoma.	2	Experiential-Learning 11.3	PSY-GUD	Shows-how	SIM,D-BED,LRI,CBL,CD
CO1,CO2,CO3,CO4	Elicit a structured history, perform systemic examination, interpret relevant investigations, and synthesize differential and final diagnoses in patients with pancreatic cancer.	2	Experiential-Learning 11.4	PSY-GUD	Shows-how	CD,D-BED,CBL,SIM,LRI
CO1,CO2,CO3,CO4	Elicit a structured history, perform systemic examination, interpret relevant investigations, and synthesize differential and final diagnoses in patients with renal cancer.	2	Experiential-Learning 11.5	PSY-GUD	Shows-how	D-BED,CBL,LRI,CD,SIM
CO1,CO2,CO3,CO4	Elicit a structured history, perform systemic examination, interpret relevant investigations, and synthesize differential and final diagnoses in patients with thoracic carcinoma.	3	Experiential-Learning 11.6	PSY-GUD	Shows-how	CBL,LRI,SIM,D-BED,CD
CO1,CO2,CO3,CO4	Elicit a structured history, perform systemic examination, interpret relevant investigations, and synthesize differential and final diagnoses in patients with brain tumor.	2	Experiential-Learning 11.7	PSY-GUD	Shows-how	SIM,CBL,CD,D-BED
CO1,CO2,CO3,CO4	Elicit a structured history, perform systemic examination, interpret relevant investigations, and synthesize differential and final diagnoses in patients with bone cancer.	2	Experiential-Learning 11.8	PSY-GUD	Shows-how	SIM,LRI,CBL,D-BED,CD
CO1,CO2,CO3,CO4	Elicit a structured history, perform systemic examination, interpret relevant investigations, and synthesize differential and final diagnoses in patients with lymphoma.	2	Experiential-Learning 11.9	PSY-GUD	Shows-how	CBL,D-BED,LRI,CD,SIM
CO1,CO2,CO3,CO4	Elicit a structured history, perform systemic examination, interpret relevant investigations, and synthesize differential and final diagnoses in patients with leukemia.	2	Experiential-Learning 11.	PSY-GUD	Shows-how	D-BED,CD,CBL,L

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M 11 Unit 2 Yavaprakhya, Andhalaji, Kacchapika, Panasika, Granthi Visarpa, Rakta Granthi/ Mootra Granthi, Vatashteela. 1. Structural enlargements.

2. Nodular growths.
3. Pathogenesis of Yavaprakhya.
4. Clinical differentiation of Andhalaji and Kacchapika.
5. Clinical differentiation of Panasika and Granthi Visarpa.
6. Pathological features of Rakta Granthi/ Mootra Granthi.
7. Clinical aspects of Vatashteela.

References: 1,2,3,4,5,7,8,9,10,11,12,13,14,15,16,17,18,19,20,21,22,23,24,25,26,27,28,29,30,31,32,33,34,35,36,37,38,39,40,41,42,43,44,45,46

3A	3B	3C	3D	3E	3F	3G
CO1,CO3,CO4	Evaluate Rakta Granthi and Mootragranthi, and compare Yavaprakhya, Andhalaji, Kacchapika, and Panasika with contemporary understanding of tumors and cysts.	1	Lecture	CAN	Knows-how	BS,BL,L&PPT,CBL,DSN
CO1,CO3,CO4	Compare Sapeksha Nidana of Rakta Granthi/ Mootra Granthi with Granthi Visarpa.	1	Lecture	CAN	Knows-how	DIS,CBL,BS,L&PPT
CO1,CO2,CO3,CO4	Demonstrate the clinical assessment of skin cancer.	2	Practical Training 11.11	PSY-GUD	Shows-how	CD,D-BED,LRI,CBL,SIM
CO1,CO2,CO3,CO4	Elicit a structured history, perform systemic examination, interpret relevant investigations, and synthesize differential and final diagnoses in patients with skin cancer.	2	Experiential-Learning 11.11	PSY-GUD	Shows-how	SIM,D-BED,LRI,CBL,CD

M 11 Unit 3 Galaganda, Gandamala. Clinical features of Galaganda

1. Clinical features of Gandamala.
2. Site of manifestation of Galaganda.

3. Site of manifestation of Gandamala.

4. Pathogenesis of Galaganda.

5. Pathogenesis of Gandamala.

6. Differential diagnosis between Galaganda and Gandamala.

References: 1,2,3,4,5,7,8,9,10,11,12,13,14,15,16,17,18,19,20,21,22,23,24,25,26,27,28,29,30,31,32,33,34,35,36,37,38,39,40,41,42,43,44,45,46

3A	3B	3C	3D	3E	3F	3G
CO1,CO3,CO4	Appraise Gandamala with contemporary understanding.	1	Lecture	CE	Knows-how	L&PPT ,BS,CBL
CO1,CO3,CO4	Evaluate Samprapti and Bheda of Galaganda with contemporary understanding.	1	Lecture	CE	Knows-how	L&PPT ,PBL,DIS
CO1,CO2,CO3 ,CO4	Demonstrate the clinical assessment of thyroid cancer.	1	Practical Training 11.1 2	PSY-GUD	Shows-how	CBL,CD, LRI,SIM, D-BED
CO1,CO2,CO3 ,CO4	Elicit a structured history, perform systemic examination, interpret relevant investigations, and synthesize differential and final diagnoses in patients with thyroid cancer.	2	Experiential-Learning 11. 12	PSY-GUD	Shows-how	LRI,CD,S IM,CBL, D-BED

Practical Training Activity

Practical Training 11.1 : Clinical assessment of colorectal carcinoma.

Teacher Instruction:

Step 1: Case Introduction and History Taking - Instruct students to systematically collect a comprehensive patient history, with focused attention on the detailed evaluation of the history of change in bowel habits, rectal bleeding, abdominal pain, anemia, and weight loss. Key aspects to explore include the onset, course, character, associated symptoms, and modifying factors. Emphasize the need to assess past medical history, treatment history, relevant negative history, family history, socioeconomic background, occupational history, and personal history.

Step 2: Physical Examination - Teach students to perform physical examination particularly a general examination and history based focused systemic examination in specific.

Step 3: Diagnostic Investigations - Facilitate discussion on selecting and interpreting relevant diagnostic investigations to support or confirm clinical impressions. Encourage

students to correlate findings from baseline investigations with clinical data, and to recognize when further, targeted diagnostic tests are necessary for a more refined evaluation.

Step 4: Formulation of Differential Diagnosis - Encourage students to develop a well-rounded differential diagnosis by correlating clinical findings with patient history. Stress the importance of evaluating key features related to change in bowel habits, rectal bleeding, abdominal pain, anemia, and weight loss such as the onset, course, character, associated symptoms, and modifying factors. Additionally, guide them to apply Ayurveda understanding using Lakshana Samucchaya to determine Vyadhi Vinischaya, identify the Vyadhi Hetu if any, recognize Anubandhya and Anubandha Dosha, Srotas involved and evaluate the Sadhya or Asadhya. Also demonstrate Avastha (Purvaroopa, Roopa and Upadrava as applicable).

Step 5: Clinical Reasoning and Diagnostic Synthesis - Support students in synthesizing clinical information and investigative findings to arrive at the most likely diagnosis. Encourage a balanced diagnostic approach that integrates Ayurveda understanding with contemporary biomedical reasoning to enhance clinical decision-making.

Practical Training 11.2 : Clinical assessment of gastric carcinoma.

Teacher Instruction:

Step 1: Case Introduction and History Taking - Instruct students to systematically collect a comprehensive patient history, with focused attention on the detailed evaluation of the history of appetite loss, weight loss, abdominal pain, early satiety, indigestion, nausea, vomiting, and anemia. Key aspects to explore include the onset, course, character, associated symptoms, and modifying factors. Emphasize the need to assess past medical history, treatment history, relevant negative history, family history, socioeconomic background, occupational history, and personal history.

Step 2: Physical Examination - Teach students to perform physical examination particularly a general examination and history based focused systemic examination in specific.

Step 3: Diagnostic Investigations - Facilitate discussion on selecting and interpreting relevant diagnostic investigations to support or confirm clinical impressions. Encourage students to correlate findings from baseline investigations with clinical data, and to recognize when further, targeted diagnostic tests are necessary for a more refined evaluation.

Step 4: Formulation of Differential Diagnosis - Encourage students to develop a well-rounded differential diagnosis by correlating clinical findings with patient history. Stress the importance of evaluating key features related to appetite loss, weight loss, abdominal pain, early satiety, indigestion, nausea, vomiting, and anemia such as the onset, course, character, associated symptoms, and modifying factors. Additionally, guide them to apply Ayurveda understanding using Lakshana Samucchaya to determine Vyadhi Vinischaya, identify the Vyadhi Hetu if any, recognize Anubandhya and Anubandha Dosha, Srotas involved and evaluate the Sadhya or Asadhya. Also demonstrate Avastha (Purvaroopa, Roopa and Upadrava as applicable).

Step 5: Clinical Reasoning and Diagnostic Synthesis - Support students in synthesizing clinical information and investigative findings to arrive at the most likely diagnosis. Encourage a balanced diagnostic approach that integrates Ayurveda understanding with contemporary biomedical reasoning to enhance clinical decision-making.

Practical Training 11.3 : Clinical assessment of hepatocellular carcinoma.

Teacher Instruction:

Step 1: Case Introduction and History Taking - Instruct students to systematically collect a comprehensive patient history, with focused attention on the detailed evaluation of the history of weight loss, abdominal pain, jaundice, enlarged liver, swelling, loss of appetite, and fever. Key aspects to explore include the onset, course, character, associated symptoms, and modifying factors. Emphasize the need to assess past medical history, treatment history, relevant negative history, family history, socioeconomic background, occupational history, and personal history.

Step 2: Physical Examination - Teach students to perform physical examination particularly a general examination and history based focused systemic examination in specific.

Step 3: Diagnostic Investigations - Facilitate discussion on selecting and interpreting relevant diagnostic investigations to support or confirm clinical impressions. Encourage students to correlate findings from baseline investigations with clinical data, and to recognize when further, targeted diagnostic tests are necessary for a more refined evaluation.

Step 4: Formulation of Differential Diagnosis - Encourage students to develop a well-rounded differential diagnosis by correlating clinical findings with patient history. Stress the importance of evaluating key features related to weight loss, abdominal pain, jaundice, enlarged liver, swelling, loss of appetite, and fever such as the onset, course, character, associated symptoms, and modifying factors. Additionally, guide them to apply Ayurveda understanding using Lakshana Samucchaya to determine Vyadhi Vinischaya, identify the Vyadhi Hetu if any, recognize Anubandhya and Anubandha Dosha, Srotas involved and evaluate the Sadhya or Asadhya. Also demonstrate Avastha (Purvaroopa, Roopa and Upadrava as applicable).

Step 5: Clinical Reasoning and Diagnostic Synthesis - Support students in synthesizing clinical information and investigative findings to arrive at the most likely diagnosis. Encourage a balanced diagnostic approach that integrates Ayurveda understanding with contemporary biomedical reasoning to enhance clinical decision-making.

Practical Training 11.4 : Clinical assessment of pancreatic cancer.

Teacher Instruction:

Step 1: Case Introduction and History Taking - Instruct students to systematically collect a comprehensive patient history, with focused attention on the detailed evaluation of the history of abdominal/ back pain, jaundice, weight loss, appetite loss, pale stools, dark urine, and fatigue. Key aspects to explore include the onset, course, character, associated symptoms, and modifying factors. Emphasize the need to assess past medical history, treatment history, relevant negative history, family history, socioeconomic background, occupational history, and personal history.

Step 2: Physical Examination - Teach students to perform physical examination particularly a general examination and history based focused systemic examination in specific.

Step 3: Diagnostic Investigations - Facilitate discussion on selecting and interpreting relevant diagnostic investigations to support or confirm clinical impressions. Encourage students to correlate findings from baseline investigations with clinical data, and to recognize when further, targeted diagnostic tests are necessary for a more refined evaluation.

Step 4: Formulation of Differential Diagnosis - Encourage students to develop a well-rounded differential diagnosis by correlating clinical findings with patient history. Stress the importance of evaluating key features related to abdominal/ back pain, jaundice, weight loss, appetite loss, pale stools, dark urine, and fatigue such as the onset, course, character, associated symptoms, and modifying factors. Additionally, guide them to apply Ayurveda understanding using Lakshana Samucchaya to determine Vyadhi Vinischaya, identify the Vyadhi Hetu if any, recognize Anubandhya and Anubandha Dosha, Srotas involved and evaluate the Sadhya or Asadhya. Also demonstrate

Avastha (Purvaroopa, Roopa and Upadrava as applicable).

Step 5: Clinical Reasoning and Diagnostic Synthesis - Support students in synthesizing clinical information and investigative findings to arrive at the most likely diagnosis. Encourage a balanced diagnostic approach that integrates Ayurveda understanding with contemporary biomedical reasoning to enhance clinical decision-making.

Practical Training 11.5 : Clinical assessment of renal cancer.

Teacher Instruction:

Step 1: Case Introduction and History Taking - Instruct students to systematically collect a comprehensive patient history, with focused attention on the detailed evaluation of the history of hematuria, back/ flank pain, lump, weight loss, fever, anemia, and fatigue. Key aspects to explore include the onset, course, character, associated symptoms, and modifying factors. Emphasize the need to assess past medical history, treatment history, relevant negative history, family history, socioeconomic background, occupational history, and personal history.

Step 2: Physical Examination - Teach students to perform physical examination particularly a general examination and history based focused systemic examination in specific.

Step 3: Diagnostic Investigations - Facilitate discussion on selecting and interpreting relevant diagnostic investigations to support or confirm clinical impressions. Encourage students to correlate findings from baseline investigations with clinical data, and to recognize when further, targeted diagnostic tests are necessary for a more refined evaluation.

Step 4: Formulation of Differential Diagnosis - Encourage students to develop a well-rounded differential diagnosis by correlating clinical findings with patient history. Stress the importance of evaluating key features related to hematuria back/ flank pain, lump, weight loss, fever, anemia, and fatigue such as the onset, course, character, associated symptoms, and modifying factors. Additionally, guide them to apply Ayurveda understanding using Lakshana Samucchaya to determine Vyadhi Vinischaya, identify the Vyadhi Hetu if any, recognize Anubandhya and Anubandha Dosha, Srotas involved and evaluate the Sadhya or Asadhya. Also demonstrate Avastha (Purvaroopa, Roopa and Upadrava as applicable).

Step 5: Clinical Reasoning and Diagnostic Synthesis - Support students in synthesizing clinical information and investigative findings to arrive at the most likely diagnosis. Encourage a balanced diagnostic approach that integrates Ayurveda understanding with contemporary biomedical reasoning to enhance clinical decision-making.

Practical Training 11.6 : Clinical assessment of thoracic carcinoma.

Teacher Instruction:

Step 1: Case Introduction and History Taking - Instruct students to systematically collect a comprehensive patient history, with focused attention on the detailed evaluation of the history of cough, hemoptysis, breathlessness, fatigue, weight loss, and chest pain. Key aspects to explore include the onset, course, character, associated symptoms, and modifying factors. Emphasize the need to assess past medical history, treatment history, relevant negative history, family history, socioeconomic background, occupational history, and personal history.

Step 2: Physical Examination - Teach students to perform physical examination particularly a general examination and history based focused systemic examination in specific.

Step 3: Diagnostic Investigations - Facilitate discussion on selecting and interpreting relevant diagnostic investigations to support or confirm clinical impressions. Encourage students to correlate findings from baseline investigations with clinical data, and to recognize when further, targeted diagnostic tests are necessary for a more refined evaluation.

Step 4: Formulation of Differential Diagnosis - Encourage students to develop a well-rounded differential diagnosis by correlating clinical findings with patient history. Stress the importance of evaluating key features related to cough, hemoptysis, breathlessness, fatigue, weight loss, and chest pain such as the onset, course, character, associated symptoms, and modifying factors. Additionally, guide them to apply Ayurveda understanding using Lakshana Samucchaya to determine Vyadhi Vinischaya, identify the Vyadhi Hetu if any, recognize Anubandhya and Anubandha Dosha, Srotas involved and evaluate the Sadhya or Asadhya. Also demonstrate Avastha (Purvaroopa, Roopa and Upadrava as applicable).

Step 5: Clinical Reasoning and Diagnostic Synthesis - Support students in synthesizing clinical information and investigative findings to arrive at the most likely diagnosis. Encourage a balanced diagnostic approach that integrates Ayurveda understanding with contemporary biomedical reasoning to enhance clinical decision-making.

Practical Training 11.7 : Clinical assessment of brain tumor.

Teacher Instruction:

Step 1: Case Introduction and History Taking - Instruct students to systematically collect a comprehensive patient history, with focused attention on the detailed evaluation of the history of headache, nausea and vomiting, seizures, altered mental status, focal neurological deficits, visual disturbances, speech difficulties, balance/ coordination issues, sensory changes, and fatigue/ drowsiness. Key aspects to explore include the onset, course, character, associated symptoms, and modifying factors. Emphasize the need to assess past medical history, treatment history, relevant negative history, family history, socioeconomic background, occupational history, and personal history.

Step 2: Physical Examination - Teach students to perform physical examination particularly a general examination and history based focused systemic examination in specific.

Step 3: Diagnostic Investigations - Facilitate discussion on selecting and interpreting relevant diagnostic investigations to support or confirm clinical impressions. Encourage students to correlate findings from baseline investigations with clinical data, and to recognize when further, targeted diagnostic tests are necessary for a more refined evaluation.

Step 4: Formulation of Differential Diagnosis - Encourage students to develop a well-rounded differential diagnosis by correlating clinical findings with patient history. Stress the importance of evaluating key features related to headache, nausea and vomiting, seizures, altered mental status, focal neurological deficits, visual disturbances, speech difficulties, balance/ coordination issues, sensory changes, and fatigue/ drowsiness such as the onset, course, character, associated symptoms, and modifying factors. Additionally, guide them to apply Ayurveda understanding using Lakshana Samucchaya to determine Vyadhi Vinischaya, identify the Vyadhi Hetu if any, recognize Anubandhya and Anubandha Dosha, Srotas involved and evaluate the Sadhya or Asadhya. Also demonstrate Avastha (Purvaroopa, Roopa and Upadrava as applicable).

Step 5: Clinical Reasoning and Diagnostic Synthesis - Support students in synthesizing clinical information and investigative findings to arrive at the most likely diagnosis. Encourage a balanced diagnostic approach that integrates Ayurveda understanding with contemporary biomedical reasoning to enhance clinical decision-making.

Practical Training 11.8 : Clinical assessment of bone cancer.

Teacher Instruction:

Step 1: Case Introduction and History Taking - Instruct students to systematically collect a comprehensive patient history, with focused attention on the detailed evaluation of the history of localized bone pain, swelling or lump, pathological fracture, limited mobility, bone deformity, systemic symptoms - fatigue, unexplained weight loss, fever, or night sweats, and numbness/ tingling/ weakness. Key aspects to explore include the onset, course, character, associated symptoms, and modifying factors. Emphasize the need to assess past medical history, treatment history, relevant negative history, family history, socioeconomic background, occupational history, and personal history.

Step 2: Physical Examination - Teach students to perform physical examination particularly a general examination and history based focused systemic examination in specific.

Step 3: Diagnostic Investigations - Facilitate discussion on selecting and interpreting relevant diagnostic investigations to support or confirm clinical impressions. Encourage students to correlate findings from baseline investigations with clinical data, and to recognize when further, targeted diagnostic tests are necessary for a more refined evaluation.

Step 4: Formulation of Differential Diagnosis - Encourage students to develop a well-rounded differential diagnosis by correlating clinical findings with patient history. Stress the importance of evaluating key features related to localized bone pain, swelling or lump, pathological fracture, limited mobility, bone deformity, systemic symptoms - fatigue, unexplained weight loss, fever, or night sweats, and numbness/ tingling/ weakness such as the onset, course, character, associated symptoms, and modifying factors. Additionally, guide them to apply Ayurveda understanding using Lakshana Samucchaya to determine Vyadhi Vinischaya, identify the Vyadhi Hetu if any, recognize Anubandhya and Anubandha Dosha, Srotas involved and evaluate the Sadhya or Asadhya. Also demonstrate Avastha (Purvaroopa, Roopa and Upadrava as applicable).

Step 5: Clinical Reasoning and Diagnostic Synthesis - Support students in synthesizing clinical information and investigative findings to arrive at the most likely diagnosis. Encourage a balanced diagnostic approach that integrates Ayurveda understanding with contemporary biomedical reasoning to enhance clinical decision-making.

Practical Training 11.9 : Clinical assessment of lymphoma.

Teacher Instruction:

Step 1: Case Introduction and History Taking - Instruct students to systematically collect a comprehensive patient history, with focused attention on the detailed evaluation of the history of painless swollen lymph nodes, fever, night sweats, and unexplained weight loss, fatigue, abdominal pain/ swelling, chest pain/ cough/ shortness of breath, Recurrent infections, anemia/ bleeding, swelling of face/ neck/ legs etc. Key aspects to explore include the onset, course, character, associated symptoms, and modifying factors. Emphasize the need to assess past medical history, treatment history, relevant negative history, family history, socioeconomic background, occupational history, and personal history.

Step 2: Physical Examination - Teach students to perform physical examination particularly a general examination and history based focused systemic examination in specific.

Step 3: Diagnostic Investigations - Facilitate discussion on selecting and interpreting relevant diagnostic investigations to support or confirm clinical impressions. Encourage students to correlate findings from baseline investigations with clinical data, and to recognize when further, targeted diagnostic tests are necessary for a more refined evaluation.

Step 4: Formulation of Differential Diagnosis - Encourage students to develop a well-rounded differential diagnosis by correlating clinical findings with patient history.

Stress the importance of evaluating key features related to painless swollen lymph nodes, fever, night sweats, and unexplained weight loss, fatigue, abdominal pain/ swelling, chest pain/ cough/ shortness of breath, Recurrent infections, anemia/ bleeding, swelling of face/ neck/ legs etc. such as the onset, course, character, associated symptoms, and modifying factors. Additionally, guide them to apply Ayurveda understanding using Lakshana Samucchaya to determine Vyadhi Vinischaya, identify the Vyadhi Hetu if any, recognize Anubandhya and Anubandha Dosha, Srotas involved and evaluate the Sadhya or Asadhya. Also demonstrate Avastha (Purvaroopa, Roopa and Upadrava as applicable).

Step 5: Clinical Reasoning and Diagnostic Synthesis - Support students in synthesizing clinical information and investigative findings to arrive at the most likely diagnosis. Encourage a balanced diagnostic approach that integrates Ayurveda understanding with contemporary biomedical reasoning to enhance clinical decision-making.

Practical Training 11.10 : Clinical assessment of leukaemia.

Teacher Instruction:

Step 1: Case Introduction and History Taking - Instruct students to systematically collect a comprehensive patient history, with focused attention on the detailed evaluation of the history of fatigue, fever, chills, frequent infections, unexplained weight loss, painless swollen lymph nodes, enlarged liver and spleen, easy bleeding/ bruising, petechiae, night sweats, bone pain/ tenderness and loss of appetite, abdominal pain, chest pain/ cough/ shortness of breath, anemia, and headache. Key aspects to explore include the onset, course, character, associated symptoms, and modifying factors. Emphasize the need to assess past medical history, treatment history, relevant negative history, family history, socioeconomic background, occupational history, and personal history.

Step 2: Physical Examination - Teach students to perform physical examination particularly a general examination and history based focused systemic examination in specific.

Step 3: Diagnostic Investigations - Facilitate discussion on selecting and interpreting relevant diagnostic investigations to support or confirm clinical impressions. Encourage students to correlate findings from baseline investigations with clinical data, and to recognize when further, targeted diagnostic tests are necessary for a more refined evaluation.

Step 4: Formulation of Differential Diagnosis - Encourage students to develop a well-rounded differential diagnosis by correlating clinical findings with patient history. Stress the importance of evaluating key features related to fatigue, fever, chills, frequent infections, unexplained weight loss, painless swollen lymph nodes, enlarged liver and spleen, easy bleeding/ bruising, petechiae, night sweats, bone pain/ tenderness and loss of appetite, abdominal pain, chest pain/ cough/ shortness of breath, anemia, and headache such as the onset, course, character, associated symptoms, and modifying factors. Additionally, guide them to apply Ayurveda understanding using Lakshana Samucchaya to determine Vyadhi Vinischaya, identify the Vyadhi Hetu if any, recognize Anubandhya and Anubandha Dosha, Srotas involved and evaluate the Sadhya or Asadhya. Also demonstrate Avastha (Purvaroopa, Roopa and Upadrava as applicable).

Step 5: Clinical Reasoning and Diagnostic Synthesis - Support students in synthesizing clinical information and investigative findings to arrive at the most likely diagnosis. Encourage a balanced diagnostic approach that integrates Ayurveda understanding with contemporary biomedical reasoning to enhance clinical decision-making.

Practical Training 11.11 : Clinical assessment of skin cancer.

Teacher Instruction:

Step 1: Case Introduction and History Taking - Instruct students to systematically collect a comprehensive patient history, with focused attention on the detailed evaluation of the history of new or changing spot/ mole – asymmetry, irregular border, color variation (multiple colors (brown, black, red, white, blue) within a single lesion), diameter >6 mm, rapidly growing nodule, non-healing sore/ ulcer, bleeding, oozing, or crusting, Itching or pain, dark lesion on palms/soles/nail beds, firm, red nodule. Key aspects to explore include the onset, course, character, duration, size, shape, colour, texture, distribution, pigmentation, ulceration, crusting, bleeding, scaling, oozing, any associated symptoms, and modifying factors. Emphasize the need to assess past medical history, treatment history, relevant negative history, family history, socioeconomic background, occupational history, and personal history.

Step 2: Physical Examination - Teach students to perform physical examination particularly a general examination and history based focused systemic examination in specific.

Step 3: Diagnostic Investigations - Facilitate discussion on selecting and interpreting relevant diagnostic investigations to support or confirm clinical impressions. Encourage students to correlate findings from baseline investigations with clinical data, and to recognize when further, targeted diagnostic tests are necessary for a more refined evaluation.

Step 4: Formulation of Differential Diagnosis - Encourage students to develop a well-rounded differential diagnosis by correlating clinical findings with patient history. Stress the importance of evaluating key features related to new or changing spot/ mole – asymmetry, irregular border, color variation (multiple colors (brown, black, red, white, blue) within a single lesion), diameter >6 mm, rapidly growing nodule, non-healing sore/ ulcer, bleeding, oozing, or crusting, Itching or pain, dark lesion on palms/soles/nail beds, firm, red nodule. Key aspects to explore include the onset, course, character, duration, size, shape, colour, texture, distribution, pigmentation, ulceration, crusting, bleeding, scaling, oozing, any associated symptoms, and modifying factors. Additionally, guide them to apply Ayurveda understanding using Lakshana Samucchaya to determine Vyadhi Vinischaya, identify the Vyadhi Hetu if any, recognize Anubandhya and Anubandha Dosha, Srotas involved and evaluate the Sadhya or Asadhya. Also demonstrate Avastha (Purvaroopa, Roopa and Upadrava as applicable).

Step 5: Clinical Reasoning and Diagnostic Synthesis - Support students in synthesizing clinical information and investigative findings to arrive at the most likely diagnosis. Encourage a balanced diagnostic approach that integrates Ayurveda understanding with contemporary biomedical reasoning to enhance clinical decision-making.

Practical Training 11.12 : Clinical assessment of thyroid cancer.

Teacher Instruction:

Step 1: Case Introduction and History Taking - Instruct students to systematically collect a comprehensive patient history, with focused attention on the detailed evaluation of the history of neck lump or nodule, swelling in the neck, voice changes, difficulty swallowing (dysphagia), difficulty breathing (dyspnea), neck or throat pain, swollen lymph nodes, persistent cough. Key aspects to explore include the such as the onset, course, character, associated symptoms, and modifying factors. Emphasize the need to assess past medical history, treatment history, relevant negative history, family history, socioeconomic background, occupational history, and personal history.

Step 2: Physical Examination - Teach students to perform physical examination particularly a general examination and history based focused systemic examination in specific.

Step 3: Diagnostic Investigations - Facilitate discussion on selecting and interpreting relevant diagnostic investigations to support or confirm clinical impressions. Encourage students to correlate findings from baseline investigations with clinical data, and to recognize when further, targeted diagnostic tests are necessary for a more refined evaluation.

Step 4: Formulation of Differential Diagnosis - Encourage students to develop a well-rounded differential diagnosis by correlating clinical findings with patient history. Stress the importance of evaluating key features related to neck lump or nodule, swelling in the neck, voice changes, difficulty swallowing (dysphagia), difficulty breathing (dyspnea), neck or throat pain, swollen lymph nodes, persistent cough. Key aspects to explore include the such as the onset, course, character, associated symptoms, and modifying factors. Additionally, guide them to apply Ayurveda understanding using Lakshana Samucchaya to determine Vyadhi Vinischaya, identify the Vyadhi Hetu if any, recognize Anubandhya and Anubandha Dosha, Srotas involved and evaluate the Sadhya or Asadhya. Also demonstrate Avastha (Purvaroopa, Roopa and Upadrava as applicable).

Step 5: Clinical Reasoning and Diagnostic Synthesis - Support students in synthesizing clinical information and investigative findings to arrive at the most likely diagnosis. Encourage a balanced diagnostic approach that integrates Ayurveda understanding with contemporary biomedical reasoning to enhance clinical decision-making.

Experiential learning Activity

Experiential-Learning 11.1 : Subjective and objective assessment, planning for investigation and diagnosis in patients presenting with complaints of colorectal carcinoma.

Student Instructions (Assessment – Subjective, Objective & Investigation):

Step 1: Take a focused history for a real or simulated case of colorectal carcinoma. Ask about bowel habit changes, rectal bleeding, pain, anemia, and weight loss. Record past illnesses, treatment, family/personal history, and assess relevant Nidana and Srotas. Summarize findings in UG RNVV CAB format.

Step 2: Perform general and systemic examination based on symptoms and comorbidities. Identify and document key physical signs relevant to the case.

Step 3: Recommend basic and relevant investigations, interpret results, and correlate findings with clinical and Ayurveda assessment. Document your interpretation clearly.

Student Instructions (Diagnosis):

Step 1: As a continuation of the above experiential learning session, based on findings, list differential diagnoses.

Step 2: Based on history and examination, list possible diagnosis through diagnostic reasoning strategies in primary health care for clinical diagnosis, integrative model of clinical reasoning model, dual process diagnostic reasoning model, hypothetico-deductive model, pattern recognition model, pathway for clinical reasoning model to learn intuitive approach and analytical approaches in clinical decision making as applicable to arrive at a diagnosis of the given case.

Step 3: Apply Ayurveda diagnostic reasoning using Lakshana Samucchaya, considering the comorbidities, systemic symptoms, and past medical history understand the Vyadhi Vinischaya, Vyadhi Hetu if any, Srotas involved, Dosha-Dushya Samurchana, and Anubandhya/ Anubandha Dosha/ Vyadhi, and Sadhya or Asadhya. Also assess Avastha (Purvaroopa, Roopa and Upadrava as applicable).

Step 4: Synthesize all findings and establish the most likely diagnosis.

Step 5: Evaluate prognosis and present a summary of the diagnosis with justification.

Experiential-Learning 11.2 : Subjective and objective assessment, planning for investigation and diagnosis in patients presenting with complaints of gastric carcinoma.

Student Instructions — (Subjective, Objective and Investigations):

Step 1 – Focused History - Take a concise history for the allotted gastric-carcinoma case: appetite loss, early satiety, dyspepsia, nausea/ vomiting, pain, anemia, weight loss. Note onset, course, character, modifiers, severity, past illnesses/treatments, family and personal history. Map key Ayurveda factors including Srotas and summarise in UG

RNVV CAB format for a provisional diagnosis.

Step 2 – Targeted Examination - Perform a general and system-oriented physical exam guided by the history and comorbidities. Record critical signs (e.g., palpable mass, Virchow's node, cachexia) with brief interpretations in the case sheet.

Step 3 – Rational Investigations - Order baseline and case-specific tests. Interpret each result and link it to clinical and Ayurveda findings, noting how it confirms the diagnosis or reveals complications.

Student Instructions (Diagnosis):

Step 1: As a continuation of the above experiential learning session, based on findings, list differential diagnoses.

Step 2: Based on history and examination, list possible diagnosis through diagnostic reasoning strategies in primary health care for clinical diagnosis, integrative model of clinical reasoning, dual process diagnostic reasoning model, hypothetico-deductive model, pattern recognition model, pathway for clinical reasoning model to learn intuitive approach and analytical approaches in clinical decision making as applicable to arrive at a diagnosis of the given case.

Step 3: Apply Ayurveda diagnostic reasoning using Lakshana Samucchaya, considering the comorbidities, systemic symptoms, and past medical history understand the Vyadhi Vinischaya, Vyadhi Hetu if any, Srotas involved, Dosha-Dushya Samurchana, and Anubandhya/ Anubandha Dosha/ Vyadhi, and Sadhya or Asadhya. Also assess Avastha (Purvaroopa, Roopa and Upadrava as applicable).

Step 4: Synthesize all findings and establish the most likely diagnosis.

Step 5: Evaluate prognosis and present a summary of the diagnosis with justification.

Experiential-Learning 11.3 : Subjective and objective assessment, planning for investigation and diagnosis in patients presenting with complaints of hepatocellular carcinoma.

Student Instructions — (Subjective, Objective and Investigation):

Step 1 – History Taking and Ayurveda Assessment - Elicit a structured history for the given case: ask about weight loss, abdominal pain, jaundice, liver swelling, appetite loss, and fever. Explore onset, course, character, modifiers, and severity. Record past illness, treatment, family/ personal history. Identify Srotas. Summarize using UG RNVV CAB format for provisional diagnosis.

Step 2 – Physical Examination - Conduct general and systemic examination based on symptoms and history. Look for signs like hepatomegaly, jaundice, ascites, or cachexia. Record and interpret findings in the case sheet.

Step 3 – Investigations and Clinical Correlation - Recommend and interpret relevant investigations. Correlate results with clinical findings and document their relevance in confirming diagnosis or assessing complications.

Student Instructions (Diagnosis):

Step 1: As a continuation of the above experiential learning session, based on findings, list differential diagnoses.

Step 2: Based on history and examination, list possible diagnosis through diagnostic reasoning strategies in primary health care for clinical diagnosis, integrative model of clinical reasoning, dual process diagnostic reasoning model, hypothetico-deductive model, pattern recognition model, pathway for clinical reasoning model to learn intuitive approach and analytical approaches in clinical decision making as applicable to arrive at a diagnosis of the given case.

Step 3: Apply Ayurveda diagnostic reasoning using Lakshana Samucchaya, considering the comorbidities, systemic symptoms, and past medical history understand the

Vyadhi Vinischaya, Vyadhi Hetu if any, Srotas involved, Dosha-Dushya Samurchana, and Anubandhya/ Anubandha Dosha/ Vyadhi, and Sadhya or Asadhya. Also assess Avastha (Purvaroopa, Roopa and Upadrava as applicable).

Step 4: Synthesize all findings and establish the most likely diagnosis.

Step 5: Evaluate prognosis and present a summary of the diagnosis with justification.

Experiential-Learning 11.4 : Subjective and objective assessment, planning for investigation and diagnosis in patients presenting with complaints of pancreatic cancer.

Student Instructions — (Subjective, Objective and Investigation):

Step 1 – History Taking and Ayurveda Assessment

Take focused history for abdominal/back pain, jaundice, appetite and weight loss, pale stools, dark urine, and fatigue. Ask about onset, course, site, radiation, severity, and modifiers. Record past illnesses, treatments, family and personal history. Identify relevant Srotas. Use UG RNVV CAB format to frame a tentative diagnosis.

Step 2 – Physical Examination - Perform general and systemic examination based on history. Look for signs such as jaundice, cachexia, palpable mass, hepatomegaly, or ascites. Document findings and their interpretations in the case sheet.

Step 3 – Investigations and Clinical Correlation - Recommend and interpret baseline and targeted tests. Correlate investigation results with clinical and Ayurveda findings. Document how each test supports or rules out potential diagnoses and complications.

Student Instructions (Diagnosis):

Step 1: As a continuation of the above experiential learning session, based on findings, list differential diagnoses.

Step 2: Based on history and examination, list possible diagnosis through diagnostic reasoning strategies in primary health care for clinical diagnosis, integrative model of clinical reasoning model, dual process diagnostic reasoning model, hypothetico-deductive model, pattern recognition model, pathway for clinical reasoning model to learn intuitive approach and analytical approaches in clinical decision making as applicable to arrive at a diagnosis of the given case.

Step 3: Apply Ayurveda diagnostic reasoning using Lakshana Samucchaya, considering the comorbidities, systemic symptoms, and past medical history understand the Vyadhi Vinischaya, Vyadhi Hetu if any, Srotas involved, Dosha-Dushya Samurchana, and Anubandhya/ Anubandha Dosha/ Vyadhi, and Sadhya or Asadhya. Also assess Avastha (Purvaroopa, Roopa and Upadrava as applicable).

Step 4: Synthesize all findings and establish the most likely diagnosis.

Step 5: Evaluate prognosis and present a summary of the diagnosis with justification.

Experiential-Learning 11.5 : Subjective and objective assessment, planning for investigation and diagnosis in patients presenting with complaints of renal cancer.

Student Instructions — (Subjective, Objective and Investigation):

Step 1 – History Taking and Ayurveda Assessment

Elicit history for symptoms like hematuria, back/ flank pain, palpable lump, weight loss, fever, anemia, and fatigue. Explore onset, course, site, radiation, severity, and modifiers. Document past illness, treatment, family and personal history. Assess involved Srotas. Use UG RNVV CAB format to suggest a provisional diagnosis.

Step 2 – Physical Examination - Conduct general and system-specific examination based on history and comorbidities. Look for signs like pallor, lump, edema, or

hypertension. Record findings and preliminary interpretations in the case sheet.

Step 3 – Investigations and Clinical Correlation - Advise and interpret necessary investigations. Correlate results with clinical and Ayurveda findings and document how each supports or rules out differential diagnoses or complications.

Student Instructions (Diagnosis):

Step 1: As a continuation of the above experiential learning session, based on findings, list differential diagnoses.

Step 2: Based on history and examination, list possible diagnosis through diagnostic reasoning strategies in primary health care for clinical diagnosis, integrative model of clinical reasoning model, dual process diagnostic reasoning model, hypothetico-deductive model, pattern recognition model, pathway for clinical reasoning model to learn intuitive approach and analytical approaches in clinical decision making as applicable to arrive at a diagnosis of the given case.

Step 3: Apply Ayurveda diagnostic reasoning using Lakshana Samucchaya, considering the comorbidities, systemic symptoms, and past medical history understand the Vyadhi Vinischaya, Vyadhi Hetu if any, Srotas involved, Dosha-Dushya Samurchana, and Anubandhya/ Anubandha Dosha/ Vyadhi, and Sadhya or Asadhya. Also assess Avastha (Purvaroopa, Roopa and Upadrava as applicable).

Step 4: Synthesize all findings and establish the most likely diagnosis.

Step 5: Evaluate prognosis and present a summary of the diagnosis with justification.

Experiential-Learning 11.6 : Subjective and objective assessment, planning for investigation and diagnosis in patients presenting with complaints of thoracic carcinoma.

Student Instructions — (Subjective, Objective and Investigation):

Step 1 – History Taking and Ayurveda Assessment - Take detailed history of symptoms such as cough, hemoptysis, breathlessness, chest pain, fatigue, and weight loss. Explore onset, course, character, site, radiation, modifiers, and severity. Record past illness, treatment, family and personal history. Identify Srotas involved. Use UG RNVV CAB format to propose a tentative diagnosis.

Step 2 – Physical Examination - Perform general and systemic examination focused on respiratory and cardiovascular systems. Look for signs like clubbing, lymphadenopathy, breath sounds, or chest tenderness. Document clinical findings and interpretations.

Step 3 – Investigations and Clinical Correlation - Advise and interpret investigations. Correlate lab and imaging results with history and physical findings, and document their diagnostic value and relevance to disease progression or complications.

Student Instructions (Diagnosis):

Step 1: As a continuation of the above experiential learning session, based on findings, list differential diagnoses.

Step 2: Based on history and examination, list possible diagnosis through diagnostic reasoning strategies in primary health care for clinical diagnosis, integrative model of clinical reasoning, dual process diagnostic reasoning model, hypothetico-deductive model, pattern recognition model, pathway for clinical reasoning model to learn intuitive approach and analytical approaches in clinical decision making as applicable to arrive at a diagnosis of the given case.

Step 3: Apply Ayurveda diagnostic reasoning using Lakshana Samucchaya, considering the comorbidities, systemic symptoms, and past medical history understand the Vyadhi Vinischaya, Vyadhi Hetu if any, Srotas involved, Dosha-Dushya Samurchana, and Anubandhya/ Anubandha Dosha/ Vyadhi, and Sadhya or Asadhya. Also assess Avastha (Purvaroopa, Roopa and Upadrava as applicable).

Step 4: Synthesize all findings and establish the most likely diagnosis.

Step 5: Evaluate prognosis and present a summary of the diagnosis with justification.

Experiential-Learning 11.7 : Subjective and objective assessment, planning for investigation and diagnosis in patients presenting with complaints of brain tumor.

Student Instructions — (Subjective, Objective and Investigation):

Step 1 – History Taking and Ayurveda Assessment - Take a detailed history of symptoms such as headache, nausea, vomiting, seizures, altered mental status, visual/speech disturbances, balance issues, sensory changes, and fatigue. Explore onset, course, site, character, radiation, modifiers, and severity. Record past illness, treatments, family and personal history. Assess involved Srotas. Use UG RNVV CAB format for provisional diagnosis.

Step 2 – Physical Examination - Perform general and neurological examination based on history. Check for altered consciousness, cranial nerve involvement, focal deficits, coordination, and reflex changes. Record relevant signs and interpret them in the context of the case.

Step 3 – Investigations and Clinical Correlation - Recommend appropriate investigations. Interpret findings and correlate them with clinical and Ayurveda features. Document how each test supports the diagnosis or evaluates complications.

Student Instructions (Diagnosis):

Step 1: As a continuation of the above experiential learning session, based on findings, list differential diagnoses.

Step 2: Based on history and examination, list possible diagnosis through diagnostic reasoning strategies in primary health care for clinical diagnosis, integrative model of clinical reasoning, dual process diagnostic reasoning model, hypothetico-deductive model, pattern recognition model, pathway for clinical reasoning model to learn intuitive approach and analytical approaches in clinical decision making as applicable to arrive at a diagnosis of the given case.

Step 3: Apply Ayurveda diagnostic reasoning using Lakshana Samucchaya, considering the comorbidities, systemic symptoms, and past medical history understand the Vyadhi Vinischaya, Vyadhi Hetu if any, Srotas involved, Dosha-Dushya Samurchana, and Anubandhya/ Anubandha Dosha/ Vyadhi, and Sadhya or Asadhya. Also assess Avastha (Purvaroopa, Roopa and Upadrava as applicable).

Step 4: Synthesize all findings and establish the most likely diagnosis.

Step 5: Evaluate prognosis and present a summary of the diagnosis with justification.

Experiential-Learning 11.8 : Subjective and objective assessment, planning for investigation and diagnosis in patients presenting with complaints of bone cancer.

Student Instructions — (Subjective, Objective and Investigation:

Step 1 – History Taking and Ayurveda Assessment - Take detailed history of symptoms such as localized bone pain, swelling/lump, limited mobility, deformity, pathological fracture, fatigue, weight loss, fever, night sweats, and numbness/ tingling. Explore onset, site, character, course, radiation, severity, and aggravating/modifying factors. Record past illnesses, treatments, family and personal history. Assess involved Srotas. Summarize in UG RNVV CAB format to propose a provisional diagnosis.

Step 2 – Physical Examination - Perform general and local musculoskeletal examination. Check for visible deformity, localized tenderness/swelling, range of motion, neurological involvement, and systemic signs. Document observations and clinical interpretations.

Step 3 – Investigations and Clinical Correlation - Recommend appropriate investigations. Interpret findings and correlate them with history and exam findings. Document how each investigation aids diagnosis, staging, or complication assessment.

Student Instructions (Diagnosis):

Step 1: As a continuation of the above experiential learning session, based on findings, list differential diagnoses.

Step 2: Based on history and examination, list possible diagnosis through diagnostic reasoning strategies in primary health care for clinical diagnosis, integrative model of clinical reasoning, dual process diagnostic reasoning model, hypothetico-deductive model, pattern recognition model, pathway for clinical reasoning model to learn intuitive approach and analytical approaches in clinical decision making as applicable to arrive at a diagnosis of the given case.

Step 3: Apply Ayurveda diagnostic reasoning using Lakshana Samucchaya, considering the comorbidities, systemic symptoms, and past medical history understand the Vyadhi Vinischaya, Vyadhi Hetu if any, Srotas involved, Dosha-Dushya Samurchana, and Anubandhya/ Anubandha Dosha/ Vyadhi, and Sadhya or Asadhya. Also assess Avastha (Purvaroopa, Roopa and Upadrava as applicable).

Step 4: Synthesize all findings and establish the most likely diagnosis.

Step 5: Evaluate prognosis and present a summary of the diagnosis with justification.

Experiential-Learning 11.9 : Subjective and objective assessment, planning for investigation and diagnosis in patients presenting with complaints of lymphoma.

Student Instructions — (Subjective, Objective, and Investigation):

Step 1 – History Taking and Ayurveda Assessment - Take focused history for complaints like painless lymph node swelling, fever, night sweats, weight loss, fatigue, abdominal/chest pain, recurrent infections, anemia, or limb/ facial swelling. Explore onset, course, site, character, radiation, severity, and aggravating/modifying factors. Record past illness, treatments, family and personal history. Assess involved Srotas. Use UG RNVV CAB format to frame a tentative diagnosis.

Step 2 – Physical Examination - Conduct a general and systemic exam, focusing on lymph nodes, abdomen, chest, and signs of anemia or edema. Identify palpable nodes, organomegaly, respiratory findings, or bleeding manifestations. Document key clinical signs and interpret them in context.

Step 3 – Investigations and Clinical Correlation - Recommend and interpret investigations. Correlate all findings with clinical and Ayurveda evaluation. Document how investigations confirm diagnosis and indicate disease extent or complications.

Student Instructions (Diagnosis):

Step 1: As a continuation of the above experiential learning session, based on findings, list differential diagnoses.

Step 2: Based on history and examination, list possible diagnosis through diagnostic reasoning strategies in primary health care for clinical diagnosis, integrative model of clinical reasoning, dual process diagnostic reasoning model, hypothetico-deductive model, pattern recognition model, pathway for clinical reasoning model to learn intuitive approach and analytical approaches in clinical decision making as applicable to arrive at a diagnosis of the given case.

Step 3: Apply Ayurveda diagnostic reasoning using Lakshana Samucchaya, considering the comorbidities, systemic symptoms, and past medical history understand the Vyadhi Vinischaya, Vyadhi Hetu if any, Srotas involved, Dosha-Dushya Samurchana, and Anubandhya/ Anubandha Dosha/ Vyadhi, and Sadhya or Asadhya. Also assess Avastha (Purvaroopa, Roopa and Upadrava as applicable).

Step 4: Synthesize all findings and establish the most likely diagnosis.

Step 5: Evaluate prognosis and present a summary of the diagnosis with justification.

Experiential-Learning 11.10 : Subjective and objective assessment, planning for investigation and diagnosis in patients presenting with complaints of leukaemia.

Student Instructions — (Subjective, Objective and Investigation):

Step 1 – History Taking and Ayurveda Assessment - Take a detailed history of symptoms such as fatigue, fever, chills, infections, weight loss, bleeding/bruising, petechiae, bone pain, lymphadenopathy, hepatosplenomegaly, breathlessness, or headache. Explore onset, course, character, severity, modifiers, and systemic involvement. Record past illness, treatments, family and personal history. Assess involved Srotas. Present findings using UG RNVV CAB format for a provisional diagnosis.

Step 2 – Physical Examination - Perform general and systemic examination with focus on pallor, petechiae, lymph node enlargement, liver/spleen size, signs of bleeding or infections. Document clinical findings and briefly interpret them in the case sheet.

Step 3 – Investigations and Clinical Correlation - Recommend and interpret investigations. Correlate results with clinical and Ayurveda observations. Clearly document how findings support or refine the diagnosis and indicate disease progression or complications.

Student Instructions (Diagnosis):

Step 1: As a continuation of the above experiential learning session, based on findings, list differential diagnoses.

Step 2: Based on history and examination, list possible diagnosis through diagnostic reasoning strategies in primary health care for clinical diagnosis, integrative model of clinical reasoning, dual process diagnostic reasoning model, hypothetico-deductive model, pattern recognition model, pathway for clinical reasoning model to learn intuitive approach and analytical approaches in clinical decision making as applicable to arrive at a diagnosis of the given case.

Step 3: Apply Ayurveda diagnostic reasoning using Lakshana Samucchaya, considering the comorbidities, systemic symptoms, and past medical history understand the Vyadhi Vinischaya, Vyadhi Hetu if any, Srotas involved, Dosha-Dushya Samurchana, and Anubandhya/ Anubandha Dosha/ Vyadhi, and Sadhya or Asadhya. Also assess Avastha (Purvaroopa, Roopa and Upadrava as applicable).

Step 4: Synthesize all findings and establish the most likely diagnosis.

Step 5: Evaluate prognosis and present a summary of the diagnosis with justification.

Experiential-Learning 11.11 : Subjective and objective assessment, planning for investigation and diagnosis in patients presenting with complaints of skin cancer.

Student Instructions — (Subjective, Objective and Investigation):

Step 1 – History Taking and Ayurveda Assessment - Collect history for symptoms such as new or changing mole/spot (asymmetry, border irregularity, color variation, diameter >6 mm), non-healing ulcer, bleeding, crusting, itching, pain, dark lesion, or red nodules. Explore onset, site, course, character, modifiers, severity, and progression. Record past illness, treatments, family/ personal history. Assess involved Srotas. Summarize using UG RNVV CAB format for provisional diagnosis.

Step 2 – Physical Examination - Conduct general and dermatological examination, focusing on size, color, shape, and texture of lesions, and check for lymphadenopathy or systemic signs. Record observations and their clinical relevance in the case sheet.

Step 3 – Investigations and Clinical Correlation - Recommend and interpret investigations. Correlate findings with history and examination to confirm diagnosis and assess severity or complications. Document how each test supports clinical reasoning.

Student Instructions (Diagnosis):

Step 1: As a continuation of the above experiential learning session, based on findings, list differential diagnoses.

Step 2: Based on history and examination, list possible diagnosis through diagnostic reasoning strategies in primary health care for clinical diagnosis, integrative model of

clinical reasoning, dual process diagnostic reasoning model, hypothetico-deductive model, pattern recognition model, pathway for clinical reasoning model to learn intuitive approach and analytical approaches in clinical decision making as applicable to arrive at a diagnosis of the given case.

Step 3: Apply Ayurveda diagnostic reasoning using Lakshana Samucchaya, considering the comorbidities, systemic symptoms, and past medical history understand the Vyadhi Vinischaya, Vyadhi Hetu if any, Srotas involved, Dosha-Dushya Samurchana, and Anubandhya/ Anubandha Dosha/ Vyadhi, and Sadhya or Asadhya. Also assess Avastha (Purvaroopa, Roopa and Upadrava as applicable).

Step 4: Synthesize all findings and establish the most likely diagnosis.

Step 5: Evaluate prognosis and present a summary of the diagnosis with justification.

Experiential-Learning 11.12 : Subjective and objective assessment, planning for investigation and diagnosis in patients presenting with complaints of thyroid cancer.

Student Instructions — (Subjective, Objective and Investigation):

Step 1 – History Taking and Ayurveda Assessment

Take a focused history for complaints such as neck lump, swelling, voice changes, difficulty swallowing/breathing, throat pain, persistent cough, and lymphadenopathy. Explore onset, site, course, radiation, severity, and modifiers. Record past illness, treatment, family and personal history. Assess involved Srotas. Present findings using the UG RNVV CAB format for tentative diagnosis.

Step 2 – Physical Examination - Perform general and local examination of the neck for thyroid nodules, swelling, lymph nodes, and signs of airway or esophageal compression. Include systemic assessment based on history. Document findings and initial interpretations in the case sheet.

Step 3 – Investigations and Clinical Correlation - Recommend and interpret relevant tests. Correlate each investigation with clinical findings to support diagnosis and assess disease extent or complications. Document reasoning clearly.

Student Instructions (Diagnosis):

Step 1: As a continuation of the above experiential learning session, based on findings, list differential diagnoses.

Step 2: Based on history and examination, list possible diagnosis through diagnostic reasoning strategies in primary health care for clinical diagnosis, integrative model of clinical reasoning model, dual process diagnostic reasoning model, hypothetico-deductive model, pattern recognition model, pathway for clinical reasoning model to learn intuitive approach and analytical approaches in clinical decision making as applicable to arrive at a diagnosis of the given case.

Step 3: Apply Ayurveda diagnostic reasoning using Lakshana Samucchaya, considering the comorbidities, systemic symptoms, and past medical history understand the Vyadhi Vinischaya, Vyadhi Hetu if any, Srotas involved, Dosha-Dushya Samurchana, and Anubandhya/ Anubandha Dosha/ Vyadhi, and Sadhya or Asadhya. Also assess Avastha (Purvaroopa, Roopa and Upadrava as applicable).

Step 4: Synthesize all findings and establish the most likely diagnosis.

Step 5: Evaluate prognosis and present a summary of the diagnosis with justification.

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 6C. Theory Based Assessment – 25 Marks. This component includes theory questions designed to assess conceptual clarity, integrative thinking, and the ability to apply learned concepts in clinical, diagnostic, or problem-solving contexts. Questions can be framed from any instructional unit, ensuring alignment with the intended learning outcomes. And Any practical in converted form can be taken for assessment. (25 Marks). Or Any experiential as portfolio/ reflections/ presentations, can be taken as an assessment. (25 Marks).	4

Module 12 : Lakshana Niroopana 2.4

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

1. Analyze the pathologic components related to mechanisms involved in Anaha, Adhmana, Atopa, Atisara, Grahani, Pravahika, and related gastrointestinal disorders.
2. Evaluate the clinical spectrum and progression of Arshas, Parikartika, Sannirudhaguddha, and Gudabhramsha based on Dosha, Mala Dushti, and site-specific pathology.
3. Correlate Ayurveda descriptions of GI and ano-rectal conditions with modern concepts of IBS, diarrhea, constipation, haemorrhoids, and prolapse.
4. Create integrated diagnostic strategies using classical principles along with contemporary clinical tools.

M 12 Unit 1 Anaha, Adhmana, Atopa, Atisara, Grahani, Visoochika, Alasaka, Vilambika, Pravahika, Nisaraka, Vit Vibandha.1. Symptom profile of Anaha, Adhmana, and Atopa.
2. Clinical features of Atisara and Pravahika.
3. Diagnostic indicators of Grahani and Vilambika.
4. Symptomatic expressions of Visoochika and Alasaka.
5. Pathological features of Nisaraka and Vit Vibandha.

6. Composite manifestations of digestive disturbances in related conditions.

References: 1,2,3,4,5,7,8,9,10,11,12,13,14,15,16,17,18,19,20,21,22,23,24,25,26,27,28,29,30,31,32,33,34,35,36,37,38,39,40,41,42,43,44,45,46

3A	3B	3C	3D	3E	3F	3G
CO1,CO3,CO4	Evaluate Adhmana, Atopa, and Anaha in relation to Gulma and Ama Pradoshaja Vikara, and differentiate the types of Anaha with their clinical implications using Ayurveda reasoning and contemporary pathophysiological perspectives.	1	Lecture	CAN	Knows-how	LS,DIS,L&PPT
CO1,CO3,CO4	Evaluate and compare the clinical differentiation of Atisara and Grahani, and analyze the characteristics of Saama and Nirama Pureesha for their diagnostic relevance.	1	Lecture	CE	Knows-how	CBL,L&PPT,BL,DIS
CO1,CO3,CO4	Analyze the Purvaroopa of Atisara and interpret their significance, and integrate classical Ayurveda references with contemporary clinical presentations of Atisara, Grahani and subtypes, Visuchika, Alasaka, Vilambika, Pravahika, and Nisaraka.	1	Lecture	CAN	Knows-how	RP,L&GD,CBL
CO1,CO3,CO4	Analyze the Nidana of Atisara in terms of Nija and Agantu Hetu, Dosha Hetu, and Vyadhi Hetu, and evaluate the Upadrava due to Margavarana Upeksha leading to Gulma, Atisara, and Vidradhi in relation to contemporary science.	1	Lecture	CAN	Knows-how	L&PPT,CBL
CO1,CO3,CO4	Analyze Sangraha Grahani and Ghateeyantara Grahani in correlation with contemporary medicine, and examine the pathophysiological basis of Vit Vibandha.	1	Lecture	CAN	Knows-how	L&GD,CBL,TBL
CO1,CO3,CO4	Discuss the differential diagnostic framework for distinguishing secretory and exudative diarrhoea, and evaluate conditions of diarrhoea with their differential diagnoses.	1	Lecture	CE	Knows-how	CBL,L&PPT
CO1,CO2,CO3,CO4	Demonstrate the clinical assessment of gastrointestinal disorders.	10	Practical Training 12.1	PSY-GUD	Shows-how	CBL,SIM,CD,D-BED
CO1,CO3,CO4	Elicit a detailed patient history and perform a focused physical examination to assess gastrointestinal disorders and abnormalities.	7	Experiential-Learning 12.1	PSY-GUD	Shows-how	CBL,SIM,D-BED,CD

CO1,CO2,CO3,CO4	Interpret diagnostic investigations, and synthesize clinical and investigative findings to formulate a comprehensive diagnosis of gastrointestinal disorders.	6	Experiential-Learning 12.2	PSY-GUD	Shows-how	D-BED,SIM,CD,LRI,CBL

M 12 Unit 2 Arshas, Parikartika, Sannirudhaguddha, Gudabhramsha.1. Clinical manifestations of Arshas.

2. Anatomical alterations in Arshas.
3. Clinical manifestations of Parikartika.
4. Anatomical alterations in Sannirudhaguddha.
5. Clinical manifestations of Gudabhramsha.
6. Anatomical alterations in Gudabhramsha.

References: 1,2,3,4,5,7,8,9,10,11,12,13,14,15,16,17,18,19,20,21,22,23,24,25,26,27,28,29,30,31,32,33,34,35,36,37,38,39,40,41,42,43,44,45,46

3A	3B	3C	3D	3E	3F	3G
CO1,CO3,CO4	Analyze the Pratyatma Lakshana of Bhagandara in relation to its Nidana and Samprapti, and evaluate the Nidana and Lakshana of Parikartika with their correlation to contemporary science.	1	Lecture	CAN	Knows-how	CBL,L&GD,SDL,BL
CO1,CO3,CO4	Analyze the Pratyatma Lakshana of Arshas for their diagnostic utility and compare the Nidana, Samprapti, and Lakshana of Sahaja Arshas with contemporary clinical features.	1	Lecture	CAN	Knows-how	CBL,L_VC,L&PPT
CO1,CO3,CO4	Analyze the Nidana, Samprapti, and Lakshana of Jatottara Arshas and the features of Sanniruddha Guda, correlating them with contemporary science.	1	Lecture	CAN	Knows-how	L_VC,L&PPT,DIS,CBL
CO1,CO3,CO4	Analyze the clinical condition of Gudabhramsha in relation to contemporary science and evaluate contemporary proctological conditions with their differential diagnosis.	1	Lecture	CAN	Knows-how	TBL,CBL,L&PPT,BL
CO1,CO2,CO3,CO4	Demonstrate clinical assessment of anorectal disorders.	10	Practical Training 12.2	PSY-GUD	Shows-how	CBL,LRI,CD,SIM,D-BED

CO1,CO3,CO4	Elicit a detailed clinical history and perform a focused clinical examination in patients presenting with anorectal complaints.	7	Experiential-Learning 12.3	PSY-GUD	Shows-how	D-BED,CD,SIM,CBL
CO1,CO2,CO3,CO4	Interpret appropriate investigations and formulate differential diagnoses by synthesizing clinical and investigative findings to establish an integrative diagnosis in anorectal disorders.	6	Experiential-Learning 12.4	PSY-GUD	Shows-how	D-BED,CD,SIM,LRI,CBL

Practical Training Activity

Practical Training 12.1 : Clinical assessment of gastrointestinal disorders.

Teacher Instruction:

Step 1: Case Introduction and History Taking - Instruct students to systematically collect a comprehensive patient history, with focused attention on the detailed evaluation of the history of present illness - particularly in cases of diarrhoea/ constipation, bloating sensation. Key aspects to explore include the onset, stool characteristics, frequency, associated symptoms, time course, other systemic complaints, modifying factors, severity, and any preceding symptoms. Emphasize the need to assess past medical and surgical history, treatment history, relevant negative history, as well as travel history, immunization status, family history, socioeconomic background, personal history emphasizing any food intolerance, psychological history, and occupational exposures.

Step 2: Physical Examination - Teach students to perform physical examination particularly a general examination and history based focused systemic examination in specific.

Step 3: Diagnostic Investigations - Facilitate discussion on selecting and interpreting relevant diagnostic investigations to support or confirm clinical impressions. Encourage students to correlate findings from baseline investigations with clinical data, and to recognize when further, targeted diagnostic tests are necessary for a more refined evaluation.

Step 4: Formulation of Differential Diagnosis - Encourage students to develop a well-rounded differential diagnosis by correlating clinical findings with patient history. Stress the importance of evaluating key features of diarrhoea - onset, stool characteristics, frequency, associated symptoms, time course, other systemic complaints, modifying factors, severity, and any preceding symptoms. Additionally, guide them to apply Ayurveda diagnostic understanding using Lakshana samucchaya to determine Vyadhi Vinischaya, identify the Vyadhi Hetu if any, assess the Srotas involved, recognize Anubandhya and Anubandha Dosha, and evaluate the Sadhya or Asadhya. Also demonstrate Avastha (Purvaoopa, Roopa and Upadrava as applicable).

Step 5: Clinical Reasoning and Diagnostic Synthesis - Support students in synthesizing clinical information and investigative findings to arrive at the most likely diagnosis. Encourage a balanced diagnostic approach that integrates Ayurveda understanding with contemporary reasoning to enhance clinical decision-making.

Practical Training 12.2 : Clinical assessment of anorectal disorders.

Teacher Instruction:

Step 1: Case Introduction and History Taking - Instruct students to systematically collect a comprehensive patient history, with focused attention on the detailed evaluation of the history of present illness - particularly in patient presenting with rectal bleeding, swelling in anal verge, anal pain, and altered bowel habits. Key aspects to explore include the onset, timing, frequency, stool characteristics, associated symptoms, other systemic complaints, modifying factors, and severity. Emphasize the need to assess past medical and surgical history, treatment history, relevant negative history, family history, socioeconomic background, personal history, and occupational exposures.

Step 2: Physical Examination - Teach students to perform physical examination particularly a general examination and history based focused systemic examination in specific.

Step 3: Diagnostic Investigations - Facilitate discussion on selecting and interpreting relevant diagnostic investigations to support or confirm clinical impressions. Encourage students to correlate findings from baseline investigations with clinical data, and to recognize when further, targeted diagnostic tests are necessary for a more refined evaluation.

Step 4: Formulation of Differential Diagnosis - Encourage students to develop a well-rounded differential diagnosis by correlating clinical findings with patient history. Stress the importance of evaluating key features of rectal bleeding, swelling in anal verge, anal pain, and altered bowel habits in relation to onset, timing, frequency, stool characteristics, associated symptoms, other systemic complaints, modifying factors, severity and other relevant history. Additionally, guide them to apply Ayurveda diagnostic understanding using Lakshana samucchaya to determine Vyadhi Vinischaya, identify the Pratyatma Lakshana, Vyadhi Hetu if any, assess the Srotas involved, recognize Anubandhya and Anubandha Dosha, and evaluate the Sadhya or Asadhya. Also demonstrate Avastha (Purvaoopa, Roopa and Upadrava as applicable).

Step 5: Clinical Reasoning and Diagnostic Synthesis - Support students in synthesizing clinical information and investigative findings to arrive at the most likely diagnosis. Encourage a balanced diagnostic approach that integrates Ayurveda understanding with contemporary reasoning to enhance clinical decision-making.

Experiential learning Activity

Experiential-Learning 12.1 : Subjective and objective assessment in gastrointestinal disorders.

Student Instructions (Subjective Assessment):

Step 1: Ask about the onset, stool characteristics, frequency, associated symptoms, time course, other systemic complaints, modifying factors, severity, and any preceding symptoms in the real case or simulated case of diarrhoea/ constipation, bloating sensation given by the teacher.

Step 2: Inquire about associated systemic manifestations such as: abdominal pain, nausea, fever, dehydration, weight loss, nutrition deficiency, etc.

Step 3: Document past medical/ surgical history, treatments, immunization, travel exposure, family history, personal history (food intolerance), psychological history, and socioeconomic and occupational background.

Step 4: Assess relevant Dosha Hetu, Vyadhi Hetu, Ubhaya Hetu, Utpataka and Vyanjaka Hetu, Pradhanika and Vyabhichari Hetu if applicable from the subjective assessment.

Step 5: Present the findings correlating with the history to arrive at a tentative diagnosis considering UG RNVV CAB as basic format.

Student Instructions (Objective Assessment):

Step 1: As a continuation of the above experiential learning session, begin with general examination.

Step 2: Perform systemic assessment with special emphasize on abdominal examination.

Step 3: Document signs with interpretation in the case sheet.

Experiential-Learning 12.2 : Planning for investigation and diagnosis in gastrointestinal disorders.

Student Instructions (Planning for Investigation):

Step 1: As a continuation of the above experiential learning session, recommend basic investigations along with result interpretation.

Step 2: Select subsequent tests if needed considering assessment of diagnosis and complications.

Step 3: Interpret lab/ imaging results and correlate with presenting symptoms and physical findings.

Step 4: Document correlation for each investigation with possible causes and interpretation.

Student Instructions (Diagnosis):

Step 1: As a continuation of the above experiential learning session, correlate key clinical features of diarrhoea/ constipation, bloating sensation - onset, stool characteristics, frequency, systemic symptoms, severity, and progression - with potential diagnoses. Also, consider the Lakshana Samucchaya to identify possible conditions.

Step 2: Apply diagnostic reasoning strategies in primary health care for clinical diagnosis, integrative model of clinical reasoning model, dual process diagnostic reasoning model, hypothetico-deductive model, pattern recognition model, pathway for clinical reasoning model to learn intuitive approach and analytical approaches in clinical decision making as applicable to arrive at a diagnosis of the given case.

Step 3: Identify the Pratyatma Lakshana, Anubandhya/Anubandha Dosha, Dushya, and affected Srotas, Saama and Nirama Pureesha. Also, identify Avastha (Purvaroopa, Roopa and Upadrava as applicable).

Step 5: Synthesize all findings and establish the most likely diagnosis.

Step 6: Evaluate prognosis and present a summary of the diagnosis with justification.

Experiential-Learning 12.3 : Subjective and objective assessment in a patient presenting with anorectal complaints.

Student Instructions (Subjective Assessment):

Step 1: Ask about onset, timing, duration, frequency, character (stool), and severity of rectal bleeding, anal pain, swelling in anal verge, altered bowel habits along with associated systemic symptoms.

Step 2: Record and relate modifying factors, previous episodes, past medical and surgical history, treatment history, relevant negative history, family history, socioeconomic background, personal history, and occupational exposures with above complaints.

Step 3: Assess relevant Dosha Hetu, Vyadhi Hetu, Ubhaya Hetu, Utpataka and Vyanjaka Hetu, Pradhanika and Vyabhichari Hetu if applicable from the subjective assessment.

Step 4: Present the findings correlating with the history to arrive at a tentative diagnosis considering UG RNVV CAB as basic format.

Student Instructions (Objective Assessment):

Step 1: As a continuation of the above experiential learning session, begin with general examination.

Step 2: Perform systemic assessment with special emphasize on abdominal examination and anorectal examination.

Step 3: Document signs with interpretation in the case sheet.

Experiential-Learning 12.4 : Planning for investigation and diagnosis for anorectal disorders.

Student Instructions (Planning for Investigation):

Step 1: As a continuation of the above experiential learning session, recommend basic investigations along with result interpretation.

Step 2: Select subsequent tests if needed considering assessment of diagnosis and complications.

Step 3: Interpret lab/ imaging results and correlate with presenting symptoms and physical findings.

Step 4: Document correlation for each investigation with possible causes and interpretation.

Formulate differential diagnoses and synthesize clinical and investigative findings to establish an integrative diagnosis in anorectal disorders.

Student Instructions (Diagnosis):

Step 1: Identify key symptoms: rectal bleeding, swelling at anal verge, anal pain, altered bowel habits, and analyze their onset, frequency, severity, and associated systemic features.

Step 2: Apply diagnostic reasoning strategies in primary health care for clinical diagnosis, integrative model of clinical reasoning, dual process diagnostic reasoning model, hypothetico-deductive model, pattern recognition model, pathway for clinical reasoning model to learn intuitive approach and analytical approaches in clinical decision making as applicable to arrive at a diagnosis of the given case.

Step 3: Apply Ayurveda diagnostic reasoning using Lakshana Samucchaya, identifying Pratyatma Lakshana, Vyadhi Hetu, Srotas involved, Dosha-Dushya Samurchana, and Anubandhya/Anubandha Dosha, evaluate the Sadhya or Asadhya. Also demonstrate Avastha (Purvaroopa, Roopa and Upadrava as applicable).

Step 4: Synthesize all findings and establish the most likely diagnosis.

Step 5: Evaluate prognosis and present a summary of the diagnosis with justification.

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 6C. Theory Based Assessment – 25 Marks. This component includes theory questions designed to assess conceptual clarity, integrative thinking, and the ability to apply learned concepts in clinical, diagnostic, or problem-solving contexts. Questions can be framed from any instructional unit, ensuring alignment with the intended learning outcomes. And Any practical in converted form can be taken for assessment. (25 Marks). Or Any experiential as portfolio/ reflections/ presentations, can be taken as an assessment. (25 Marks).	4

Module 13 : Lakshana Niroopana 2.5

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

1. Analyze the Ayurveda principles for pathogenesis of Akshepaka, Apatanaka, Dandapatanaka, Antarayama, Bahirayama, Apantantraka, Vrunayama, and Apasmara, focusing on their neurological and muscular manifestations.
2. Evaluate the clinical features, stages, and prognostic indicators of seizure-related disorders.
3. Interpret and compare these conditions with neurological disorders such as epilepsy, tetanus, convulsions, and dystonia, based on symptomatology and investigations.
4. Develop comprehensive diagnostic approaches using classical principles in conjunction with neurology concepts.

M 13 Unit 1 Akshepaka, Apatanaka, Dandapatanaka, Antarayama, Bahirayama, Apantantraka, Vrunayama. 1. Neuro-muscular features of Akshepaka.
2. Seizure-like manifestations in Apatanaka.
3. Convulsive patterns of Dandapatanaka.
4. Muscular rigidity in Antarayama.
5. External spasmodic features of Bahirayama.
6. Neuromotor signs of Apantantraka.
7. Paralytic and spasmodic symptoms in Vrunayama.

References: 1,2,3,4,5,7,8,9,10,11,12,13,14,15,16,17,18,19,20,21,22,23,24,25,26,27,28,29,30,31,32,33,34,35,36,37,38,39,40,41,42,43,44,45,46

3A	3B	3C	3D	3E	3F	3G
CO1,CO3,CO4	Differentiate Akshepaka and Akshepaka Bheda.	1	Lecture	CAN	Knows-how	LS,L&PPT

CO1,CO3,CO4	Analyze Apatanaka and its Bheda as described in Sushruta Samhita, and Apatanaka and Apatantraka as described in Charaka Samhita, correlating their perspectives with contemporary science.	2	Lecture	CAN	Knows-how	TBL,CBL,L&GD
CO1,CO3,CO4	Evaluate Vrunayama and relate with the contemporary science.	1	Lecture	CE	Knows-how	LS,CBL
CO1,CO3,CO4	Interpret causes and symptoms of decorticate rigidity, decerebrate rigidity, and tetany.	1	Lecture	CAN	Knows-how	L_VC,BL,CBL
CO1,CO2,CO3,CO4	Demonstrate clinical assessment of non – rhythmical involuntary movement disorders.	7	Practical Training 13.1	PSY-GUD	Shows-how	SIM,CD,CBL,D-BED
CO1,CO2,CO3,CO4	Demonstrate clinical assessment of seizure like disorders.	7	Practical Training 13.2	PSY-GUD	Shows-how	D-BED,LRI,CD,SIM,CBL
CO1,CO2,CO3,CO4	Elicit structured histories, perform systemic examinations, interpret appropriate investigations, and synthesize differential and final diagnoses in patients with non-rhythmical involuntary movement disorders.	9	Experiential-Learning 13.1	PSY-GUD	Shows-how	CBL,SIM,CD,LRI,D-BED
CO1,CO2,CO3,CO4	Elicit structured histories, perform systemic examinations, interpret appropriate investigations, and synthesize differential and final diagnoses in patients with seizure like disorders.	8	Experiential-Learning 13.2	PSY-GUD	Shows-how	CBL,SIM,LRI,D-BED,CD

M 13 Unit 2 Apasmara.1. Pathogenesis of Apasmara linked to Dosha imbalance and Manovaha Srotodushti.
2. Sudden and episodic loss of consciousness.
3. Abnormal involuntary movements during episodes.
4. Presence of prodromal symptoms such as aura or premonitory signs.
5. Post-episode confusion, disorientation, or fatigue aiding differential diagnosis.

References: 1,2,3,4,5,7,8,9,10,11,12,13,14,15,16,17,18,19,20,21,22,23,24,25,26,27,28,29,30,31,32,33,34,35,36,37,38,39,40,41,42,43,44,45,46

3A	3B	3C	3D	3E	3F	3G
CO1,CO3,CO4	Interpret Pratyatma Lakshana of Apasmara and relate with contemporary science.	1	Lecture	CAN	Knows-how	L&GD,CBL,RLE
CO1,CO3,CO4	Analyze Nidana, Samprapti and Lakshana of Apasmara.	1	Lecture	CAN	Knows-how	CBL,L_VC,L&GD
CO1,CO3,CO4	Interpret and compare the differential diagnosis of Apasmara and Akshepaka.	1	Lecture	CAN	Knows-how	CBL,L&GD,BS
CO1,CO3,CO4	Interpret differential diagnosis of seizure disorders.	2	Lecture	CAN	Knows-how	L_VC,CDBL,L&GD,CBL
CO1,CO2,CO3,CO4	Demonstrate clinical assessment of seizure disorders.	6	Practical Training 13.3	PSY-GUD	Shows-how	D-BED,LRI,SIM,CBL,CD
CO1,CO2,CO3,CO4	Elicit structured histories, perform systemic examinations, interpret appropriate investigations, and synthesize differential and final diagnoses in patients with seizure disorders.	9	Experiential-Learning 13.3	PSY-GUD	Shows-how	D-BED,SIM,CD,CBL,LRI

Practical Training Activity

Practical Training 13.1 : Clinical assessment of non – rhythmical involuntary movement disorders.

Teacher Instruction:
Step 1: Case Introduction and History Taking - Instruct students to systematically collect a comprehensive patient history, with focused attention on the detailed evaluation of a unconscious patient either with a) Extended rigid legs, toes pointed away from the body and turned slightly inward, arms bent upward at the elbows toward the centre of the body, curled wrists, hands balled and pressed together and against the chest or b) Rigid extended legs, toes pointed away from the body and turned slightly inward, arms tensed, rotated toward the centre of the body so palms face away from the body's centre, and held parallel against the sides of the body, wrists flexed away from the body, fingers curled, arched or stiff back. Key aspects to explore include the onset, course, character, associated symptoms and modifying factors if any with severity. Emphasize the need to assess past medical history, treatment history, relevant negative history, family history, socioeconomic background, occupational history and personal history.
Step 2: Physical Examination - Teach students to perform physical examination particularly a general examination and history based focused systemic examination in

specific.

Step 3: Diagnostic Investigations - Facilitate discussion on selecting and interpreting relevant diagnostic investigations to support or confirm clinical impressions. Encourage students to correlate findings from baseline investigations with clinical data, and to recognize when further, targeted diagnostic tests are necessary for a more refined evaluation.

Step 4: Formulation of Differential Diagnosis - Encourage students to develop a well-rounded differential diagnosis by correlating clinical findings with patient history. Stress the importance of evaluating key features of a unconscious patient either with a) Extended rigid legs, toes pointed away from the body and turned slightly inward, arms bent upward at the elbows toward the centre of the body, curled wrists, hands balled and pressed together and against the chest or b) Rigid extended legs, toes pointed away from the body and turned slightly inward, arms tensed, rotated toward the centre of the body so palms face away from the body's centre, and held parallel against the sides of the body, wrists flexed away from the body, fingers curled, arched or stiff back such as the site, onset, course, character, associated symptoms, modifying factors, and severity. Additionally, guide them to apply Ayurveda understanding using Lakshana Samucchaya to determine Vyadhi Vinischaya, identify the Vyadhi Hetu if any, recognize Anubandhya and Anubandha Dosha, Srotas involved and evaluate the Sadhya or Asadhya. Also demonstrate Avastha (Purvaoopa, Roopa and Upadrava as applicable).

Step 5: Clinical Reasoning and Diagnostic Synthesis - Support students in synthesizing clinical information and investigative findings to arrive at the most likely diagnosis. Encourage a balanced diagnostic approach that integrates Ayurveda principles with contemporary biomedical reasoning to enhance clinical decision-making.

Practical Training 13.2 : Clinical assessment of seizure like disorders.

Teacher Instruction:

Step 1: Case Introduction and History Taking - Instruct students to systematically collect a comprehensive patient history, with focused attention on the detailed evaluation of the history of seizure-like spasms that last for several minutes, causing painful muscle spasms and stiffness, a sustained, abnormal spasm of the facial muscles, resulting in a fixed, painful-looking grin or grimace. Key aspects to explore include the onset, course, character, associated symptoms, modifying factors, and severity. Emphasize the need to assess past medical history, treatment history, relevant negative history, family history, socioeconomic background, occupational history and personal history.

Step 2: Physical Examination - Teach students to perform physical examination particularly a general examination and history based focused systemic examination in specific.

Step 3: Diagnostic Investigations - Facilitate discussion on selecting and interpreting relevant diagnostic investigations to support or confirm clinical impressions. Encourage students to correlate findings from baseline investigations with clinical data, and to recognize when further, targeted diagnostic tests are necessary for a more refined evaluation.

Step 4: Formulation of Differential Diagnosis - Encourage students to develop a well-rounded differential diagnosis by correlating clinical findings with patient history. Stress the importance of evaluating key features of history of seizure-like spasms that last for several minutes, causing painful muscle spasms and stiffness, a sustained, abnormal spasm of the facial muscles, resulting in a fixed, painful-looking grin or grimace such as the onset, course, character, associated symptoms, modifying factors, and severity. Additionally, guide them to apply Ayurveda understanding using Lakshana Samucchaya to determine Vyadhi Vinischaya, identify the Vyadhi Hetu if any, recognize Anubandhya and Anubandha Dosha, Srotas involved and evaluate the Sadhya or Asadhya. Also demonstrate Avastha (Purvaoopa, Roopa and Upadrava as applicable).

Step 5: Clinical Reasoning and Diagnostic Synthesis - Support students in synthesizing clinical information and investigative findings to arrive at the most likely diagnosis. Encourage a balanced diagnostic approach that integrates Ayurveda principles with contemporary biomedical reasoning to enhance clinical decision-making.

Practical Training 13.3 : Clinical assessment of seizure disorders.

Step 1: Case Introduction and History Taking - Instruct students to systematically collect a comprehensive patient history, with focused attention on the detailed evaluation of a unconscious patient with uncontrollable jerking movements, stiffening, or twitching, drooling, frothing at the mouth, or loss of bladder or bowel control. Key aspects to explore include the onset, course, character, associated symptoms and modifying factors if any with severity. Emphasize the need to assess past medical history, treatment history, relevant negative history, family history, socioeconomic background, occupational history and personal history.

Step 2: Physical Examination - Teach students to perform physical examination particularly a general examination and history based focused systemic examination in specific.

Step 3: Diagnostic Investigations - Facilitate discussion on selecting and interpreting relevant diagnostic investigations to support or confirm clinical impressions. Encourage students to correlate findings from baseline investigations with clinical data, and to recognize when further, targeted diagnostic tests are necessary for a more refined evaluation.

Step 4: Formulation of Differential Diagnosis - Encourage students to develop a well-rounded differential diagnosis by correlating clinical findings with patient history. Stress the importance of evaluating key features of a unconscious patient with uncontrollable jerking movements, stiffening, or twitching, drooling, frothing at the mouth, or loss of bladder or bowel control such as the site, onset, course, character, associated symptoms, modifying factors, and severity. Additionally, guide them to apply Ayurveda understanding using Lakshana Samucchaya to determine Vyadhi Vinischaya, identify the Vyadhi Hetu if any, recognize Anubandhya and Anubandha Dosha, Srotas involved and evaluate the Sadhya or Asadhya. Also demonstrate Avastha (Purvaoopa, Roopa and Upadrava as applicable).

Step 5: Clinical Reasoning and Diagnostic Synthesis - Support students in synthesizing clinical information and investigative findings to arrive at the most likely diagnosis. Encourage a balanced diagnostic approach that integrates Ayurveda principles with contemporary biomedical reasoning to enhance clinical decision-making.

Experiential learning Activity

Experiential-Learning 13.1 : Subjective and objective assessment, planning for investigation and diagnosis in patients presenting with non – rhythmical involuntary movement disorders.

Student Instructions (Assessment – Subjective, Objective & Investigation):

Step 1: Take a focused history for a real or simulated case of non – rhythmical involuntary movement disorders. Evaluate unconscious patient either with a) Extended rigid legs, toes pointed away from the body and turned slightly inward, arms bent upward at the elbows toward the centre of the body, curled wrists, hands balled and pressed together and against the chest or b) Rigid extended legs, toes pointed away from the body and turned slightly inward, arms tensed, rotated toward the centre of the body so palms face away from the body's centre, and held parallel against the sides of the body, wrists flexed away from the body, fingers curled, arched or stiff back. Record past illnesses, treatment, family/ personal history, and assess relevant Nidana and Srotas. Summarize findings in UG RNVV CAB format.

Step 2: Perform general and systemic examination based on symptoms and comorbidities. Identify and document key physical signs relevant to the case.

Step 3: Recommend basic and relevant investigations, interpret results, and correlate findings with clinical and Ayurveda assessment. Document your interpretation clearly.

Student Instructions (Diagnosis):

Step 1: As a continuation of the above experiential learning session, based on findings, list differential diagnoses.

Step 2: Based on history and examination, list possible diagnosis through diagnostic reasoning strategies in primary health care for clinical diagnosis, integrative model of clinical reasoning, dual process diagnostic reasoning model, hypothetico-deductive model, pattern recognition model, pathway for clinical reasoning model to learn intuitive approach and analytical approaches in clinical decision making as applicable to arrive at a diagnosis of the given case.

Step 3: Apply Ayurveda diagnostic reasoning using Lakshana Samucchaya, considering the comorbidities, systemic symptoms, and past medical history understand the Vyadhi Vinischaya, Vyadhi Hetu if any, Srotas involved, Dosha-Dushya Samurchana, and Anubandha/ Anubandhya Dosha/ Vyadhi, and Sadhya or Asadhya. Also assess Avastha (Purvaroopa, Roopa and Upadrava as applicable).

Step 4: Synthesize all findings and establish the most likely diagnosis.

Step 5: Evaluate prognosis and present a summary of the diagnosis with justification.

Experiential-Learning 13.2 : Subjective and objective assessment, planning for investigation and diagnosis in patients presenting with seizure like disorders.

Student Instructions (Assessment – Subjective, Objective & Investigation):

Step 1: Take a focused history for a real or simulated case of seizure like disorders. Evaluate seizure-like spasms that last for several minutes, causing painful muscle spasms and stiffness, a sustained, abnormal spasm of the facial muscles, resulting in a fixed, painful-looking grin or grimace. Record past illnesses, treatment, family/ personal history, and assess relevant Nidana and Srotas. Summarize findings in UG RNVV CAB format.

Step 2: Perform general and systemic examination based on symptoms and comorbidities. Identify and document key physical signs relevant to the case.

Step 3: Recommend basic and relevant investigations, interpret results, and correlate findings with clinical and Ayurveda assessment. Document your interpretation clearly.

Student Instructions (Diagnosis):

Step 1: As a continuation of the above experiential learning session, based on findings, list differential diagnoses.

Step 2: Based on history and examination, list possible diagnosis through diagnostic reasoning strategies in primary health care for clinical diagnosis, integrative model of clinical reasoning, dual process diagnostic reasoning model, hypothetico-deductive model, pattern recognition model, pathway for clinical reasoning model to learn intuitive approach and analytical approaches in clinical decision making as applicable to arrive at a diagnosis of the given case.

Step 3: Apply Ayurveda diagnostic reasoning using Lakshana Samucchaya, considering the comorbidities, systemic symptoms, and past medical history understand the Vyadhi Vinischaya, Vyadhi Hetu if any, Srotas involved, Dosha-Dushya Samurchana, and Anubandha/ Anubandhya Dosha/ Vyadhi, and Sadhya or Asadhya. Also assess Avastha (Purvaroopa, Roopa and Upadrava as applicable).

Step 4: Synthesize all findings and establish the most likely diagnosis.

Step 5: Evaluate prognosis and present a summary of the diagnosis with justification.

Experiential-Learning 13.3 : Subjective and objective assessment, planning for investigation and diagnosis in patients presenting with seizure disorders.

Student Instructions (Assessment – Subjective, Objective & Investigation):

Step 1: Take a focused history for a real or simulated case of seizure disorders. Evaluate patient with uncontrollable jerking movements, stiffening, or twitching, drooling, frothing at the mouth, or loss of bladder or bowel control. Record past illnesses, treatment, family/ personal history, and assess relevant Nidana and Srotas. Summarize findings in UG RNVV CAB format.

Step 2: Perform general and systemic examination based on symptoms and comorbidities. Identify and document key physical signs relevant to the case.

Step 3: Recommend basic and relevant investigations, interpret results, and correlate findings with clinical and Ayurveda assessment. Document your interpretation clearly.

Student Instructions (Diagnosis):

Step 1: As a continuation of the above experiential learning session, based on findings, list differential diagnoses.

Step 2: Based on history and examination, list possible diagnosis through diagnostic reasoning strategies in primary health care for clinical diagnosis, integrative model of clinical reasoning, dual process diagnostic reasoning model, hypothetico-deductive model, pattern recognition model, pathway for clinical reasoning model to learn intuitive approach and analytical approaches in clinical decision making as applicable to arrive at a diagnosis of the given case.

Step 3: Apply Ayurveda diagnostic reasoning using Lakshana Samucchaya, considering the comorbidities, systemic symptoms, and past medical history understand the Vyadhi Vinischaya, Vyadhi Hetu if any, Srotas involved, Dosha-Dushya Samurchana, and Anubandha/ Anubandhya Dosha/ Vyadhi, and Sadhya or Asadhya. Also assess Avastha (Purvaroopa, Roopa and Upadrava as applicable).

Step 4: Synthesize all findings and establish the most likely diagnosis.

Step 5: Evaluate prognosis and present a summary of the diagnosis with justification.

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 6C. Theory Based Assessment – 25 Marks. This component includes theory questions designed to assess conceptual clarity, integrative thinking, and the ability to apply learned concepts in clinical, diagnostic, or problem-solving contexts. Questions can be framed from any instructional unit, ensuring alignment with the intended learning outcomes. And Any practical in converted form can be taken for assessment. (25 Marks). Or Any experiential as portfolio/ reflections/ presentations, can be taken as an assessment. (25 Marks).	4

Module 14 : Lakshana Niroopana 2.6

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

1. Analyze the Dosha, Dhatu, and Srotas-based pathogenesis of Hrut Shoola, Hrudroga, Shotha, Shopha, Bahya Vidradhi, Asthi-Majja Paripaka, Udara, and Pleeha Roga.
2. Evaluate the clinical features, progression, and prognostic signs of internal and external inflammatory and systemic disorders described in Ayurveda.
3. Interpret and compare classical descriptions of cardiac, edematous, abscess-related, and abdominal disorders with modern conditions such as ischemic heart disease, edema, cellulitis, splenomegaly, and ascites.
4. Develop comprehensive diagnostic and prognostic frameworks integrating Ayurveda diagnostic tools with contemporary investigations.

M 14 Unit 1 Hrut Shoola, Hrudroga.1. Clinical expressions of Hrut Shoola.
2. Underlying mechanism of Hrut Shoola.
3. Clinical expressions of Hrudroga.
4. Underlying mechanism of Hrudroga.
5. Site-specific manifestations and progression.

References: 1,2,3,4,5,7,8,9,10,11,12,13,14,15,16,17,18,19,20,21,22,23,24,25,26,27,28,29,30,31,32,33,34,35,36,37,38,39,40,41,42,43,44,45,46

3A	3B	3C	3D	3E	3F	3G
CO1,CO3,CO4	Evaluate Pratyatma and Samanya Lakshana of Hrudroga, correlate Nidana, Samprapti, and Hrut Shula features with Ayurveda and contemporary science, and analyze the pathogenesis of Doshaja Hrudroga with modern medical perspectives.	1	Lecture	CE	Knows-how	CBL,L&GD
CO1,CO3,CO4	Analyze the Samprapti and clinical implications of Krimija Hrudroga/ Shonitaja Krimi with contemporary parallels, correlate Apatanaka with Hrudroga Lakshana in modern context, and differentiate causes of chest pain.	1	Lecture	CAN	Knows-how	CBL,L&GD
CO1,CO2,CO3,CO4	Demonstrate clinical assessment of chest pain.	4	Practical Training 14.1	PSY-GUD	Shows-how	LRI,SIM,CBL,CD,

						D-BED
CO1,CO2,CO3,CO4	Elicit a detailed history and perform a focused physical examination in patients presenting with chest pain.	3	Experiential-Learning 14.1	PSY-GUD	Shows-how	CBL,SIM,CD,D-BED
CO1,CO2,CO3,CO4	Select and interpret relevant investigations, and formulate differential diagnoses by synthesizing clinical and investigative data to establish an integrative diagnosis of chest pain.	2	Experiential-Learning 14.2	PSY-GUD	Shows-how	CBL,CD,LRI,SIM,D-BED

M 14 Unit 2 Shotha.1. Clinical patterns of Shotha.
2. Pathogenesis of Shotha.
3. Classification of Shotha.
4. Progression of Shotha.

References: 1,2,3,4,5,7,8,9,10,11,12,13,14,15,16,17,18,19,20,21,22,23,24,25,26,27,28,29,30,31,32,33,34,35,36,37,39,40,41,42,43,44,45,46

3A	3B	3C	3D	3E	3F	3G
CO1,CO3,CO4	Evaluate the Nidana and Lakshana of Nija and Doshaja Shotha from classical and contemporary perspectives, and synthesize their clinical correlations with pathophysiological mechanisms, systemic causes, types, progression, and therapeutic response.	1	Lecture	CE	Knows-how	L_VC,PBL,CBL,L&PPT
CO1,CO3,CO4	Analyze the mechanisms of Starling forces, blood sludging, and capillary dynamics in relation to the Samprapti of Shotha, and differentiate the mechanisms and clinical features of cardiac failure from renal and cardiac edema.	1	Lecture	CAN	Knows-how	CBL
CO1,CO2,CO3,CO4	Demonstrate clinical assessment of swelling (Part 1).	4	Practical Training 14.2	PSY-GUD	Shows-how	D-BED,LRI,SIM,CBL,CD
CO1,CO2,CO3,CO4	Demonstrate clinical assessment of swelling (Part 2).	4	Practical Training 14.3	PSY-GUD	Shows-how	LRI,SIM,CBL,CD,D-BED

3A	3B	3C	3D	3E	3F	3G
CO1,CO3,CO4	Elicit a detailed clinical history and perform a focused physical examination to assess systemic and cardiac signs in patients presenting with swelling (Part 1).	3	Experiential-Learning 14.3	PSY-GUD	Shows-how	CBL,SIM,CD,D-BED
CO1,CO2,CO3,CO4	Select and interpret diagnostic investigations for edema, and formulate differential diagnoses by synthesizing clinical and investigative findings to establish the diagnosis of swelling (Part 1).	2	Experiential-Learning 14.4	PSY-GUD	Shows-how	CD,SIM,CBL,D-BED,LRI
CO1,CO3,CO4	Elicit a detailed clinical history and perform a focused physical examination to assess systemic and cardiac signs in patients presenting with swelling (Part 2).	3	Experiential-Learning 14.5	PSY-GUD	Shows-how	SIM,CBL,CD,D-BED
CO1,CO2,CO3,CO4	Select and interpret diagnostic investigations for edema, and formulate differential diagnoses by synthesizing clinical and investigative findings to establish the diagnosis of swelling (Part 2).	2	Experiential-Learning 14.6	PSY-GUD	Shows-how	LRI,D-BED,CBL,CD,SIM

M 14 Unit 3 Shopha, Bahya Vidradhi, Asthi Majja Paripaka. 1. External inflammatory presentations in Shopha.
2. Deep-seated tissue involvement in Bahya Vidradhi.
3. Asthi-Majja Paripaka progression and pathogenesis.

References: 1,2,3,4,5,7,8,9,10,11,12,13,14,15,16,17,18,19,20,21,22,23,24,25,26,27,28,29,30,31,32,33,34,35,36,37,38,39,40,41,42,43,44,45,46

3A	3B	3C	3D	3E	3F	3G
CO1,CO3,CO4	Evaluate the Sapeksha Nidana of Shopha and Vidradhi in comparison with Gulma, and integrate the pathophysiology, clinical manifestations, and types of Doshaja Shopha with corresponding inflammatory responses.	1	Lecture	CAN	Knows-how	CBL,BL,L_VC
CO1,CO3,CO4	Evaluate the etiological spectrum of Shopha by distinguishing Nija and Agantu Hetu, correlate the concept of Asthi Majja Paripaka with contemporary understanding, and integrate these with clinical conditions characterized by inflammatory swelling.	1	Lecture	CE	Knows-how	CBL,L&GD
CO1,CO2,CO3,CO4	Demonstrate clinical assessment of inflammatory and suppurative conditions.	4	Practical Training 14.4	PSY-GUD	Shows-how	CD,CBL,D-

3A	3B	3C	3D	3E	3F	3G
						BED,SIM
CO1,CO3,CO4	Elicit a detailed clinical history and perform a focused physical examination to assess inflammatory or suppurative conditions.	3	Experiential-Learning 14.7	PSY-GUD	Shows-how	D-BED,CD,CBL,SIM
CO1,CO2,CO3,CO4	Select and interpret diagnostic investigations for edema, and formulate differential diagnoses by synthesizing clinical and investigative findings to establish the diagnosis of inflammatory and suppurative conditions.	3	Experiential-Learning 14.8	PSY-GUD	Shows-how	D-BED,LRI,CD,SIM,CBL

M 14 Unit 4 Udara, Pleeha Roga.1. Progressive abdominal distension in Udara.
2. Organ-specific involvement in Pleeha Roga.
3. Clinical staging and interpretation.

References: 1,2,3,4,5,7,8,9,10,11,12,13,14,15,16,17,18,19,20,21,22,23,24,25,26,27,28,29,30,31,32,33,34,35,36,37,38,39,40,41,42,43,44,45,46

3A	3B	3C	3D	3E	3F	3G
CO1,CO3,CO4	Evaluate the cardinal features of Udara, distinguish its Bheda as described in Ayurveda texts, and appraise the Nidana contributing to its manifestation.	1	Lecture	CE	Knows-how	L&GD,L_VC,PBL
CO1,CO3,CO4	Analyze the Samprapti of Udara with emphasis on the mechanisms of Doshaja Udara Samanya Samprapti, and differentiate its types in relation to analogous contemporary clinical conditions.	1	Lecture	CAN	Knows-how	REC,DIS,L&PPT
CO1,CO3,CO4	Analyze the Nidana, Samprapti, Bheda, and Lakshana of Pleehodara in relation to modern hepatosplenic disorders, and correlate the Nidana and Samprapti of Udakodara (Jalodara) with contemporary conditions such as ascites and liver dysfunction.	1	Lecture	CAN	Knows-how	CBL,DIS,BL,L&PPT ,L_VC
CO1,CO3,CO4	Analyze the clinical implications of Ajatodaka and Jatodaka stages of Udara in disease progression and prognosis, and differentiate hepatomegaly, splenomegaly, and ascites.	1	Lecture	CAN	Knows-how	CBL,L&GD,L_VC,PBL
CO1,CO2,CO3,CO4	Demonstrate clinical assessment of hepatosplenic and gastrointestinal conditions.	4	Practical Training 14.5	PSY-GUD	Shows-how	CD,LRI,CBL,D-

						BED,SIM
CO1,CO3,CO4	Elicit a detailed clinical history and perform a focused physical examination to assess hepatosplenic and gastrointestinal complaints.	3	Experiential-Learning 14.9	PSY-GUD	Shows-how	D-BED,CD,CBL,SIM
CO1,CO2,CO3,CO4	Select and interpret diagnostic investigations for edema, and formulate differential diagnoses by synthesizing clinical and investigative findings to establish the diagnosis of hepatosplenic and GI conditions.	2	Experiential-Learning 14.10	PSY-GUD	Shows-how	SIM,CBL,D-BED,LRI,CD

Practical Training Activity

Practical Training 14.1 : Clinical assessment of chest pain.

Teacher Instruction:

Step 1: Case Introduction and History Taking - Instruct students to systematically collect a comprehensive patient history, with focused attention on the detailed evaluation of the history of chest pain. Key aspects to explore include the site, onset, characteristics, radiation, associated symptoms, time course, modifying factors, and severity. Emphasize the need to assess past medical, interventional and surgical history, treatment history, relevant negative history, family history, socioeconomic background, personal history, and occupational history.

Step 2: Physical Examination - Teach students to perform physical examination particularly a general examination and history based focused systemic examination in specific.

Step 3: Diagnostic Investigations - Facilitate discussion on selecting and interpreting relevant diagnostic investigations to support or confirm clinical impressions. Encourage students to correlate findings from baseline investigations with clinical data, and to recognize when further, targeted diagnostic tests are necessary for a more refined evaluation.

Step 4: Formulation of Differential Diagnosis - Encourage students to develop a well-rounded differential diagnosis by correlating clinical findings with patient history. Stress the importance of evaluating key features of chest pain such as site, onset, characteristics, radiation, associated symptoms, time course, modifying factors, and severity. Additionally, guide them to apply Ayurveda understanding using Lakshana samucchaya to determine Vyadhi Vinischaya, identify the Vyadhi Hetu if any, recognize Anubandhya and Anubandha Dosha, and evaluate the Sadhya or Asadhya. Also demonstrate Avastha (Purvaroopa, Roopa and Upadrava as applicable).

Step 5: Clinical Reasoning and Diagnostic Synthesis - Support students in synthesizing clinical information and investigative findings to arrive at the most likely diagnosis. Encourage a balanced diagnostic approach that integrates Ayurveda principles with contemporary biomedical reasoning to enhance clinical decision-making.

Practical Training 14.2 : Clinical assessment of swelling (Part 1).

Teacher Instruction:

Step 1: Case Introduction and History Taking - Instruct students to systematically collect a comprehensive patient history, with focused attention on the detailed evaluation of the history of swollen face and hands, fatigue, constipation, weight gain, loss of appetite. Key aspects to explore include the onset, course, character, aggravating and relieving factors, associated symptoms, time course, and severity. Emphasize the need to assess past medical history especially infective disease, treatment history, relevant negative findings, family history, socioeconomic background, personal history.

Step 2: Physical Examination - Teach students to perform physical examination particularly a general examination and history based focused systemic examination in specific.

Step 3: Diagnostic Investigations - Facilitate discussion on selecting and interpreting relevant diagnostic investigations to support or confirm clinical impressions. Encourage students to correlate findings from baseline investigations with clinical data, and to recognize when further, targeted diagnostic tests are necessary for a more refined evaluation.

Step 4: Formulation of Differential Diagnosis - Encourage students to develop a well-rounded differential diagnosis by correlating clinical findings with patient history. Stress the importance of evaluating key features of history of swollen face and hands, fatigue, constipation, weight gain, loss of appetite. Key aspects to explore include the onset, course, character, aggravating and relieving factors, associated symptoms, time course, and severity and past medical history. Additionally, guide them to apply Ayurveda understanding using Lakshana Samucchaya to determine Vyadhi Vinischaya, identify the Vyadhi Hetu if any, recognize Anubandhya and Anubandha Dosha, and evaluate the Sadhya or Asadhya. Also demonstrate Avastha (Purvaroopa, Roopa and Upadrava as applicable).

Step 5: Clinical Reasoning and Diagnostic Synthesis - Support students in synthesizing clinical information and investigative findings to arrive at the most likely diagnosis. Encourage a balanced diagnostic approach that integrates Ayurveda principles with contemporary biomedical reasoning to enhance clinical decision-making.

Practical Training 14.3 : Clinical assessment of swelling (Part 2).

Teacher Instruction:

Step 1: Case Introduction and History Taking - Instruct students to systematically collect a comprehensive patient history, with focused attention on the detailed evaluation of the history of shortness of breath, orthopnoea, paroxysmal nocturnal dyspnoea, cough, ankle swelling, fatigue, reduced exercise tolerance. Key aspects to explore include the onset, course, character, aggravating and relieving factors, associated symptoms, time course, and severity. Emphasize the need to assess past medical and surgical history, treatment history, relevant negative findings, family history, socioeconomic background, personal history, and occupational history.

Step 2: Physical Examination - Teach students to perform physical examination particularly a general examination and history based focused systemic examination in specific.

Step 3: Diagnostic Investigations - Facilitate discussion on selecting and interpreting relevant diagnostic investigations to support or confirm clinical impressions. Encourage students to correlate findings from baseline investigations with clinical data, and to recognize when further, targeted diagnostic tests are necessary for a more refined evaluation.

Step 4: Formulation of Differential Diagnosis - Encourage students to develop a well-rounded differential diagnosis by correlating clinical findings with patient history. Stress the importance of evaluating key features of history of shortness of breath, orthopnoea, paroxysmal nocturnal dyspnoea, cough, ankle swelling, fatigue, reduced exercise tolerance. Key aspects to explore include the onset, course, character, aggravating and relieving factors, associated symptoms, time course, and severity. Additionally, guide them to apply Ayurveda understanding using Lakshana Samucchaya to determine Vyadhi Vinischaya, identify the Vyadhi Hetu if any, recognize

Anubandhya and Anubandha Dosha, and evaluate the Sadhya or Asadhyata. Also demonstrate Avastha (Purvaroopa, Roopa and Upadrava as applicable).

Step 5: Clinical Reasoning and Diagnostic Synthesis - Support students in synthesizing clinical information and investigative findings to arrive at the most likely diagnosis. Encourage a balanced diagnostic approach that integrates Ayurveda principles with contemporary biomedical reasoning to enhance clinical decision-making.

Practical Training 14.4 : Clinical assessment of inflammatory and suppurative conditions.

Teacher Instruction:

Step 1: Case Introduction and History Taking - Instruct students to systematically collect a comprehensive patient history, with focused attention on the detailed evaluation of the history of abdominal pain, nausea, vomiting. Key aspects to explore include the site, onset, character, radiation, course, associated symptoms, aggravating and relieving factors, and severity. Emphasize the need to assess past medical history, treatment history, relevant negative history, family history, socioeconomic background, personal history.

Step 2: Physical Examination - Teach students to perform physical examination particularly a general examination and history based focused systemic examination in specific.

Step 3: Diagnostic Investigations - Facilitate discussion on selecting and interpreting relevant diagnostic investigations to support or confirm clinical impressions. Encourage students to correlate findings from baseline investigations with clinical data, and to recognize when further, targeted diagnostic tests are necessary for a more refined evaluation.

Step 4: Formulation of Differential Diagnosis - Encourage students to develop a well-rounded differential diagnosis by correlating clinical findings with patient history. Stress the importance of evaluating key features of abdominal pain, nausea, vomiting. Key aspects to explore include the site, onset, character, radiation, course, associated symptoms, aggravating and relieving factors, and severity. Additionally, guide them to apply Ayurveda understanding using Lakshana samucchaya to determine Vyadhi Vinischaya, identify the Vyadhi Hetu if any, recognize Anubandhya and Anubandha Dosha, Srotas involved, and evaluate the Sadhya or Asadhya. Also demonstrate Avastha (Purvaroopa, Roopa and Upadrava as applicable as well as Ama, Pachyamana and Pakva Avastha).

Step 5: Clinical Reasoning and Diagnostic Synthesis - Support students in synthesizing clinical information and investigative findings to arrive at the most likely diagnosis. Encourage a balanced diagnostic approach that integrates Ayurveda principles with contemporary biomedical reasoning to enhance clinical decision-making.

Practical Training 14.5 : Clinical assessment of hepatosplenic and gastrointestinal conditions.

Teacher Instruction:

Step 1: Case Introduction and History Taking - Instruct students to systematically collect a comprehensive patient history, with focused attention on the detailed evaluation of the history of gradual onset of bloating, distension of abdomen, fatigue, loss of appetite, weight loss, jaundice. Key aspects to explore include the onset, course, character, associated symptoms, aggravating and relieving factors, and severity. Emphasize the need to assess past medical history, treatment history, relevant negative findings (fever, night sweats etc), family history, immunization history, socioeconomic background, personal history.

Step 2: Physical Examination - Teach students to perform physical examination particularly a general examination and history based focused systemic examination in specific.

Step 3: Diagnostic Investigations - Facilitate discussion on selecting and interpreting relevant diagnostic investigations to support or confirm clinical impressions. Encourage students to correlate findings from baseline investigations with clinical data, and to recognize when further, targeted diagnostic tests are necessary for a more refined evaluation.

Step 4: Formulation of Differential Diagnosis - Encourage students to develop a well-rounded differential diagnosis by correlating clinical findings with patient history. Stress the importance of evaluating key features of history of gradual onset of bloating, distension of abdomen, fatigue, loss of appetite, weight loss, jaundice. Key aspects to explore include the onset, course, character, associated symptoms, aggravating and relieving factors, and severity. Additionally, guide them to apply Ayurveda understanding using Lakshana samucchaya to determine Vyadhi Vinischaya, identify the Vyadhi Hetu if any, Srotas involved, recognize Anubandhya and Anubandha Dosha, and evaluate the Sadhya or Asadhya. Encourage students to appreciate Ajatodaka and Jatodaka Avastha.

Step 5: Clinical Reasoning and Diagnostic Synthesis - Support students in synthesizing clinical information and investigative findings to arrive at the most likely diagnosis. Encourage a balanced diagnostic approach that integrates Ayurveda principles with contemporary biomedical reasoning to enhance clinical decision-making.

Experiential learning Activity

Experiential-Learning 14.1 : Subjective and objective assessment in patients with chest pain.

Student Instructions (Subjective Assessment):

Step 1: Teacher will allot a real case or simulated case presenting with chest pain, interact about site, onset, duration, character, radiation, severity, associated symptoms, aggravating and relieving factors and timing of chest pain.

Step 2: Record past medical, interventional and surgical history, treatment history, lifestyle habits, and family, occupational, and socioeconomic history.

Step 3: Assess relevant Dosha Hetu, Vyadhi Hetu, Ubhaya Hetu, Utpataka and Vyanjaka Hetu, Pradhanika and Vyabhichari Hetu if applicable from the subjective assessment.

Step 4: Present the findings correlating with the history to arrive at a tentative diagnosis considering UG RNVV CAB as basic format.

Student Instructions (Objective Assessment):

Step 1: As a continuation of the above experiential learning session, begin with general examination.

Step 2: Perform a comprehensive systemic assessment based on the associated systemic symptoms and past medical history or comorbidities.

Step 3: Document signs and interpretations in the case sheet.

Experiential-Learning 14.2 : Planning for investigation and diagnosis in patients with chest pain.

Student Instructions (Planning for Investigation):

Step 1: As a continuation of the above experiential learning session, recommend basic investigations along with result interpretation.

Step 2: Select subsequent tests if needed considering assessment of diagnosis and complications.

Step 3: Interpret lab/ imaging results and correlate with presenting symptoms and physical findings.

Step 4: Document correlation for each investigation with possible causes and interpretation.

Student Instructions (Diagnosis):

Step 1: As a continuation of the above experiential learning session, analyze features of chest pain (site, onset, nature, radiation, modifying factors, severity, time course, associated symptoms).

Step 2: Based on history and examination, list possible diagnosis through diagnostic reasoning strategies in primary health care for clinical diagnosis, integrative model of clinical reasoning, dual process diagnostic reasoning model, hypothetico-deductive model, pattern recognition model, pathway for clinical reasoning model to learn intuitive approach and analytical approaches in clinical decision making as applicable to arrive at a diagnosis of the given case.

Step 3: Apply Ayurveda diagnostic reasoning using Lakshana Samucchaya, considering the comorbidities, systemic symptoms, and past medical history understand the Vyadhi Vinischaya, Vyadhi Hetu if any, Srotas involved, Dosha-Dushya Samurchana, and Anubandhya/ Anubandha Dosha/ Vyadhi, and Sadhya or Asadhya. Also assess Avastha (Purvaroopa, Roopa and Upadrava as applicable).

Step 4: Synthesize all findings and establish the most likely diagnosis.

Step 5: Evaluate prognosis and present a summary of the diagnosis with justification.

Experiential-Learning 14.3 : Subjective and objective assessment in cases with swelling (Part 1).

Student Instructions (Subjective Assessment):

Step 1: Teacher will allot a real case or simulated case related to swelling, interact about the onset, location, duration, and pattern of swelling.

Step 2: Inquire about associated symptoms: fatigue, breathlessness, palpitations, weight gain, decreased appetite, constipation.

Step 3: Explore aggravating/ relieving factors, diurnal variation, and recent infections.

Step 4: Document past cardiac, renal, or systemic illness, treatment history, and negative history like absence of fever or night sweats.

Step 5: Assess relevant Dosha Hetu, Vyadhi Hetu, Ubhaya Hetu, Utpataka and Vyanjaka Hetu, Pradhanika and Vyabhichari Hetu and Srotas involved if applicable from the subjective assessment.

Step 6: Present the findings correlating with the history to arrive at a tentative diagnosis considering UG RNVV CAB as basic format.

Student Instructions (Objective Assessment):

Step 1: As a continuation of the above experiential learning session, begin with general examination.

Step 2: Perform a comprehensive systemic assessment based on the associated systemic symptoms and past medical history or comorbidities.

Step 3: Document signs and interpretations in the case sheet.

Experiential-Learning 14.4 : Planning for investigation and diagnosis in cases with swelling (Part 1).

Student Instructions (Planning for Investigation):

Step 1: As a continuation of the above experiential learning session, recommend basic investigations along with result interpretation.

Step 2: Select subsequent tests if needed considering assessment of diagnosis and complications.

Step 3: Interpret lab/ imaging results and correlate with presenting symptoms and physical findings.

Step 4: Document correlation for each investigation with possible causes and interpretation.

Student Instructions (Diagnosis):

Step 1: As a continuation of the above experiential learning session, based on subjective, objective and assessment findings along with investigations, list probable conditions.

Step 2: Based on history and examination, list possible diagnosis through diagnostic reasoning strategies in primary health care for clinical diagnosis, integrative model of clinical reasoning, dual process diagnostic reasoning model, hypothetico-deductive model, pattern recognition model, pathway for clinical reasoning model to learn intuitive approach and analytical approaches in clinical decision making as applicable to arrive at a diagnosis of the given case.

Step 3: Apply Ayurveda diagnostic reasoning using Lakshana Samucchaya, considering the comorbidities, systemic symptoms, and past medical history understand the Vyadhi Hetu if any, Srotas involved, Dosha-Dushya Samurchana, and Anubandhya/ Anubandha Dosha/ Vyadhi, and Sadhya or Asadhya. Also assess Avastha (Purvaroopa, Roopa and Upadrava as applicable).

Step 4: Synthesize all findings and establish the most likely diagnosis.

Step 5: Evaluate prognosis and present a summary of the diagnosis with justification.

Experiential-Learning 14.5 : Subjective and objective assessment in patients presenting swelling (Part 2)

Student Instructions (Subjective Assessment):

Step 1: Teacher will allot a real case or simulated case related to shortness of breath, orthopnoea, paroxysmal nocturnal dyspnoea, cough, ankle swelling, fatigue, reduced exercise tolerance, and ask about onset, course, character, aggravating and relieving factors, associated symptoms, time course, and severity.

Step 2: Document past medical and surgical history, treatment history, relevant negative findings, family history, socioeconomic background, personal history, and occupational history.

Step 3: Assess relevant Dosha Hetu, Vyadhi Hetu, Ubhaya Hetu, Utpataka and Vyanjaka Hetu, Pradhanika and Vyabhichari Hetu, and Srotas involved if applicable from the subjective assessment.

Step 4: Present the findings correlating with the history to arrive at a tentative diagnosis considering UG RNVV CAB as basic format.

Student Instructions (Objective Assessment):

Step 1: As a continuation of the above experiential learning session, begin with general examination.

Step 2: Perform a comprehensive systemic assessment based on the associated systemic symptoms and past medical history or comorbidities.

Step 3: Document signs and interpretations in the case sheet.

Experiential-Learning 14.6 : Planning for investigation and diagnosis in patients with swelling (Part 2).

Student Instructions (Planning for Investigation):

Step 1: As a continuation of the above experiential learning session, recommend basic investigations along with result interpretation.

Step 2: Select subsequent tests if needed considering assessment of diagnosis and complications.

Step 3: Interpret lab/ imaging results and correlate with presenting symptoms and physical findings.

Step 4: Document correlation for each investigation with possible causes and interpretation.

Student Instructions (Diagnosis):

Step 1: As a continuation of the above experiential learning session, based on symptoms and findings – subjective, objective and assessment along with investigations, list differential diagnoses.

Step 2: Based on history and examination, list possible diagnosis through diagnostic reasoning strategies in primary health care for clinical diagnosis, integrative model of clinical reasoning, dual process diagnostic reasoning model, hypothetico-deductive model, pattern recognition model, pathway for clinical reasoning model to learn intuitive approach and analytical approaches in clinical decision making as applicable to arrive at a diagnosis of the given case.

Step 3: Apply Ayurveda diagnostic reasoning using Lakshana Samucchaya, considering the comorbidities, systemic symptoms, and past medical history understand the Vyadhi Vinischaya, Vyadhi Hetu if any, Srotas involved, Dosha-Dushya Samurchana, and Anubandhya/ Anubandha Dosha/ Vyadhi, and Sadhya or Asadhya. Also assess Avastha (Purvaroopa, Roopa and Upadrava as applicable).

Step 4: Synthesize all findings and establish the most likely diagnosis.

Step 5: Evaluate prognosis and present a summary of the diagnosis with justification.

Experiential-Learning 14.7 : Subjective and objective assessment of inflammatory or suppurative conditions.

Student Instructions (Subjective Assessment):

Step 1: Teacher will allot a real case or simulated case related to inflammatory or suppurative conditions and ask about site, onset, character, radiation, course, associated symptoms, aggravating and relieving factors, and severity.

Step 2: Explore associated symptoms like fever, altered bowel habits, anorexia, or urinary complaints.

Step 3: Review past medical/ surgical history, drug use, family history, and socioeconomic background.

Step 4: Assess relevant Dosha Hetu, Vyadhi Hetu, Ubhaya Hetu, Utpataka and Vyanjaka Hetu, Pradhanika and Vyabhichari Hetu and Srotas involved if applicable from the subjective assessment.

Step 6: Present the findings correlating with the history to arrive at a tentative diagnosis considering UG RNVV CAB as basic format.

Student Instructions (Objective Assessment):

Step 1: As a continuation of the above experiential learning session, begin with general examination.

Step 2: Perform a comprehensive systemic assessment based on the associated systemic symptoms and past medical history or comorbidities.

Step 3: Document signs and interpretations in the case sheet.

Experiential-Learning 14.8 : Planning for investigation and diagnosis of inflammatory and suppurative conditions.

Student Instructions (Planning for Investigation):

Step 1: As a continuation of the above experiential learning session, recommend basic investigations along with result interpretation.

Step 2: Select subsequent tests if needed considering assessment of diagnosis and complications.

Step 3: Interpret lab/ imaging results and correlate with presenting symptoms and physical findings.

Step 4: Document correlation for each investigation with possible causes and interpretation.

Student Instructions (Diagnosis):

Step 1: As a continuation of the above experiential learning session, based on history and examination, list possible diagnosis through diagnostic reasoning strategies in primary health care for clinical diagnosis, integrative model of clinical reasoning, dual process diagnostic reasoning model, hypothetico-deductive model, pattern recognition model, pathway for clinical reasoning model to learn intuitive approach and analytical approaches in clinical decision making as applicable to arrive at a diagnosis of the given case.

Step 2: Use Lakshana Samucchaya to group classical signs and correlate with possible Ayurveda diagnosis.

Step 3: Determine Vyadhi Hetu, involved Srotas, Dosha-Dushya Samurchana, and identify Anubandhya/Anubandha Dosha.

Step 4: Evaluate disease stage as Purvaroopa, Roopa, or Upadrava, and classify as Sadhya or Asadhya as well as Ama, Pachyamana and Pakva Avastha).

Step 5: Integrate all information and arrive at a comprehensive diagnosis supported by both modern and Ayurveda perspectives.

Step 6: Present findings and justification for diagnosis.

Experiential-Learning 14.9 : Subjective and objective assessment in patients presenting with hepatosplenic and gastrointestinal complaints.

Student Instructions (Subjective Assessment):

Step 1: Teacher will allot a real case or simulated case related to hepatosplenic and gastrointestinal complaints and ask about onset, course, character, associated symptoms, aggravating and relieving factors, and severity.

Step 2: Identify associated features like anorexia, pruritus, nausea, or night sweats.

Step 3: Review past medical/ surgical history, immunization status, family history, socioeconomic and occupational history.

Step 5: Assess relevant Dosha Hetu, Vyadhi Hetu, Ubhaya Hetu, Utpataka and Vyanjaka Hetu, Pradhanika and Vyabhichari Hetu and Srotas involved if applicable from the subjective assessment.

Step 6: Present the findings correlating with the history to arrive at a tentative diagnosis considering UG RNVV CAB as basic format.

Student Instructions (Objective Assessment):

Step 1: As a continuation of the above experiential learning session, begin with general examination.

Step 2: Perform a comprehensive systemic assessment based on the associated systemic symptoms and past medical history or comorbidities.

Step 3: Document signs and interpretations in the case sheet.

Experiential-Learning 14.10 : Planning for investigation and diagnosis for hepatosplenic and GI conditions.

Student Instructions (Planning for Investigation):

Step 1: As a continuation of the above experiential learning session, recommend basic investigations along with result interpretation.

Step 2: Select subsequent tests if needed considering assessment of diagnosis and complications.

Step 3: Interpret lab/ imaging results and correlate with presenting symptoms and physical findings.

Step 4: Document correlation for each investigation with possible causes and interpretation.

Student Instructions (Diagnosis):

Step 1: As a continuation of the above experiential learning session, based on history of gradual onset of bloating, distension of abdomen, fatigue, Loss of appetite, weight loss, jaundice.

Step 2: Based on history and examination, list possible diagnosis through diagnostic reasoning strategies in primary health care for clinical diagnosis, integrative model of clinical reasoning, dual process diagnostic reasoning model, hypothetico-deductive model, pattern recognition model, pathway for clinical reasoning model to learn intuitive approach and analytical approaches in clinical decision making as applicable to arrive at a diagnosis of the given case.

Step 3: Apply Ayurveda diagnostic reasoning using Lakshana Samucchaya, considering the comorbidities, systemic symptoms, and past medical history understand the Vyadhi Vinischaya, Vyadhi Hetu if any, Srotas involved, Dosha-Dushya Samurchana, and Anubandhya/ Anubandha Dosha/ Vyadhi, and Sadhya or Asadhya. Also assess Avastha (Purvaroopa, Roopa and Upadrava as applicable as well as appreciate Ajatodaka and Jatodaka Avastha).

Step 4: Evaluate prognosis and present a summary of the diagnosis with justification.

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 6C. Theory Based Assessment – 25 Marks. This component includes theory questions designed to assess conceptual clarity, integrative thinking, and the ability to apply learned concepts in clinical, diagnostic, or problem-solving contexts. Questions can be framed from any instructional unit, ensuring alignment with the intended learning outcomes. And Any practical in converted form can be taken for assessment. (25 Marks). Or Any experiential as portfolio/ reflections/ presentations, can be taken as an assessment. (25 Marks).	4

Semester No : 6

Module 15 : Lakshana Niroopana 2.7

Module Learning Objectives

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

1. Analyze the Ayurveda principle for pathogenesis of neurological and motor disorders such as Pakshagata, Ardita, Ekanga/ Sarvanga Roga, Khanja, Pangu, Vepathu, Gridhrasi, Vishwachi, Padaharsha, and Padadaha.
2. Evaluate their clinical features, progression, and prognosis based on Ayurveda parameters like Roopa, Upashaya, and Samprapti Bheda.
3. Correlate these conditions with neurological disorders including stroke, facial palsy, neuropathy, sciatica, and radiculopathies using clinical findings and diagnostic tools.
4. Create individualized diagnostic strategies by integrating Ayurveda principles with contemporary diagnostic methods.

M 15 Unit 1 Ekanga Roga, Pakshagata, Sarvanga Roga, Ardita, Adharanga Vata, Vepathu Vata, Khanja and Pangu. 1. Clinical spectrum of Ekanga Roga.

2. Neuromuscular manifestations in Pakshagata.
3. Site-specific affliction in Sarvanga Roga.
4. Functional disability in Ardita.
5. Clinical features of Adharanga Vata.
6. Neuromuscular signs in Vepathu Vata.
7. Locomotor impairment in Khanja.
8. Mobility limitation in Pangu.

References: 1,2,3,4,5,7,8,9,10,11,12,13,14,15,16,17,18,19,20,21,22,23,24,25,26,27,28,29,30,31,32,33,34,35,36,37,38,39,40,41,42,43,44,45,46

3A	3B	3C	3D	3E	3F	3G
CO1,CO3,CO4	Analyze Ekanga Roga, Sarvanga Roga, Ardita, Adharanga Roga, and Pakshaghata in relation to Nidana, Samprapti, and Lakshana, and relate with the contemporary science.	1	Lecture	CAN	Knows-how	CBL,DIS, L&PPT ,L_VC
CO1,CO3,CO4	Evaluate Ardita as per Charaka and Sushruta Samhita, and analyze the involvement of cranial nerves.	1	Lecture	CE	Knows-how	DIS,CBL, PBL,L&PPT

CO1,CO3,CO4	Appraise Vepathu Vata and relate with the contemporary science.	1	Lecture	CE	Knows-how	TBL,DIS, L_VC,L& PPT ,CBL
CO1,CO3,CO4	Interpret Krimija Shiro Roga and understand its contemporary perspectives.	1	Lecture	CAN	Knows-how	L&GD,B L,L_VC
CO1,CO3,CO4	Interpret differential diagnosis of stroke syndrome.	1	Lecture	CAN	Knows-how	L&PPT , L_VC,BL ,CBL
CO1,CO3,CO4	Differentiate and compare causes of Lower Motor Neuron and Upper Motor Neuron facial palsy.	1	Lecture	CAN	Knows-how	L_VC,BL ,L&PPT ,CBL
CO1,CO3,CO4	Assess and compare paraplegia and movement disorders.	1	Lecture	CE	Knows-how	BL,L_VC ,L&PPT ,CBL
CO1,CO2,CO3 ,CO4	Demonstrate clinical evaluation and diagnostic reasoning for diseases of central nervous system.	6	Practical Training 15.1	PSY-GUD	Shows-how	D-BED,S IM,LRI,C BL,CD
CO1,CO2,CO3 ,CO4	Elicit a structured clinical history and perform a detailed general and system-based examination in patients presenting with central nervous system diseases.	4	Experiential-Learning 15. 1	PSY-GUD	Shows-how	SIM,D-B ED,CBL, CD
CO1,CO2,CO3 ,CO4	Select and interpret investigations and synthesize differential diagnoses for diseases of the central nervous system.	3	Experiential-Learning 15. 2	PSY-GUD	Shows-how	D-BED,C BL,SIM,P SM,CD

M 15 Unit 2 Gridhrasi, Vishwachi.1. Neuromuscular symptoms of Gridhrasi.
2. Neuromuscular symptoms of Vishwachi.

References: 1,2,3,4,5,7,8,9,10,11,12,13,14,15,16,17,18,19,20,21,22,23,24,25,26,27,28,29,30,31,32,33,34,35,36,37,38,39,40,41,42,43,44,45,46

3A	3B	3C	3D	3E	3F	3G
CO1,CO3,CO4	Evaluate Vishwachi, Gridhrasi, Avabahuka, Khanja, and Pangu by distinguishing their clinical features and correlating them with contemporary scientific perspectives.	1	Lecture	CE	Knows-how	L_VC,ML,CBL,DIS,PER
CO1,CO3,CO4	Assess and compare Gridhrasi, Khanja, and Pangu, and interpret their differential diagnosis in relation to lumbago sciatica syndrome, brachial neuralgia, and thoracic outlet syndrome.	1	Lecture	CE	Knows-how	BS,CBL,L_VC,L&PPT
CO1,CO2,CO3,CO4	Demonstrate clinical assessment of diseases of peripheral nervous system.	6	Practical Training 15.2	PSY-GUD	Shows-how	LRI,CBL,CD,SIM,D-BED
CO1,CO3,CO4	Elicit a comprehensive clinical history and perform a focused physical examination to assess diseases of the peripheral nervous system.	4	Experiential-Learning 15.3	PSY-GUD	Shows-how	LRI,D-BED,CBL,CD,SIM
CO1,CO2,CO3,CO4	Select and interpret diagnostic tests, and synthesize clinical findings to formulate differential and provisional diagnoses of peripheral nervous system diseases.	3	Experiential-Learning 15.4	PSY-GUD	Shows-how	CBL,CD,SIM,LRI,D-BED

M 15 Unit 3 Padaharsha, Padadaha.1. Localized sensory disturbances in Padaharsha.
2. Localized sensory disturbances in Padadaha.

References: 1,2,3,4,5,7,8,9,10,11,12,13,14,15,16,17,18,19,20,21,22,23,24,25,26,27,28,29,30,31,32,33,34,35,36,37,38,39,40,41,42,43,44,45,46

3A	3B	3C	3D	3E	3F	3G
CO1,CO3,CO4	Analyze Padadaha and Padaharsha in relation to contemporary science, and compare neurogenic and vascular claudication with reference to Padadaha and Vatarakta.	1	Lecture	CAN	Knows-how	BL,L_VC,CBL,L&GD
CO1,CO2,CO3,CO4	Demonstrate clinical assessment for Padadaha.	4	Practical Training 15.3	PSY-GUD	Shows-how	CD,D-BED,SIM,L

					RI,CBL
CO1,CO2,CO3,CO4	Demonstrate clinical assessment for Padaharsha.	4	Practical Training 15.4	PSY-GUD	Shows-how	D-BED,CD,CBL,SIM,LRI
CO1,CO3,CO4	Elicit a comprehensive clinical history and perform a focused general and system-specific examination in patients presenting with Padadaha.	3	Experiential-Learning 15.5	PSY-GUD	Shows-how	SIM,D-BED,CD,CBL
CO1,CO2,CO3,CO4	Interpret relevant investigations and synthesize differential diagnoses to confirm Padadaha.	3	Experiential-Learning 15.6	PSY-GUD	Shows-how	LRI,SIM,CD,CBL,D-BED
CO1,CO3,CO4	Elicit a comprehensive patient history and conduct a focused physical examination to assess signs of Padaharsha.	3	Experiential-Learning 15.7	PSY-GUD	Shows-how	CBL,SIM,CD,D-BED
CO1,CO2,CO3,CO4	Interpret relevant investigations to identify Padaharsha and formulate differential diagnoses.	3	Experiential-Learning 15.8	PSY-GUD	Shows-how	CD,CBL,LRI,SIM,D-BED

Practical Training Activity

Practical Training 15.1 : Clinical evaluation for diseases of central nervous system.

Teacher Instruction:
Step 1: Case Introduction and History Taking - Instruct students to systematically collect a comprehensive patient history, with focused attention on the detailed evaluation of the history of weakness in one limb - one upper and lower limb - weakness in lower limbs - fascial weakness - bilaterally/ tremors. Key aspects to explore include the onset, course, character, associated symptoms, modifying factors, and severity. Emphasize the need to assess past medical history, treatment history, relevant negative history, family history, socioeconomic background, occupational history and personal history.
Step 2: Physical Examination - Teach students to perform physical examination particularly a general examination and history based focused systemic examination in specific.
Step 3: Diagnostic Investigations - Facilitate discussion on selecting and interpreting relevant diagnostic investigations to support or confirm clinical impressions. Encourage students to correlate findings from baseline investigations with clinical data, and to recognize when further, targeted diagnostic tests are necessary for a more refined

evaluation.

Step 4: Formulation of Differential Diagnosis - Encourage students to develop a well-rounded differential diagnosis by correlating clinical findings with patient history. Stress the importance of evaluating key features of weakness in one limb- one upper and lower limb- weakness in lower limbs- fascial weakness- bilaterally/ tremors such as the onset, course, character, associated symptoms, modifying factors, and severity. Additionally, guide them to apply Ayurveda understanding using Lakshana samucchaya to determine Vyadhi Vinischaya, identify the Vyadhi Hetu if any, recognize Anubandhya and Anubandha Dosha, Srotas involved and evaluate the Sadhya or Asadhya. Also demonstrate Avastha (Purvaroopa, Roopa and Upadrava as applicable).

Step 5: Clinical Reasoning and Diagnostic Synthesis - Support students in synthesizing clinical information and investigative findings to arrive at the most likely diagnosis. Encourage a balanced diagnostic approach that integrates Ayurveda principles with contemporary biomedical reasoning to enhance clinical decision-making.

Practical Training 15.2 : Clinical assessment of diseases of peripheral nervous system.

Teacher Instructions:

Step 1: Case Introduction and History Taking - Instruct students to systematically collect a comprehensive patient history, with focused attention on the detailed evaluation of the history of altered gait, low back ache with or without radiation to lower limb, neck pain with or without radiating pain to upper limb. Key aspects to explore include the onset, course, character, associated symptoms, modifying factors, and severity. Emphasize the need to assess past medical history, treatment history, relevant negative history, family history, socioeconomic background, occupational history and personal history.

Step 2: Physical Examination - Teach students to perform physical examination particularly a general examination and history based focused systemic examination in specific.

Step 3: Diagnostic Investigations - Facilitate discussion on selecting and interpreting relevant diagnostic investigations to support or confirm clinical impressions. Encourage students to correlate findings from baseline investigations with clinical data, and to recognize when further, targeted diagnostic tests are necessary for a more refined evaluation.

Step 4: Formulation of Differential Diagnosis - Encourage students to develop a well-rounded differential diagnosis by correlating clinical findings with patient history. Stress the importance of evaluating key features of altered gait, low back ache with or without radiation to lower limb, neck pain with or without radiating pain to upper limb such as the onset, course, character, associated symptoms, modifying factors, and severity. Additionally, guide them to apply Ayurveda understanding using Lakshana Samucchaya to determine Vyadhi Vinischaya, identify the Vyadhi Hetu if any, recognize Anubandhya and Anubandha Dosha, Srotas involved and evaluate the Sadhya or Asadhya. Also demonstrate Avastha (Purvaroopa, Roopa and Upadrava as applicable).

Step 5: Clinical Reasoning and Diagnostic Synthesis - Support students in synthesizing clinical information and investigative findings to arrive at the most likely diagnosis. Encourage a balanced diagnostic approach that integrates Ayurveda principles with contemporary biomedical reasoning to enhance clinical decision-making.

Practical Training 15.3 : Clinical assessment for Padadaha.

Teacher Instruction:

Step 1: Case Introduction and History Taking - Instruct students to systematically collect a comprehensive patient history, with focused attention on the detailed evaluation

of the history of leg pain on exertion. Key aspects to explore include the site, onset, course, character, associated symptoms, modifying factors, and severity. Emphasize the need to assess past medical history, treatment history, relevant negative history, family history, socioeconomic background, occupational history and personal history.

Step 2: Physical Examination - Teach students to perform physical examination particularly a general examination and focused systemic examination considering the neurogenic and vascular claudication.

Step 3: Diagnostic Investigations - Facilitate discussion on selecting and interpreting relevant diagnostic investigations to support or confirm clinical impressions. Encourage students to correlate findings from baseline investigations with clinical data, and to recognize when further, targeted diagnostic tests are necessary for a more refined evaluation.

Step 4: Formulation of Differential Diagnosis - Encourage students to develop a well-rounded differential diagnosis by correlating clinical findings with patient history. Stress the importance of evaluating key features of leg pain on exertion such as the site, onset, course, character, associated symptoms, modifying factors, and severity. Additionally, guide them to apply Ayurveda understanding using Lakshana Samucchaya to determine Vyadhi Vinischaya, identify the Vyadhi Hetu if any, recognize Anubandhya and Anubandha Dosha, Srotas involved and evaluate the Sadhya or Asadhya. Also demonstrate Avastha (Purvaroopa, Roopa and Upadrava as applicable).

Step 5: Clinical Reasoning and Diagnostic Synthesis - Support students in synthesizing clinical information and investigative findings to arrive at the most likely diagnosis. Encourage a balanced diagnostic approach that integrates Ayurveda principles with contemporary biomedical reasoning to enhance clinical decision-making.

Practical Training 15.4 : Clinical assessment for Padaharsha.

Teacher Instruction:

Step 1: Case Introduction and History Taking - Instruct students to systematically collect a comprehensive patient history, with focused attention on the detailed evaluation of the history of numbness and tingling, pain in the limbs, weakness of muscle of distal part of limbs, changes in temperature sensitivity. Key aspects to explore include the site, onset, course, character, associated symptoms, modifying factors, and severity. Emphasize the need to assess past medical history, treatment history, relevant negative history, family history, socioeconomic background, occupational history and personal history.

Step 2: Physical Examination - Teach students to perform physical examination particularly a general examination and history based focused systemic examination in specific.

Step 3: Diagnostic Investigations - Facilitate discussion on selecting and interpreting relevant diagnostic investigations to support or confirm clinical impressions. Encourage students to correlate findings from baseline investigations with clinical data, and to recognize when further, targeted diagnostic tests are necessary for a more refined evaluation.

Step 4: Formulation of Differential Diagnosis - Encourage students to develop a well-rounded differential diagnosis by correlating clinical findings with patient history. Stress the importance of evaluating key features of Numbness and tingling, pain in the limbs, weakness of Muscle of distal part of limbs, Changes in temperature sensitivity such as the site, onset, course, character, associated symptoms, modifying factors, and severity. Additionally, guide them to apply Ayurveda understanding using Lakshana Samucchaya to determine Vyadhi Vinischaya, identify the Vyadhi Hetu if any, recognize Anubandhya and Anubandha Dosha, Srotas involved and evaluate the Sadhya or Asadhya. Also demonstrate Avastha (Purvaroopa, Roopa and Upadrava as applicable).

Step 5: Clinical Reasoning and Diagnostic Synthesis - Support students in synthesizing clinical information and investigative findings to arrive at the most likely diagnosis. Encourage a balanced diagnostic approach that integrates Ayurveda principles with contemporary biomedical reasoning to enhance clinical decision-making.

Experiential learning Activity
Experiential-Learning 15.1 : Subjective and objective assessment for diseases of central nervous system.
Student Instructions (Subjective Assessment):   Step 1: Teacher will allot a real case or simulated case with weakness in one limb - one upper and lower limb - weakness in lower limbs - fascial weakness - bilaterally/ tremors. Elicit the onset, course, character, associated symptoms, modifying factors, and severity. Emphasize the need to assess past medical history, treatment history, relevant negative history, family history, socioeconomic background, occupational history and personal history   Step 2: Assess relevant Dosha Hetu, Vyadhi Hetu, Ubhaya Hetu, Utpataka and Vyanjaka Hetu, Pradhanika and Vyabhichari Hetu and Srotas involved if applicable from the subjective assessment.   Step 3: Present the findings correlating with the history to arrive at a tentative diagnosis considering UG RNVV CAB as basic format.   Student Instructions (Objective Assessment):   Step 1: As a continuation of the above experiential learning session, begin with general examination.   Step 2: Perform a comprehensive systemic assessment based on the associated systemic symptoms and past medical history or comorbidities.   Step 3: Document signs and interpretations in the case sheet.
Experiential-Learning 15.2 : Planning for investigation and diagnosis of central nervous system.
Student Instructions (Planning for Investigation):   Step 1: As a continuation of the above experiential learning session, recommend basic investigations along with result interpretation.   Step 2: Select subsequent tests if needed considering assessment of diagnosis and complications.   Step 3: Interpret lab/ imaging results and correlate with presenting symptoms and physical findings.   Step 4: Document correlation for each investigation with possible causes and interpretation.   Student Instructions (Diagnosis):   Step 1: As a continuation of the above experiential learning session, list differentials for diseases of central nervous system.   Step 2: Based on history and examination, list possible diagnosis through diagnostic reasoning strategies in primary health care for clinical diagnosis, integrative model of clinical reasoning, dual process diagnostic reasoning model, hypothetico-deductive model, pattern recognition model, pathway for clinical reasoning model to learn intuitive approach and analytical approaches in clinical decision making as applicable to arrive at a diagnosis of the given case.   Step 3: Apply Ayurveda diagnostic reasoning using Lakshana Samucchaya, considering the comorbidities, systemic symptoms, and past medical history understand the Vyadhi Vinischaya, Vyadhi Hetu if any, Srotas involved, Dosha-Dushya Samurchana, and Anubandhya/ Anubandha Dosha/ Vyadhi, and Sadhya or Asadhya. Also assess Avastha (Purvaroopa, Roopa and Upadrava as applicable).   Step 4: Synthesize all findings and establish the most likely diagnosis.   Step 5: Evaluate prognosis and present a summary of the diagnosis with justification.

Experiential-Learning 15.3 : Subjective and objective assessment for diseases of peripheral nervous system.

Student Instructions (Subjective Assessment):

Step 1: Teacher will allot a real or simulated case, introduce the patient case, asking for detailed information about altered gait, low back pain with or without radiation to the lower limbs, neck pain with or without radiation to the upper limbs. Ask about the onset, duration, progression, and associated features.

Step 2: Assess relevant Dosha Hetu, Vyadhi Hetu, Ubhaya Hetu, Utpataka and Vyanjaka Hetu, Pradhanika and Vyabhichari Hetu and Srotas involved if applicable from the subjective assessment.

Step 3: Present the findings correlating with the history to arrive at a tentative diagnosis considering UG RNVV CAB as basic format.

Student Instructions (Objective Assessment):

Step 1: As a continuation of the above experiential learning session, begin with general examination.

Step 2: Perform a comprehensive systemic assessment based on the associated systemic symptoms and past medical history or comorbidities.

Step 3: Document signs and interpretations in the case sheet.

Experiential-Learning 15.4 : Planning for investigation and diagnosis for diseases of peripheral nervous system.

Student Instructions (Planning for Investigation):

Step 1: As a continuation of the above experiential learning session, recommend basic investigations along with result interpretation.

Step 2: Select subsequent tests if needed considering assessment of diagnosis and complications.

Step 3: Interpret lab/ imaging results and correlate with presenting symptoms and physical findings.

Step 4: Document correlation for each investigation with possible causes and interpretation.

Student Instructions (Diagnosis):

Step 1: As a continuation of the above experiential learning session, list differential diagnoses for diseases of peripheral nervous system.

Step 2: Based on history and examination, list possible diagnosis through diagnostic reasoning strategies in primary health care for clinical diagnosis, integrative model of clinical reasoning, dual process diagnostic reasoning model, hypothetico-deductive model, pattern recognition model, pathway for clinical reasoning model to learn intuitive approach and analytical approaches in clinical decision making as applicable to arrive at a diagnosis of the given case.

Step 3: Apply Ayurveda diagnostic reasoning using Lakshana Samucchaya, considering the comorbidities, systemic symptoms, and past medical history understand the Vyadhi Vinischaya, Vyadhi Hetu if any, Srotas involved, Dosha-Dushya Samurchana, and Anubandhya/ Anubandha Dosha/ Vyadhi, and Sadhya or Asadhya. Also assess Avastha (Purvaroopa, Roopa and Upadrava as applicable).

Step 4: Synthesize all findings and establish the most likely diagnosis.

Step 5: Evaluate prognosis and present a summary of the diagnosis with justification.

Experiential-Learning 15.5 : Subjective and objective assessment in patients presenting with Padadaha.

Student Instructions (Subjective Assessment):

Step 1: Teacher will allot a real case or simulated case, begin by asking the patient about site, nature, and timing of burning or pain in the legs, especially related to walking or exertion. Explore onset, duration, progression, radiation, aggravating/relieving factors.

Step 2: Inquire about past medical history, treatment history, and family history.

Step 3: Assess relevant Dosha Hetu, Vyadhi Hetu, Ubhaya Hetu, Utpataka and Vyanjaka Hetu, Pradhanika and Vyabhichari Hetu and Srotas involved if applicable from the subjective assessment.

Step 4: Present the findings correlating with the history to arrive at a tentative diagnosis considering UG RNVV CAB as basic format.

Student Instructions (Objective Assessment):

Step 1: As a continuation of the above experiential learning session, begin with general examination.

Step 2: Perform a comprehensive systemic assessment based on the associated systemic symptoms and past medical history or comorbidities.

Step 3: Document signs and interpretations in the case sheet.

Experiential-Learning 15.6 : Planning for investigation and diagnosis to confirm Padadaha.

Student Instructions (Planning for Investigation):

Step 1: As a continuation of the above experiential learning session, recommend basic investigations along with result interpretation.

Step 2: Select subsequent tests if needed considering assessment of diagnosis and complications.

Step 3: Interpret lab/ imaging results and correlate with presenting symptoms and physical findings.

Step 4: Document correlation for each investigation with possible causes and interpretation.

Student Instructions (Diagnosis):

Step 1: As a continuation of the above experiential learning session, based on symptoms and signs, list differentials for Padadaha.

Step 2: Based on history and examination, list possible diagnosis through diagnostic reasoning strategies in primary health care for clinical diagnosis, integrative model of clinical reasoning, dual process diagnostic reasoning model, hypothetico-deductive model, pattern recognition model, pathway for clinical reasoning model to learn intuitive approach and analytical approaches in clinical decision making as applicable to arrive at a diagnosis of the given case.

Step 3: Apply Ayurveda diagnostic reasoning using Lakshana Samucchaya, considering the comorbidities, systemic symptoms, and past medical history understand the Vyadhi Vinischaya, Vyadhi Hetu if any, Srotas involved, Dosha-Dushya Samurchana, and Anubandhya/ Anubandha Dosha/ Vyadhi, and Sadhya or Asadhya. Also assess Avastha (Purvaroopa, Roopa and Upadrava as applicable).

Step 4: Synthesize all findings and establish the most likely diagnosis.

Step 5: Evaluate prognosis and present a summary of the diagnosis with justification.

Experiential-Learning 15.7 : Subjective and objective assessment in cases of Padaharsha.

Student Instructions (Subjective Assessment):

Step 1: Teacher will allot a real case or simulated case, introduce yourself and elicit the patient's chief complaint - burning, numbness, tingling, weakness, or temperature change in limbs. Explore symptom onset, duration, progression, location, character, severity, and aggravating/relieving factors. Inquire about past history, medication, family history, occupational or toxin exposure.

Step 2: Assess relevant Dosha Hetu, Vyadhi Hetu, Ubhaya Hetu, Utpataka and Vyanjaka Hetu, Pradhanika and Vyabhichari Hetu and Srotas involved if applicable from the subjective assessment.

Step 3: Present the findings correlating with the history to arrive at a tentative diagnosis considering UG RNVV CAB as basic format.

Student Instructions (Objective Assessment):

Step 1: As a continuation of the above experiential learning session, begin with general examination.

Step 2: Perform a comprehensive systemic assessment based on the associated systemic symptoms and past medical history or comorbidities.

Step 3: Document signs and interpretations in the case sheet.

Experiential-Learning 15.8 : Planning for investigation and diagnosis to identify Padaharsha.

Student Instructions (Planning for Investigations):

Step 1: As a continuation of the above experiential learning session, recommend basic investigations along with result interpretation.

Step 2: Select subsequent tests if needed considering assessment of diagnosis and complications.

Step 3: Interpret lab/imaging results and correlate with presenting symptoms and physical findings.

Step 4: Document correlation for each investigation with possible causes and interpretation.

Student Instructions (Diagnosis):

Step 1: As a continuation of the above experiential learning session, based on symptoms and signs, list differentials for Padaharsha.

Step 2: Based on history and examination, list possible diagnosis through diagnostic reasoning strategies in primary health care for clinical diagnosis, integrative model of clinical reasoning, dual process diagnostic reasoning model, hypothetico-deductive model, pattern recognition model, pathway for clinical reasoning model to learn intuitive approach and analytical approaches in clinical decision making as applicable to arrive at a diagnosis of the given case.

Step 3: Apply Ayurveda diagnostic reasoning using Lakshana Samucchaya, considering the comorbidities, systemic symptoms, and past medical history understand the Vyadhi Vinischaya, Vyadhi Hetu if any, Srotas involved, Dosha-Dushya Samurchana, and Anubandhya/ Anubandha Dosha/ Vyadhi, and Sadhya or Asadhya. Also assess Avastha (Purvaroopa, Roopa and Upadrava as applicable).

Step 4: Synthesize all findings and establish the most likely diagnosis.

Step 5: Evaluate prognosis and present a summary of the diagnosis with justification.

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	4

methods in each module for the semester. Keep a record of the structured pattern used for assessment. Calculate the modular grade point as per Table 6C.

Theory Based Assessment – 25 Marks. This component includes theory questions designed to assess conceptual clarity, integrative thinking, and the ability to apply learned concepts in clinical, diagnostic, or problem-solving contexts. Questions can be framed from any instructional unit, ensuring alignment with the intended learning outcomes.

And

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

Or

Any experiential as portfolio/ reflections/ presentations, can be taken as an assessment. (25 Marks).

Module 16 : Lakshana Niroopana 2.8

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

1. Analyze the Ayurveda principles in the pathogenesis of Mootra Shoola, Ashmari, Mootrakrchhra, Tuni, and Mootraghata.
2. Evaluate the types, clinical features, and complications of obstructive and painful urinary conditions in classical and contemporary terms.
3. Correlate classical descriptions with urological disorders such as renal colic, calculi, dysuria, retention, and infections.
4. Create integrative diagnostic strategies using Ayurveda principles and relevant contemporary diagnostic tools.

M 16 Unit 1 Mootra Shoola, Ashmari, Mootrakrichra, Tuni. 1. Mootra Shoola – features and differential diagnosis.
2. Ashmari – clinical signs and diagnostic distinctions.
3. Mootrakrichra – symptom profile and differential considerations.
4. Tuni – manifestations and clinical differentiation.

References: 1,2,3,4,5,7,8,9,10,11,12,13,14,15,16,17,18,19,20,21,22,23,24,25,26,27,28,29,30,31,32,33,34,35,36,37,38,39,40,41,42,43,44,45,46

3A	3B	3C	3D	3E	3F	3G
CO1,CO3,CO4	Interpret and differentiate Mootra Shoola in the context of Mootravaha Srotovikara and	1	Lecture	CAN	Knows-	LS,CBL,

	interpret a clinical differential diagnosis.				how	L&GD,BS
CO1,CO3,CO4	Evaluate the Pratyatma Lakshana of Mootrakrichra through patient-centered clinical features and compare the Nidana, Samprapti, and Lakshana of Doshaja Mootrakrichra with contemporary science.	1	Lecture	CE	Knows-how	CBL,L&PPT,L&GD
CO1,CO3,CO4	Evaluate the types of Mootrakrichra—Ashmarija, Sharkaraja, Shukraja, Raktaja, Shakrutrodhaja, and Abhighataja—in comparison with contemporary science, and appraise Abhyantara Vidradhi of Basti by comparing its pathogenesis and features with contemporary science.	1	Lecture	CE	Knows-how	L&GD,CBL
CO1,CO3,CO4	Analyze the Hetu of Ashmari with emphasis on Utpadaka and Vyanjaka Hetu, examine its Purvaroopa and Samanya Lakshana, and evaluate its Samprapti.	1	Lecture	CAN	Knows-how	L&GD,L_VC,CBL
CO1,CO3,CO4	Evaluate the Nidana, Samprapti, and Lakshana of Doshaja Ashmari and Shukra Ashmari, and appraise the concept of Tuni in correlation with contemporary science.	1	Lecture	CAN	Knows-how	CBL,L_VC,BL,LS
CO1,CO3,CO4	Differentiate the possible causes of dysuria to formulate a structured differential diagnosis.	1	Lecture	CS	Knows-how	DIS,CBL
CO1,CO2,CO3,CO4	Demonstrate clinical assessment of diseases of the urinary tract (Part 1).	10	Practical Training 16.1	PSY-GUD	Shows-how	SIM,CD,D-BED,LRI,CBL
CO1,CO3,CO4	Elicit a structured clinical history and perform a focused physical examination to identify clinical signs of urinary tract disease (Part 1).	7	Experiential-Learning 16.1	PSY-GUD	Shows-how	CD,LRI,SIM,D-BED,CBL
CO1,CO2,CO3,CO4	Select and interpret diagnostic investigations, and synthesize history, examination, and findings to formulate differential diagnoses and final diagnosis of urinary tract diseases (Part 1).	6	Experiential-Learning 16.2	PSY-GUD	Shows-how	D-BED,SIM,CBL,CD,LRI

M 16 Unit 2 Mootraghata.1. Obstructive patterns observed in Mootraghata.

2. Functional limitations associated with Mootraghata.
3. Mechanism underlying Mootraghata.
4. Stages of progression in Mootraghata.

References: 1,2,3,4,5,7,8,9,10,11,12,13,14,15,16,17,18,19,20,21,22,23,24,25,26,27,28,29,30,31,32,33,34,35,36,37,38,39,40,41,42,43,44,45,46

3A	3B	3C	3D	3E	3F	3G
CO1,CO3,CO4	Analyze the Pratyatma Lakshana of Mootraghata to differentiate its types based on Ayurveda pathogenesis and presentation, and compare Mootroukasada and Mootrakshaya with relevant contemporary clinical entities.	1	Lecture	CAN	Knows-how	BS,CBL, L_VC,L& GD
CO1,CO3,CO4	Analyze and relate Mootrashukra/ Mootrakrichra, Ushnavata, and Vidvighata with relevant contemporary conditions.	1	Lecture	CAN	Knows-how	L&PPT , L_VC,CB L,BS
CO1,CO3,CO4	Analyze the clinical manifestations of Mootrotsanga, Vatabasti, Mootrateeta, Mootrajathara, Vatashteela, Vatakundalika, Bastikundala and associate it with contemporary science.	1	Lecture	CAN	Knows-how	BL,CBL, PL
CO1,CO3,CO4	Collate and compare the differential diagnosis of acute and chronic retention of urine.	1	Lecture	CAN	Knows-how	L&PPT , L_VC,CD ,CBL
CO1,CO2,CO3 ,CO4	Demonstrate clinical assessment of diseases of the urinary tract (Part 2).	10	Practical Training 16.2	PSY-GUD	Shows-how	SIM,D-B ED,CD,C BL,LRI
CO1,CO3,CO4	Elicit a focused and structured clinical history and perform a general and systemic examination to identify signs suggestive of the underlying cause of oliguria or anuria (Part 2).	7	Experiential-Learning 16. 3	PSY-GUD	Shows-how	CD,SIM, D-BED,CB L
CO1,CO2,CO3 ,CO4	Interpret relevant diagnostic investigations to differentiate the type and cause of oliguria or anuria, and formulate an integrative differential diagnosis (Part 2).	6	Experiential-Learning 16.	PSY-GUD	Shows-how	SIM,CD, CBL,LRI,

			4			D-BED

Practical Training Activity

Practical Training 16.1 : Clinical assessment of diseases of the urinary tract (Part 1).

Teacher Instruction:

Step 1: Case Introduction and History Taking - Instruct students to systematically collect a comprehensive patient history, with focused attention on the detailed evaluation of the history of dysuria/ haematuria/ incomplete bladder emptying either alone or in association. Key aspects to explore include the onset, character, radiation, associated symptoms, aggravating and relieving factors, timing and severity. Emphasize the need to assess past medical history, treatment history, relevant negative history, family history, socioeconomic background and personal history.

Step 2: Physical Examination - Teach students to perform physical examination particularly a general examination and history based focused systemic examination in specific.

Step 3: Diagnostic Investigations - Facilitate discussion on selecting and interpreting relevant diagnostic investigations to support or confirm clinical impressions. Encourage students to correlate findings from baseline investigations with clinical data, and to recognize when further, targeted diagnostic tests are necessary for a more refined evaluation.

Step 4: Formulation of Differential Diagnosis - Encourage students to develop a well-rounded differential diagnosis by correlating clinical findings with patient history. Stress the importance of evaluating key features of history of dysuria/ haematuria/ incomplete bladder emptying either alone or in association considering other aspects of history. Key aspects to explore include the onset, character, radiation, associated symptoms, aggravating and relieving factors, timing and severity. Additionally, guide them to apply Ayurveda understanding using Lakshana Samucchaya to determine Vyadhi Vinischaya, identify the Vyadhi Hetu if any, Srotas involved, recognize Anubandhya and Anubandha Dosha, and evaluate the Sadhya or Asadhya. Also demonstrate Avastha (Purvaroopa, Roopa and Upadrava as applicable)

Step 5: Clinical Reasoning and Diagnostic Synthesis - Support students in synthesizing clinical information and investigative findings to arrive at the most likely diagnosis. Encourage a balanced diagnostic approach that integrates Ayurveda understanding with contemporary biomedical reasoning to enhance clinical decision-making.

Practical Training 16.2 : Clinical assessment of diseases of the urinary tract (Part 2).

Teacher Instruction:

Step 1: Case Introduction and History Taking - Guide students to elicit a focused history of oliguria/ anuria, including duration, fluid intake, associated symptoms (e.g., Oedema, haematuria, fever). Key aspects to explore include the onset, course, character, severity, aggravating and relieving factors if any, associated symptoms and relevant negative history. Emphasize the need to assess past medical and surgical history, treatment history, family history, socioeconomic background, personal history

Step 2: Physical Examination - Teach students to perform physical examination particularly a general examination and history based focused systemic examination in specific.

Step 3: Diagnostic Investigations - Facilitate discussion on selecting and interpreting relevant diagnostic investigations to support or confirm clinical impressions. Encourage students to correlate findings from baseline investigations with clinical data, and to recognize when further, targeted diagnostic tests are necessary for a more refined

evaluation.

Step 4: Formulation of Differential Diagnosis - Encourage students to develop a well-rounded differential diagnosis by correlating clinical findings with patient history. Stress the importance of evaluating key features of history of oliguria/ anuria. Key aspects to explore include the onset, course, character, associated symptoms, aggravating and relieving factors if any, and severity. Enable learners to categorize oliguria/ anuria into prerenal, renal, and postrenal types based on clinical and investigative findings, forming a structured differential diagnosis with supporting evidence. Additionally, guide them to apply Ayurveda understanding using Lakshana samucchaya to determine Vyadhi Vinischaya, identify the Vyadhi Hetu if any, Srotas involved, recognize Anubandhya and Anubandha Dosha, and evaluate the Sadhya or Asadhya. Also demonstrate Avastha (Purvaroopa, Roopa and Upadrava as applicable)

Step 5: Clinical Reasoning and Diagnostic Synthesis - Support students in synthesizing clinical information and investigative findings to arrive at the most likely diagnosis. Encourage a balanced diagnostic approach that integrates Ayurveda understanding with contemporary biomedical reasoning to enhance clinical decision-making.

Experiential learning Activity

Experiential-Learning 16.1 : Subjective and objective assessment in patient presenting with urinary complaints (Part 1).

Student Instructions (Subjective Assessment):

Step 1: Teacher will allot a real case or simulated case related to urinary complaints such as dysuria/ haematuria/ incomplete bladder emptying either alone or in association, and record the key aspects to explore include the onset, character, radiation, associated symptoms, aggravating and relieving factors, timing and severity.

Step 2: Gather detailed past medical/ surgical history, medications, family history, occupation, and socioeconomic background.

Step 3: Assess relevant Dosha Hetu, Vyadhi Hetu, Ubhaya Hetu, Utpataka and Vyanjaka Hetu, Pradhanika and Vyabhichari Hetu and Srotas involved if applicable from the subjective assessment.

Step 4: Present the findings correlating with the history to arrive at a tentative diagnosis considering UG RNVV CAB as basic format.

Student Instructions (Objective Assessment):

Step 1: As a continuation of the above experiential learning session, begin with general examination.

Step 2: Perform a comprehensive systemic assessment based on the associated systemic symptoms and past medical history or comorbidities.

Step 3: Document signs and interpretations in the case sheet.

Experiential-Learning 16.2 : Planning for investigation and diagnosis for urinary tract disease (Part 1).

Student Instructions (Planning for Investigation):

Step 1: As a continuation of the above experiential learning session, recommend basic investigations along with result interpretation.

Step 2: Select subsequent tests if needed considering assessment of diagnosis and complications.

Step 3: Interpret lab/ imaging results and correlate with presenting symptoms and physical findings.

Step 4: Document correlation for each investigation with possible causes and interpretation

Student Instructions (Diagnosis):

Step 1: As a continuation of the above experiential learning session, list at least few differential diagnoses based on history and examination.

Step 2: Based on history and examination, list possible diagnosis through diagnostic reasoning strategies in primary health care for clinical diagnosis, integrative model of clinical reasoning, dual process diagnostic reasoning model, hypothetico-deductive model, pattern recognition model, pathway for clinical reasoning model to learn intuitive approach and analytical approaches in clinical decision making as applicable to arrive at a diagnosis of the given case.

Step 3: Apply Ayurveda diagnostic reasoning using Lakshana Samucchaya, considering the comorbidities, systemic symptoms, and past medical history understand the Vyadhi Vinischaya, Vyadhi Hetu if any, Srotas involved, Dosha-Dushya Samurchana, and Anubandhya/ Anubandha Dosha/ Vyadhi, and Sadhya or Asadhya. Also assess Avastha (Purvaroopa, Roopa and Upadrava as applicable).

Step 4: Evaluate prognosis and present a summary of the diagnosis with justification.

Experiential-Learning 16.3 : Subjective and objective assessment in patient presenting with oliguria or anuria (Part 2).

Student Instructions (Subjective Assessment):

Step 1: Teacher will allot a real case or simulated case related to oliguria or anuria.

Step 2: Elicit onset, course, character, severity, aggravating and relieving factors if any, associated symptoms and relevant negative history.

Step 3: Emphasize the need to assess past medical and surgical history, treatment history, family history, socioeconomic background, personal history.

Step 4: Assess relevant Dosha Hetu, Vyadhi Hetu, Ubhaya Hetu, Utpataka and Vyanjaka Hetu, Pradhanika and Vyabhichari Hetu and Srotas involved if applicable from the subjective assessment.

Step 5: Present the findings correlating with the history to arrive at a tentative diagnosis considering UG RNVV CAB as basic format.

Student Instructions (Objective Assessment):

Step 1: As a continuation of the above experiential learning session, begin with general examination.

Step 2: Perform a comprehensive systemic assessment based on the associated systemic symptoms and past medical history or comorbidities.

Step 3: Document signs and interpretations in the case sheet.

Experiential-Learning 16.4 : Planning for investigation and diagnosis for oliguria or anuria (Part 2).

Student Instructions (Planning for Investigation):

Step 1: As a continuation of the above experiential learning session, recommend basic investigations along with result interpretation.

Step 2: Select subsequent tests if needed considering assessment of diagnosis and complications.

Step 3: Interpret lab/ imaging results and correlate with presenting symptoms and physical findings.

Step 4: Document correlation for each investigation with possible causes and interpretation.

Student Instructions (Diagnosis):

Step 1: As a continuation of the above experiential learning session categorize oliguria/ anuria into prerenal, renal, or postrenal causes based on history, examination, and investigation.

Step 2: Based on history and examination, list possible diagnosis through diagnostic reasoning strategies in primary health care for clinical diagnosis, integrative model of clinical reasoning, dual process diagnostic reasoning model, hypothetico-deductive model, pattern recognition model, pathway for clinical reasoning model to learn intuitive approach and analytical approaches in clinical decision making as applicable to arrive at a diagnosis of the given case.

Step 3: Apply Ayurveda diagnostic reasoning using Lakshana Samucchaya, considering the comorbidities, systemic symptoms, and past medical history understand the Vyadhi Vinischaya, Vyadhi Hetu if any, Srotas involved, Dosha-Dushya Samurchana, and Anubandhya/ Anubandha Dosha/ Vyadhi, and Sadhya or Asadhya. Also assess Avastha (Purvaroopa, Roopa and Upadrava as applicable).

Step 4: Synthesize all findings and establish the most likely diagnosis.

Step 5: Evaluate prognosis and present a summary of the diagnosis with justification.

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 6C. Theory Based Assessment – 25 Marks. This component includes theory questions designed to assess conceptual clarity, integrative thinking, and the ability to apply learned concepts in clinical, diagnostic, or problem-solving contexts. Questions can be framed from any instructional unit, ensuring alignment with the intended learning outcomes. And Any practical in converted form can be taken for assessment. (25 Marks). Or Any experiential as portfolio/ reflections/ presentations, can be taken as an assessment. (25 Marks).	4

Paper No : 3 Vikriti Pareeksha I (Clinical Pathology

Semester No : 3

Module 17 : Rakta Vikriti Vijnana (Haematology)

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

1. Discuss abnormalities of Rakta and its application in disease pathogenesis in Ayurveda.
2. Describe and perform haematological investigations in laboratory set up with their quality control and standardization methods.
3. Interpret haematological results in various clinical context of Ayurveda and contemporary medical science
4. Correlate the haematological findings clinically and interpret their clinical significance.
5. Perform advanced investigations in haematology, transfusion medicine and coagulation studies.
6. Justify haematological investigations in a clinical condition.

M 17 Unit 1 Rakta Pareeksha 1. Shuddha and Ashuddha Rakta.
2. Rakta Dhatu vitiated with Dosha.
3. Utility of Rakta Dhatu Pareeksha in Ayurveda pathology.

References: 1,2,3,4

3A	3B	3C	3D	3E	3F	3G
CO1,CO2	Differentiate Shuddha and Ashuddha Rakta by describing its formation, Panchabhoutika composition, functions, and physical properties as mentioned in Ayurveda.	1	Lecture	CC	Knows-how	L&GD,DIS,L&PPT
CO1,CO2	Analyze abnormalities of Rakta Dhatu caused by Dosha affliction and compare the resulting pathologies.	1	Lecture	CAN	Knows-how	DIS,L&GD
CO1,CO2,CO5	Demonstrate abnormalities of Rakta Dhatu resulting from Dosha affliction and the	1	Practical	PSY-	Shows-	D-BED,D

,CO7	associated pathologies.		Training 17.1	GUD	how	
CO1,CO2,CO5 ,CO7	Analyze various abnormalities in Rakta Dhatu due to affliction of Doshas and in various pathologies in Ayurveda.	2	Experiential-Learning 17. 1	CAN	Shows-how	TBL,D-BED,C_L,IBL
CO1,CO2,CO5 ,CO7	Demonstrate utility of findings of Rakta Pareeksha in understanding various pathologies in Ayurveda.	1	Practical Training 17.2	PSY-GUD	Shows-how	DL
CO1,CO2,CO5 ,CO6,CO7	Interpret findings of Rakta examination in Ayurveda pathologies and critically appraise published literature and laboratory research on Rakta Dhatu examination.	1	Experiential-Learning 17. 2	CC	Knows-how	PBL,JC,DIS,LS,BS

M 17 Unit 2 Haematological procedures and interpretations1. Hemopoiesis, normal and abnormal blood cells.

2. Haematology sampling, equipment's and instruments and their principles with functioning.

3. Manual, automated procedures and rapid testing in haematology, coagulation studies, blood banking.

4. Interpretation of machine results and PBS observations.

5. Quality measures, trouble shooting and data management.

6. Clinical and therapeutic relevance of haematology investigations.

7. Advance testing and Recent advances in haematology.

References: 21,24,25,26,46,49,50,51,52,53,54,55,56,57,58,59,60,61,62,63,64,65,66,67,68,69,70,71,72,73,74,75,76,77,78

3A	3B	3C	3D	3E	3F	3G
CO5	Analyze hemopoiesis with its influencing factors, normal and abnormal blood cell morphology with clinical significance, and explain sampling techniques, anticoagulants, collection tubes, and sample storage in hematology and transfusion medicine.	2	Lecture	CAN	Knows-how	PL,L&PPT
CO5	Perform blood sampling using appropriate methods, correctly select collection tubes with anticoagulants, and demonstrate proper sample storage techniques for hematology investigations and transfusion medicine.	2	Practical Training 17.3	PSY-GUD	Shows-how	D,DL
CO5	Describe and explain manual and automated hematological procedures, staining techniques, and normal versus pathological values of investigations, and evaluate the	2	Lecture	CC	Knows-how	TUT,L&GD,L&P

	advantages and disadvantages of automation in hematology.					PT
CO5	Perform manual and automated haematological tests, apply staining techniques, and evaluate the advantages and disadvantages of automation in haematology.	8	Practical Training 17.4	PSY-GUD	Shows-how	DL,PAL
CO5	Perform manual and automated haematological tests, report normal and pathological findings, present their clinical significance, and evaluate the advantages and disadvantages of automation in haematology.	8	Experiential-Learning 17.3	PSY-GUD	Shows-how	CBL,LRI, DL,DIS
CO5	Analyze haematology investigation findings to establish a diagnosis, illustrate their clinical significance, and correlate results with patient presentations.	2	Lecture	CAN	Knows-how	IBL,LRI, DIS,SY,T UT
CO5,CO8	Demonstrate variations in findings of haematological investigations correlate clinically.	6	Practical Training 17.5	PSY-GUD	Shows-how	PER,DL, LRI,SY
CO5,CO8	Interpret haematological investigation findings, correlate them clinically, and justify their clinical significance.	10	Experiential-Learning 17.4	PSY-GUD	Shows-how	PBL,LRI, DL,L_VC
CO5	Explain advanced haematology tests and justify their clinical application in pathology.	1	Lecture	CAN	Knows-how	DIS,ML, L_VC,TU T
CO5,CO8	Perform advanced haematology tests and apply their findings in pathology.	2	Experiential-Learning 17.5	PSY-GUD	Knows-how	LS,TUT, W,FV,SY

M 17 Unit 3 Interpretation of haematological tests using fundamental principles of Roganidana - Vikritivijnana1. Interpretation of haematology investigations by incorporating fundamental principles of Roganidana - Vikritivijnana.

References: 1,2,3,4,5,49,54,55,62,63,64,65,66,67,68,69,70,71,72,73,74,75,76,77,78

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

CO6,CO7	Analyze of fundamental principles of Dosha - Dushyadi Vijnana to findings of haematology investigation to interpret possible pathologies in Ayurveda.	1	Lecture	CAN	Knows-how	PER,DIS,IBL,TUT,PBL
CO6,CO7	Develop SOP of application of fundamental principles of Dosha-Dushyadi Vijnana to the findings of haematological investigations.	2	Practical Training 17.6	CS	Shows-how	D-BED,LRI,Mnt,IBL,PBL
CO6,CO7	Interpret haematological test results by incorporating principles of Dosha-Dushyadi Vijnana with the help of SOP.	3	Experiential-Learning 17.6	PSY-GUD	Does	PrBL,PBL,LS

Practical Training Activity

Practical Training 17.1 : Examination of Rakta Dhatu

Teacher will demonstrate to develop SOP of sample collection, indications for Rakta Dhatu examination storage, examination of parameters to observe, interpretation of parameters, precautions to take while sampling, use of laboratory instruments and equipments in examination by using the fundamentals of laboratory medicine. Teacher will demonstrate at least 2 cases to identify Vata / Pitta / Kapha afflicted Rakta Dhatu in samples. Teacher will demonstrate to interpret the observations as per Ayurveda. Student will follow the instructions and perform under guidance in cases.

Practical Training 17.2 : Utility of Rakta Dhatu examination

Teacher instructions:
1. Demonstrate students to identify physical parameters to be determined in blood samples.
2. Demonstrate methods to identify physically variations in observations.
3. Demonstrate Rakta Dushti with the use of physical parameters.
Students instruction:
 From the demonstration given by teacher student shall-
1. Perform examination of Rakta in collected blood sample.
2. Perform examinations to identify physically variations in observations.
3. Identify vitiation of Rakta by applying various of physical parameters like colour, odour, temperature on touch, consistency, clotting time, fluidity etc.
Use references from Samhitas, textbooks or published scientific articles on the relevant topics and identify the parameters.

Practical Training 17.3 : Sampling techniques and requirements in haematology.

1. Determine the container for sampling of haematology investigations.
2. Perform independently sampling for complete blood count, ESR, examination of peripheral blood smear for cell morphology and malarial parasite detection, reticulocyte count, platelet count, bleeding time, clotting time and prothrombin time and other coagulation profile, rapid diagnostics in haematology, Hb electrophoresis, blood grouping, cross matching.
3. Observe patient preparation, sampling techniques and equipments used and storage of various blood components during visit to a blood bank organised by the department.
4. Demonstrate usefulness of capillary sampling and vene-puncture, simple blood containers and vacutainers.
5. Decide and explain anticoagulants used for preservation of samples as per various tests in haematology.
6. Decide appropriate sample storage for haematology.
7. Demonstrate identification of haemolysed and non-haemolysed whole blood sample.
8. Demonstrate difference between clotted and non-clotted sample in a collected blood sample.
9. Demonstrate measures for quality sampling.

Practical Training 17.4 : Manual and automated procedures, quality control, troubleshooting in haematology

In laboratory posting student will perform following activities-
1. Operate independently common equipment's in haematology such as automated cell counter, Neubauer chamber, microscope etc.
2. Perform independently complete blood count, haematology analyser, manual cell counts on Neubauer chamber, erythrocyte sedimentation rate, blood group, and, bleeding time, clotting time.
3. Prepare independently good quality blood smears from finger prick and from anticoagulated whole blood sample for examination purpose.
4. Perform independently staining of peripheral blood smear.
5. Perform independently examination of peripheral blood smear.
6. Perform independently bleeding time, clotting time and prothrombin time.
7. Perform under supervision coagulation profile with APTT and FDP.
8. Observe or perform under observation bone marrow sampling, blood collection for blood banking and transfusion techniques.
9. Observe patient preparation, sampling techniques, instrument requirement, aseptic precautions to follow, smear preparation and imprints, staining with special stains including stain for iron and cytochemical characterization of leukaemia for bone marrow aspiration and biopsy.
10. Inspect machine working, standardizations and calibrations.
11. Demonstrate importance of following standard procedures.
12. Find out possible manual and machine errors in procedure.
13. Discuss advantages and disadvantages of automation in haematology.
14. Demonstrate troubleshooting.

Practical Training 17.5 : Interpretation of observations in haematology investigations

1. Illustrate machine values and findings of microscopic examination.

2. Demonstrate physiological and pathological variations.

3. Discuss parameters to report the findings in a standard reporting format.

5. Elaborate clinical significance of findings in diagnosis of pathologies.

6. Elaborate significance of identifying variations in investigations for differential diagnosis.

7. Identify the critical values and learn to how to report them to achieve effective patient care.

8. Explain importance of clinical correlation of the interpretation in the report generation.

9. Observe the results in pre and post treatment scenarios and also in follow ups if needed.

10. Timelines and communication- Follow timely reporting and effective communication to render quality patient care.

Keep record of at least 5 different practicals.

Practical Training 17.6 : SOP development of interpretation of biochemistry investigations as per Ayurveda.

Instructions to teacher: Teacher will guide to develop critical thinking-based SOP to interpret fluid examination and gastric analysis findings. follow the steps-To develop a standard operating procedure (SOP)-

1. Integrate fundamental principles of Roganidan- Vikriti Vijnana (Dosha Dushya etc.).

2. Conduct a detail literature review of Ayurveda texts and modern medical literature to inform the development of the SOP.

3. Consult with the senior faculties and peers to exhibit the various criteria used for the development.

4. Take assistance from the clinical histories for the patients advised with concerned investigation.

5. Develop a plan to take in consideration various physical, chemical and microscopic factors to be involved interpretation.

6. Develop all-encompassing understanding of the investigation in terms Ayurveda.

Students instruction: Follow instructions given by teachers and work with peers to develop the SOP. Apply case studies and try to interpret the haematology investigation in terms of Ayurveda pathology.

Experiential learning Activity

Experiential-Learning 17.1 : Assessment of Rakta Dhatu

Teacher will assign at least 5 cases to students to assess Dosha afflicted Rakta Dhatu and observe students.

Students instruction:

1. Evaluate at least 2 cases of Dosha afflicted Rakta Dhatu Observe and enlist the various Dosha afflicted Rakta Dhatu symptoms in cases.

2. Explain the findings with appropriate references from classics. Findings will include Samata, Niramata, Dosha afflicted symptoms.

3. Explain correlation of findings with the symptoms appeared. Correlation can also be done to observe severity and chronicity of the symptoms, prognosis of the clinical

condition with the abnormality observed in the sample.

4. Explain how the findings are useful in diagnosing a pathology in the case.

5. Students will explore incorporation of laboratory equipments and instruments or any technology to be incorporated in examination technique to facilitate the examination of Rakta Dhatu as per Ayurved.

At the end of the hour teacher will discuss about the results.

Experiential-Learning 17.2 : Practical utility of Rakta examination in Dosha-Dushyadi Vijnana.

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1. Student will evaluate at least 2 cases of findings of Rakta vitiation and interpret the findings.

2. Correlate the observed parameters clinically with the symptoms associated with Dosha.

3. Identify the utility of examination of Rakta in identifying the various pathologies or pathological processes.

4. Develop correlation between haematology observations and parameters determined based on Ayurveda principles.

5. Find out literature or researches published on Rakta Dhatu examination with respect to laboratory procedures or development tools in rakta examination supporting fundamental principles of Ayurveda.

Experiential-Learning 17.3 : Manual and automated procedures, quality control, troubleshooting, data management in haematology

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1. Practice procedures of haematology investigations on cell counter and manually and interpret the values.

2. Practice preparing good quality peripheral blood smear, proper staining.

3. Practice microscopic examination of PBS and bone marrow, identify cell morphology normal, parasites in blood to interpret various pathologies.

4. Practice handling of Neubauer's chamber and describe errors and limitations of the procedure.

5. Discuss requirement and usefulness of manual and automation procedures.

6. Summarise advantages and disadvantages of automation in haematology.

7. Identify and enlist manual and machine errors in sampling and processing of a blood sample.

8. Handle troubleshooting.

9. Describe quality measures in haematology.

10. Illustrate data entry, reagent inventory, record keeping and data retrieving procedures.

Student will explain the experience in the department among peers and teachers.

Experiential-Learning 17.4 : Clinical correlation of the interpretation and report generation in haematology.

A student will independently able to-

1. Identify machine values and findings of microscopic examination of common haematological investigations.

2. Interpret the findings in terms of normal or abnormal presentation.

3. Report the findings in a standard reporting format.

4. Corelate clinically the interpretation with the help of case history or by direct examination of the patient.

5. Cross check abnormal results of CBC by reviewing the peripheral blood smear manually if necessary.

6. Recognise the critical values and learn to how to report them to achieve effective patient care.

7. Justify importance of identifying errors in sampling, labelling, processing and interpreting the specimen.

8. Generate a quality report to ensure an effective patient care.

9. Describe clinical significance of haematology investigations in case studies in peers and before teachers.

10. Analyse the results in pre and post treatment scenarios and also in follow ups if needed.

11. Timelines and communication- Follow timely reporting and effective communication to render quality patient care.

Student will explain the above points in at least 10 case studies.

- Student will observe and interpret the findings of bone marrow studies, coagulation profile, sickling test and osmotic fragility test under observation of the pathologist.

Student has to observe these activities in at least one specimen. Institute is advised to allocate postings or visits to laboratories with these facilities.

- Student will explain the experience in the department among peers and teachers.

Experiential-Learning 17.5 : Interpretation and reporting of advance tests in haematology

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Institute is desired to allocate postings in laboratory carrying out above investigations.

A student is desired to attempt during their posting -

1. Observe coagulation profile and coagulation assay on coagulometers and point of care testing, explain the parameters in coagulation profile and their significance in diagnosing coagulation disorders.

2. Observe sampling, procedures, and machine working of flow cytometry, HPLC and Hb electrophoresis apparatus.

3. State significance of these tests in identifying pathologies related to haematology.

4. Observe interpretation of tests such as hemosiderin in urine, G6PD enzyme estimation, platelet function test, platelet aggregation and adhesion and PF3 release, fibrin degradation products, D-dimers, monitoring of anti-coagulant therapy, thrombophilia profile (LAC), anticardiolipin antibody (ACA), Protein C, Protein S and antithrombin III, activated protein C resistance (APCR),

5. A student will interpret the findings with the help of pathologist. Teacher will discuss the observation with students.

6. Analyse the results in pre and post treatment scenarios and also in follow ups if needed.

7. Timelines and communication- Follow timely reporting and effective communication to render quality patient care.

Student has to perform all the tests as many as possible in the laboratory postings. Student will explain the experience in the department among peers and teachers.

Experiential-Learning 17.6 : Interpret haematological investigations in terms of Ayurveda.

The interpretation exercise is to generate and enhance critical thinking in students to apply the principles of Dosha-Dushyadi Vijnana in various fields of laboratory

technology and use it to generate knew knowledge of Ayurveda. Evaluate interpretation to assist the physicians in planning Ayurveda based treatment regime in quality patient care of concerned clinical domain. Follow the below guidelines to give a comprehensive direction to the tasks-

1. Administer the SOP in at least 3 haematology investigations.

2. Interpret the parameters to generate a comprehensive understanding in terms of Dosha Dushya etc.

3. Establish criteria for various pathological process in Vikriti Vijnana, identify types of the aetiologies, explore pathogenesis of the diseases expressed in fluids.

4. Develop critical thinking on determining various aspects of Ayurveda pathological process and their stages e.g. Samata, Niramata, Kleda formation, Vriddhi, Kshaya, Dushti of Dosha and Dushya to assist laboratory assisted diagnosis in Ayurveda.

5. Support the interpretation with the help of case studies and pre and post treatment analysis of the investigations.

6. Support your interpretation by providing any published literature (perspectives) or experiments on the lab investigations and their interpretation in terms of Ayurveda.

7. Infer how the integration of Ayurveda pathology helps in improved diagnosis, tailoring effective treatment plans.

Submit at least 3 different interpretations. Teacher will allot different investigations to students.

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 6C. 1. Theory Based Assessment (25 Marks): This component includes theory questions designed to assess conceptual clarity, integrative thinking, and the ability to apply learned concepts in clinical, diagnostic, or problem-solving contexts. Questions can be framed from any instructional unit, ensuring alignment with the intended learning outcomes. 2. Any practical converted into an assessment format based on skills or demonstration relevant to the module (25 Marks). OR Any experiential learning method such as portfolio work, reflective tasks, or presentations conducted individually or in groups that demonstrate applied understanding (25 Marks). OR Interpret any investigation from haematology by applying fundamental principles of Dosha- Dushyadi Vijnana (25 marks): The components of the assessment include general information of the investigation (e.g. function, metabolism etc), clinical and therapeutic significance, clinical symptoms shown due to derangement of the constituents, or any other information which is useful in interpretation of the observations in terms of Dosha, Dushya, Srotasa, Agni etc. justification for the application of applied fundamentals supported by classical references, conclusion of the interpretation.	4

Module 18 : Dhatwansha Pareeksha (Biochemistry)

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

1. Explain principles and procedures of biochemical investigations.
2. Perform basic to advance biochemical investigations in a laboratory set up with their quality control and standardization methods.
3. Organise and justify biochemical investigations in a clinical condition.
4. Interpret the results of biochemical investigations and understand their clinical significance in diagnosis and monitoring of various clinical conditions.
5. Interpret biochemical investigations according to fundamental principles of Dosha - Dushyadi Vijnana.

M 18 Unit 1 Introduction to Biochemistry1. Metabolism of biochemical molecules, function and importance in health and disease.

References: 25,26,46,50,51,52,53,54,55,56,57,58,59,60,61,62

3A	3B	3C	3D	3E	3F	3G
CO5	Explain the metabolism, functions, and clinical relevance of biochemical molecules, and apply principles of biochemical testing, sampling, storage, and reagent preparation.	2	Lecture	CC	Knows-how	TUT,L& GD,L&P PT

M 18 Unit 2 Biochemical procedures and their interpretation1. Principle of biochemical testing.
2. Biochemistry sampling, equipment's and instruments.
3. Manual and automated procedures in biochemistry.
4. Interpretation of results and quality reporting.
5. Quality measures, trouble shooting, data management.
6. Clinical and therapeutic relevance of biochemical investigations.
7. Advanced testing and recent advances in biochemistry.

References: 50,51,52,53,54,55,56,57,58,59,60,61,62,79,80,81,82,83,84,85,86

3A	3B	3C	3D	3E	3F	3G
CO5	Explain manual and automated biochemical test procedures, interpret standard values with clinical significance, and evaluate the advantages and limitations of automation in biochemistry.	3	Lecture	CC	Knows-how	DIS,TUT, L&PPT ,BS
CO5	Perform biochemical tests using manual and automated analysers, report normal and pathological values, and demonstrate the advantages and limitations of automation in biochemistry.	10	Practical Training 18.1	PSY-GUD	Shows-how	D,DL,L_VC,PL
CO5	Perform precise sample handling and quality control in biochemical testing, interpret test results independently, evaluate differences between semi-automated and automated systems, and identify the advantages and disadvantages of automation in biochemistry.	10	Experiential-Learning 18. 1	PSY-GUD	Shows-how	PL,DL,IBL
CO5	Analyze the findings and clinical correlation of various biochemical tests to generate a quality laboratory report.	2	Lecture	CAN	Knows-how	BS,L&GD,Mnt
CO5	Interpret biochemical findings to generate standard laboratory reports, examine their clinical correlations, and recognize critical values for diagnosis and patient care.	5	Practical Training 18.2	PSY-GUD	Shows-how	DL,Mnt,CBL,LRI
CO5	Evaluate biochemical findings to generate laboratory reports and compare them with clinical presentations for diagnostic relevance.	9	Experiential-Learning 18. 2	PSY-GUD	Shows-how	LRI,Mnt, CBL,C_L
CO5	Describe advanced tests, their principles and utility in disease diagnosis.	1	Lecture	CAP	Knows-how	L&PPT , L&GD,L _VC
CO5	Demonstrate advancements in biochemistry.	2	Practical Training 18.3	PSY-GUD	Shows-how	L_VC,D
CO5	Analyze the utility of advanced biochemical tests in clinical cases and evaluate recent technological advancements in biochemistry.	3	Experiential-Learning 18. 3	PSY-GUD	Shows-how	FV,CBL, L_VC,LRI

M 18 Unit 3 Interpretation of biochemical tests using fundamental principles of Roganidana - Vikritivijnana 1. Interpretation of biochemistry investigations by incorporating fundamental principles of Roganidana - Vikritivijnana.

References: 1,2,3,4,5,25,26,27,28,31,32,50,51,52,53,54,55,56,57,58,59,60,61,62,80,81,83

3A	3B	3C	3D	3E	3F	3G
CO1,CO2,CO5 ,CO6,CO7	Discuss fundamental principles of Dosha - Dushyadi Vijnana to findings of biochemical investigation to interpret possible pathologies in Ayurveda.	2	Lecture	CC	Knows-how	BS,PER,LS,TUT
CO1,CO2,CO5 ,CO6,CO7	Develop SOP of application of fundamental principles of Dosha-Dushyadi Vijnana to the findings of biochemical investigations.	3	Practical Training 18.4	PSY-ADT	Shows-how	IBL,C_L,TPW,LRI
CO1,CO2,CO5 ,CO6,CO7	Interpret biochemical test results by incorporating principles of Dosha-Dushyadi Vijnana with the help of SOP.	4	Experiential-Learning 18.4	PSY-ADT	Shows-how	BS,CBL,PrBL,PBL

Practical Training Activity

Practical Training 18.1 : Laboratory techniques in biochemistry (Sampling, procedures, quality measures, troubleshooting, data management)

A student will perform under observation-
1. Sampling procedure for biochemical investigations.
2. Demonstrate individually all organ profiles, electrolytes, nutrients on semi auto analyser and complete auto analyser.
3. Follow standard operating procedure in biochemistry investigations.
4. Demonstrate individually the normal and pathological values of biochemical investigations in give samples.
5. Perform quality control, standardization and troubleshooting under observation.
6. Find out advantages and disadvantages of automation process in biochemistry while performing on the machines.
Student has to perform all the tests as many as possible in the laboratory postings.

Practical Training 18.2 : Interpretation of biochemistry investigations

A teacher will demonstrate the interpretation, reporting, clinical correlation and understanding critical values. Students will follow the instructions and apply in their practice.
1. Interpret the finding to arrive at a diagnosis.

2. Generate a standard biochemical test report.

3. Examine clinical correlations in cases.

4. Understand critical values in biochemistry.

Student has to perform all the tests as many as possible in the laboratory postings.

Keep record of at least 10 different practicals.

Practical Training 18.3 : Recent advance in biochemistry

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1. Perform under supervision the procedures for tests like Vit.12, Folic acid, Serum iron, Serum Ferritin, Troponin, CK-MB, ANA (Antinuclear antibodies) etc. tests in biochemistry.

2. Understand machine working, maintenance, trouble shooting, quality management.

3. Observe interpretation and reporting of the advance tests

4. Demonstrate critical reporting in biochemistry.

5. Demonstrate their utility in disease diagnosis.

Practical Training 18.4 : SOP development of interpretation of biochemistry investigations as per Ayurveda.

Teacher insruction: Follow the steps from M1U3 practical session to develop a standard SOP. A teacher will demonstrate at least 1 test interpretation to develop SOP.

Student instructions: Follow instructions given by teachers and work with peers to develop the SOP. Apply case studies and try to interpret the cavity fluid and gastric analysis investigation in terms of Ayurveda pathology.

Experiential learning Activity

Experiential-Learning 18.1 : Laboratory techniques in biochemistry (Sampling, procedures, quality measures, troubleshooting, data management)

A student will perform individually –

1. Sample handling and performing biochemical testing, running controls, maintaining data, maintain standardization processes, trouble shooting,

2. Acquire the necessary skills to interpret the test results generated by semiautomated or automated systems about normal and abnormal ranges independently.

3. Evaluate difference in results from semi auto, and automated independently.

4. Identify advantages and disadvantages of automation process in biochemistry.

Student has to perform all the tests as many as possible in the laboratory postings.

Experiential-Learning 18.2 : Interpretation, clinical correlation and report generation of biochemistry investigations

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A student will present in peers and with the teachers -

1. Interpretation of test findings.

2. Various components of a standard biochemical laboratory report and practice generating a test report.

3. Skill to identify abnormality in findings to arrive at a diagnosis.

4. Help physicians in developing the diagnosis wherever required.

5. Identify the critical values and learn to how to report them to achieve effective patient care.

6. Compare the finding and corelate with clinical presentations in front of the teacher.

7. Use test findings in developing differential diagnosis and also guide physicians to advice further or other tests for an appropriate diagnosis.

Student has to perform all the tests as many as possible in the laboratory postings.

Experiential-Learning 18.3 : Advancements in biochemistry

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1. Examine the cases and confirm the indications of the tests like Vit.12, Folic acid, Serum iron, Serum Ferritin, Troponin, CK-MB, ANA (Antinuclear antibodies) tests.

2. Corelate the interpretation with clinical presentation in cases.

3. Analyse the results in pre and post treatment scenarios and also in follow ups if needed.

4. Find out advancements in technology to enhance quality and effective patient care. E.g. Search innovations on Genomics and proteomics, gene editing and therapy, metabolic engineering, machine learning and bio informatics, single-molecule technique, Cryo-electron microscopy (cryo- EM), next generation sequencing etc.

Students use online searches on innovations in biotechnology and submit at least 1 report per student of the activity. Teacher will allot various topics to students.

Experiential-Learning 18.4 : Interpret biochemical investigations in terms of Ayurveda.

Students can follow the instruction mentioned in M1U3 experiential session to interpret the results of biochemistry. Students are expected to come up with few basic outcomes form the activity. Interpret at least 3 investigation as per Ayurveda.

Submit at least 3 different interpretations. Teacher will allot different investigations to students.

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 6C. 1. Theory Based Assessment (25 Marks): This component includes theory questions designed to assess conceptual clarity, integrative thinking, and the ability to apply learned concepts in clinical, diagnostic, or problem-solving contexts. Questions can be framed from any instructional unit, ensuring alignment with the intended learning outcomes. 2. Any practical converted into an assessment format based on skills or demonstration relevant to the module (25 Marks).	4

OR
Any experiential learning method such as portfolio work, reflective tasks, or presentations conducted individually or in groups that demonstrate applied understanding (25 Marks).
OR
Interpret any investigation from biochemistry by applying fundamental principles of Dosha-Dushyadi Vijnana (25 marks): The components of the assessment include general information of the investigation (e.g. function, metabolism etc), clinical and therapeutic significance, clinical symptoms shown due to derangement of the constituents, or any other information which is useful in interpretation of the observations in terms of Dosha, Dushya, Srotasa, Agni etc, justification for the application of applied fundamentals supported by classical references, conclusion of the interpretation.

Semester No : 4

Module 19 : Rakta-Rasa Pareeksha (Serology)

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

1. Discuss principles and procedures of serological investigations and their clinical application
2. Perform serological tests with their quality control and standardization methods.
3. Describe and justify the cinical applicability of tests in a clinical condition.
4. Interpret the results of serological tests to support clinical decision making.
5. Interpret serological tests according to fundamental principles of Dosha - Dushyadi Vijnana.

M 19 Unit 1 Introduction to serology1. Purpose of serological testing, sampling and storage.

References: 49,50,51,52,53,54,55,56,57,58,59,60,61,62

3A	3B	3C	3D	3E	3F	3G
CO5	Describe procedures of serological tests with their clinical significance.	2	Lecture	CAP	Knows-how	DIS,L&G D,L&PPT

M 19 Unit 2 Serological procedures and interpretation1. Procedures sampling and principles of serological testing.

2. Manual and automated procedures in serology.

3. Interpret test result and quality reporting.

4. Quality measures, trouble shooting and data management.

5. Clinical and therapeutic relevance of serological investigations.

6. Advanced testing and automation in serology.

References: 49,50,51,52,53,54,55,56,57,58,59,60,61,62,87,88,89

3A	3B	3C	3D	3E	3F	3G
CO5	Discuss procedures and clinical significance of serological tests.	2	Lecture	CC	Knows-how	PER,L&PPT ,L&GD,SDL,TUT
CO5	Perform serological tests, interpret their normal and pathological findings, and demonstrate proper methods of sample disposal.	10	Practical Training 19.1	PSY-GUD	Shows-how	C_L,DL,PL
CO5	Perform serological investigations independently, identify errors in sampling and procedures, and monitor quality measures and data entries.	10	Experiential-Learning 19.1	PSY-GUD	Does	RLE,DL
CO5	Analyze serological test findings and interpret their clinical correlations.	2	Lecture	CAN	Knows-how	DIS,IBL
CO5	Interpret serological test findings and correlate them with clinical observations.	5	Practical Training 19.2	PSY-GUD	Shows-how	DIS,DL,PL
CO5	Demonstrate serological investigations, justify their clinical usefulness, and apply them in differential diagnosis of clinical presentations.	10	Experiential-Learning 19.2	PSY-GUD	Shows-how	IBL,LRI,Mnt,RLE

CO5	Discuss advanced tests, their principles and utility in disease diagnosis.	2	Lecture	CC	Knows-how	TUT,L&PPT ,L&GD,L_VC
CO5	Observe advance serology testing, their equipments, sampling, procedures, principle of working, reporting methods and quality measures.	2	Practical Training 19.3	PSY-GUD	Shows-how	L_VC,FV,PER,Mnt
CO5	Interpret findings of advanced serological tests and evaluate their diagnostic utility in clinical practice.	2	Experiential-Learning 19.3	PSY-ADT	Shows-how	JC,L_VC,TUT

M 19 Unit 3 Interpretation of serology tests using fundamental principles of Roganidana - Vikritivijnana1. Interpretation of serology investigations by incorporating fundamental principles of Roganidana - Vikritivijnana.

References: 1,2,3,4,5,25,26,27,28,33,49,50,51,52,53,54,55,56,57,58,59,60,61,62

3A	3B	3C	3D	3E	3F	3G
CO5,CO6,CO7	Discuss fundamental principles of Dosha - Dushyadi Vijnana to findings of biochemical investigation to interpret possible pathologies in Ayurveda.	2	Lecture	CC	Knows-how	TUT,IBL,PER,LS
CO5,CO6,CO7	Develop SOP for integration of fundamental principles of Dosha-Dushyadi Vijnana to the findings serology test results.	3	Practical Training 19.4	PSY-GUD	Shows-how	LS,PAL,PBL,TBL,IBL
CO5,CO6,CO7	Interpret serology test results with the help of fundamental principles of Dosha-Dushyadi Vijnana to understand clinical conditions as per Ayurveda.	4	Experiential-Learning 19.4	PSY-ADT	Shows-how	IBL,TBL,LS,PBL

Practical Training Activity

Practical Training 19.1 : Laboratory techniques in serology (sampling, procedures, quality measures, data management)

Teacher will demonstrate serological sampling and testing in laboratory and students will follow the as per the instructions.
1. Explain the choice of the container for sampling, sample storage and sample preservation and disposal for serological tests.

2. Demonstrate principles and SOP of serological tests such as Rheumatoid factor, VDRL, CRP, ASO, WIDAL, Dengue NS1, Leptospira, SLE and any other.

3. Demonstrate clinical significance in disease diagnosis with normal and pathological findings in serological investigations.

Explain in peers quality measures in handling the samples and data maintenance.

Practical Training 19.2 : Interpretation of serology test findings

1. A student will demonstrate interpret and report the test result at least in 10 samples.

2. Examine the cases and corelate the findings clinically such as signs and symptoms.

Keep record of at least 5 different practicals.

Practical Training 19.3 : Advance testing in serology

In lab postings student has to perform under supervision advance testing in serology if the said set up is not available in the affiliated hospital of the institute.

1. Discuss with peers' function and principle of ELISA, Western blot, Immuno-fluorescence assays, Chemiluminescence assays, use of omics technology (Seromics and Proteomics), multiplex serology, Surface -Enhnced Raman Scatering (SERS) detection methods, biosensors, AI and machine learning in serology.

2. Observe functioning of the equipment, their maintenance, quality measures, standardization, and perform under supervision wherever possible.

3. Observe interpretation and reporting of the advance tests.

Practical Training 19.4 : SOP development of interpretation of serology tests as per Ayurveda.

Instructions to teacher: Follow the steps from M1U3 practical session to develop a standard SOP. Teacher will demonstrate at least 1 test result for interpretation purpose.

Instructions to student: Follow instructions given by teachers and apply them in case studies and try to interpret the serology investigation in terms of fundamentals of Ayurveda.

Experiential learning Activity

Experiential-Learning 19.1 : Laboratory techniques in serology (sampling, it's errors, various procedures, quality measures, data management)

1. Perform independently at least 10 procedures of each serological tests such as Rheumatoid factor, VDRL, CRP, ASO, WIDAL, Dengue NS1, Leptospira, SLE and any other in laboratory set up or to the labs where your visits are scheduled.

2. Identify and discuss, faulty testing kits, importance of appropriate maintenance of temperature for the storage of kits, inventory management.

3. Explain in peers the functioning of serological test kits.

4. Explore out specificity and sensitivity of the test kits.

5. Explore variations in results due to lipemic, haemolyzed or hyperbilirubinemia samples.

6. Practice quality measures, aseptic procedures and disposal of the serological samples.

Experiential-Learning 19.2 : Clinical correlation of serology test findings
1. A student will independently interpret and report the test result at least in 10 samples.
2. A student will independently explain on at least 10 cases and differentiate the cases clinically with the use of serology test reports.

Experiential-Learning 19.3 : Qualitative and quantitative tests, advance testing in serology, their advantages and disadvantages in laboratory procedures and in-patient care.
1. Observe and perform under supervision at least 2 procedures for each of the advanced test in serology.
2. Explore the utility of quantitative testing over qualitative testing in serology.
3. Discuss advantages and disadvantages of performing advance serology testing.
4. Discuss utility of advance tests in clinical diagnosis.
5. Find out research innovations in serology and share in peers.
Submit 1 summary report per student of session learning. Teacher will allot various topics to students.

Experiential-Learning 19.4 : Interpret serology test results as per Ayurveda by administering SOP.
Students can follow the instruction mentioned in M1U3 experiential session to interpret serology investigation. Students are expected to come up with few basic outcomes form the activity.
Teacher will allot different investigations to students. Teacher will analyse the interpretations. Students have to keep record of at least 2 different interpretations.

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 6C. 1. Theory Based Assessment (25 Marks): This component includes theory questions designed to assess conceptual clarity, integrative thinking, and the ability to apply learned concepts in clinical, diagnostic, or problem-solving contexts. Questions can be framed from any instructional unit, ensuring alignment with the intended learning outcomes. 2. Any practical converted into an assessment format based on skills or demonstration relevant to the module (25 Marks). OR Any experiential learning method such as portfolio work, reflective tasks, or presentations conducted individually or in groups that demonstrate applied understanding (25 Marks).	4

OR

Interpret any investigation from serology by applying fundamental principles of Dosha-Dushyadi Vijnana (25 marks): The components of the assessment include general information of the investigation (e.g. function, metabolism etc), clinical and therapeutic significance, clinical symptoms shown due to derangement of the constituents, or any other information which is useful in interpretation of the observations in terms of Dosha, Dushya, Srotasa, Agni etc, justification for the application of applied fundamentals supported by classical references, conclusion of the interpretation.

Module 20 : Mootra and Pureesha Pareeksha (Urine and Stool examination)

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

1. Discuss parameters to be examined in Mootra Pareeksha and its utility to provide insights for prognosis of diseases.
2. Describe parameters to be examined in Pureesha Pareeksha and its clinical significance in deriving state of diseases.
3. Describe methods of urine examination and its interpretation to arrive at a laboratory assisted diagnosis.
4. Discuss methods of stool examination and its interpretation to arrive at a laboratory assisted diagnosis.
5. Interpret results of urine and stool examination to derive possible pathologies in Ayurveda.

M 20 Unit 1 Mootra Pareeksha 1. Physiological background of Mootra and Mootra Pareeksha.
2. Clinical conditions to advise Mootra Pareeksha.
3. Procedure of urine examination in Ayurveda with Mootra Tail Bindu Pareeksha (oil droplet examination of urine).
4. Interpretation of Mootra Pareeksha and Mootra Tail Bindu Pareeksha.
5. Clinical and therapeutic relevance of Mootra Pareeksha.

References: 1,2,3,4,5,48

3A	3B	3C	3D	3E	3F	3G
CO1	Explain urine formation and its normal and pathological characters as per Ayurveda, identify parameters for Mootra analysis, and illustrate clinical conditions requiring	1	Lecture	CC	Knows-how	TUT,L& GD,C_L,

3A	3B	3C	3D	3E	3F	3G
	Mootra Pareeksha.					SDL
CO1	Describe urine sample collection procedures in Ayurveda and identify instruments and equipment required for performing Mootra Taila Bindu Pareeksha in the laboratory.	2	Lecture	CC	Knows-how	LS,SDL, BS,L&G D,TUT
CO1,CO2,CO5 ,CO7	Demonstrate laboratory requirements, sample collection, urine examination techniques including Mootra Taila Bindu Pareeksha, and interpret and report findings as per Ayurveda.	4	Practical Training 20.1	PSY-GUD	Shows-how	D,CBL
CO1,CO2,CO5 ,CO7	Apply the SOP of Mootra Taila Bindu Pareeksha in laboratory practice and utilize it for prognostic assessment.	6	Experiential-Learning 20.1	PSY-GUD	Shows-how	CBL,TP W,PBL,L S

M 20 Unit 2 Urine examination1. Brief physiology of urine formation and composition.
2. Sampling of urine examination.
3. Laboratory techniques and rapid testing of urine examination.
4. Interpretation and reporting of physical, chemical and microscopic observation.
5. Quality measures, troubleshooting.
6. Clinical and therapeutic relevance of urine examination.
7. Interpretation of urine examination by incorporating fundamental principles of Roganidana - Vikritivijnana.

References: 1,2,3,4,5,24,25,26,27,46,48,49,50,51,52,53,54,55,56,57,58,59,60,61,62,90,91,92,93,94

3A	3B	3C	3D	3E	3F	3G
CO5	Explain urine formation, composition, functions, pathological indicators, and laboratory requirements for urine examination.	1	Lecture	CC	Knows-how	TUT,L& GD
CO5	Explain sampling requirements and preservation reagents for urine, and demonstrate physical, chemical, microscopic, and rapid diagnostic methods in urine examination.	2	Lecture	CAP	Knows-how	L&PPT , L&GD,T UT
CO5	Perform physical, chemical, microscopic, and rapid diagnostic urine examinations,	6	Practical	PSY-	Shows-	LRI,DL

	interpret laboratory findings for reporting, and correlate results with clinical significance.		Training 20.2	GUD	how	
CO5	Correlate urine analysis findings with clinical cases, perform examinations using quality protocols and advanced technologies, report results accurately, and appraise innovative research in urine diagnostics.	4	Experiential-Learning 20.2	PSY-GUD	Shows-how	PL,LRI,JC,IBL,PBL
CO1,CO2,CO5,CO7	Interpret urine analysis as per Ayurveda by administering SOP.	4	Experiential-Learning 20.3	PSY-ADT	Shows-how	TPW,PrBL,LRI

M 20 Unit 3 Pureesha Pareeksha 1. Physiological background of Pureesha (stool) and Pureesha Pareeksha as per Ayurveda.

2. Clinical conditions to advise Pureesha Pareeksha.

3. Procedure of stool examination in Ayurveda with Jala Nimajjana Pareeksha of Pureesha (water submersion test).

4. Interpretation of Pureesha Pareeksha.

5. Clinical and therapeutic relevance of Pureesha Pareeksha as per Ayurveda.

References: 1,2,3,4,5,6,48

3A	3B	3C	3D	3E	3F	3G
CO1,CO2	Analyze the physiological and pathological features of Pureesha, identify laboratory parameters and requirements for Pureesha Pareeksha, and illustrate its clinical applications in Ayurveda pathology.	2	Lecture	CAN	Knows-how	SDL,TUT
CO1,CO2,CO5,CO7	Demonstrate stool sample collection, perform Jala Nimajjana Pareeksha and other laboratory techniques, and interpret and report observations as per Ayurveda.	4	Practical Training 20.3	PSY-GUD	Shows-how	LRI,DL,TBL
CO1,CO2,CO5,CO7	Review research publications on Pureesha Pareeksha laboratory procedures, interpret findings to develop SOPs, and perform stool examination as per Ayurveda to support prognostic assessment in clinical conditions.	4	Experiential-Learning 20.4	PSY-ADT	Shows-how	TPW,CBL,SY,LRI,JC

M 20 Unit 4 Stool examination 1. Brief physiology of stool formation and composition.

2. Sampling of stool examination.

3. Laboratory techniques and rapid testing of stool examination.

4. Interpretation and reporting of physical, chemical and microscopic observation.

5. Quality measures related to stool examination.

6. Clinical and therapeutic relevance of stool examination.

7. Interpretation of stool examination by incorporating fundamental principles of Roganidana - Vikritivijnana.

References: 1,2,3,4,5,6,48,49,50,51,52,53,54,55,56,57,58,59,60,61,62,95,96,97

3A	3B	3C	3D	3E	3F	3G
CO5	Explain urine formation, composition, function, and pathological aspects of stool examination, and identify laboratory requirements for performing stool analysis.	1	Lecture	CC	Knows-how	TUT,L&PPT ,L&GD
CO5	Explain sampling requirements and preservation reagents for stool samples, and demonstrate physical, chemical, microscopic, and rapid diagnostic methods in stool examination.	1	Lecture	CC	Knows-how	L&GD,TUT,L&PPT
CO5	Perform physical, chemical, microscopic, and rapid diagnostic methods in stool examination, interpret laboratory reports, and correlate findings clinically.	6	Practical Training 20.4	PSY-GUD	Shows-how	DL,Mnt,D
CO5	Correlate urine analysis findings with clinical cases, perform examinations using quality protocols and advanced technologies, report results accurately, and appraise innovative research in urine diagnostics.	5	Experiential-Learning 20.5	PSY-GUD	Shows-how	BL,IBL,JC,LRI,PL
CO1,CO2,CO5,CO6,CO7	Interpret urine analysis as per Ayurveda by administering SOP.	3	Experiential-Learning 20.6	PSY-GUD	Shows-how	PBL,TPW,CBL,IBL,LRI

Practical Training Activity

Practical Training 20.1 : Mootra Taila Bindu Pareeksha, (Oil droplet test), its laboratory requirements and processing techniques, interpretation, quality measures.

Teacher will guide student to carry out activities given below -

1. Requirement of the instruments and equipments required for Mutra Taila Bindu Pareeksha.

2. Urine sample collection method to carry out Urine examination and Mootra Taila Bindu Pareeksha.

3. Analyze the parameters e.g. Varna (colour), Gandha (odour), Awilata (turbidity), Matra/ Pramana (Volume), Vega (frequency) etc. and record data.

4. Mootra Taila Bindu Pareeksha- Prepare a standard operating procedure and follow the steps to perform examination.

- Lab requirements to perform the procedure and oil specifications.
- Record key observations of Taila Bindu (oil droplet) e.g. Bindu Aakar (shapes and size), Prasarana (spread), Disha (direction), Tale vicaharna (sinking of oil droplet) correlate them with the classical references and clinical conditions in patients.
- Correlation oil droplet presentations with pathologies and Dosha involvement mentioned in classics.
- Interpret the results with the help of manuscript references and generate a comprehensive report of Mootra Taila Bindu Pareeksha.
- Report findings for various clinical conditions in prepared format.

5. Set Quality control measures in stool examination.

Perform in as many samples in laboratory posting and get acquainted with the procedures. Keep record of at least 2 practicals.

Practical Training 20.2 : Urine examination procedures (routine and rapid diagnostics), lab requirements and reporting of urine analysis.

A teacher will demonstrate urine examination methods. Students have to observe and perform the activities.

1. Sample requirements, storage,
2. Physical, chemical, microscopic and rapid examination of urine.
3. Evaluate the findings to generate laboratory report.
4. Clinical significance of the laboratory diagnosis.
5. Perform as many tests in laboratory postings and get acquainted with procedures and reporting.

Student has to keep record of at least 2 practicals.

Practical Training 20.3 : Laboratory methods, quality control and reporting of stool examination as per Ayurveda

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Teacher will demonstrate students abut various lab procedures of stool examination in Ayurveda. Students has to perform them independently.

1. Sample collection for Pureesha Pareeksha (water submersion test))
2. Procedure for Jal Nimmajan Pareeksha.
3. SOP preparation for all the procedures.
4. Parameters selection (E.g. Varna (Colour), Gandha (Odour), Swaroopa (Consistency), Matra (Volume), Samata Niramata (Digested, undigested) etc. to observe, record, interpret and report.
5. Gradations and relevant terminologies to record and report.
6. Clinical correlation with the patient's condition.
7. Component of a standard stool examination report as per Ayurveda requirements.
8. Set Quality control measures in stool examination.

Perform independently Pureesha Pareeksha in as many samples during lab posting and get acquainted wit the procedures and reporting. Student has to keep record of at least

2 practicals.

Practical Training 20.4 : Stool examination procedures (routine and rapid diagnostics), lab requirements and reporting in stool examination

A teacher will demonstrate stool examination methods. Student has to observe and perform the activities.

1. Sample requirements, storage.
2. Physical, chemical, microscopic and rapid examination of stool.
3. Practice microscopy as a 'Gold standard' test in detecting fecal parasites.
4. Evaluate the findings to generate laboratory report.
5. Clinical significance of the laboratory diagnosis.
6. Perform as many tests in laboratory postings and get acquainted with procedures and reporting.

Student has to keep record of at least 2 practicals.

Experiential learning Activity

Experiential-Learning 20.1 : Utility of urine examination as per Ayurveda

1. Encourage students to perform urine examination and Mutra Taila Bindu Pareeksha in different clinical conditions by using prepared SOP.
2. Standardise the SOP from peers, teachers and experts in the field.
3. Evaluate criteria for normal and abnormal parameters.
4. Maintain formats to interpret the observations.
5. Select terminologies to be used to report the observations with the help of manuscripts.
6. Pre and post treatment analysis- Collect data for findings and interpretation of urine samples in same clinical condition in pre and post treatment analysis.
7. Maintain the data systematically.
8. List out the various patterns and correlate them with different disease status.
9. Evaluate the reasons behind your data interpretation.
10. Initiate laboratory supported diagnosis/ prognosis/clinical condition.

Students has to search research publications on laboratory procedures and parameters of Mootra Pareeksha. Share them in peers and use the conclusions for SOP developing and reporting purpose.

Experiential-Learning 20.2 : Clinical correlation, quality assessment and advance technology and researches in urine examination.

1. Administer clinical correlation approach enhance quality assured reporting.
2. Ensure quality assurance protocols for urine examination and take part in quality round with the staff.

3. Figure out comprehensive methods of urine analysis such as microfluidic paper base assays, artificial intelligence, and improved microscopy techniques in urine examination.

4. Understand importance of point of care testing and portable devices in urine examination.

5. AI driven non-invasive disease diagnosis.

6. Signify use of urine examination in detecting sever conditions like cancers, monitoring disease progression.

7. Search on innovations in urine analysis e.g. novel materials and methods AI powered analysis, use of omics technologies (proteomics, metabolomics and rNomics) etc. current innovations in analysis.

Prepare a summary report of your activity on publications on innovations in urine analysis and submit. Teacher will allocate different topics to search online. Read the summary report in peers to share your experience.

Experiential-Learning 20.3 : Interpret urine analysis by applying fundamental principles of Dosha-Dushyadi Vijnana to understand clinical conditions as per Ayurveda.

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1. Students can follow the instruction mentioned in M1U3 experiential session to interpret the results of urine analysis. Students are expected to come up with few basic outcomes form the activity. Interpret at least 2 investigations as per Ayurveda.

Teacher will allot different investigations to students. Student has to submit interpretation report in department. Discuss your analysis in peers. Teacher will monitor the cavity.

Experiential-Learning 20.4 : Utility of stool examination as per Ayurveda

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Encourage students to perform stool examination and Jala Nimajjana Pareeksha in different clinical conditions by using prepared SOP.

1. Standardise the SOP from peers, teachers and experts in the field.

2. Evaluate criteria for normal and abnormal parameters.

3. Maintain formats to interpret the observations.

4. Select terminologies to be used to report the observations with the help of manuscripts.

5. Pre and post treatment analysis- Collect data for findings and interpretation of urine samples in same clinical condition in pre and post treatment analysis.

6. Maintain the data systematically.

7. Evaluate the reasons behind your data interpretation.

8. Initiate laboratory supported diagnosis/ prognosis/clinical condition.

Students has to search research publications on laboratory procedures and parameters of Purresha Pareeksha. Share them in peers and use the conclusions for SOP developing and reporting purpose.

Conduct this activity in at least 10 different clinical conditions, teacher will allocate the conditions as acute or chronic or as per different Srotasas. Teacher can make teams of students and allocate tasks. Keep record of at least 2 procedures with you, monitored and checked by the teacher.

Experiential-Learning 20.5 : Clinical correlation, quality assessment and advance technology and researches in stool analysis.

1. Comply with clinical correlation approach to practice quality assured reporting.

2. Ensure quality assurance protocols for stool examination and take part in quality round with the staff.

3. Figure out comprehensive methods of stool analysis such as Multiplex molecular panel, metabolite analysis, Biomarker tests.

4. Understand functioning and significance of Restriction Fragment Length Polymorphism (RFLP) and DNA sequencing for characterization of parasite detected through PCR.

5. Understand importance of point of care testing and portable devices in stool examination.

6. Understand AI driven non-invasive disease diagnosis e.g. fecal immunochemical test (FIT)

7. Signify use of stool examination in detecting sever conditions like colorectal cancer and other neoplasms, monitoring treatment response in Inflammatory bowel syndrome.

8. Search on innovations in urine analysis e.g. image processing, and metabolomics technologies etc. current innovations in analysis.

Prepare a summary report of your activity on publications on innovations in stool analysis and submit. Teacher will allocate different topics to search online. Read the summary report in peers to share your experience.

Experiential-Learning 20.6 : Interpret stool analysis by applying fundamental principles of Dosha-Dushyadi Vijnana to understand clinical conditions as per Ayurveda.

Follow the instruction mentioned in M1U3 experiential session to interpret the results of stool analysis. Students are expected to come up with few basic outcomes form the activity. Interpret at least 1 investigation as per Ayurveda.

Submit your interpretation report in department. Discuss your analysis in peers. Teacher will monitor the cavity.

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 6C. 1. Theory Based Assessment (25 Marks): This component includes theory questions designed to assess conceptual clarity, integrative thinking, and the ability to apply learned concepts in clinical, diagnostic, or problem-solving contexts. Questions can be framed from any instructional unit, ensuring alignment with the intended learning outcomes. 2. Any practical converted into an assessment format based on skills or demonstration relevant to the module (25 Marks). OR Any experiential learning method such as portfolio work, reflective tasks, or presentations conducted individually or in groups that demonstrate applied understanding (25 Marks). OR	4

Interpret urine or stool examination by applying fundamental principles of Dosha-Dushyadi Vijnana (25 marks): The components of the assessment include general information of the investigation (e.g. function, metabolism etc), clinical and therapeutic significance, clinical symptoms shown due to derangement of the constituents, or any other information which is useful in interpretation of the observations in terms of Dosha, Dushya, Srotasa, Agni etc, justification for the application of applied fundamentals supported by classical references, conclusion of the interpretation.

Semester No : 5

Module 21 : Retasa and Shthivana Pareeksha (Semen and Sputum examination)

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

1. Describe various parameters to be examined in Retasa pareeksha, Sthivana pareeksha and as per Ayurveda.
2. Discuss utility of Retasa, Sthivana pareekhsa in providing insights for prognosis of diseases.
3. Describe methods of semen and sputum examination and its clinical significance in diagnosis.
4. Interpret results of semen and sputum examination to derive possible pathologies in Ayurveda by using basic principles of Ayurveda pathology.

M 21 Unit 1 Retasa Pareeksha 1. Concept of Shuddha Shukra (semen).
2. Analytical parameters of Shuddha Shukra and its examination.
3. Clinical conditions to advise Retasa examination.
4. Laboratory requirements for Retasa (semen) examination.
5. Clinical and therapeutic relevance of Retasa examination.

References: 1,2,3,4

3A	3B	3C	3D	3E	3F	3G
CO1,CO2,CO5	Describe the characteristics, volume, functions, and abnormalities of Shuddha Shukra, and discuss clinical conditions requiring Retasa Pareeksha in a laboratory setup.	1	Lecture	CC	Knows-how	C_L,BL,PER,TUT,L&GD

CO1,CO2,CO5	Describe diseases associated with Shukra Dushti by identifying primary and secondary involvement, clinical features, and pathological implications as described in Ayurveda.	1	Lecture	CC	Knows-how	DIS,BS,LS,L&PPT
CO1,CO2,CO5,CO6,CO7,CO8	Demonstrate sample collection procedures, utilize appropriate instruments, and apply laboratory and manuscript-based parameters to perform Retasa Pareeksha effectively.	2	Practical Training 21.1	PSY-GUD	Shows-how	SDL,DL,JC
CO1,CO2,CO5,CO6,CO7,CO8	Perform sample collection with appropriate instruments, apply and interpret Retasa Pareeksha parameters to generate laboratory reports as per Ayurveda, and review scientific literature for methodological and interpretative insights.	2	Experiential-Learning 21.1	PSY-GUD	Shows-how	LRI,Mnt,DL,JC,PER

M 21 Unit 2 Semen examination1. Brief physiology of Semen formation and composition.

2. Sampling techniques and laboratory requirements of semen examination.

3. Laboratory techniques of semen examination.

4. Interpretation and reporting of physical, chemical and microscopic observation.

5. Quality measures, troubleshooting, and data management.

6. Clinical, therapeutic, forensic medicinal relevance of semen examination.

7. Semen banking.

8. Interpretation of semen examination by incorporating fundamental principles of Roganidana - Vikritivijnana.

References: 1,2,3,4,5,6,23,24,25,26,27,49,50,51,52,53,54,55,56,57,58,59,60,61,62,98,99,100,101

3A	3B	3C	3D	3E	3F	3G
CO5	Illustrate gonadal functions and semen physiology, describe semen sample collection and preservation methods, and identify instruments and equipment required for semen examination.	1	Lecture	CAP	Knows-how	SDL,L&PPT ,L&GD
CO5	Illustrate the diagnostic and pathological utility of semen examination, evaluate its role in clinical andrology, medico-legal and forensic aspects, describe automation technologies in semen analysis, and identify techniques for sperm banking in threatened fertility.	1	Lecture	CAP	Knows-how	BL,L_VC ,SY
CO5	Perform physical, chemical, and microscopic examination of semen, construct laboratory	4	Practical	PSY-	Shows-	D,DL

3A	3B	3C	3D	3E	3F	3G
	findings, and demonstrate semen wash techniques.		Training 21.2	GUD	how	
CO2,CO5,CO6,CO8	Evaluate semen analysis findings to generate a laboratory report, demonstrate process automation, and interpret quality assurance measures.	6	Experiential-Learning 21.2	PSY-ADT	Shows-how	CBL,L_VC,JC,LS
CO1,CO2,CO5,CO6,CO7	Apply fundamental principles of Dosha-Dushyadi Vijnana to the findings of semen examinations to interpret possible pathologies in Ayurveda.	1	Lecture	CAP	Knows-how	JC,CBL,PBL,L&GD,LS
CO1,CO2,CO5,CO6,CO7	Develop SOP for integration of fundamental principles of Dosha-Dushyadi Vijnana to the findings of semen analysis.	2	Practical Training 21.3	PSY-GUD	Shows-how	LS,Mnt,PBL,BS,CBL
CO1,CO2,CO5,CO6,CO7	Interpret findings of semen examination as per Ayurveda and appraise research on Ayurveda methodologies of Retasa examination.	2	Experiential-Learning 21.3	PSY-GUD	Shows-how	PBL,BS,LS,Mnt,PrBL

M 21 Unit 3 Sthivana Pareeksha 1. Clinical conditions relevant in Sthivana Pareeksha.

2. Attributes of abnormal Shthivana in various pathologies.

3. Procedures of Shthivana Pareeksha.

4. Clinical and therapeutic relevance of Sthivana Pareeksha.

5. Interpretation of Shthivana Pareeksha.

References: 1,2,3,4,5

3A	3B	3C	3D	3E	3F	3G
CO1,CO2,CO5,CO7	Analyze clinical conditions, causative factors, pathogenesis, and abnormal characteristics reflected in Shthivana Pareeksha, including alterations due to Pranavaha Srotasa and other pathological conditions.	1	Lecture	CAN	Knows-how	L&GD,SDL,BS
CO1,CO2,CO5,CO7	Describe the parameters of Shthivana Pareeksha from manuscripts, demonstrate its sample collection and laboratory procedure, and analyze its diagnostic and prognostic value in clinical conditions.	1	Lecture	CAP	Knows-how	TUT,DIS,BS

CO1,CO2,CO5,CO6,CO7	Demonstrate the use of instruments, application of parameters, and laboratory procedures for the examination of Shthivana.	4	Practical Training 21.4	PSY-GUD	Shows-how	D,DL,D-BED
CO1,CO2,CO5,CO6,CO7,CO8	Correlate clinical observations, determine the utility of Shthivana Pareeksha in Ayurveda pathology, and interpret findings to generate a laboratory report.	4	Experiential-Learning 21.4	PSY-ADT	Shows-how	LRI,RLE,PAL,JC,CBL

M 21 Unit 4 Sputum examination 1. Brief physiology of sputum formation and composition.
2. Sampling of sputum examination.
3. Laboratory techniques (conventional and automated biological culture systems and molecular diagnosis approaches) of sputum examination.
4. Interpretation and reporting of physical, chemical and microscopic observation.
5. Quality measures related to sputum examination.
6. Clinical and therapeutic relevance of sputum examination.
7. Interpretation of sputum examination by incorporating fundamental principles of Roganidana - Vikritivijnana.

References: 1,2,3,4,5,6,20,24,25,26,27,28,31,32,34,46,49,50,51,52,53,54,55,56,57,58,59,60,61,62,102,103,104,105

3A	3B	3C	3D	3E	3F	3G
CO5	Illustrate the formation and pathological alterations of sputum, describe appropriate sampling and preservation methods, and discuss the instruments required for sputum examination.	1	Lecture	CAN	Knows-how	L&GD,L&PPT
CO5	Explain staining, smear, and culture techniques, evaluate molecular diagnostic approaches, and determine the clinical utility of routine and cytological sputum examination in pathology.	1	Lecture	CAP	Knows-how	DIS,IBL,L&GD,L&PPT
CO5,CO8	Perform staining and smear techniques, apply conventional and automated culture systems, utilize molecular diagnostic approaches, and evaluate the utility of routine and cytological sputum examination in pathology.	6	Practical Training 21.5	PSY-GUD	Shows-how	PER,L_VC,PAL,DL,FV
CO5,CO8	Perform physical, microscopic, and culture-based sputum examinations, interpret and report findings with quality assurance, and evaluate the utility of molecular diagnostic approaches in sputum examination.	9	Experiential-Learning 21.5	PSY-GUD	Shows-how	FV,D,PAL,JC,LRI

CO1,CO2,CO6 ,CO7	Apply the principles of Dosha-Dushyadi Vijnana to sputum examination and interpret the findings to identify possible pathologies in Ayurveda.	1	Lecture	CAP	Knows-how	BL,BS,L &GD,PE R
CO1,CO2,CO6 ,CO7	Develop SOP for integration of fundamental principles of Dosha-Dushyadi Vijnana to the findings of sputum examination.	2	Practical Training 21.6	CE	Shows-how	TPW,PrB L,PBL,LS ,BS
CO1,CO2,CO6 ,CO7	Interpret sputum examination results with the help of fundamental principles of Dosha-Dushyadi Vijnana to understand clinical conditions as per Ayurveda.	3	Experiential-Learning 21. 6	PSY-ADT	Shows-how	JC,LRI,C _L,PBL,C BL

Practical Training Activity

Practical Training 21.1 : Lab parameters of semen examination as per Ayurveda, lab requirements, procedure, SOP

Teacher shall demonstrate the following steps in Retasa specimen sampling.
1. Recognise methods of sample collection procedure, sampling requirements and conditions to collect Retas sample in a laboratory to perform various examinations.
2. Use of various instruments or equipments to be used in Retasa Pareeksha
3. Derive parameters to be observed in a Retasa sample.
4. Explain methods applied to the observation based on the fundamentals of Ayurveda.
Keep record of at least 1 practical.

Practical Training 21.2 : Laboratory procedures of semen examination and semen wash.

A teacher will demonstrate semen sample collection, its examination in the laboratory and reporting. In the demonstration teacher will focus on following points –
1. Patient counselling, importance of careful collection and transportation of the sample, prerequisites for the semen sample collection ad important of timely examination of specimen for the quality and accurate reporting.
2. Various attributes of physical and chemical examinations of semen like fructose test etc.
3. Techniques to identify liquefaction time of semen.
4. Microscopic examination to identify sperm morphology and its abnormalities.
5. Terminologies in abnormal sperm morphology and abnormal sperm count
6. How to report semen analysis.
7. Techniques in semen wash.

8. Techniques in sperm banking and its significance.

Student will observe and demonstrate before the teacher –

1. Explain importance of appropriate sampling of semen.

2. Steps in physical, chemical, microscopic examination of at least 5 semen specimens.

3. Identify manual errors and limitations in semen analysis.

Keep record of at least 2 practicals.

Practical Training 21.3 : SOP development of interpretation of semen analysis as per Ayurveda.

Instructions to teacher: Follow the steps from M1U3 practical session to develop a standard SOP. A teacher will demonstrate at least 1 semen specimen to students. This activity can be performed directly on semen specimen or to a simulated sample or on video clip semen examination.

1. Students will learn to apply methods of Pancha dnyanidriya examination to the specimen. E.g. Varna, Gandha, Sparsha, etc.

2. Students will identify normal characteristics of semen in a collected specimen. E.g. Laj gandha, Ghrut varni etc.

3. Students will learn to identify various pathological appearances in semen specimen as mentioned in Ayurveda manuscripts. E.g. Phenila (Frothy), Tanu (Thin), Ruksha (Dry), Puti (Putrid/ Pyospremia), Vivarna (Discoloration), Ati Picchila (Hyper viscosity) etc.

Practical Training 21.4 : Lab parameters of sputum examination as per Ayurveda, lab requirements, SOP of procedures

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A teacher will demonstrate Shthivana examination to students under which following the given steps-

1. Use of equipments and instruments to perform examination of Shthivana.

2. Apply sampling criteria for the Shthivana specimen collection.

3. Requirments to be followed by of patients for specimen collection.

4. Assessment of the specimen for the examination.

5. Instruct on sample preservation.

6. Construct a standard operating procedure to perform Shthivana examination.

7. Apply parameters to Shthivana examinations as per Ayurveda.

8. Report and interpret the observations.

Students will observe and gather the knowledge to perform Shthivana examination.

At least 5 Shthivana specimens are to be observed by students and noted down the observations. Keep record of at least 2 practicals.

Practical Training 21.5 : Laboratory methods in sputum examination and its reporting.

Teacher will demonstrate-

1. Sampling specifications for various tests to be performed in sputum examination.

2. Staining procedures, bacteriological culture techniques to students.

3. Microscopic smear examinations in sputum specimen and elaborate variations in observations in different clinical conditions.

4. Quality measure to be applied while procuring, handling and reporting sputum specimen.

5. Essentials in reporting of sputum specimen in different techniques.

6. Understand timely reporting and effective communication to render quality patient care.

Keep record of at least 2 practicals.

Practical Training 21.6 : SOP development of interpretation of sputum examination per Ayurveda.

Instructions to teacher: Follow the steps from M1U3 practical session to develop a standard SOP. In addition, students can also take in consideration following points to interpret. This activity can be performed directly on semen specimen or to a simulated sample or on video clip semen examination. A teacher will demonstrate at least 1 sputum specimens to students.

Demonstrate to-

1. Derive assessment methods of Pancha Dnyanidriya (Five sense organs) examination to the specimen. E.g. Varna (Colour), Gandha (Odour) etc.

2. Assess characteristics of sputum in a collected specimen. And compare the observations as mentioned in manuscripts. Fenil (Frothy), Tanu (Thin), Grathit (Thick), Puti (Purulent), Sa-Rakta (with blood), Picchila (Sticky) etc.

3. Assess Dosha attributes in the specimen.

4. Interpret the observations in terms of Ayurveda pathology.

Instructions to student: Follow instructions given by teachers and work with peers to develop the SOP. Apply case studies and try to interpret in terms of Ayurveda pathology.

Student has to summarise the session learning in pears and with teachers.

Experiential learning Activity

Experiential-Learning 21.1 : Lab parameters of semen examination as per Ayurveda, lab requirements, procedure, SOP

For this learning objective, a student shall do observations and examinations on a semen sample collected in laboratory for investigation purpose. Teacher will discuss with the students on below topics-

1. Making out various methods to examine Retasa in a laboratory set up.

2. Logical reasoning behind developing methods and examination parameters.

3. Inferences based on literature from the observed parameters to identify normal or abnormal conditions explained in the literature.

Scientific researches published on various methods and parameters to examine, latest devises developed to examine Retasa in Ayurveda or other medical streams.

Experiential-Learning 21.2 : Laboratory procedures of semen examination and semen wash

In an experiential session of semen assessment student will -

1. Evaluate of findings to generate a laboratory report and how to maintain quality examination in laboratory.

2. Infer laboratory report appropriately by using corresponding terminologies in reporting of semen specimen.

3. Learn about automation in semen assessment e.g.

- AI generated analysis,

- computer -aided semen analysis,

- smart phone based diagnostic assays for point of care semen analysis etc. through self-experience by visiting laboratories where automated semen assessment is performed or through the researches on advancements in semen analysis.

4. Discuss in the group about advantages and disadvantages of manual method and automated semen assessment.

5. Follow timely reporting and effective communication to render quality patient care.

Teacher will acknowledge the researches and summarise the discussions done on above aspects in student's group.

Experiential-Learning 21.3 : Interpretation of semen examination as per fundamental principles of Ayurveda

Students can follow the instruction mentioned in M1U3 experiential session to interpret the results semen analysis. Students are expected to come up with few basic outcomes form the activity. Interpret at least 1 investigation as per Ayurveda.

1. Analyse microscopic observations of semen examination and interpret them according to various conditions like Shukra Kashya, Shukra Vriddhi, Shukra Dushti and Anya Dhatu Sampslishta Shukra (Contaminated with tissues other than reproductive system,), Avasadi (Sedimenting) etc.

2. Identify advantages or limitations in analysis with the help of Ayurveda principles.

3. Discuss in peers about researches publications on comparative study of Semen examination and its interpretation as per Ayurveda.

Discuss your findings of Semen specimen and its clinical correlation in patents and submit interpretation activity report. Teacher will allot different investigations to students. Submit at least 1 interpretation per student.

Experiential-Learning 21.4 : Clinical correlation, clinical and therapeutic relevance and interpretation of observations of sputum examination as per Ayurveda.

A student will reflect on the activity and draw out conclusions. For the useful outcome student will take help of Ayurveda manuscripts and published research articles Shthivana Pareeksha.

Develop SOP of the Shthivana Pareeksha to be carried out in laboratory set up.

1. Find out quality measures to be taken care of while sampling, handling and examination of Shthivana specimen.

2. Correlate the observations clinically in patients.

3. Discuss the parameters observed and provide the fundamental principles used to derive the observations.

4. Find out the relation between underlying pathology and observations.

5. Assess Dosha and Dushya involvement by using analysis of observations.

6. Prepare a systematic report of observation and explain the parameters included in the reporting and how they help a physician to decide on the underlying clinical condition in a patient.

7. Assess utility of Shthivana Pareeksha in the derivation of diagnosis, Dosha involvement and possible status of the conditions in the patients.

8. Explain the various attributes of the Doshas contributing in the alterations of the Shthivana appearance.

9. Discuss on whether inferences can be taken out regarding stating particular type of dieses condition asper Ayurveda.

Student will examine at least 5 specimens and derive the finding. Student has to provide a reflective summary of the learning and present it in peers and with the teachers.

Experiential-Learning 21.5 : Laboratory methods in sputum examination and its reporting.

Students are instructed to practice procedures in sputum examination.

1. Student has to practice at least 10 sputum specimens to perform following procedures -
2. Preparing quality smears and performing quality staining procedures
3. Microscopic examination and identification of biological cells and organisms.
4. Identification of cultural growths
5. Scientific terms to be used in reporting of sputum examination and generate quality reporting.
6. Observe cytological examination and identify variations in presentations.
7. Identify the advantages and advantages of advanced techniques/ methods in sputum examination.
8. Learn quality measure and infection control measures in sputum handling.
9. Follow timely reporting and effective communication to render quality patient care.

Experiential-Learning 21.6 : Interpret sputum examination as per fundamental principles of Ayurveda by administering SOP.

Students can follow the instruction mentioned in M1U3 experiential session to interpret the results of sputum examination. Students are expected to come up with few basic outcomes form the activity. In addition to the SOP given students can also take in consideration the following points. Interpret at least 2 specimens as per Ayurveda.

- Analyse the observation to rule out Sama or Nirama Shithivana or Anya Dhatu Sanshrushta Sthivana (Contaminated with other tissues) etc.
- Evaluate the observations of sputum examination to correlate pathological conditions in Ayurveda.
- Identify advantages or limitations in interpretation.
- Discuss in peers about published researches or literature on interpretation of sputum examination as per Ayurveda.

Teacher will allot different investigations to students. Submit at least1 interpretation per student.

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 6C. 1. Theory Based Assessment (25 Marks): This component includes theory questions designed to assess conceptual clarity, integrative thinking, and the ability to apply learned concepts in clinical, diagnostic, or problem-solving contexts. Questions can be framed from any instructional unit, ensuring alignment with the intended learning outcomes. 2. Any practical converted into an assessment format based on skills or demonstration relevant to the module (25 Marks). OR Any experiential learning method such as portfolio work, reflective tasks, or presentations conducted individually or in groups that demonstrate applied understanding (25 Marks) OR Interpret any semen or sputum by applying fundamental principles of Dosha-Dushyadi Vijnana (25 marks): The components of the assessment include general information of the investigation (e.g. function, metabolism etc), clinical and therapeutic significance, clinical symptoms shown due to derangement of the constituents, or any other information which is useful in interpretation of the observations in terms of Dosha, Dushya, Srotasa, Agni etc, justification for the application of applied fundamentals supported by classical references, conclusion of the interpretation.	4

Module 22 : Uti Vikriti Vijnana (Histopathology), Kosha - Vikriti Vijnana (Cytology) and Dhatupratiraksha Vijnana (Immunohistochemistry)

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

1. Discuss preliminary knowledge of normal and pathological morphology of cells and tissue.
2. Appraise foundational knowledge of immunohistochemistry and its use in clinical conditions.
3. Discuss various techniques in histopathology, cytology and immunohistochemistry testing in specimen processing.
4. Analyze role of AI assistance and digitalization in HPE, IHC and Cytology.
5. Interpret the results of histopathology, cytology and immunohistochemistry findings to identify possible pathologies in contemporary medical science and in Ayurveda.

M 22 Unit 1 Uti Vikriti Vijnana (Histopathology (HPE) - Basic knowledge, techniques and laboratory requirements 1. Introduction to tissue morphology.

2. Sample procure, grossing, fixing, staining and mounting and preservation procedures.

3. Clinical conditions to suggest HPE testing.

4. Laboratory requirements for HPE set up.

5. Quality measures, troubleshooting, and data management.

6. Automation in HPE.

References:
11,13,15,17,24,25,26,27,33,34,38,41,42,46,49,50,51,52,53,54,55,56,57,58,59,60,61,62,106,107,108,109,110,111,112,113,130,131,132,133,134,135,136,137,138,139,140

3A	3B	3C	3D	3E	3F	3G
CO5	Describe normal and pathological morphology of tissues of various and organs systems, clinical, specimen process and preservation.	2	Lecture	CC	Knows-how	TUT,L&PPT ,TBL, L_VC
CO5	Describe histopathological specimen processing, including gross examination, fixation, and staining techniques, and explain the laboratory setup, instruments, equipment, and automation required for histopathology.	1	Lecture	CC	Knows-how	L_VC,TBL,L&GD
CO5	Demonstrate the use of histopathology equipment and perform specimen selection, processing, staining, and microscopic examination in histopathological evaluation.	3	Practical Training 22.1	PSY-GUD	Shows-how	W,L_VC, FV,DL
CO5,CO8	Demonstrate key factors in importance of patient identification, specimen identification and clinical history taking to generate histopathology report	3	Practical Training 22.2	PSY-GUD	Shows-how	CBL,LRI, TBL,FV, L_VC
CO5,CO8	Examine and interpret tissue morphology microscopically, analyze peer-review reporting methods, illustrate the role of AI and digitalization in histopathology, and correlate histopathological findings with clinical conditions.	8	Experiential-Learning 22.1	PSY-GUD	Shows-how	L_VC,JC, LRI,W,TBL

M 22 Unit 2 Kosha - Vikriti Vijnana (Cytology) - Basic knowledge, techniques and laboratory requirements1. Introduction to different cell morphology.

2. Sample procure, grossing, fixing, staining and mounting and preservation procedures.

3. Clinical conditions to suggest cytology testing.

4. Laboratory requirements for cytology examinations.

5. Quality measures, troubleshooting, and data management.
6. Automation in cytology.

References: 13,14,16,17,18,49,50,51,52,53,54,55,57,58,62,110,111,114,115,116,117,118,119,120,121,122,123,124,130,131,132,133,134,135,136,137,138,139,140

3A	3B	3C	3D	3E	3F	3G
CO5	Describe cellular morphology and clinical indications, differentiate types of cytopathology, and illustrate essential laboratory setup with automation in cytology.	2	Lecture	CC	Knows-how	SY,TBL, TUT,W, Mnt
CO5	Describe sample collection, smear preparation and fixation of specimen, routine and special stains and staining techniques and reporting microscopic interpretations in cytological examinations.	1	Lecture	CC	Knows-how	PER,W,T BL,TUT, L_VC
CO5	Demonstrate specimen processing, staining techniques, microscopic examination, and apply instrument use with quality assessment and troubleshooting in cytology.	3	Practical Training 22.3	PSY-GUD	Shows-how	Mnt,L_V C,W,SY, DL
CO5,CO8	Demonstrate key factors to observe, interpret and report in cytology	3	Practical Training 22.4	PSY-GUD	Shows-how	CBL,L_V C,W,LRI, PBL
CO5,CO8	Interpret tissue morphology microscopically, evaluate peer-review reporting, explain the role of AI and digitalization in cytopathology, and correlate cytological findings with clinical conditions.	8	Experiential-Learning 22.2	PSY-GUD	Shows-how	TUT,W,L RI,TBL,P ER

  M 22 Unit 3 Dhatupratiraksha Vijnana (Immunohistochemistry (IHC) - Basic knowledge, techniques and laboratory requirements1. Introduction to immunohistochemistry.
2. Clinical conditions to suggest IHC testing.
3. Sample procure, various staining and localization of biomarkers.
4. Laboratory techniques and staining protocols and identification of IHC markers.
5. Laboratory requirements and automation in IHC set up.
6. Quality measures, troubleshooting, and data management.

7. Clinical and therapeutic relevance of IHC.

References: 49,50,51,52,53,54,55,57,58,60,61,62,124,125,126,127,128,129

3A	3B	3C	3D	3E	3F	3G
CO5	Describe antigen–antibody reactions, immune responses, and biomarker localization; outline sample preparation, labeling, and counterstaining in immunohistochemistry; and identify clinical conditions requiring IHC investigation.	1	Lecture	CC	Knows-how	L_VC,SY,TBL,TUT,W
CO5	Discuss the applications, strengths, and limitations of immunohistochemistry; evaluate its importance in medicine and research; identify key histochemical markers and antibodies; and describe the principles and functioning of machines used in immunohistochemistry.	1	Lecture	CAP	Knows-how	PER,L_VC,DL,FV,Mnt
CO5	Demonstrate staining procedures with counterstains, perform the stepwise immunohistochemistry protocol, apply diagnostic IHC markers, and follow quality assessment protocols in IHC.	3	Practical Training 22.5	PSY-GUD	Shows-how	W,FV,L_VC,PER,TUT
CO5	Demonstrate interpretation of IHC findings by analyzing staining patterns and intensity under the microscope and applying scoring systems for quantification.	3	Practical Training 22.6	PSY-GUD	Shows-how	PER,Mnt,DL,TUT,FV
CO5,CO8	Analyze the diagnostic and therapeutic benefits of immunohistochemistry, compare it with HPE in disease diagnosis, illustrate automation and machine learning applications, and relate clinical conditions with IHC interpretation.	8	Experiential-Learning 22.3	PSY-GUD	Shows-how	TPW,Mnt,JC,FV,DL

M 22 Unit 4 Interpretation in Histopathology, Cytology and Immunohistochemistry 1. Interpret the observations.
2. Interpretation of HPE, IHC and cytology examination by incorporating fundamental principles of Roganidana - Vikritivijnana.

References:
1,2,3,4,5,49,50,51,52,53,54,55,56,57,58,59,60,61,62,106,107,108,109,110,111,112,113,114,115,116,117,118,119,120,121,122,123,124,125,126,127,128,129,131,132,133,134,135,137,138,139,140

3A	3B	3C	3D	3E	3F	3G
CO1,CO2,CO5,CO6,CO7	Analyze fundamental principles of Dosha-Dushyadi Vijnana to findings of histopathological, cytological and immunohistochemistry interpretations.	2	Lecture	CAN	Knows-how	TBL,L&GD,BS,Mnt,TPW
CO1,CO2,CO5,CO6,CO7	Develop SOP for integration of fundamental principles of Dosha-Dushyadi Vijnana to the findings histopathology, cytology and immunohistochemistry investigations	2	Practical Training 22.7	PSY-ADT	Shows-how	LRI,IBL,JC,PBL,PrBL
CO1,CO2,CO5,CO6,CO7	Interpret histopathology, cytology and immunohistochemistry results with the help of fundamental principles of Dosha-Dushyadi Vijnana to understand clinical conditions as per Ayurveda.	2	Experiential-Learning 22.4	PSY-ADT	Shows-how	PrBL,W,LS,PBL,CBL

Practical Training Activity

Practical Training 22.1 : Sample grossing, specimen preparation, staining, microscopic examination for HPE and SOP for machine operations in HPE

Institute is desired to schedule visits or postings in laboratories where histopathology examinations are performed and reported. Student will observe and perform under supervision various techniques in tissue processing and reporting methods.
1. Operations of various machines and understand their maintenance, use SOP for handling the machines.
2. Observe or perform under supervision specimen grossing of various tissues acquired from organs.
3. Understand guidelines for retention periods, storage and disposal of HPE specimens.
4. Observe and perform staining processes, decide various stains as per the type of specimen, proper fixation (tissue to fixative ratio), specimen size adequate labelling.
5. Observe and perform under supervision grossing, selection of tissue for examination, how to describe a specimen size, shape and appearance.
6. Illustrate tissue morphologies by using slides or digital images for both normal and abnormal tissues highlighting key differences.
7. Conduct quality analysis in HPE, trouble shooting.

Practical Training 22.2 : Interpretation and reporting in histopathology.

Student has to interpret the observations with the help of the mentor. Follow the steps in histopathology interpretation to facilitate quality reporting under the guidance of the teacher / mentor-
1. Essential elements -Identification of key in interpretation such as patient identification, specimen identification and clinical history taking to generate histopathology report.

2. Histopathological Descriptions such as tumour description, histological features and evaluation of margins and their reporting.

3. Diagnostic conclusion- Provide a clear and definitive diagnosis, differential diagnosis, if applicable and recommending additional testing, if necessary.

4. Reporting standards- Use of standardised terminologies, grading systems, synaptic reporting and language used in reporting.

5. Timelines and communication- Follow timely reporting and effective communication to render quality patient care.

6. Understand components of a quality and standardised histopathology report.

Keep record of at least 3 different slides in histopathology.

Practical Training 22.3 : Sampling, specimen preparation, staining and lab requirements and in cytology.

Institute is desired to schedule visits or postings in laboratories where cytology examinations are performed and reported. Student will observe and perform under supervision of teacher/ Mentor various techniques and reporting methods in cytology.

1. Explore samples requirement for various types of cytopathology such as gynaecological and non-gynaecological cytology, exfoliative, interventional and imprint cytopathology.

2. Process of gross examination of aspirated fluid appearance.

3. Slide preparation and preservation, staining techniques, proper fixation (tissue to fixative ratio) in cytological methods.

4. Describe essential laboratory setup instruments and equipments and automation in cytological.

Conduct quality analysis and trouble shooting in cytology.

Practical Training 22.4 : Interpretation and reporting in cytology

Under the guidance of the teacher / mentor learn quality reporting by using key factors to interpret cytology slides-

1. Patient identification, specimen identification and clinical history taking

2. Specimen information such as specimen type, adequacy.

3. Cytology description such as cellular features, nuclear features and cytoplasmic background, cellular arrangements, information about cells in the background such as inflammatory cells, debris etc, identify specific features such as cellularity, mitotic activity and intracellular inclusions preservation

4. Diagnostic conclusions differential diagnosis, if applicable and recommending additional testing, if necessary.

5. Use of standardised terminologies and language used in reporting.

6. Timelines and communication- Follow timely reporting and effective communication to render quality patient care.

Keep record of at least 3 different slides in cytology.

Practical Training 22.5 : Sampling, general IHC protocols, methods of antibody labelling and quality assessment protocols.

Institute is desired to schedule visits or postings in laboratories where immunohistochemistry examinations are performed and reported. Student will observe under the guidance of teacher / mentor various techniques and reporting methods in immunohistochemistry as follow-

1. Stains and counterstains, their section basis and steps of staining techniques.
2. Stepwise general immunohistochemistry protocol such as tissue preparation, pre-treatment, staining, use of controls.
3. Microscope specifications to observe and identify tissue.
4. Microscopic examination of tissue focusing on areas where biomarkers are present.
5. Selection of specific antibodies are used to detect antigens (biomarkers) in tissue sections, allowing for visualisation of abnormal cells.
6. Binding of primary antibody specifically to the antigen (biomarkers).
Students will discuss in peer group and present it to the teachers. Department can also arrange guest lectures or workshop on the topic.

Practical Training 22.6 : Stain patterns, scoring systems, case histories to interpret immunohistochemistry.

Student has to interpret the observations with the help of the teacher/ mentor. Follow the steps in IHC interpretation-
1. Display staining patterns with the help of localization and distribution of stain.
2. Identify spread of staining intensity in the slide.
3. Utilize scoring systems to quantify the staining intensity
4. Interpret the results with the context of patient's case history.
5. Follow established laboratory criteria for determining positive and negative findings.
6. Correlate clinically the interpretation of the specimens
Students can take help of mentors or IHC specialist to understand the various microscopic presentations. They can also use various digital images, simulating IHC tools/ softwares, use of lecture videos on interpretation of IHC.

Practical Training 22.7 : SOP development of interpretation of histopathological, cytological and immunohistochemistry per Ayurveda.

Instructions to teacher: Teacher will guide students to prepare SOP. Follow the steps from M1U3 practical session to develop a standard SOP. In addition to this, specifications of cell and tissue morphology can be taken in consideration for the interpretation.
1. Identify the pathological process and types of pathogenesis that can be interpreted from tissue studi
2. Students can take a detail case history and try corelate the various abnormalities that can affect the morphology of the tissue or cell.
3. Evaluating various Dosha Gunas (attributes of Dosha) affecting tissue or cellular changes with the help of histopathology or cytology interpretations.
4. Student will try to interpret the role of Dhatwagni (Tissue metabolism) in carrying out various changes in tissues and cells.
5. Review laboratory results and identify patterns that correspond with Ayurveda concepts.
Student instructions: Follow instructions given by teachers and work with peers to develop the SOP. Apply case studies and try to interpret the HPE, IHC and Cytology investigation in terms of Ayurveda pathology.

Experiential learning Activity

Experiential-Learning 22.1 : Microscopy, quality assessment, clinical correlation, AI and digital pathology in HPE examination.

Student has to work on following activities-

1. Practice reporting histopathology examination by using standard terminologies and grading system.

2. Illustrate challenges in sample processing, preservation and reporting of histopathology examinations.

3. Significance of 'Peer review' as quality assessment before reporting and running quality assurance programmes.

4. Follow timely reporting and effective communication to render quality patient care.

5. Identify key automated systems e.g. automated tissue processor, microtomes, automated staining machines, digital pathology scanner, sectioning devices.

6. Acquire knowledge about digital pathology and image analysis e.g. image acquisition, image analysis, AI and machine learning applications, AI assisted cancer diagnosis, tumour classification, prognostication, AI generated algorithms.

7. Acquire knowledge about whole slide images (WSI), static digital image, real time dynamic digital microscopy, synthetic cytology Images in digital

8. Participate in regular reviews of specimen storage and disposal of HPE

9. Discuss regulatory compliance for standardization, quality assurance, waste disposal for HPE specimens.

Submit 1 summary of report of learning and researches per student. Teacher will allocate different topics to the students. Read the report in peers.

Experiential-Learning 22.2 : Microscopy, quality assessment, clinical correlation, AI assistance and digital pathology in cytopathology.

1. Practice microscopic interpretation of specimens and use of standard terminologies in cytopathology reporting.

2. Identify the difference in preservation methods for routine and special cases.

3. Identify morphologic changes in the cells and figure out cells acquiring different or varied staining.

4. Significance of 'Peer review' as quality assessment before reporting and running quality assurance programmes.

5. Follow timely reporting and effective communication to render quality patient care.

6. Explain AI significance, AI assisted investigation and importance of digitalization in providing improved diagnosis accuracy such as tele cytology, digital pathology.

7. Explain automated systems for slide preparation, image analysis and cell detection and classification and automation benefits in cytology.

8. Illustrate benefits, challenges and limitations in AI assistance and digitalization in cytology.

9. Correlate interpretations of cytology with clinical presentations in patients.

10. Acquire advancements in reporting (digital pathology tools, whole slide imaging (WSI) and computer assisted diagnosis (CAD), virtual microscopy, cytology websites, cytology atlas etc.), interpretation in cytology by discussing various researches on cytology.

11. Discuss regulatory compliance for standardization, quality assurance, waste disposal for HPE specimens.

11. Follow timely reporting and effective communication to render quality patient care.

Submit 1 summary of report of learning and researches per student. Teacher will allocate different topics to the students. Read the report in peers.

Experiential-Learning 22.3 : Benefits, limitations, challenges, automation and simulation in IHC.

Student has to critically examine following factors and share in peers-

1. Application of counterstains in IHC and their importance in visualising biomarkers.

2. List out various diagnostic markers. (E.g. HER2, p53) and their clinical significance.

3. Observe abnormalities such as overexpression or absence of markers that may indicate cancer or other pathological conditions.

4. Use of various terminologies used for describing various variations in immunohistochemistry.

5. Running Quality assurance programmes.

6. Understand significance of 'Peer review' (prospective and retrospective) as quality assessment and running quality assurance programmes in IHC.

7. Study clinical case histories advised for immunohistochemistry examination. Students can use simulated patients, standardised patients or virtual reality aids to study cases.

8. Diagnostic relevance of immunohistochemistry in identifying abnormal cells in diseases.

9. Follow timely reporting and effective communication to render quality patient care.

10. Correlate interpretations of cytology with clinical presentations in patients.

11. Perform pre and post treatment analysis in cases by using IHC report.

12. Case studies monitoring changes in biomarker expression in response to therapy.

13. Utility of IHC in the development of Therapeutic antibodies.

14. Machine learning algorithms for simulating immunohistochemistry

15. Update knowledge by reading and sharing published researches on IHC interpretation.

Submit 1 summary of report of learning and researches per student. Teacher will allocate different topics to the students. Read the report in peers.

Experiential-Learning 22.4 : Interpret histopathology, cytology and immunohistochemistry as per Ayurveda by administering SOP.

Teachers and students can follow the instruction mentioned in M1U3 experiential session to interpret the results of histopathology, cytology and immunohistochemistry.

Students are expected to come up with few basic outcomes form the activity.

Submit at least 1 interpretation (1 HPE/ 1 Cytology/ 1 IHC) checked by teacher as per Ayurveda. Teacher will allot different slides to students.

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 6C.	4

1. Theory Based Assessment (25 Marks): This component includes theory questions designed to assess conceptual clarity, integrative thinking, and the ability to apply learned concepts in clinical, diagnostic, or problem-solving contexts. Questions can be framed from any instructional unit, ensuring alignment with the intended learning outcomes.

2. Any practical converted into an assessment format based on skills or demonstration relevant to the module (25 Marks).

OR

Any experiential learning method such as portfolio work, reflective tasks, or presentations conducted individually or in groups that demonstrate applied understanding (25 Marks).

OR

Interpret any investigation from HPE, IHC or cytology by applying fundamental principles of Dosha-Dushyadi Vijnana (25 marks): The components of the assessment include general information of the investigation (e.g. function, metabolism etc), clinical and therapeutic significance, clinical symptoms shown due to derangement of the constituents, or any other information which is useful in interpretation of the observations in terms of Dosha, Dushya, Srotasa, Agni etc, justification for the application of applied fundamentals supported by classical references, conclusion of the interpretation.

Semester No : 6

Module 23 : Deh Drava (Cavity fluid examination and Gastric analysis)

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

1. Discuss principles and procedures of body fluids and gastric analysis.
2. Perform body fluid examinations and gastric analysis with their quality control and standardization methods.
3. Organise and justify body fluid tests and gastric analysis to arrive at a clinical diagnosis.
4. Interpret the results of tests to support clinical decision making.
5. Interpret body fluid tests according to fundamental principles of Dosha - Dushyadi Vijnana.

M 23 Unit 1 Introduction to cavity fluids and gastric fluid1. Foundational knowledge of (formation, composition and function) of cavity fluids and gastric fluid.

References: 25,26,27,46,49,50,51,52,53,54,55,56,57,58,59,60,61,62

3A	3B	3C	3D	3E	3F	3G
CO5	Illustrate the formation and pathological alterations of cavity fluids and analyze the composition and function of gastric fluid.	2	Lecture	CAN	Knows-how	PER,BL,PL,SDL,L&GD

M 23 Unit 2 Fluid examination procedure and interpretation1. Sampling, safety precautions and clinical indications.
2. Laboratory techniques of cavity fluid and gastric fluid examination.
3. Interpretation and reporting.
4. Quality measures, troubleshooting, and data management.
5. Clinical and therapeutic relevance of the cavity fluid examination and gastric fluid analysis.

References: 49,51,52,53,54,55,56,57,58,59,60,61,62,141,142,143,144,145,146,147,148

3A	3B	3C	3D	3E	3F	3G
CO5	Describe sampling methods, laboratory procedures, and clinical significance of serological tests, and explain the clinical indications of cavity and body fluid examinations.	2	Lecture	CAP	Knows-how	L&GD,TUT,SDL,L&PPT,PL
CO5	Demonstrate sample collection, storage, patient positioning, collection sites, and safety precautions for cavity fluid and gastric analysis, and display their clinical indications.	10	Practical Training 23.1	PSY-GUD	Shows-how	PER,L_VC,FV,DL
CO5	Demonstrate sample collection, sample storage and safety precautions while handling various fluids	10	Experiential-Learning 23.1	PSY-ADT	Shows-how	DL,FV,D,Mnt,W
CO5	Describe the physical, chemical, and microscopic examination of cavity fluids and explain laboratory methods of gastric analysis.	2	Lecture	CAP	Knows-how	TUT,SY,FV,DL,L_VC
CO5	Demonstrate examination of cavity fluids and gastric analysis.	4	Practical	PSY-	Shows-	DL,TUT,

				Training 23.2	GUD	how	W
CO5	Observe and reflect standard operating procedures (SOP) for cavity fluids and gastric analysis	10	Experiential-Learning 23.2	CAP	Shows-how	JC,L_VC,W,TBL,FV
CO5	Analyze variations in findings of cavity fluid, gastric analysis.	2	Lecture	CAN	Knows-how	LRI,PL,BL,Mnt,SY
CO5	Demonstrate identification of variations in physical, chemical and microscopic examinations in cavity fluids and gastric fluid.	3	Practical Training 23.3	PSY-GUD	Shows-how	DL,TBL,L_VC,TUT,FV
CO5	Compare cavity fluid and gastric fluid examination findings to apply in decision making.	2	Experiential-Learning 23.3	CAN	Knows-how	L_VC,LS,W,FV

M 23 Unit 3 Interpretation of cavity fluid and Gastric analysis using fundamental principles of Roganidana - Vikritivijnana1. Cavity fluid and gastric analysis by incorporating fundamental principles of Roganidana - Vikritivijnana.

References: 1,2,3,4,5,24,25,26,31,32,46,49,50,51,52,53,54,55,56,57,58,59,60,61,62

3A	3B	3C	3D	3E	3F	3G
CO1,CO2,CO5,CO6,CO7	Analyze fundamental principles of Dosha - Dushyadi Vijnana to findings of cavity fluid examination	2	Lecture	CAN	Knows-how	TBL,LS,PBL,BS,PL
CO1,CO2,CO5,CO6,CO7	Design SOP for integration of fundamental principles of Dosha-Dushyadi Vijnana to the findings of cavity fluid investigations.	3	Practical Training 23.4	CS	Shows-how	PrBL,C_L,LRI,JC,IBL
CO1,CO2,CO5,CO6,CO7	Interpret cavity fluid observation and gastric analysis with the help of fundamental principles of Dosha-Dushyadi Vijnana to understand clinical conditions as per Ayurveda.	4	Experiential-Learning 23.4	CE	Shows-how	JC,Mnt,LS,BS,TBL

M 23 Unit 4 DELETDELET THIS UNIT NO 4

References:

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

Practical Training Activity

Practical Training 23.1 : Sampling techniques and clinical indications cavity fluids gastric analysis.

Teacher instructions: During lab postings teacher will demonstrate the procedures of sampling and explain clinical indications to students.
Student instructions: Follow teacher and volunteer in following activities-
1. Patient preparation for sampling of cavity fluids and gastric fluid, selection of containers, preserving agents if needed, patient position and equipmnets and instruments in sampling.
2. Identify clinical indications of examinations of body fluids and cavity fluids.
3. Identify errors in sampling and volume to be collected, storage of samples and how to identify a quality sample.
4. Display the correct anatomical site selection based on the type of fluid. (E.g. Lumbar puncture for CSF, pleural, pericardial, peritoneal fluid)
5. Display safety measures and implication of unsterile procedures.
6. Display the risks associated with delayed analysis of cavity fluids and gastric fluid.

Practical Training 23.2 : Lab procedures of cavity fluids and gastric analysis

In lab posting, student has to volunteer in the procedures and participate in following activities-
1. Observe various parameters in physical, chemical microscopic examination of cavity fluids and gastric fluid.
2. Observe normal and pathological variations in samples.
3. Demonstrate to assess for turbidity or any presence of clot.
4. Demonstrate use of test strips or chemical reagents for determining various tests.

Practical Training 23.3 : Identify variations in findings of cavity fluid, gastric analysis to arrive at a diagnosis.

Institute is desired to schedule a visit or postings of the students to the laboratory providing fluid examination facility.
1. Find out variations in physical, chemical and microscopic variations in various fluid examination.
2. Perform under supervision where ever possible at least 2 procedures of fluid examinations.

3. Observe parameters to be interpreted and how to generate a report of fluid examination.

4. Observe how various parameters are suggestive of underlying pathogenesis or understanding causative factor or possible changes in the organ or the system.

Submit record of 2 practical.

Practical Training 23.4 : SOP development of interpretation of cavity fluid and gastric analysis per Ayurveda.

Instructions to teacher: Follow the steps from M1U3 practical session to develop a standard SOP. This activity can be performed directly on fluid specimens, or to a simulated sample or on educational video clip of cavity fluid examination. Teacher will demonstrate at least 1 fluid specimen to students.

Student instructions: Follow instructions given by teachers and work with peers to develop the SOP. Apply case studies and try to interpret the cavity fluid and gastric analysis investigation in terms of Ayurveda pathology.

Experiential learning Activity

Experiential-Learning 23.1 : Sampling techniques and clinical indications cavity fluids gastric analysis.

1. Find out the indications of fluid examination in cases.
2. Reflect on patient preparation and discuss the SOP in peers.
3. Observe at least 2 procedures of sample collection, its labelling and storage method of different cavity fluids.
3. Reflect on safety precautions and implications of failure to follow safety precautions in peers.
4. Reflect on procedures and find out importance of safety measures in patients and in the performer.

Experiential-Learning 23.2 : Lab procedures of cavity fluids and gastric analysis.

Volunteer in at least 2 procedures of sample collection and processing of cavity fluid examination. For gastric analysis student has to acquire essential knowledge about procedure any standard source.
1. Discuss on various methods to perform fluid examination.
2. Find out limitations of the methods if any.
3. Discuss automation in fluid examination.

Experiential-Learning 23.3 : Clinical implications -Variations in cavity and gastric analysis.

Observe or perform under supervision at least 2 procedures of fluid examination in a laboratory set up. Students can use real case studies, use simulation models or virtual reality to mimic real life scenarios and discussions in peers on published researches on the cases showing of differential diagnosis.
1. A student shall get acquainted with correlation of findings with clinical pathologies.
2. Students has to study cases and corelate the finding clinically.

3. Perform in at least 2 cases pre and post treatment analysis.

Experiential-Learning 23.4 : Interpret fluid examination and gastric analysis as per Ayurveda by administering SOP.

Students can follow the instruction mentioned in M1U3 experiential session to interpret the results of histopathology, cytology and immunohistochemistry. Students are expected to come up with few basic outcomes form the activity. Interpret at least 1 investigation as per Ayurveda.
Submit at least 1 interpretation of any cavity fluid. Teacher will allot different investigations to students

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 6C. 1. Theory Based Assessment (25 Marks): This component includes theory questions designed to assess conceptual clarity, integrative thinking, and the ability to apply learned concepts in clinical, diagnostic, or problem-solving contexts. Questions can be framed from any instructional unit, ensuring alignment with the intended learning outcomes. 2. Any practical converted into an assessment format based on skills or demonstration relevant to the module (25 Marks). OR Any experiential learning method such as portfolio work, reflective tasks, or presentations conducted individually or in groups that demonstrate applied understanding (25 Marks). OR Interpret any investigation from cavity fluid examination by applying fundamental principles of Dosha-Dushyadi Vijnana (25 marks): The components of the assessment include general information of the investigation (e.g. function, metabolism etc), clinical and therapeutic significance, clinical symptoms shown due to derangement of the constituents, or any other information which is useful in interpretation of the observations in terms of Dosha, Dushya, Srotasa, Agni etc, justification for the application of applied fundamentals supported by classical references, conclusion of the interpretation.	4

Module 24 : Jaiva Anu Vijnana (Molecular biology), Koshika Vansh Vikrii Vijanana (Cytogenetics), Dehadhatu Vikriti Sanketaka (Cancer and Tumour markers), Drut Pareekshan Paddhati (Point of care testing (POCT)

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

1. Describe fundamental knowledge in Molecular biology such as molecular composition, Chromosome, DNA, RNA, transcription and translation process, gene expression, DNA repair and mutation etc.

2. Discuss the concept of molecular pathology and its assessment techniques and their types.

3. Describe use of various equipments and instruments in molecular pathology, their maintenance and quality measures.

4. Interpret the results of molecular biology testing and understand their clinical significance in diagnosing and monitoring various clinical conditions in contemporary medical science.

5. Explain importance of cytogenetics and its usefulness in laboratory diagnosis.

6. Identify utility of cancer markers in diagnosis and monitoring various cancers and interpret the test to understand pathological conditions in Ayurveda.

M 24 Unit 1 Jaiva Anu Vijnana (Molecular biology)1. Fundamentals of Molecular biology.

2. Concept of Molecular pathology and its assessment techniques.

3. Molecular biology lab set up.

4. Quality measures, troubleshooting and data management.

5. Interpretation of observations.

6. Clinical and therapeutic relevance of molecular biology investigations.

References: 49,50,51,52,53,54,55,56,57,58,59,60,61,62,149,150,151,152,153,154,155,156

3A	3B	3C	3D	3E	3F	3G
CO5	Describe the term molecular biology, discuss molecular structure and composition including chromosome structure and protein synthesis, and explain the control of transcription and translation.	1	Lecture	CC	Knows-how	L&GD,P ER,DIS,L _VC
CO5	Describe gene regulation and the operon concept, and discuss DNA repair and mutation.	1	Lecture	CC	Knows-how	SY,PER, L&GD,L _VC,TUT
CO5	Illustrate molecular pathology by describing laboratory setup, instruments, and quality measures, and demonstrate techniques such as nucleic acid analysis, hybridization assays, and the diagnostic application of DNA probes.	1	Lecture	CAP	Knows-how	DIS,L&G D,PER,L_ VC

CO5	Perform specimen collection, preparation, and extraction, and operate instruments and equipment in a molecular biology laboratory.	3	Practical Training 24.1	PSY-GUD	Shows-how	FV,L_VC ,DL,TUT
CO5,CO8	Demonstrate molecular laboratory setup requirements and perform appropriate specimen collection methods for molecular testing.	6	Experiential-Learning 24.1	PSY-GUD	Shows-how	DL,FV,L _VC
CO5	Discuss PCR and its variants, including FISH and automated PCR, and evaluate their diagnostic significance in disease identification.	1	Lecture	CAP	Knows-how	PER,L_V C,L&PPT ,L&GD
CO5	Demonstrate PCR techniques and its various types, automation in PCR.	3	Practical Training 24.2	PSY-GUD	Shows-how	Mnt,FV,L RI,DL
CO5	Interpret PCR test reports and evaluate the advantages, disadvantages, and limitations of the PCR technique.	3	Practical Training 24.3	PSY-GUD	Shows-how	W,FV,Mn t,LRI,BS
CO5	Illustrate hybridization assay techniques and its significance in diagnostic pathology.	1	Lecture	CAP	Knows-how	IBL,TUT, DL,Mnt,F V
CO5	Demonstrate hybridization array techniques and its significance in diagnostic pathology.	3	Practical Training 24.4	PSY-GUD	Shows-how	L_VC,TU T,W,FV, Mnt
CO5	Interpret hybridization array reports and appraise research advancements and procedural improvements in its diagnostic applications.	6	Experiential-Learning 24.2	PSY-ADT	Knows-how	DL,Mnt,S DL,C_L, TUT

M 24 Unit 2 Koshika Vansh Vikriti Vijanana (Cytogenetics) 1. Fundamentals of DNA, RNA, transcription and translation.

2. Cytogenetics lab set up.

3. Preparation of Cell cultures.

4. Prenatal screening and laboratory testing of inborn error of metabolism, FISH technique, forensic science, gender determination and parentage testing.

5. Quality measures, troubleshooting and data management.

6. Interpretation of observations.

7. Clinical and therapeutic relevance of cytogenetics investigations.

References: 32,33,34,36,38,39,42,46,49,50,51,52,53,54,55,57,58,59,60,61,62

3A	3B	3C	3D	3E	3F	3G
CO5	Discuss the importance of cytogenetics in genetic disorders, describe chromosomal structure and related terminologies, and identify instruments required for cytogenetic testing.	1	Lecture	CAN	Knows-how	TUT,IBL, L_VC,C_ L,SDL
CO5	Describe cell culture methods, explain the role of prenatal screening and laboratory diagnosis in inborn errors of metabolism, and classify types of clinical cytogenetic testing (CCT).	1	Lecture	CAN	Knows-how	LS,IBL,B L,L_VC, C_L
CO5	Explain methods of prenatal chromosomal diagnosis, demonstrate cytogenetic techniques using specimens such as amniotic fluid and blood cells, and apply cytogenetic diagnostics in forensic science, gender determination, and parentage testing.	1	Lecture	CAN	Knows-how	SY,L_VC ,Mnt,W,I BL
CO5,CO7,CO8	Demonstrate cytogenetic laboratory techniques, including FISH for cancer genetics, forensic science, gender determination, and parentage testing, and prepare accurate laboratory reports.	4	Practical Training 24.5	PSY-GUD	Shows-how	FV,BL,W ,L_VC,S Y
CO5	Evaluate hybridization array reports, case studies, and diagnostic applications in forensic medicine, parentage, and gender determination, while assessing the limitations, advantages, and disadvantages of cytogenetic studies.	3	Experiential-Learning 24. 3	CAN	Shows-how	DL,BL,M nt,W,FV
CO1,CO2,CO5 ,CO6,CO7	Integrate Dosha-Dushyadi Vijnana with cytogenetic and epigenetic concepts to interpret their relevance in Ayurveda pathology and clinical applications.	3	Experiential-Learning 24. 4	PSY-GUD	Shows-how	Mnt,IBL, LS,C_L,B S

M 24 Unit 3 Dehadhatu Vikriti Sanketaka (Cancer and Tumour markers))1. Pathology of cancer, carcinogens and oncogenes, tumour markers.

2. Sampling specifications, principles of laboratory procedures and interpretation of tumour marker testing.

3. Quality measures, troubleshooting and data management.

4. Clinical and therapeutic relevance of cancer and tumour markers.

5. Benefits and limitations in testing.

6. Emerging tumour markers and technologies in testing.

7. Interpretation of cancer and tumour markers by incorporating fundamental principles of Roganidana - Vikritivijnana.

References: 13,16,17,18,19,32,36,37,38,39,40,41,42,46,49,50,51,52,53,54,55,56,57,58,59,60,61,62

3A	3B	3C	3D	3E	3F	3G
CO5	Discuss the pathophysiology of cancer by describing carcinogens, oncogenes, and oncogenic viruses; explain sample collection techniques and clinical conditions for advising cancer markers; describe the principles, procedures, and common tumour markers; and analyze the role of tumour markers in cancer diagnosis and management.	1	Lecture	CC	Knows-how	L&PPT , W,L_VC, JC,L&GD
CO5	Perform and interpret tumour marker assays while ensuring quality control and standardization in cancer diagnostics.	2	Practical Training 24.6	PSY-GUD	Shows-how	SY,TUT, W,FV,PER
CO5	Evaluate the benefits, limitations, and emerging technologies in tumour marker testing.	4	Experiential-Learning 24.5	PSY-ADT	Shows-how	PER,DL, L_VC,L&GD,FV
CO5,CO6,CO7	Interpret cancer and tumour markers results with the help of fundamental principles of Dosha-Dushyadi Vijnana to understand clinical conditions as per Ayurveda.	4	Experiential-Learning 24.6	PSY-ADT	Shows-how	C_L,TPW ,BS,BL, W

M 24 Unit 4 Drut Pareekshan Paddhati (Point of care testing (POCT) 1. Concept of POCT.

2. POCT devices and technologies.

3. Quality control and quality assurance, potential errors and troubleshooting strategies.

4. POCT regulations and guidelines.

5. POCT impact on patient care.

6. Comparison with traditional laboratory testing.

References: 157,158,159,160,161,162,163,165,166,167,168,169,170,171,172,173

3A	3B	3C	3D	3E	3F	3G
CO5	Describe the principles of point-of-care testing, discuss its devices and technologies, analyze the importance of quality control and assurance, and illustrate the applicable regulations and guidelines.	1	Lecture	CC	Knows-how	SY,L&GD,SDL
CO5,CO8	Demonstrate the role of point-of-care testing in disease diagnosis and management, compare it with traditional laboratory testing, and rectify potential errors through appropriate troubleshooting strategies.	2	Practical Training 24.7	PSY-GUD	Shows-how	C_L,RLE,DL,JC,FV

Practical Training Activity

Practical Training 24.1 : Laboratory requirements, sampling and lab procedures in molecular biology and its reporting.

Visit / lab posting to a molecular biology laboratory. Teacher will describe students about variety of instruments and equipments used in a molecular biology laboratory set up.
1. Sampling techniques of blood, sputum, saliva, tissue and other samples like fecal sample, swabs, fluids etc.
2. Sample preparation technique e.g. dissolving samples, extracting analytes, separating interfering components etc.
3. Demonstrate sample extraction techniques. like Such as liquid–liquid extraction (LLE), solid–liquid extraction (SLE) or Soxhlet extraction, solid–phase extraction (SPE), pressurized liquid extraction (PLE), microwave-assisted extraction (MAE), and many others.
4. Microscopes, micropipettes, aerobic incubator, spectrophotometer, and other tools, agar mediums, glassware, electrophoresis system, magnetic stirrer, vortex mixer etc.
5. Observe their use, maintenance, functionality and quality measures conducted.
6. Various techniques to identify molecular pathology. E.g. Nucleic acid analysis, hybridization assay and DNA probes.
Keep record of at least 2 practicals.

Practical Training 24.2 : PCR techniques and automation in PCR

Visit / lab posting to a molecular biology laboratory. Teacher will describe students about various PCR techniques.
1.PCR techniques performed, explore various types of PCR machines and their functions.
2. Viral load monitoring methods
3. Reporting system of PCR.

Practical Training 24.3 : PCR techniques and automation in PCR

1. Explore reporting of PCR test for HIV, M TB by TB TMA method.

2. Explore advantages and disadvantages and limitations of PCR techniques.

3. Explore automation in PCR technique.

Students can use can audio visual aids available on online platform for the exploratory study of the topic. Students shall present in peers about the gathered information.

Teacher will monitor the session.

Practical Training 24.4 : Hybridization assay techniques in Molecular biology.

Visit / lab posting to a molecular biology laboratory. Teacher will describe students about hybridization array techniques

1. Observe the hybridization assay techniques performed in the laboratory.

2. Observe types of hybridization assays e.g. Liquid phase hybridization, Solid-Support hybridization,

3. Observe dot blot hybridization, Southern-Northern hybridization, Southern and Northern Blot techniques

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Practical Training 24.5 : Laboratory techniques, machine handling and performing special tests like FISH technique in forensic science, gender determination and parentage testing and their reporting criteria.

Visit / lab posting to a laboratory with cytogenetic testing section. Teacher will demonstrate students about –

1. Working of cytogenetic section, specimen specifications, collection and preservation.

2. Information, functionality, maintenance and quality measures of equipments and instruments in cytogenetic testing.

3. Techniques to perform cell cultures, tissue cultures, culture media, harvesting procedures, chromosomal staining, karyotype analysis, Fluorescence in situ Hybridization (FISH) technique.

4. Understand patterns of inheritance and factors to check in reporting of testing.

Student will summarise the learning in peers. Teacher will monitor the session.

Practical Training 24.6 : Lab procedures in cancer marker testing, quality control and standardization measures.

Student has to attain skills in-

1. Various techniques of tumour marker testing,

2. Familiarise with the equipment and instruments in testing.

3. Identify different types of tumour markers

4. Interpreting tumour marker results.

5. Quality control and standardization of techniques in tumour marker testing.

Student has to prepare a report on learning of the session about various techniques in testing of tumour markers, types of tumour markers, ways to interpret the tested marker results and quality and standardisation measures to be taken in the testing.

Practical Training 24.7 : POCT set up, its significance, importance of quality assessment and troubleshooting management in POCT.

Student has to learn and explore the various aspect of POCT. Student shall value in learning following points –
1. Significance of POCT e.g. glucose test, rapid strep test, home pregnancy test in diagnosis and management.
2. Consider role of turnaround time in management.
3. Benefits in emergency medicine.
4. Critically think on role of POCT in real world scenarios in patient care.
5. Correlation of the test results with clinical presentation in patients.
6. Compare benefits of POCT and traditional laboratory testing.
7. Rectify potential errors and troubleshooting and evaluate importance of quality control and standardization in POCT.

Experiential learning Activity

Experiential-Learning 24.1 : Laboratory requirements, sampling and lab procedures in molecular biology and its reporting.

Students have to prepare summary report of visit / lab posting to Molecular laboratory. The summary report should include.
1. Sampling methods and samples required to perform tests.
2. Sample preparation techniques observed during visit.
3. Equipments and instruments required to set a standard molecular pathology laboratory.
4. Maintenance and quality control measures planned in the laboratory for the equipments and instruments.
5. Various techniques performed in laboratory to study molecular genetics.
6. In addition to the visit, student have to report other samples used in lab, their collection and preparation techniques which are not observed in the laboratory. Students can search on the recommended online platforms through literature, audio visual presentation available online or read refence books in library and wright the report.

Experiential-Learning 24.2 : Reporting of hybridization assay techniques in Molecular biology.

1. Explore reporting of various techniques of hybridization array.
2. Search scientific publications on Hybridization array, advancements in techniques.
Students can use can audio visual aids available on online platform for the exploratory study of the topic. Students shall present in peers about the gathered information.
Teacher will monitor the session.

Experiential-Learning 24.3 : Reporting of hybridization arrays with respect in various scenarios, limitations, advantages and disadvantages of hybridization arrays with study of recent researches.

1. Student will observe laboratory reporting of a cytogenetic testing.
2. Learn in deep about various terminologies used in analysis, reporting in cytogenetic testing.
3. Learn about sample collection techniques and limitations in sampling.
4. Brain storm the case studies related to forensic medicine. Parentage detection and gender detection.
5. Explore researches on newer techniques.
Students will summarise the learning and present in peers and with the teachers.

Experiential-Learning 24.4 : Interpretation of cytogenetics as per fundamental principles of Ayurveda

1. Student will brain storm on application of cytogenetic testing to the various Bija Duhsti Janya Vyadhi (Genetic and hereditary diseases) mentioned in Ayurveda.
2. Learn interrelation between epigenetics and its relation with cytogenetic studies.
3. Students will share their thoughts on influence of various aetiological factors mentioned in various disease in Ayurveda. The studies can be done in light of role of epigenetics and its diagnosis through cytogenetic testing.
Students can take help of online published researches to explore the information and share it in the peers.
Teacher will monitor the activity and the brain storming session

Experiential-Learning 24.5 : Knowledge of newer cancer and tumour markers and emerging techniques through publication search.

1. Student has to depict limitations in testing, identification and interpreting the markers.
2. Understand specificity and sensitivity issues in testing. False positive and false negative occurrence in testing.
3. Understand the prognostic values of tumour marker testing and context -dependent interpretation of tumour marker testing.
4. Understand use of markers testing in conjunction with other diagnostic tests and usefulness in treatment monitoring trends
Students can learn this by exploring various researches or literature published online, data available with various organizations or by earning various case studies of cancer diagnosis and treatment monitoring scenarios in inpatient or outpatient departments.

Experiential-Learning 24.6 : Interpretation of cancer and tumour markers as per fundamental principles of Ayurveda.

1. Evaluate at least 5 case histories to interpret the marker testing results as per principles of Dosha-Dushyadi Vijnana.
2. Discuss in peers about published researches or literature on interpretation of cancer and tumour markers and interpretation in terms of Ayurveda pathologies.
3. Interpret test markers and correlation with possible aetiological factors in patient to develop raised markers, monitoring treatments and the health history follow with the laboratory monitoring of the marker levels.
Teacher will provide different slide to students. Submit atleast1 interpretation per student

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 6C. 1. Theory Based Assessment (25 Marks): This component includes theory questions designed to assess conceptual clarity, integrative thinking, and the ability to apply learned concepts in clinical, diagnostic, or problem-solving contexts. Questions can be framed from any instructional unit, ensuring alignment with the intended learning outcomes. 2. Any practical converted into an assessment format based on skills or demonstration relevant to the module (25 Marks). OR Any experiential learning method such as portfolio work, reflective tasks, or presentations conducted individually or in groups that demonstrate applied understanding (25 Marks). OR Interpret any investigation from molecular biology, cytogenetics or tumour marker by applying fundamental principles of Dosha-Dushyadi Vijnana (25 marks): The components of the assessment include general information of the investigation (e.g. function, metabolism etc), clinical and therapeutic significance, clinical symptoms shown due to derangement of the constituents, or any other information which is useful in interpretation of the observations in terms of Dosha, Dushya, Srotasa, Agni etc, justification for the application of applied fundamentals supported by classical references, conclusion of the interpretation.	4

Paper No : 4 Vikriti Pareeksha II (Microbiology and Imaging

Semester No : 3

Module 25 : Fundamentals of Chhaya Evam Vikiran Vijnana

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

1.Describe the gross and cross-sectional Radio anatomy of various Anga, Shadanga, and relevant radiological interpretation.
2.Interpret the radiological findings with applied aspects of Ayurveda concepts and fundamentals for comprehensive understanding and reporting.
3.Demonstrate an effective approach to patient care in radiology, including performing pre-examination assessments, preparing patients appropriately, communicating findings with clarity and empathy, and utilizing standardized templates for structured radiology reporting.
4.Identify the main radiographic densities (air, fat, water, bone, soft tissues, etc) and interpret them in light of Ayurveda principles, integrating fundamental concepts of Ayurveda, giving an Ayurveda diagnostic perspective.

M 25 Unit 1 Fundamentals of Chhaya Evam Vikiran Vijanana. 1. Vikiran Rachana Sharir – Study of gross and cross-sectional radioanatomy of various Anga and Shadanga.
2. Shakha (Urdwa/Adho) – Radiological anatomy of upper and lower limbs.
3. Greeva and Prushata – Radiological anatomy of neck and back.
4. Antaradhi regions – Radiological anatomy of thorax (Urah/Vaksha), abdomen (Udarah), and pelvis (Sronih).
5. Shiro-Greeva – Radiological anatomy of head and neck region.
6. Interpretation and patient care – Interpretation of radiological findings using Ayurveda concepts, application in structured reporting, and approach to patient care in radiology.

References: 174,175,176,178,179,180,181,182,183,184,185,186,187,188,189,190,191,192,193,194

3A	3B	3C	3D	3E	3F	3G
CO1,CO2	Analyze and interpret the gross and cross-sectional anatomical features of Anga,	4	Lecture	CAP	Knows-	C_L,L_V

	Shadanga, and related regions, and describe the applied aspects of Rachana Sharir, Kriya Sharir, and Roganidana in relation to radiology of Koshtha Evam Ashaya Sharira, Asthi, Sandhi, Peshi, Sira, Dhamani, Srotas, Twacha, Kala, Uttam Angiya Sharir, and other Avayava.				how	C,L&PPT ,L&GD
CO1,CO2	Examine and outline the gross Radiological anatomy of Shadangas and integrate this knowledge in the context of Diagnostic radiology.	3	Practical Training 25.1	PSY-GUD	Shows-how	D-M,PSN ,DSN,X-Ray
CO1,CO2	Examine and outline the Cross-sectional anatomy of Shadanga and integrate this knowledge in the context of Diagnostic radiology.	3	Practical Training 25.2	PSY-GUD	Does	D,CBL,P AL,BS,G BL
CO1,CO2,CO3 ,CO4,CO5	Differentiate and interpret the gross and cross-sectional anatomy of the Shadanga using digital 3D visualization tools and diagnostic imaging modalities (X-ray, CT, MRI); Evaluate anatomical correlation in a diagnostic context; and effectively present their interpretations through structured case reports.	6	Experiential-Learning 25.1	PSY-GUD	Shows-how	X-Ray,DI S,SIM,D, TBL
CO4,CO5,CO8	Demonstrate a structured approach to patient interaction in the radiology unit, including pre-examination, patient preparation, and communication of findings.	2	Practical Training 25.3	PSY-GUD	Shows-how	RLE,TBL ,RP,PL,C _L
CO1,CO2,CO5	Demonstrate the use of standardized templates for structured reporting across various imaging techniques.	2	Practical Training 25.4	PSY-GUD	Shows-how	PAL,BS, Mnt,PL
CO1,CO2	Describe radiographic densities and its Ayurveda interpretation using fundamental principles and concepts of Ayurveda.	1	Lecture	CAN	Knows-how	CBL,JC,T BL,IBL,D IS
CO1,CO2,CO3	Interpret main radiographic densities (air, fat, soft tissue, bone, etc) and formulate its Ayurveda interpretation using fundamental principles and concepts of Ayurveda.	3	Experiential-Learning 25.2	CE	Shows-how	X-Ray,DI S,PL,C_L ,TBL
CO4,CO5,CO8	Implement approach to patient - Pre examination, patient preparation, identify X-ray	4	Experiential-	PSY-	Shows-how	EDU,D,P

| | findings and interpret with fundamental principles and concepts of Ayurveda, communication of findings to patients. | | Learning 25.3 | GUD | how | L,C_L,D-BED |

Practical Training Activity

Practical Training 25.1 : Shadangas: Gross anatomy.

Teacher instruction:

- Collect gross radiological images (X-ray, CT, and MRI) representing each of the six Shadanga regions, displaying both normal anatomical views across standard planes.
- Demonstrate the identification of gross anatomical structures in each region using labeled images, anatomical models, and corresponding radiological visuals, highlighting key landmarks relevant to both radiology and Ayurveda understanding.
- Interpret the anatomical structures as per Ayurveda Shadanga and Rachana concepts ex Greeva adhyasthi (Extra Cervical rib), Sandhi (joints), Asthi, Tarunasthi Snayu and Kandara (bone, cartilage, tendons and ligaments)etc.
- Provide students with 5 gross anatomical radiological images and suggest reference materials for hands-on practice.

Student instruction

- Observe and identify major structures (e.g. muscles, bones, heart chambers).
- Correlate the images (xray, CT or MRI) with the gross anatomical structures they observed in the reference book.
- Discuss in groups and with the teacher if unsure.

Practical Training 25.2 : Shadangas: Cross-sectional anatomy.

Teacher instruction:

- Collect cross-sectional images (CT and MRI) for each of the Shadanga, including both normal and abnormal cases in axial, coronal, and sagittal views.
- Demonstrate the distinction between CT and MRI modalities and sequences, identify anatomical structures, recognize abnormalities, and interpret the corresponding

Ayurveda Shadanga (body parts).

- Explain how these images relate to Ayurveda diagnostics.
- Assign students with 5 cross-sectional CT/ MRI images (Normal) and provide reference materials such as "Imaging Atlas of Human Anatomy" for hands-on practice.

Student instruction:

- Identify key structures in cross-sectional images. (ex: Identify the following structures in this axial CT scan of the Kukshi (abdomen): Koshtanga (liver, aorta, and spleen)
- Correlate the images (e.g. CT or MRI) with the cross-sectional anatomy they observed in the reference book.
- Label important anatomical structures.

Practical Training 25.3 : Approach to the patient in the radiology unit.

Teacher instructions:
Demonstrate an Approach to the patient in the radiology unit

- Pre-requisites- clinical history taking of the patient coming to the radiology unit Assess the Indication for the Imaging Study, determine if there are any contraindications to the imaging study, and Verify Patient Information. Explain the exam's purpose, procedure, and potential risks in simple, patient-friendly language.
- Perform patient Preparation for specific diagnostic imaging (X-ray, USG, CT, MRI & contrast)
- Post-procedural - Explain the Results in Layman's Terms and Follow-Up Plan

Student instructions:

- Perform an Approach to the patient in the radiology unit for one patient.

Practical Training 25.4 : Structured radiology reporting.

Teacher instruction:

- Present standardized templates for structured reporting across four key imaging modalities: X-ray, CT, MRI, and USG.
- Demonstrate structured reporting examples for each modality, highlighting Key components of a structured report (clinical indication, technique, findings, impression), Modality-specific terminology and structure and Common errors and how to avoid them.
- Assign each student four anonymized radiology cases (one of X-ray, CT, MRI, and USG), including clinical history and imaging findings.

Student instruction:

- Apply the structured reporting format demonstrated by the teacher.
- Use a checklist to ensure completeness and consistency of each report.
- Engage in peer review by exchanging reports with classmates and providing constructive feedback.
- Participate in a guided group discussion with the teacher to clarify doubts, reinforce modality-specific Ayurveda terminologies. (ex-Sandhimukta - Avakshipta, Atikshipta, Tiryakshipta (dislocation). Vishlishta (subluxation), etc.

Experiential learning Activity

Experiential-Learning 25.1 : Gross anatomy, cross-sectional anatomy of the Shadanga.

Case-Based Learning:

- Students will work through 5 clinical cases, each involving different imaging modalities (X-rays, CTs, MRIs), and review the indicated images.
- Utilize digital tools/ Atlas to visualize anatomy in 3D/2D and correlate it with cross-sectional images.
- Evaluate specific case examples of X-ray, CT, and MRI scans, comparing normal anatomy to abnormal cases.
- Discuss how cross-sectional imaging differs from gross anatomy in terms of 3D visualization and diagnostic utility.

- Create a case report and present their findings in class.

Experiential-Learning 25.2 : Main radiographic densities and their Ayurveda interpretation.

Radiology posting:
Step 1: Collect various radiographic images (X-rays, CTs, MRIs) showcasing different densities.
Step 2: Ensure the images represent normal findings.
Step 3: Review the fundamental concepts of Ayurveda, specifically.
Step 4: Interpret radiographic presentations and correlate with Ayurveda concepts (Ex- Asthi, Mamsa, Peshi, Snayu, Kandara, Tarun Asthi etc).
Step 5: Compile your findings into a structured report and discuss them in class.
Teacher's Role: The teacher will guide and encourage students to consider the integrated approach to diagnosis and summarize the main points.

Experiential-Learning 25.3 : Approach to the patient.

Radiology posting:
Instruction
Step 1: Perform clinical history taking of patients coming to the radiology unit
Step 2: Assess the Indication for the Imaging Study,
Step 3: Determine if there are any contraindications to the imaging study.
Step 4: Verify Patient Information,
Step 5: Explain the purpose, procedure, and potential risks associated with the imaging in simple, patient-friendly language.
Step 6: Perform patient Preparation for specific diagnostic imaging (X-ray, USG, CT, MRI & contrast)
Step 7: Explain the Results in Layman's Terms and Follow-Up Plan.
Teacher's Role: The teacher shall discuss, summarize, and conclude the session.

Modular Assessment

Assessment method	Hour
Instructions - Conduct a structured modular assessment. The assessment will be for 25 marks. Keep a structured marking pattern. Use different assessment methods in each module for the semester. Keep a record of the structured pattern used for assessment. Calculate the Modular grade point as per Table 6C. Theory Based Assessment – 25 Marks. This component includes theory questions designed to assess conceptual clarity, integrative thinking, and the ability	2

to apply learned contexts. Questions can be framed from any instructional unit, ensuring alignment with the intended learning outcomes.

Or

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

Or

Any experiential as portfolio/ reflections/ presentations, can be taken as an assessment. (25 Marks)

Method/Tools (Select one or two based on skills needed to be assessed)

1. Skill-based Assessment in stations
2. OSCE
3. Demonstration

Module 26 : Chhaya Evam Vikiran Vijnana–1 (Radiography & Ultrasonography)

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

1. Demonstrate knowledge of radiological physics by explaining the principles of X-ray and ultrasound generation, image acquisition, equipment components, radiation safety, and dosimetry relevant to X-ray and ultrasonography diagnostic practice.
2. Analyze and compare various imaging modalities, including conventional and digital radiography, fluoroscopy, DEXA, Doppler and elastography ultrasound, and their image processing systems.
3. Interpret radiological (X-ray and ultrasonographic) images of Anga, Shadanga (Shakha (Urdwa/Adho), Greeva and Prushata, Antaradhi:- Urah/ Vaksha, Antaradhi:- Udarah & Sronih, Shiro-Greeva), identify normal and pathological findings, and interpret these with Ayurveda terminologies applying fundamental concepts and diagnostic principles.
4. Apply advanced ultrasonography imaging techniques such as doppler, elastography, and ultrasound-guided interventions (e.g., biopsy, aspiration), and evaluate their clinical applications in detecting Koshtanga Vikriti and vascular conditions.
5. Integrate Ayurveda diagnostic frameworks with modern radiological interpretation to provide sensitive and holistic diagnostic care.

M 26 Unit 1 Vikiran Vijnana Siddhant, Yantra Evam Vidhi: Radiography 1. X-ray: Radiophysics, Equipment, Imaging Systems and Image Processing Techniques.
2. Core principles, imaging Systems & Image Processing techniques in fluoroscopy, mammography and DEXA Scan.

3. Radiographic Rachana (anatomy) of the Shadanga (Shakha (Urdwa/ Adho), Greeva and Prushta, Antaradhi:- Urah/ Vaksha, Antaradhi:- Udarah and Sronih, Shiro-Greeva), its Vikiriti Vinischaya (pathological recognition).
4. Contrast Media – Contrast agent, mechanism of action, dose schedule, route of administration, adverse reactions, and their management.
5. Interpretation of radiographic findings/ densities with Ayurveda principles and concepts, and reporting the results through an integrated approach.

References: 195,196,197,198,199,200,201,202,203,204,205,206,207,208,209,210,211,212,213,214,215

3A	3B	3C	3D	3E	3F	3G
CO1	Discuss the application of principles of radiophysics: - X-ray, types & properties, electromagnetic radiation, radiation physics, in the context of diagnostic imaging.	1	Lecture	CC	Knows-how	L&PPT , L_VC,JC, L&GD,L
CO1	Discuss the process of X-ray generation, including the production of X-rays and factors affecting the intensity and quality of X-ray beams.	1	Lecture	CC	Knows-how	L_VC,L& PPT ,L,L&GD
CO1	Analyze the interactions of X-ray particles and photons with matter, including coherent scattering, the photoelectric effect, Compton scattering, and pair production, evaluate their relative importance, and understand attenuation, attenuation coefficients, and factors affecting attenuation with applications in diagnostic radiology.	1	Lecture	CAN	Knows-how	L&GD,L, L_VC,L& PPT ,LS
CO1	Discuss the components of conventional radiography systems, describe the process of image formation, and analyze the factors influencing image quality.	1	Lecture	CAN	Knows-how	D,L_VC, L&PPT ,L,L&GD
CO1	Discuss the components of digital radiography systems, explain the process of image production, and analyze factors affecting image quality in digital radiography.	1	Lecture	CC	Knows-how	L_VC,L& PPT ,D,BS,BL
CO1,CO2	Demonstrate X-ray instrumentation, functioning of imaging systems, and image processing techniques used in conventional and digital radiography.	2	Practical Training 26.1	PSY-GUD	Shows-how	PER,PL, DIS,D-M,C_L
CO1,CO2	Describe the application of general principle, imaging system, and image processing	1	Lecture	CC	Knows-	PAL,ML,

	techniques in fluoroscopy and its integration to assist diagnostic evaluation in Ayurveda				how	L&PPT ,L_VC,L
CO1,CO2	Describe the application of general principles, imaging systems, and image processing techniques related to mammography, with an emphasis on their integration and application in Ayurveda diagnostics	1	Lecture	CAN	Knows-how	DIS,BS,L ,L_VC,B L
CO1,CO2	Describe the application of the general principles, imaging system, and image processing techniques in DEXA scan, its application in enhancing diagnostic accuracy in Ayurveda diagnostics.	1	Lecture	CC	Knows-how	L_VC,DI S,L&PPT ,BL,BS
CO1,CO2	Demonstrate imaging system and image processing techniques for fluoroscopy, mammography, DEXA scan with an emphasis on their integration and application in Ayurveda diagnostics.	2	Practical Training 26.2	PSY-GUD	Shows-how	ML,PER, C_L,D,F V
CO1,CO2	Describe the types, properties, mechanisms, dosage, routes, adverse reactions with management of contrast media, and explain contrast-enhanced radiographic procedures (Barium studies, HSG, angiography, etc.) with their application in imaging of Shadanga and Koshtangas (GIT, hepato-biliary tract, pancreas, cardiovascular, and genito-urinary systems).	1	Lecture	CAP	Knows-how	L,BS,BL, L&GD,L _VC
CO1,CO2	Identify key X-ray terminologies from the classical texts to enhance interpretative understanding." and interpret X-ray presentations with Ayurveda terminologies/ conditions.	1	Lecture	CE	Knows-how	DIS,L&G D,BS,CB L,PAL
CO1,CO2,CO3 ,CO5	Interpret radiographs of Shakha (Urdhva and Adho), Greeva, and Prushtha by identifying anatomical landmarks, evaluating pathological changes, and formulating structured Ayurveda reports using Ayurveda-based terminologies and principles.	4	Practical Training 26.3	PSY-GUD	Shows-how	C_L,TPW ,PBL,BS, D
CO1,CO2,CO3 ,CO5	Interpret radiographs of Antradhi –Urah/ Vaksha (chest) by identifying anatomical and pathological features, and develop standardized Ayurveda X-ray terminologies and structured reporting formats based on Ayurveda principles and diagnostic concepts.	4	Practical Training 26.4	PSY-GUD	Shows-how	D,W,BS, X-Ray,CD

CO1,CO2,CO3,CO5	Interpret radiographs of Anataradhi–Udara and Sronih (abdomen and pelvis) by identifying anatomical and pathological features, and develop Ayurveda X-ray reporting templates aligned with core Ayurveda principles and diagnostic frameworks.	4	Practical Training 26.5	PSY-GUD	Shows-how	TBL,C_L,X-Ray,D,W
CO1,CO2,CO5	Interpret radiographs of the Sirah (skull, orbit, and sinuses) by identifying anatomical and pathological features, and apply standardized Ayurveda X-ray terminologies with structured reporting formats grounded in Ayurveda diagnostic concepts.	4	Practical Training 26.6	PSY-GUD	Shows-how	CD,D,C_L,SIM,CBL
CO1,CO2,CO3,CO5	Interpret radiographs of the Shakha (Urdhva and Adho), Greeva, and Prushtha (limbs and spine) by integrating radiological anatomy and pathology with Ayurveda principles to generate comprehensive diagnostic reports.	9	Experiential-Learning 26.1	PSY-GUD	Shows-how	D,TPW,X-Ray,DIS,ML
CO1,CO2,CO3,CO5	Interpret thoracic radiographs (Urah/ Vaksha) by integrating radiological anatomy and pathology with Ayurveda principles to produce comprehensive diagnostic reports.	9	Experiential-Learning 26.2	PSY-GUD	Shows-how	BS,PAL,C_L,CD,X-Ray
CO1,CO2,CO3,CO4,CO5	Interpret radiographic images of the Antaradhih (Udara and Sronih—abdomen and pelvis) by integrating radiological anatomy and pathology with Ayurveda principles for comprehensive diagnosis and structured reporting.	3	Experiential-Learning 26.3	CAN	Shows-how	PL,DIS,PAL,X-Ray,Mnt
CO1,CO2,CO3,CO5	Interpret radiographic images of the Sirah (skull, orbit, and sinus) by integrating radiological anatomy, and pathology with Ayurveda principles and concepts for comprehensive diagnosis and reporting.	3	Experiential-Learning 26.4	PSY-GUD	Shows-how	D,IBL,C_L,DIS,BS

M 26 Unit 2 Vikiran Vijnana Siddhant, Yantra Evam Vidhi - Ultrasonography and doppler 1. Ultrasonography Siddhant: Principles of Ultrasound, acquisition techniques, image quality, and components of ultrasonography imaging systems.

2. Doppler ultrasonography Siddhant, Yantra Evam Vidhi: Principles, types, acquisition techniques and components of doppler imaging systems.

3. Ultrasound elastography: Principles, Techniques, and Clinical Applications.

4. Ultrasonography of Shadanga, Its Rachana Evam Vikriti Vinishcahya (anatomical and pathological recognition).

5. Ayurveda interpretation and reporting of ultrasonography findings.

6. Application of USG-guided procedures in Ayurveda diagnosis.

References: 216,217,218,219,220,221,222,223,224

3A	3B	3C	3D	3E	3F	3G
CO1	Describe the principles of ultrasound physics, including wave propagation, velocity, intensity, acoustic impedance, piezoelectric effect, and resolution, and apply them to optimize ultrasound image quality.	1	Lecture	CC	Knows-how	L&PPT , TBL,L,L_VC,DIS
CO1	Discuss the doppler effect and its application in pulsed and continuous wave doppler. Describe spectral waveform analysis and explain the correct method to acquire a doppler waveform.	1	Lecture	CAP	Knows-how	L&PPT , L_VC,L, LS,D
CO1	Discuss the components of ultrasound and doppler imaging systems, and describe the factors influencing optimum image quality and the role of contrast media.	1	Lecture	CC	Knows-how	L,SIM,L_VC,L&PPT ,D
CO1	Discuss the principles, procedures, clinical applications, benefits, and limitations of elastography (fibroscan) and vascular ultrasound, and relate their application to Ayurveda diagnostics.	1	Lecture	CAP	Knows-how	SDL,TBL ,L&GD,BS,L_VC
CO1,CO2,CO3 ,CO5	Demonstrate ultrasound examination of the Antaradhi - Udara and Sronih (abdomen and pelvis), including normal anatomy, variants, and pathologies, and apply Ayurveda principles to their interpretation while demonstrating elastography of Koshtanga for assessing tissue stiffness and elasticity.	4	Practical Training 26.7	PSY-GUD	Shows-how	TBL,PL, C_L,PAL, W
CO1,CO2,CO3 ,CO5	Demonstrate ultrasound examination of the Antaradhi: Urah/ Vaksha by identifying normal anatomy, variants, and pathologies, and interpret findings through Ayurveda principles and concepts.	2	Practical Training 26.8	PSY-GUD	Shows-how	PL,TPW, DIS,ML, TBL
CO1,CO2,CO3 ,CO5	Demonstrate ultrasound examination of Stanah (Breast) by recognizing normal anatomy, variants, and pathologies, and interpret findings with Ayurveda principles and concepts.	2	Practical Training 26.9	PSY-GUD	Shows-how	CD,BS,W ,TBL,DIS
CO1,CO2,CO3 ,CO5	Demonstrate ultrasound examnation of Asrugvaha Sira–Dhamani (vascular system) by recognizing normal anatomy, variants, and pathologies, and interpret findings with Ayurveda principles and concepts.	2	Practical Training 26.10	PSY-GUD	Shows-how	CD,PER, CBL,ML, PAL
CO1,CO2,CO3	Interpret ultrasound findings of the Kukshi/ Antaradhi (Udara and Sronih – abdomen and	6	Experiential-	PSY-	Shows-	PAL,PER

,CO5	pelvis) by examining normal anatomy, variants, and pathologies, analyzing sonographic features, and correlating them with Ayurveda principles to generate structured reports using Ayurveda terminology.		Learning 26.5	GUD	how	,D,CBL,TPW
CO1,CO2,CO3,CO5	Interpret ultrasound findings of the Antaradhih (Urah/ Vaksha – chest, Shakah – limbs, Greeva, and Prushta) by examining normal anatomy, variants, and pathologies, analyzing sonographic features, and correlating them with Ayurveda principles to generate structured reports using Ayurveda terminology.	3	Experiential-Learning 26.6	PSY-GUD	Shows-how	BS,PL,PBL,PAL,IBL
CO1,CO2,CO3,CO5	Interpret ultrasound images of the Stanah (Breast) by evaluating normal anatomy, variants, and pathologies, analyzing sonographic findings, and correlating them with Ayurveda principles to generate structured reports using Ayurveda terminology.	3	Experiential-Learning 26.7	PSY-GUD	Shows-how	PAL,DIS,CBL,PBL,TBL
CO1,CO2,CO3,CO5	Interpret ultrasound images of the Asrugvaha Sira-Dhamani (Vascular system) by evaluating normal anatomy, variants, and pathologies, analyzing sonographic findings, and correlating them with Ayurveda principles to generate structured reports using Ayurveda terminology.	3	Experiential-Learning 26.8	PSY-GUD	Shows-how	SDL,BS,PBL,CBL,CD
CO1	Discuss the principles and steps of ultrasound-guided biopsy, aspiration, and fine needle aspiration, and apply ultrasound guidance for accurate needle placement in planning and assisting procedures.	1	Lecture	CAP	Knows-how	BL,C_L,SIM,L_VC,TUT

Practical Training Activity

Practical Training 26.1 : conventional & digital radiography

Visit/ posting to the radiology department and the teacher shall demonstrate
Step 1: Conventional X-ray: instruments, functioning and image processing
Step 2: Digital X-ray: instruments, functioning and image processing

Practical Training 26.2 : Fluoroscopy, mammography, DEXA scan.

Visit/ posting to radiology department and demonstrate
Dexa Scan -instruments, functioning, and image processing

Mammography: instruments, functioning, and image processing
Fluoroscopy: instruments, functioning, and image processing

Practical Training 26.3 : Radiography of the Shakha, Greeva and Prushta – (limbs and spine)

The teacher will demonstrate

Step 1: Radioanatomy of Shakha, Prushta and Greeva : Display normal radiographs, label the anatomical landmarks visible in X-rays of Shakha, Greeva and Prushata (limbs and spine)

Step 2: Show pathological Xray's of the Ayurveda diseases related to Shakha, Greeva and Prushata (limbs and spine) commonly approaching the Ayurveda hospital (Ex- Xray LS spine in Gridhrasi, Katigraha, Katishula,Trikgrah Xray Knee in janu sandhigata vata, X-ray Hip- Asthi-majjagata Vata, Urusthambh, Bhagna, Sandhimukta etc.

Step 3: Demonstrate the difference between normal and pathological radiographs and identify the pathological presentation.

Step 4: Interpret the Xray findings with concepts and fundamental principles of Ayurveda and explore the Ayurveda terminologies to define the pathologies seen on X-ray Ex:Vaat kantak - recurrent subluxation of ankle, Gulpha Marma Viddha (Sandhinaash) OA ankle.

Step 5: Provide normal X-rays of Shakha, Prushta, and Greeva and ask them to mark and label the X-rays

Step 6: Provide 5 X-rays with pathologies and Ask the students to compare with the normal and label the pathological findings. Identify the probable Ayurveda interpretation.

Practical Training 26.4 : Radiography of the Anatradhi:-Urah/ Vaksha (chest)

The teacher shall demonstrate

Step 1: Display normal chest radiographs (PA view).
Label the anatomical landmarks visible in the X-rays explain how to read a normal chest X-ray

Step 2: Show pathological X-rays of chest diseases commonly seen in Ayurveda hospitals, ex, Shwasa, Kasa, Rajayakshma, Urakshata, etc, Explain how to identify opacities, fluid levels, cardiac enlargement, or loss of lung volume compared to a normal chest X-ray.

Step 3: Demonstrate the difference between normal and pathological radiographs.

Step 4: Interpret the X-ray findings applying concepts and fundamental principles of Ayurveda and explore the Ayurveda terminologies to define the pathologies seen on xray Ex- Urahtoya: plural effusion, Sleshma Avarutta Mukha Srotas): clogged bronchioles (obstructive pathology), Urasatha Pavana: emphysema (Air-filled spaces), Vatapurna Koshta: pneumothorax, lohitapurna koshta: hemothorax, Kaphapurna Koshata etc.

Step 5 : Provide one normal x-ray of the Urah (chest) and ask students to mark and label the X-ray.

Step 6: Provide 5 X-rays with pathologies and ask students to compare with the normal and label the pathological findings and formulate the Ayurveda Interpretation of the X-ray findings.

Practical Training 26.5 : Radiography of Anataradhi:-Udara and Sronih (abdomen and pelvis)

The teacher will demonstrate

Step 1: Display normal radiographs of Udara (abdomen) and Sronih (pelvis). Label the anatomical landmarks visible in the X-rays.

Step 2: Show pathological X-rays of the diseases related to Udara and Sro?i? commonly approaching the Ayurveda hospital: example Gulma, Udararoga, Grahani, Shoola, Ashmari etc (abnormal gas patterns, air-fluid levels, calcifications, contour)

Step 3: Demonstrate the difference between normal and pathological radiographs and identify the pathological presentation.

Step 4: Interpret the X-ray findings with concepts and fundamental principles of Ayurveda and explore the Ayurveda terminologies to define the pathologies seen on X-ray ex: Mutrautsanga – Urethral strictures, Vata ashtila mass in recto vesicular pouch, Vidvighata – vesico enteric fistula, etc

Step 5: Provide normal X-rays of Kukshi and ask them to mark and label the anatomical landmarks clearly.

Step 6: Provide 5 pathological X-rays and ask the students to compare with the normal radiographs. Label the pathological findings. Identify the probable Ayurveda terminologies.

Practical Training 26.6 : Radiography of the Sirah (skull, orbit, sinuses).

The teacher will demonstrate

Step 1: Radioanatomy of Sirah (skull, orbit, and paranasal sinuses):

Display normal radiographs of the skull (AP, lateral, and Water's view).Label the anatomical landmarks visible in X-rays.

Step 2: Show pathological X-rays of Ayurveda-related conditions such as shiro roga,nasaroga, etc.

Step 3: Demonstrate the difference between normal and pathological radiographs and identify the pathological presentation.

Step 4: Interpret the X-ray findings with concepts and fundamental principles of Ayurveda and explore the Ayurveda terminologies to define the pathologies seen on X-ray. (Nasa Arsha (nasal polyp), Nasa Arbuda tumours, Shopha, etc

Step 5: Provide one normal x-ray of Sirah and ask them to mark and label anatomical landmarks: skull bones, orbital margins, sinuses, sella turcica, etc.

Step 6 : Provide 5 pathological X-rays and ask the students to compare with the normal radiographs. Label the pathological findings (e.g., sinus opacification, bone erosion, abnormal shadows). Identify the probable Ayurveda condition/ term.

Practical Training 26.7 : Ultrasound examination of the Antaradhi:- Udara and Sronih (Abdomen & pelvis) & Elastography of Koshtangas

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Teacher Will Demonstrate

Step 1: Demonstrate normal abdominal and pelvic organs on ultrasound in transverse, longitudinal, and oblique planes.

Step 2: Identify and demonstrate key anatomical landmarks on grayscale (B-mode) imaging, such as Yakrt,Pliha,Vrkka, Basti,Garbhashaya, Grahani, Amashaya, Pakwashaya, etc

Step 3: Practical or video demonstrate vascular structures (Asrugvahi Sira Dhamani) using color doppler .

Step 4: Practical or video demonstrate elastography to assess organ stiffness (e.g., liver) and relate with Ayurveda tissue qualities.

Pathological Ultrasound Demonstration

Step 5: Show ultrasound images/ video clipping of clinical conditions related to Antaradhi:- Udara and Sronih (Abdomen & pelvis) frequently encountered in Ayurveda practice, such as Yakrtodara, Pleehodara, Gulma, Ashmari, Mutrakrcchra, Mutraghata, Granthi/ Arbuda, Grahani, Udarashool, Yonivyapada, Vandya etc

Step 6: Explain key differences between normal and pathological images demonstrating changes in echogenicity, size, contour, presence of fluid collections, cystic or solid masses, doppler flow patterns, organ displacement etc.

Step 7: Interpret sonographic (USG) findings by applying fundamental Ayurveda principles and use appropriate Ayurveda terms to describe anatomical structures and pathological features, thereby contextualizing their application in Ayurveda diagnostics.

Students Shall Perform

Hands-on Labelling of Normal Ultrasound

- Provide normal ultrasound images/ video clipping (transverse/longitudinal planes) of the abdomen and pelvis.
- Students shall identify/mark and label organs and structures seen in normal USG: liver, GB, spleen, pancreas, kidneys, bladder, uterus/ovaries/prostate, intestines, aorta, IVC, etc.
- Identify the orientation of images and standard probe positions.

Pathology Identification and Ayurveda Interpretation

- Provide 5 ultrasound scans (images/ video clipping) showing common abdominal and pelvic pathologies approaching Ayurveda hospitals.
- Students shall compare pathological scans with normal scans.
- Identify and label findings such as organomegaly, fluid collection, cysts, stones, masses, irregular echotexture, or vascular abnormalities.
- Identify and interpret the ultrasonography findings with classical Ayurveda terms that best describe the condition/ anatomical structures/disease features.

Practical Training 26.8 : Ultrasound examination of the Antaradhi:- Urah/ Vaksha

Teacher Will Demonstrate

Step 1: Demonstrate normal thoracic structures on ultrasound (as visible), including pleura, lungs via transthoracic or thoracoabdominal approach), heart via subcostal view, and upper abdominal organs adjacent to the diaphragm.

Step 2: Identify and demonstrate key anatomical landmarks on grayscale (B-mode) imaging, such as H?udaya, Phuphusa etc

step 3: Demonstrate vascular structures using color doppler.

Step 4: Show ultrasound images/ video clippings of thoracic conditions frequently observed in Ayurveda practice such as urahkshta, shwasa, Parshva Shoola, Kasa, Arbuda

(thoracic masses), etc

Step 5: Identify key differences between normal and pathological sonographic images, such as altered echogenicity, pleural effusion, pericardial fluid, cardiomegaly (on subcostal view), solid/cystic lesions near the diaphragm, vascular dilatation, or restricted organ movement.

Step 6: Interpret sonographic (USG) findings by applying fundamental Ayurveda principles. Use suitable Ayurveda terms to describe anatomical structures and pathological features identified on USG, explaining the application in Ayurveda diagnostics.

Students Shall Perform

Hands-on Labelling of Normal Ultrasound

• Provide normal ultrasound images/video clippings   (transverse/longitudinal/ subcostal planes)/ of the thoracic/upper abdominal region.

• Students shall identify/mark and label visible structures such as liver, diaphragm, subcostal heart view, spleen, IVC, aorta, pleura, and costal margins.

• Identify the probe orientation and standard acoustic windows for upper thoracic views (subcostal, intercostal, thoracoabdominal).

Pathology Identification and Ayurveda Interpretation

• Provide 5 ultrasound scans (images/ video clippings) showing common thoracic pathologies.

• Students shall compare pathological scans with normal.

• Identify and label findings such as fluid collections (pleural/pericardial), hypoechoic or hyperechoic lesions, restricted diaphragm movement, or vascular abnormalities.

• Interpret the radiological findings with classical Ayurveda terms that best describe the condition /anatomical structures/pathological features.

Practical Training 26.9 : Stanah (Breast) ultrasound

Teacher Will Demonstrate

Step 1: Demonstrate normal sonographic anatomy of the breast in transverse and longitudinal planes.

Step 2: Identify and explain key anatomical landmarks on grayscale (B-mode) imaging. Show normal echotexture, ductal pattern, and symmetry between both breasts.

Step 3: Practical or video demonstration of vascularity using Color Doppler.

Step 4:Highlight differences in premenopausal and postmenopausal breast appearance.

Step 5: Show ultrasound images of commonly encountered breast pathologies in Ayurveda practice, such as:

Granthi, arbuda, Stanah Roga etc

Step 6: Demonstrate (practical / video clipping) changes in echogenicity, margins, posterior acoustic features, vascular patterns, presence of cysts, solid masses, or calcifications.

Step 7: Interpret observed findings with classical Ayurveda concepts, and use Ayurveda terminology to describe pathological features, explaining the application in Ayurveda diagnostics.

Students Shall Perform

Hands-on Labeling of Normal Ultrasound

• Provide normal ultrasound images/ video clipping of both breasts in transverse and longitudinal planes.

•Students shall note symmetry and identify common scanning positions and identify key features of normal echotexture and probe placement techniques.

Pathology Identification and Ayurveda Interpretation

• Provide 5 ultrasound scans (images/ video clippings) showing common breast pathologies (e.g., fibroadenoma, cyst, abscess, carcinoma).

• Students shall compare pathological scans with normal.

• Identify and annotate findings.

• Interpret the radiological findings with classical Ayurveda terms/ conditions to explain anatomical structures and pathological features.

Practical Training 26.10 : Asrugvaha:-sira:Dhaman? (Vascular) ultrasound:

Teacher Will Demonstrate

Step 1: Demonstrate normal vascular anatomy using B-mode and Color Doppler Ultrasound in transverse and longitudinal planes.

Step 2: Identify and demonstrate key vascular anatomical landmarks,

Step 3: Demonstrate doppler waveform patterns (triphasic, biphasic, monophasic) for arteries and flow characteristics of veins.

Step 4: Video demonstrates elastography of vascular walls (for arterial stiffness), and relate tissue elasticity or stiffness to Ayurveda Guna such as Sthira, Mrdu, Snigdha, Kathina, etc.

Step 5: Show ultrasound and Doppler images of vascular conditions commonly encountered in Ayurveda practice, such as Sira-granthi, Sira-avarodh etc.

Step 6: Discuss key differences between normal and pathological vascular findings and contextualize their relevance within Ayurveda diagnostics.

Students Shall Perform

Hands-on Labelling of Normal Ultrasound

- Provide normal Doppler ultrasound video clippings (transverse/longitudinal) of major arteries and veins (e.g., abdominal aorta, femoral vessels, jugular vein, portal vein).
- Students shall identify vessel names, walls, lumen, and surrounding soft tissue etc.

Pathology Identification and Ayurveda Interpretation

- Provide 5 ultrasound scans (with Color Doppler) showing common vascular pathologies.
- Students shall compare pathological findings with normal vascular anatomy.
- Identify and label Aneurysms, thrombosis, stenosis, turbulent flow, Wall calcification, plaque, dilatation, or varicosity
- Interpret the radiological findings with classical Ayurveda terms that best describe the condition.

Experiential learning Activity

Experiential-Learning 26.1 : X-Ray Shakha (Urdwa/ Adho),

Posting in the Radiology/X-ray Unit
Step 1: Observe and understand the workflow of the X-ray unit
Step 2: Image observation and identification of Shakha (Urdwa/ Adho)
 For each image:

- Take a print/photo of the X-ray
- Mark and label normal anatomical landmarks and abnormalities
- Describe radiological findings
- Interpret the findings with concepts and principles used in Ayurveda and interpret them in Ayurveda terminology
- Write a structured report using a combined format, providing a probable Ayurveda diagnosis.

Experiential-Learning 26.2 : Xray Antaradhih:- Urah/ Vaksha (Chest/Thorax)

Posting in the Radiology/X-ray Unit
Step 1: Observe and understand the workflow of the X-ray unit
Step 2: Image observation and identification of Antaradhih:- Urah/ Vaksha (Chest/Thorax)
 For each image:

- Take a print/photo of the X-ray
- Mark and label normal anatomical landmarks and abnormalities
- Describe radiological findings
- Interpret the findings with concepts and principles used in Ayurveda and interpret them in Ayurveda terminology
- Write a structured report using a combined format, providing a probable Ayurveda diagnosis.

Experiential-Learning 26.3 : X-Ray Antaradhi:- Udara and Sronih (Abdomen and pelvis)

Posting in the Radiology/ X-ray Unit

Step 1: Observe and understand the workflow of the X-ray unit

Step 2: Image observation and identification of Antaradhi:- Udara and Sronih (Abdomen & pelvis).

 For each image:

- Take a print /photo of the X-ray
- Mark and label normal anatomical landmarks and abnormalities
- Describe radiological findings
- Interpret the findings with concepts and principles used in Ayurveda and interpret them in Ayurveda terminology
- Write a structured report using a combined format, providing a probable Ayurveda diagnosis.

Experiential-Learning 26.4 : X-ray - Sirah (skull, orbit, and sinus)

Posting in the Radiology/X-ray Unit

Step 1: Observe and understand the workflow of the X-ray unit

Step 2: Image Observation & Identification of Sirah (skull, orbit, and sinuses) .

 For each image:

- Take a print/Photo of the X-ray
- Mark and label normal anatomical landmarks and abnormalities
- Describe radiological findings
- Interpret the findings with concepts and principles used in Ayurveda and interpret them in Ayurveda terminology
- Write a structured report using a combined format, providing a probable Ayurveda diagnosis.

Experiential-Learning 26.5 : Ultrasound examination of the Kukshi: Udarah and Sronih, Shira-Greeva.

Posting in USG Unit/ Hands on Workshop
Step 1 – Observe and understand the workflow of the USG Unit

- Students shall observe and understand the routine functioning of the USG Unit including patient preparation, probe selection, scanning technique, orientation of scanning planes, image acquisition, and interpretation workflow.

Step 2 – Structured Image/ video clipping Observation and Interpretation

- Students shall be exposed to USG images of Kukshi/ Antaradhi?:- Udarah and Sronih
- They shall perform structured image observation and interpretation under the guidance of the faculty or radiologist.

Step 3 – Identify/ Mark and Label
• Obtain and print/ photo the USG Image (Transverse/ Longitudinal/ Oblique views as relevant)
• Mark normal anatomical landmarks (organs, bones, vessels, soft tissues) and any observed abnormalities or pathologies
Step 4 – Describe sonographic findings
Describe echotexture, size, margins, presence of fluid, cysts, masses, vascular flow (if doppler used), stiffness (if elastography available. Interpretation of radiological findings through Roga-Rogi Pareeksha findings and Ayurveda principles, utilizing appropriate Ayurveda terminology and contextualizing their relevance within the framework of Ayurveda diagnostics.
Step 5 – Reporting
Prepare a combined diagnostic report integrating both modern USG perspectives and Ayurveda interpretation.

Experiential-Learning 26.6 : Ultrasound examination of the Antaradhih:- Urah/ Vaksha and Shakah (Limbs) Greeva & Prushta.

Posting in USG Unit/ Hands on Workshop:
Step 1 – Observe and Understand the Workflow of the USG Unit

- Students shall observe and understand the routine functioning of the USG Unit including patient preparation, probe selection, scanning technique, orientation of

scanning planes, image acquisition, and interpretation workflow.

Step 2 – Structured Image/ video clipping Observation & Interpretation

- Students shall be exposed to USG images of Shakha (Urdhva/Adhah), Greeva and Prustha, Antaradhi:- Urah/ Vaksah
- They shall perform structured image observation and interpretation under the guidance of the faculty or radiologist.

Step 3 – Identify / Mark and Label
• Obtain and print/ photo the USG Image (Transverse/ Longitudinal/ Oblique views as relevant).
• Mark normal anatomical landmarks (organs, bones, vessels, soft tissues) and any observed abnormalities or pathologies.
Step 4 – Describe Sonographic Findings.
Describe echotexture, size, margins, presence of fluid, cysts, masses, vascular flow (if Doppler used), stiffness (if elastography available. Interpretation of radiological findings through Roga-Rogi Pareeksha findings and Ayurveda principles, utilizing appropriate Ayurveda terminology and contextualizing their relevance within the framework of Ayurveda diagnostics.
Step 5 – Reporting
• Prepare a combined diagnostic report integrating both modern USG perspectives and Ayurveda interpretation.

Experiential-Learning 26.7 : Stanah (Breast) ultrasound.

Posting in USG Unit/ Hands-on Workshop:
Step 1 – Observe and Understand the Workflow of the USG Unit

- Students shall observe and understand the routine functioning of the USG Unit, including patient preparation, probe selection, scanning technique, orientation of scanning planes, image acquisition, and interpretation workflow.

Step 2 – Structured Image/ video clipping Observation & Interpretation

- Students shall be exposed to USG images of Stanah (Breast).
- They shall perform structured image observation & Interpretation under the guidance of the faculty or radiologist.

Step 3 – Identify / Mark and Label
• Obtain and print/ photo the USG Image (Transverse/ Longitudinal/ Oblique views as relevant)
• Mark normal anatomical landmarks (organs, bones, vessels, soft tissues) and any observed abnormalities or pathologies.
Step 4 – Describe Sonographic Findings
Describe echotexture, size, margins, presence of fluid, cysts, masses, vascular flow (if Doppler used), stiffness (if elastography available. Interpretation of radiological findings through Roga-Rogi Pareeksha findings and Ayurveda principles, utilizing appropriate Ayurveda terminology and contextualizing their relevance within the framework of Ayurveda diagnostics.
Step 5 – Reporting
Prepare a combined diagnostic report integrating both modern USG perspectives and Ayurveda interpretation.

Experiential-Learning 26.8 : Asrugvaha:- Sira - Dhamani (Vascular) ultrasound.

Posting in USG Unit/ Hands on Workshop:
Step 1 – Observe and Understand the Workflow of the USG Unit

• Students shall observe and understand the routine functioning of the USG Unit including patient preparation, probe selection, scanning technique, orientation of scanning planes, image acquisition, and interpretation workflow.

Step 2 – Structured Image/ video clipping Observation & Interpretation

• Students shall be exposed to USG images of Asrugvaha:- Sira - Dhamani (Vascular) ultrasound
• They shall perform structured image observation & interpretation under the guidance of the faculty or radiologist.

Step 3 – Identify / Mark and Label
• Obtain and print/ photo the USG Image (Transverse/ Longitudinal/ Oblique views as relevant)
• Mark normal anatomical landmarks (organs, bones, vessels, soft tissues) and any observed abnormalities or pathologies
Step 4 – Describe Sonographic Findings
Describe echotexture, size, margins, presence of fluid, cysts, masses, vascular flow (if Doppler used), stiffness (if elastography available. Interpretation of radiological findings through Roga-Rogi Pareeksha findings and Ayurveda principles, utilizing appropriate Ayurveda terminology and contextualizing their relevance within the framework of Ayurveda diagnostics.
Step 5 – Reporting

- Prepare a combined diagnostic report integrating both modern USG perspectives and Ayurveda interpretation.

Modular Assessment

Assessment method	Hour
Instructions - Conduct a structured modular assessment. The assessment will be for 75 marks. Keep a structured marking pattern. Use different assessment methods in each module for the semester. Keep a record of the structured pattern used for assessment. Calculate the modular grade point as per Table 6C. Theory Based Assessment – 25 Marks. This component includes theory questions designed to assess conceptual clarity, integrative thinking, and the ability to apply learned contexts. Questions can be framed from any instructional unit, ensuring alignment with the intended learning outcomes. And Any practical in converted form can be taken for assessment. (25 Marks). And Any experiential as portfolio/ reflections/ presentations, can be taken as an assessment. (25 Marks). Methods: 1.Mini-CEX (Mini Clinical Evaluation Exercise) - Assess real-time clinical interpretation and patient communication using (25 marks) 2.DOPS (Direct Observation of Procedural Skills- evaluate practical and technical skills in conducting X-ray ultrasound-based tasks (25 marks) 3.Structured Report Review - Evaluate ability to generate structured and standardized reports using (25 Marks)	6

Semester No : 4

Module 27 : Chhaya Evam Vikiran Vijnana – 2 (CT & MRI)

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

1. Analyze the core principles and physics underlying Computed Tomography (CT) and Magnetic Resonance Imaging (MRI), including image formation techniques, reconstruction algorithms, image acquisition, and image optimization parameters such as Hounsfield Units, window width/level, and MRI sequences.
2. Evaluate the structure and function of CT and MRI imaging systems, including contrast media characteristics, and strategies to manage contrast-induced adverse

effects safely.

3. Apply knowledge of contrast agents, dosing protocols, potential adverse reactions, and their management to optimize patient safety and enhance image quality during diagnostic and interventional procedures

4. Interpret and differentiate normal and pathological findings in CT and MRI images of the Shadanga (Shakha (Urdwa/Adho), Greeva & Prushata, Antaradhi:- Urah /Vaksha, Antaradhi:- Udarah & Sronih, Shiro-Greeva) integrating Ayurveda principles and concepts for appropriate diagnostic reasoning.

5. Demonstrate and justify the selection and application of CT- and MRI-guided interventional procedures (e.g., biopsy, aspiration, MRgFUS) based on Ayurveda clinical indications, image guidance advantages, and safety considerations.

M 27 Unit 1 Sharira Avayava Anuccheda Drushya: Computed Tomography 1. Computed Tomography Siddhant, Yantra Evam Vidhi: Principles and image reconstruction, image acquisition, processing, and Computed Tomography instrumentation and imaging system.

2. Computed Tomography of Shadanga (Shakha (Urdwa/ Adho), Greeva and Prushata, Antaradhi:- Urah/ Vaksha, Antaradhi:- Udarah and Sronih, Shiro-Greeva), Rachana Evam Vikriti Vinishchaya (anatomical and pathological recognition).

 3. Ayurveda interpretation and reporting of Computed Tomography findings.

4. Contrast Media - The contrast agent, mechanism of action, dose schedule, route of administration, adverse reactions, and their management.

5. Application of CT guided procedures in Ayurveda diagnosis.

References: 225,226,228,229,230,231,232

3A	3B	3C	3D	3E	3F	3G
CO1	Describe the principles of X-ray generation in CT, including attenuation and beam quality, and discuss the role of Hounsfield values and windowing in accurate CT image interpretation.	1	Lecture	CC	Knows-how	L&GD,L, L_VC,L& PPT
CO1	Describe the principles of X-ray generation in CT, including attenuation and beam quality, and discuss the role of Hounsfield values and windowing in accurate CT image interpretation.	1	Lecture	CC	Knows-how	L&GD,L _VC,DIS, L,BL
CO1	Describe the components of the CT imaging system, including the gantry, patient table, X-ray tube, generator, collimation, filtration, and detector systems.	1	Lecture	CAP	Knows-how	L,D-M,L &GD,L& PPT ,D

CO1	Discuss the principles of image reconstruction techniques, including back-projection, algebraic, iterative, and filtered back-projection, and compare the use of object space, Radon space, and Fourier space in reconstruction with reference to Ayurveda clinical practice.	1	Lecture	CAP	Knows-how	L_VC,L, L&PPT ,L&GD
CO1,CO2	Describe scan projection radiographs and different CT scan modes (axial, helical, MDCT, cardiac CT, and contrast-enhanced CT), and apply them to select appropriate scan modes for clinical situations while integrating with Ayurveda diagnostic methodologies.	1	Lecture	CAP	Knows-how	BS,L&GD,L,DIS, PL
CO1	Analyze the influence of exposure, acquisition, and reconstruction parameters on image quality, and identify imaging artifacts with methods to minimize them.	1	Lecture	CAN	Know	L&PPT , L_VC,DIS,L,BS
CO1,CO2	Describe the types, mechanisms, dose schedules, routes, adverse reactions, and management of CT contrast agents, and evaluate their application in diagnosing Ayurveda clinical conditions.	1	Lecture	CC	Knows-how	BL,ML,BS,D-M,SIM
CO1,CO2,CO3 ,CO5	Interpret CT images of the Shirah (head) to identify normal anatomy, variants, and pathological findings, and correlate the observations with Ayurveda principles for comprehensive reporting.	3	Practical Training 27.1	PSY-GUD	Shows-how	ML,Mnt, CBL,D-M,PBL
CO1,CO2,CO3 ,CO5	Interpret CT images of the Greeva (neck) to identify normal anatomy, variants, and pathological findings, and correlate the findings with Ayurveda principles for comprehensive reporting.	3	Practical Training 27.2	PSY-GUD	Shows-how	BS,DIS, ML,PL,W
CO1,CO2,CO3 ,CO5	Interpret CT images of the Antraradhi:- Urah/ Vaksha (chest) to identify normal anatomy, variants, and pathological findings, and correlate the findings with Ayurveda principles for comprehensive reporting.	3	Practical Training 27.3	PSY-GUD	Shows-how	DIS,CBL, D-BED,D,W
CO1,CO3,CO5	Interpret CT images of the Antaradhi:- Udaraha and Sronih (abdomen and pelvis) to identify normal anatomy, variants, and pathological findings, and correlate the findings with Ayurveda principles for comprehensive application and reporting.	3	Practical Training 27.4	PSY-GUD	Shows-how	TBL,W,CBL,Mnt,D-BED

CO1,CO2,CO5	Interpret CT images of the Shakah: Urdhva/Adhah and Prushtam (spine and limbs) to identify normal variants and pathologies, evaluate and report findings, and integrate Ayurveda principles with MRI correlations for comprehensive reporting.	3	Practical Training 27.5	CE	Shows-how	PL,DIS,CBL,W,D
CO1,CO2,CO3,CO5	Analyze and interpret CT images of the Sirah (head) by identifying normal variants and pathologies, evaluating and reporting findings, and applying Ayurveda principles for integrated diagnostic reporting.	5	Experiential-Learning 27.1	PSY-GUD	Shows-how	C_L,PL,D,CBL,BS
CO1,CO2,CO3,CO5	Interpret CT images of the Greeva (neck) by identifying normal variants and pathologies, evaluating and reporting findings, and integrating Ayurveda principles.	3	Experiential-Learning 27.2	PSY-GUD	Shows-how	SDL,CBL,DIS,PL,W
CO1,CO2,CO3,CO5	Interpret CT Antaradhi:- Urah/ Vaksha (thorax) images to identify normal variants and common pathologies, evaluate and critique findings using Ayurvedq principles.	5	Experiential-Learning 27.3	PSY-GUD	Shows-how	BS,DIS,PL,BL,W
CO1,CO2,CO3,CO5	Interpret CT images of Antaradhi:- Udarah and Sronih (abdomen & pelvis) to identify normal variants and common pathologies, evaluate and critique findings through Ayurveda principles.	5	Experiential-Learning 27.4	PSY-GUD	Shows-how	SDL,CBL,CD,D,BL
CO1,CO2,CO3,CO5	Interpret CT images of Sakha (Urdhva, Adhah, and Prushtam) to identify normal variants and common pathologies, evaluate and critique findings through Ayurveda principles.	3	Experiential-Learning 27.5	PSY-GUD	Shows-how	BL,TBL,D,CBL,BS
CO1,CO2	Describe the basic principles and steps of CT-guided procedures such as biopsy and aspiration, and apply Ayurveda principles to identify indications, plan procedures, and recognize basic imaging guidance techniques.	1	Lecture	CAP	Knows-how	L&GD,L&PPT ,IBL,L_VC,L

M 27 Unit 2 Sharira Avayava anuccheda Drushya : Magnetic Resonance Imaging (MRI)1. Magnetic Resonance Imaging (MRI) Siddhant Yantra Evam Vidhi: MRI principles and concepts of image formation, image acquisition, processing and MRI instrumentation and imaging system.

2. Contrast Media - types, chemical composition, mechanism of action, dose schedule, route of administration, adverse reactions and their management.

3. MRI of Shadanga (Shakha (Urdwa/ Adho), Greeva and Prushata, Antaradhi:- Urah/ Vaksha, Antaradhi:- Udarah and Sronih, Shiro-Greeva, its Rachana Evam Vikriti Vinishchaya (anatomical & pathological recognition).

4. Ayurveda interpretation and reporting of Magnetic Resonance Imaging findings.
5. MRI-guided procedures in Ayurveda diagnosis to enhance clinical accuracy.

References: 227,230,231,232,233,234,235,236,237,238,239

3A	3B	3C	3D	3E	3F	3G
CO1	Discuss the principles of magnetic resonance imaging, the principles of image formation in MRI, and analyze the principles and applications of basic sequences of MRI.	1	Lecture	CAP	Knows-how	L_VC,LS, BL,L,L& GD
CO1	Identify and describe the components of MRI machines, including their functions.	1	Lecture	CAP	Knows-how	BS,L_VC ,L&PPT , L&GD,B L
CO1	Describe the principles of signal reception in MRI and the role of K-space and the Fourier Transform in image reconstruction; analyze the techniques used in parallel imaging and the application of image reconstruction algorithms.	1	Lecture	CAP	Knows-how	L_VC,L& PPT ,L& GD,L,BL
CO1	Describe basic and advanced MRI pulse sequences, including DWI, fMRI, and MRA; explain the concept of spatial encoding and factors affecting acquisition time; and analyze how different sequences are used for specific clinical purposes and their application in Ayurveda diagnostics.	1	Lecture	CAP	Knows-how	L&PPT , L_VC,DI S,L&GD, L
CO1	Discuss the factors that affect MRI image quality, including signal-to-noise ratio (SNR), contrast-to-noise ratio (CNR), spatial resolution, fat suppression, and echo-planar imaging; identify common artifacts and analyze their impact on image quality.	1	Lecture	CAN	Knows-how	BL,L&G D,PL,L,D IS
CO1	Describe commonly used MRI contrast agents with their routes, mechanisms, doses, adverse reactions and management, and analyze their application in imaging to diagnose Ayurveda clinical conditions.	1	Lecture	CE	Knows-how	L&GD,L _VC,BS, DIS,BL
CO1,CO2,CO3 ,CO5	Analyze MRI images of Sirah and Greeva to identify normal variants and common pathologies, interpret presentations, and correlate findings with fundamental Ayurveda	3	Practical Training 27.6	PSY-GUD	Shows-how	D,TBL,C BL,CD,C

	principles.					_L
CO1,CO2,CO3,CO5	Analyze MRI images of Antaradhi – Urah/ Vaksha (thorax) to identify normal variants and common pathologies, interpret presentations, and correlate findings with fundamental Ayurveda principles.	3	Practical Training 27.7	CAN	Shows-how	D,PL,BS,BL,CBL
CO1,CO2,CO3,CO5	Analyze MRI images of Antaradhi – Udara and Sroni (abdomen and pelvis) to identify normal variants and common pathologies, interpret presentations, and correlate findings with Ayurveda principles.	3	Practical Training 27.8	PSY-GUD	Shows-how	DIS,CD,BS,PL,PER
CO1,CO2,CO3,CO5	Analyze MRI images of Sakha – Urdhva and Adha? (upper and lower limbs) to identify normal variants and common pathologies, interpret presentations, and correlate findings with Ayurveda principles.	3	Practical Training 27.9	PSY-GUD	Shows-how	BS,PAL,D-BED,CD,PL
CO1,CO2,CO3,CO5	Analyze MRI images of Prushtam (spine) to identify normal variants and common pathologies, interpret presentations, and correlate findings with Ayurveda principles.	3	Practical Training 27.10	PSY-GUD	Shows-how	ML,PL,D,BS,BL
CO1,CO2,CO3,CO5	Interpret MRI images of Sirah and Greeva (head and neck) to identify normal variants and common pathologies, evaluate and critique findings using Ayurveda principles.	4	Experiential-Learning 27.6	PSY-GUD	Shows-how	CBL,BS,BL,PL,DIS
CO1,CO2,CO5	Interpret MRI images of Prushtam (spine) to identify normal variants and common pathologies, evaluate and critique findings using Ayurveda principles.	4	Experiential-Learning 27.7	PSY-GUD	Shows-how	D,CD,SDL,CBL,TBL
CO1,CO2,CO3,CO5	Interpret MRI images of Antaradhi – Urah/ Vaksha (thorax) to identify normal variants and common pathologies, evaluate and critique findings using Ayurveda principles.	3	Experiential-Learning 27.8	CAN	Does	D,BL,CBL,BS,TBL
CO1,CO2,CO3,CO5	Interpret MRI images of Antaradhi – Udara and Sroni (abdomen and pelvis) to identify normal variants and common pathologies, evaluate and critique findings using Ayurveda principles.	3	Experiential-Learning 27.9	PSY-GUD	Shows-how	D,CBL,CD,DIS,WD
CO1,CO2,CO3	Interpret MRI images of Sakha – Urdhva and Adhah (limbs) to identify normal variants	4	Experiential-	PSY-	Shows-	D,C_L,C

,CO5	and common pathologies, evaluate and critique findings using Ayurveda principles.		Learning 27.10	GUD	how	BL,CD,DIS
CO1	Describe the basic principles and clinical applications of MRI-guided procedures such as biopsy and focused ultrasound, and apply them to plan procedures and select patients appropriately.	1	Lecture	CC	Knows-how	RP,L&PPT ,L&GD ,DIS,L_VC

Practical Training Activity

Practical Training 27.1 : CT Shira (head)

Teacher Will Demonstrate
Step 1: Display normal CT images (axial, coronal, and sagittal views) of the Brain, orbit, nasal cavity and paranasal sinuses.
Step 2: Identify and label key anatomical landmarks: Brain, ear, sinuses, orbital structures, Globe and lens, nasal cavity and septum etc.
Step 3: Show CT images of clinical conditions approaching frequently to ayurveda hospitals ex: Paskhaghata, Nasarshas, Nasaroga (Granthi, Arbuda), Nasanaha (DNS), Shiroroga (Shirashula, Krimija, Rakta, Karnashrava (extended to bone), Suryavarta (frontal sinusitis) Kaphaja Shirashula, etc.
Step 4: Explain key differences between normal and pathological scan to interpret the CT findings with concepts and fundamental principles of Ayurveda and explore the Ayurveda terminologies to define the pathologies seen on CT scan.
Students Shall Perform
Hands-on Labeling of Normal CT

- Provide one normal CT scan (multi-planar view) of the Sirah.
- Ask students to mark and label the anatomical structures.

Pathology Identification and Ayurveda Interpretation

- Provide 5 CT scans showing pathology related to brain, sinus, orbit, ect.
- Students will: Compare with the normal scan and label the pathological findings (e.g. hemorrhage, brain lesions, soft tissue masses, mucosal swelling, septal deviation, fractures)
- Interpret CT scan findings using Ayurveda principles, incorporating appropriate Ayurveda terminology, and contextualizing their significance in Ayurveda

diagnostics.

Practical Training 27.2 : CT Greeva (neck)

Teacher Will Demonstrate
Step 1: Radiological Anatomy of Greeva (Neck) on CT Scans: Display normal CT images (axial, coronal, and sagittal views) of the neck region. Identify and label key anatomical landmarks: Bony structures, Soft tissues, Vascular structures,Lymph nodes and soft tissue planes, Airways etc.
Step 2: Pathological CT Scans Demonstration: Show CT images of neck disorders/ conditions commonly seen in Ayurveda such as: Greevastambha, Galganda, Gandamala, Granthi, Arbuda, Tundikeri, etc.
Step 3: Explain key differences between normal and pathological scans: Abnormal soft tissue density, mass lesions, enlarged lymph nodes.
Step 4: Interpret CT findings with concepts and fundamental principles of Ayurveda and explore the Ayurveda terminologies to define the pathologies seen on CT scan, contextualizing their relevance in Ayurveda diagnostics.
Students Shall Perform
Hands-on Labeling of Normal CT

- Provide one normal CT scan (multi-planar view) of the Greeva (neck).
- Ask students to mark and label the structures of Greeva.

Pathology Identification and Ayurveda Interpretation

- Provide 5 CT scans showing pathology related to the neck region.
- Students will compare with the normal scan. Label the pathological findings (e.g Galganda, Gandamala, Granthi, Arbuda, Tundikeri thyroid nodule, lymphadenopathy, tracheal deviation, neck masses)

Interpret CT scan findings using Ayurveda principles, incorporating appropriate Ayurveda terminology, and contextualizing their significance in Ayurveda diagnostics.

Practical Training 27.3 : CT Antaradhi - Udaraha and Sronih (abdomen and pelvis)

Teacher Shall Demonstrate

Step 1: Radiological Anatomy of Antaradhi - Udaraha & Sronih on CT Scans- Display normal CT scans (axial, coronal, and sagittal views) of the abdomen and pelvis.
Identify and label key anatomical structures like Koshtanga – abdominal; and pelvic organs,vascular structures, bony pelvis, pelvic muscles.
Step 2: Pathological CT Scans Demonstration- Show pathological CT images of common abdominal and pelvic diseases encountered in Ayurveda practice, such as: Udara Yakritodara, Plihodar, Ashmari, Mutraghata, Gulma, Shotha, Udarshoola, etc.
Step 3: Demonstrate the radiological differences between normal and pathological CT findings.
Step 4: Interpret CT scan findings through Ayurveda principles, employing appropriate Ayurveda terminology and contextualizing their relevance in Ayurveda diagnostics
Students Shall Perform
Hands-on Labeling of Normal CT Scans

- Provide a normal multiphase CT scan of the abdomen and pelvis (axial/coronal).
- Ask students to identify and label the anatomical structures

Pathology Identification and Ayurveda Interpretation

- Provide 5 pathological CT scans relevant to Ayurveda conditions.
- Students will Compare each scan with normal anatomy Label pathological findings.

Interpret CT scan findings using Ayurveda principles, incorporating appropriate Ayurveda terminology, and contextualizing their significance in Ayurveda diagnostics.

Practical Training 27.4 : CT Antaradhi - Udaraha and Sronih (abdomen and pelvis)

Teacher Shall Demonstrate
Step 1: Radiological Anatomy of Antaradhi - Udaraha and Sronih on CT Scans- Display normal CT scans (axial, coronal, and sagittal views) of the abdomen and pelvis.
Identify and label key anatomical structures like koshtangas – abdominal; and pelvic organs, vascular structures, bony pelvis, pelvic muscles.
Step 2: Pathological CT Scans Demonstration- Show pathological CT images of common abdominal and pelvic diseases encountered in Ayurveda practice, such as: Udara, Yakritodara, Plihodar, Ashmari, Mutraghata, Gulma, Shotha, Udarshoola, etc.
Step 3: Demonstrate the radiological differences between normal and pathological CT findings.
Step 4: Interpret CT scan findings through Ayurveda principles, employing appropriate Ayurveda terminology and contextualizing their relevance in Ayurveda diagnostics.
Students Shall Perform
Hands-on Labeling of Normal CT Scans

- Provide a normal multiphase CT scan of the abdomen and pelvis (axial/coronal).
- Ask students to identify and label the anatomical structures.

Pathology identification and Ayurveda Interpretation

- Provide 5 pathological CT scans relevant to Ayurveda conditions.
- Students will Compare each scan with normal anatomy Label pathological findings.

Interpret CT scan findings using Ayurveda principles, incorporating appropriate Ayurveda terminology, and contextualizing their significance in Ayurveda diagnostics.

Practical Training 27.5 : CT Shakah: Urdhva/ Adhah and Prushtam (spine and limbs).

Teacher Will Demonstrate
Step 1: Radiological anatomy of Shakah Urdhva/ Adhah and Prustham on CT Scans - Display normal CT scans (axial, coronal, and sagittal views) of: Urdhva Shakah, Adhaha Shakah) Prushta. Identify and label bones, joints, soft tissues and spinal components.
Step 2: Pathological CT Scans Demonstration- Show CT scans of common musculoskeletal conditions approaching Ayurveda hospitals, such as Asthi-majjagata Vata, Grdhrasi, Katigraha, Sotha, Vidradhi, Sandhivata, Mamasa-gata-vata, Snayugata-vata etc.
Step 3: Demonstrate the difference in normal and pathological findings.
Step 4: Interpret CT scan findings through Ayurveda principles, employing appropriate Ayurveda terminology and contextualizing their relevance in Ayurveda diagnostics
Students Shall Perform
Hands-on Labeling of Normal CT Scans

- Provide normal CT images of Urdhva Sakha, Adha Shakah and Prushta
- Ask students to label anatomical structures

Pathology Identification and Ayurveda Interpretation

- Provide 5 pathological CT scans related to limbs and spine
- Students will compare with normal scans, label pathological findings

Interpret CT scan findings using Ayurveda principles, incorporating appropriate Ayurveda terminology, and contextualizing their significance in Ayurveda diagnostics

Practical Training 27.6 : MRI Shirah and Greeva (Head & Neck)

Teacher Will Demonstrate

Step 1: Radiological Anatomy of Shirah and Greeva (Head & Neck):- Display normal MRI images in axial, coronal, and sagittal planes using T1-weighted, T2-weighted, and FLAIR sequences of the Shirah and Greeva (Head & Neck), Identify and label key anatomical structures ex, brain, vascular structures, orbit, paranasal sinuses, nasal cavity, cervical airway, vertebrae, spinal cord, intervertebral disc etc.

Step 2: Pathological MRI Demonstration- Present MRI images of clinical conditions of Shirah and Greeva (Head & Neck):- commonly managed in Ayurveda practice ex- Nasaarsha, Granthi, Galaganda, Shiroroga, Manyasthamba, etc.

Step 3:Practical/ video demonstrate key radiological parameters, including variations in signal intensities (e.g., T2 hyperintense lesions, T1 hypointense or isointense areas), post-contrast enhancement patterns, and other notable features such as organ enlargement, displacement, compression effects, and mass effect.

Step 4: Interpret MRI scan findings through Ayurveda principles, employing appropriate Ayurveda terminology and contextualizing their relevance in Ayurveda diagnostics.

Students Shall Perform

Hands-on Labeling of Normal MRI

- Provide one normal Shirah and Greeva (Head & Neck) scan set in multi-planar views (Axial, Coronal, Sagittal).
- Ask students to Label major structures. Annotate features specific to T1, T2, and FLAIR sequences

Pathology Identification and Ayurveda Interpretation

- Provide 5 MRI scans demonstrating pathology involving Shirah and Greeva (Head & Neck)
- Students will compare findings with normal MRI anatomy and label pathological changes
- Interpret MRI scan findings using Ayurveda principles, incorporating appropriate Ayurveda terminology, and contextualizing their significance in Ayurveda diagnostics.

Practical Training 27.7 : MRI Antaradhi:- Urah/ Vaksha (thorax)

Teacher Shall demonstrate

Step 1: Display normal MRI thorax images in axial, coronal, and sagittal planes, using appropriate MRI sequences T1-weighted, T2-weighted, and STIR (Short Tau Inversion Recovery) for soft tissue evaluation, MR Angiography (if available) for vascular visualization. Identify and label key anatomical structures such as Pulmonary Structures, Cardiac Anatomy, Mediastinum, Bony Thorax, Spine, Diaphragm, thoracic duct etc.

Step 2: Pathological MRI Demonstration - Present MRI images of clinical conditions frequently encountered in Ayurveda practice involving the Antaradhi:- Urah /Vaksha (thorax) region: Ex: Urakshata, Kasa, Shwasa Rog, Hrudroga, etc.

Step 3:Practical/ video Demonstrate key radiological parameters, including variations in signal intensities (e.g., T2 hyperintense lesions, T1 hypointense or isointense areas), post-contrast enhancement patterns, and other notable features such as organ enlargement, displacement, compression effects, and mass effect.

Step 4: Interpret MRI scan findings through Ayurveda principles, employing appropriate Ayurveda terminology and contextualizing their relevance in Ayurveda diagnostics

Students Shall Perform

Hands-on Labeling of Normal MRI

- Provide a normal MRI scan set of Antaradhi:- Urah/ Vaksha (thorax) in multi-planar views (Axial, Coronal, Sagittal)
- Students will Label major structures in T1, T2, and STIR sequences
- Recognize and annotate specific tissue characteristicse.g., T1: fat is bright, water is dark | T2/STIR: water/edema bright, fat dark) Understand how organs and tissues differ in signal intensity across sequences

Pathology Identification and Ayurveda Interpretation

- Provide 5 MRI thorax scans showing common pathologies
- Students will compare findings with normal MRI and label abnormal findings
- Interpret MRI scan findings using Ayurveda principles, incorporating appropriate Ayurveda terminology, and contextualizing their significance in Ayurveda diagnostics

Practical Training 27.8 : MRI Udaraha and Sronih (Abdomen and pelvis)

Teacher Will Demonstrate

Step 1: Radiological anatomy of Udaraha and Sronih (Abdomen and pelvis) - Display normal MRI images of abdomen and pelvis in Axial, Coronal, and Sagittal planes,

using the following sequences: T1-weighted, T2-weighted (Fluid contrast), STIR/Fat-suppressed sequences, MRCP (Magnetic Resonance Cholangiopancreatography) for hepatobiliary system, MR Urography or Pelvic MRI sequences for urogenital system. Identify and label major anatomical structures Udaraha and Sronih (Abdomen and pelvis) like Yakrut, Pleeha, Grahani, Vrukka, Amashaya, Dhamani, Garbhashaya, Basti,etc

Step 2: Pathological MRI demonstration- Present MRI images of abdominal and pelvic clinical conditions commonly seen in Ayurveda practice ex: Yakrutodara, Plihodara, Gulma, Grahani, Asmari, Yoni-Vyapada, Mutrakrcchra, etc.

Step3 : Practical/ video demonstrate key radiological parameters, including variations in signal intensities (e.g., T2 hyperintense lesions, T1 hypointense or isointense areas), post-contrast enhancement patterns, and other notable features.

Step 4: Interpret MRI scan findings through Ayurveda principles, employing appropriate Ayurveda terminology and contextualizing their relevance in Ayurveda diagnostics

Students Shall Perform

Hands-on Labeling of Normal MRI

- Provide a normal MRI scan (multi-planar) of Udaraha and Sronih (Abdomen and pelvis)
- Students will label key organs and structures Annotate differences in signal intensity across T1, T2, STIR

Pathology Identification and Ayurveda Interpretation

- Provide 5 MRI scan sets with pathology involving the abdomen and pelvis

- Students will compare findings with normal MRI and label abnormal findings
- Interpret MRI scan findings using Ayurveda principles, incorporating appropriate Ayurveda terminology, and contextualizing their significance in Ayurveda diagnostics.

Practical Training 27.9 : MRI Shakah: Urdhva/ Adhah (upper and lower limbs)

Teacher Will Demonstrate

Step 1: Radiological Anatomy on MRI Scan- Demonstrate normal MRI images (axial, coronal, and sagittal planes) of ShakaH: Urdhva/ Adhah (upper and lower limbs) (shoulder, arm, forearm, hand, hip, thigh, leg, foot) using T1-weighted, T2-weighted, and STIR sequences. Identify and label key anatomical structures such as bones, joints, muscles and tendons, ligaments and cartilage, neurovascular bundles and fascia planes etc.

Step 2: Pathological MRI Demonstration- Present MRI scans showing common clinical conditions relevant to Shakah: Urdhva/ Adhah seen in Ayurveda hospitals sch as

Sandhigata Vata, Snayusosha, Avabhahuka, Mamsa-granthi / Arbuda, Asthigata Vata / Bhagna etc.

Step 3: Demonstrate differences in signal intensities (T1 hypo / T2 hyper / STIR edema),tendon or ligament discontinuity, joint effusion, synovial thickening, bone marrow signal changes (suggesting infection or tumor) etc.

Step 4: Interpret MRI scan findings through Ayurveda principles, employing appropriate Ayurveda terminology and contextualizing their relevance in Ayurveda diagnostics.

Students Shall Perform

Hands-on Labeling of Normal MRI

- Provide students with a normal MRI Shakah: Urdhva/ Adhah (upper and lower limbs) scan set (multi-planar, T1, T2, STIR).
- Students will mark and label anatomical landmarks. Annotate T1, T2, STIR features
- Correlate structure visibility with sequence type

Pathology Identification and Ayurveda Interpretation

- Provide 5 MRI scans showing limb pathologies.
- Students will compare with normal images and label the abnormal findings (e.g. tendon tears, effusion, muscle edema, marrow lesions)
- Interpret MRI scan findings using Ayurveda principles, incorporating appropriate Ayurveda terminology, and contextualizing their significance in Ayurveda diagnostics

Practical Training 27.10 : MRI Prushtam (spine)

Teacher Will Demonstrate

Step 1: Radiological anatomy - Display normal MRI images in axial and sagittal planes using T1-weighted, T2-weighted, and STIR sequences of the spine (Cervical, thoracic, lumbar, sacral regions)

Identify and label key anatomical structures such as Vertebrae: bodies, pedicles, spinous processes, Intervertebral discs, Spinal cord, conus medullaris, cauda equina, Nerve roots, facet joints, ligamentum flavum, surrounding soft tissues and paraspinal muscles etc.

Step 2: Pathological MRI Demonstration- Present MRI scans showing spinal pathologies often encountered in patients seeking Ayurveda management like ex: Manyastambha / Katisula, Katigraha, Sandhigata Vata, Granthi, Arbuda, Sotha, Gridhrasi, etc.

Step 3: Demonstrate key MRI features like Signal intensity changes (T1 hypo / T2 hyper in disc, marrow, cord), Disc bulge/ prolapse, annular tear, nerve root impingement,

spinal canal narrowing, cord compression, edema/ inflammation, contrast-enhancing lesions etc.

Step 4: Interpret MRI scan findings through Ayurveda principles, employing appropriate Ayurveda terminology and contextualizing their relevance in Ayurveda diagnostics

Students Shall Perform

Hands-on Labeling of Normal MRI

- Provide a normal MRI scan set of the spine (cervical, thoracic, lumbar)—multi-planar views in T1, T2, STIR sequences.
- Students shall mark and label all anatomical landmarks. Annotate tissue appearances across sequences

Pathology Identification and Ayurveda Interpretation

- Provide 5 MRI scans showing pathological findings of the spine.
- Students will compare with normal anatomy & identify and label abnormal findings (e.g., herniated disc, spinal stenosis, spondylolisthesis, infection, trauma)
- Interpret MRI scan findings using Ayurveda principles, incorporating appropriate Ayurveda terminology, and contextualizing their significance in Ayurveda diagnostics

Experiential learning Activity
Experiential-Learning 27.1 : CT Sirah (Head)

 Posting in CT Unit / Workshop

Step 1 - Observe and understand the workflow of the CT Unit

Step 2-Students shall be exposed to CT images of Shirah - Greeva, and students shall do structured image observation and interpretation under guidance.

Step 3- Mark and Label:

- Obtain and Print/ photo of the CT Image (Axial/Coronal/Sagittal views as relevant)
- Mark Normal anatomical landmarks (bones, organs, vessels, soft tissues) and any observed abnormalities or pathologies

Step 4- Describe Radiological Findings

Interpretation of Radiological findings through roga-rogi pareeksha findings and Ayurveda principles, utilizing appropriate Ayurveda terminology and contextualizing their relevance within the framework of Ayurveda diagnostics.

Step 5- Reporting

Prepare a combined diagnostic report integrating both modern radiological and Ayurveda perspectives

Experiential-Learning 27.2 : CT Greeva (neck)

Posting in CT Unit/ Workshop

Step 1 - Observe and understand the workflow of the CT Unit

Step 2-Students shall be exposed to CT images of the Greeva. Students shall do structured image observation and interpretation under guidance.

Step 3- Mark and Label:

- Obtain and Print/ photo of the CT Image (Axial/Coronal/Sagittal views as relevant)
- Mark Normal anatomical landmarks (bones, organs, vessels, soft tissues) and any observed abnormalities or pathologies

Step 4- Describe Radiological Findings

Interpretation of Radiological findings through roga-rogi pareeksha findings and Ayurveac principles, utilizing appropriate Ayurveda terminology and contextualizing their relevance within the framework of Ayurveda diagnostics.

Step 5- Reporting

Prepare a combined diagnostic report integrating both modern radiological and Ayurveda perspectives.

Experiential-Learning 27.3 : CT Antaradhi:- Urah/ Vaksha (thorax)

Posting in CT Unit / Workshop

Step 1 - Observe and understand the workflow of the CT UnitStep 2-Students shall be exposed to CT images CT Antaradhi:- Urah/ Vaksha (thorax). Students shall do structured image observation and interpretation under guidance.

Step 3- Mark and Label:

- Obtain and Print /photo the CT Image (Axial/Coronal/Sagittal views as relevant)
- Mark Normal anatomical landmarks (bones, organs, vessels, soft tissues) and any observed abnormalities or pathologies

Step 4- Describe Radiological Findings

Interpretation of Radiological findings through roga-rogi pareeksha findings and Ayurveda principles, utilizing appropriate Ayurveda terminology and contextualizing their relevance within the framework of Ayurveda diagnostics.

Step 5- Reporting

Prepare a combined diagnostic report integrating both modern radiological and Ayurveda perspectives.

Experiential-Learning 27.4 : CT Antaradhi:- Udarah and Sronih (abdomen & pelvis)

Posting in CT Unit / Workshop

Step 1 - Observe and understand the workflow of the CT Unit

Step 2-Students shall be exposed to CT images of Antaradhi:- Udarah and Sronih (abdomen & pelvis) Students shall do Structured Image Observation & Interpretation under guidance.

Step 3- Mark and Label:

- Obtain and Print/photo of the CT Image (Axial/Coronal/Sagittal views as relevant)
- Mark Normal anatomical landmarks (bones, organs, vessels, soft tissues) and any observed abnormalities or pathologies

Step 4- Describe Radiological Findings

Interpretation of Radiological findings through roga-rogi pareeksha findings and Ayurveda principles, utilizing appropriate Ayurveda terminology and contextualizing their relevance within the framework of Ayurvedia diagnostics.

Step 5- Reporting

Prepare a combined diagnostic report integrating both modern radiological and Ayurveda perspectives.

Experiential-Learning 27.5 : CT Shakah: Urdhva/ Adhah and Prushtam (spine and limbs)

Posting in CT Unit / Workshop

Step 1 - Observe and understand the workflow of the CT Unit

Step 2-Students shall be exposed to CT images of CT Urdhva/ Adhah and Prushtam (spine and limbs). Students shall do structured Image observation and interpretation under guidance.

Step 3- Mark and Label:

- Obtain and print/ photo of the CT Image (Axial/Coronal/Sagittal views as relevant)
- Mark normal anatomical landmarks (bones, organs, vessels, soft tissues) and any observed abnormalities or pathologies

Step 4- Describe radiological findings

Interpretation of radiological findings through Roga-Rogi Pareeksha findings and Ayurveda principles, utilizing appropriate Ayurveda terminology and contextualizing their relevance within the framework of Ayurveda diagnostics.

Step 5- Reporting

Prepare a combined diagnostic report integrating both modern radiological and Ayurveda perspectives.

Experiential-Learning 27.6 : MRI Shirah and Greeva (Head and Neck)

Posting in MRI Unit/ Workshop

Step 1 – Observe and understand the workflow of the MRI Unit

Step 2 – Guided structured image observation & interpretation

Students will be exposed to MRI images (multi-planar views) of the following regions under faculty supervision: Shirah and Greeva (Head & Neck):

Step 3 – Mark and Label Key Structures

Students will be provided with printed MRI images (T1, T2, or FLAIR/STIR depending on region).

For each Mark Normal Anatomical Landmarks such as organs, bones, joints, nerves, muscles, soft tissues, vessels

Identify and annotate any abnormalities like hyperintensities, hypointensities, masses, fluid collections, structural displacements

Step 4- Interpretation of radiological findings through roga-rogi pareeksha findings and Ayurveda principles, utilizing appropriate Ayurveda terminology and contextualizing their relevance within the framework of Ayurveda diagnostics.

Step 5- Reporting Prepare a combined diagnostic report integrating both modern radiological interpretation and Ayurveda perspective.

Experiential-Learning 27.7 : MRI Prushtam (spine)

Posting in MRI Unit/ Workshop

Step 1 – Observe and understand the workflow of the MRI Unit

Step 2 – Guided structured image observation and interpretation

Students will be exposed to MRI images (multi-planar views) of the following regions under faculty supervision: Prushtam (spine)

Step 3 – Mark and Label Key Structures

Students will be provided with printed MRI images (T1, T2, or FLAIR/STIR depending on region).

For each Mark normal anatomical landmarks such as organs, bones, joints, nerves, muscles, soft tissues, vessels

Identify and annotate any abnormalities like hyperintensities, hypointensities, masses, fluid collections, structural displacements

Step 4- Interpretation of radiological findings through Roga-Rogi pareeksha findings and Ayurveda principles, utilizing appropriate Ayurveda terminology and contextualizing their relevance within the framework of Ayurveda diagnostics.

Step 5- Reporting Prepare a combined diagnostic report integrating both modern radiological interpretation and Ayurveda perspective.

Experiential-Learning 27.8 : MRI Antaradhi:- Urah/ Vaksha (thorax)

Posting in MRI Unit / Workshop

Step 1 – Observe and understand the workflow of the MRI Unit

Step 2 – Guided structured image observation and interpretation

Students will be exposed to MRI images (multi-planar views) of the following regions under faculty supervision: Antaradhi:- Urah/ Vaksha (thorax)

Step 3 – Mark and Label Key Structures

Students will be provided with printed MRI images (T1, T2, or FLAIR/STIR depending on region).

For each mark normal anatomical Landmarks such as organs, bones, joints, nerves, muscles, soft tissues, vessels

Identify and annotate any abnormalities like hyperintensities, hypointensities, masses, fluid collections, structural displacements

Step 4- Interpretation of radiological findings through Roga-Rogi pareeksha findings and Ayurveda principles, utilizing appropriate Ayurveda terminology and contextualizing their relevance within the framework of Ayurvedia diagnostics.

Step 5- Reporting prepare a combined diagnostic report integrating both modern radiological interpretation and Ayurveda perspective.

Experiential-Learning 27.9 : MRI Antaradhi:- Udarah and Sroni (abdomen and pelvis)

Posting in MRI Unit/ Workshop

Step 1 – Observe and understand the workflow of the MRI Unit.

Step 2 – Guided structured image observation and interpretation.

Students will be exposed to MRI images (multi-planar views) of the following regions under faculty supervision:Shakah (Urdwa/ Adho), Greeva and Prushata, Antaradhi:- Urah/ Vaksha, Antaradhi:- Udarah and Sronih, Shira-Greeva.

Step 3 – Mark and label key structures.

Students will be provided with printed MRI images (T1, T2, or FLAIR/STIR depending on region).

For each mark normal anatomical landmarks such as organs, bones, joints, nerves, muscles, soft tissues, vessels.

Identify and annotate any abnormalities like hyperintensities, hypointensities, masses, fluid collections, structural displacements.

Step 4- Interpretation of radiological findings through Roga-Rogi Pareeksha findings and Ayurveda principles, utilizing appropriate Ayurveda terminology and contextualizing their relevance within the framework of Ayurveda diagnostics.

Step 5- Reporting prepare a combined diagnostic report integrating both modern radiological interpretation and Ayurveda perspective.

Experiential-Learning 27.10 : MRI - Shakah: Urdhva/ Adhah (limbs)

4-Day Posting in MRI Unit/ Workshop
Step 1 – Observe and understand the workflow of the MRI Unit.

4-Day Posting in MRI Unit/ Workshop

Step 1 – Observe and understand the workflow of the MRI Unit.

Step 2 – Guided structured image observation and interpretation.

Students will be exposed to MRI images (multi-planar views) of the following regions under faculty supervision: Shakah Urdhva/ Adhah (limbs)

Step 3 – Mark and label key structures

Students will be provided with printed MRI images (T1, T2, or FLAIR/ STIR depending on region).

For each Mark normal anatomical landmarks such as organs, bones, joints, nerves, muscles, soft tissues, vessels.

Identify and annotate any abnormalities like hyperintensities, hypointensities, masses, fluid collections, structural displacements

Step 4- Interpretation of radiological findings through roga-rogi pareeksha findings and Ayurveda principles, utilizing appropriate Ayurveda terminology and contextualizing their relevance within the framework of Ayurveda diagnostics.

Step 5- Reporting prepare a combined diagnostic report integrating both modern radiological interpretation and Ayurveda perspective.

Modular Assessment

Assessment method	Hour
Instructions - Conduct a structured modular assessment. The assessment will be for 75 marks. Keep a structured marking pattern. Use different assessment methods in each module for the semester. Keep a record of the structured pattern used for assessment. Calculate the modular grade point as per Table 6C. Theory Based Assessment – 25 Marks. This component includes theory questions designed to assess conceptual clarity, integrative thinking, and the ability to apply learned contexts. Questions can be framed from any instructional unit, ensuring alignment with the intended learning outcomes. And Any practical in converted form can be taken for assessment. (25 Marks). And Any experiential as portfolio/ reflections/ presentations, can be taken as an assessment. (25 Marks). Methods: 1. 360° Feedback. 2. Objective Structured Radiology Examination (OSRE). 3. Journal club presentation. 4. Skill demonstration.	6

Module 28 : Fundamentals of Bhuta Vijnana

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

1. Synthesize the connections between Ayurveda Bhuta Vijnana and the principles of clinical microbiology
2. Correlate infection transmission dynamics with the Ayurveda framework of Upasargajanya Vyadhi.
3. Demonstrate care, maintenance and use of common laboratory equipments of microbiology lab.
4. Demonstrate various sterilization methods and infection control measures.
5. Relate Vikrita Vayu, Jala, Desha and Kala in context of environmental surveillance and epidemiological patterns of infectious disease.

M 28 Unit 1 Fundamentals of Bhuta Vijnana 1.Fundamentals of Bhuta Vijnana and principles of clinical microbiology.
2.Normal and abnormal human microbiota: Exploration of the human microbiota in health and disease and its Ayurveda perspective.
3.Infection transmission and host factors: Understanding source, transmission pathways and host susceptibility through the Ayurveda framework of Upasargajanya Vyadhi.
4.Healthcare-Associated Infections (HAIs): Classification, Surveillance, and Standard Preventive Measures.
5.Environmental Surveillance and Ayurveda perspectives on Vikrita Vayu and Vikrita Jala with their role in disease spread.
6.Epidemiological patterns of infectious diseases and understanding of Vikrita Desha and Vikrita Kala as contributing factors.
7.Sterilization and disinfection – Sterilization and disinfection in hospitals and clinical settings and its concept in Ayurveda.

References: 1,2,3,4,5,241,242,243,244,245,246,257,258,259,260

3A	3B	3C	3D	3E	3F	3G
CO1	Analyze concept and classification of "Bhuta Vijnana" in Ayurveda.	1	Lecture	CAN	Knows-how	L&PPT , L&GD,L_VC,BS
CO5,CO6	Appraise basics of clinical microbiology and common instruments used in microbiology laboratory.	1	Lecture	CS	Knows-how	L&GD,L&PPT ,L_VC
CO1,CO2,CO3	Compare concept of Upasargajanya Vyadhi with contemporary knowledge.	1	Lecture	CAN	Knows-	L&PPT ,

					how	L&GD,L _VC
CO1,CO2,CO3	Describe healthcare associated infections, types, transmission and their prevention.	1	Lecture	CC	Knows-how	L_VC,L& PPT ,L&GD
CO1,CO2	Compare sterilization and disinfection in Ayurveda with contemporary knowledge.	1	Lecture	CAP	Knows-how	L&PPT , BS,L_VC ,L&GD
CO5,CO6	Demonstrate maintenance of common laboratory equipments.	4	Practical Training 28.1	PSY-GUD	Shows-how	DL,IBL,D IS
CO3,CO4,CO8	Demonstrate case studies of different Upasargajanya Vyadhi.	4	Practical Training 28.2	PSY-GUD	Shows-how	D-BED,R P,BS,DIS, SIM
CO5	Demonstrate sterilization methods and use of sterilizers (indicators) in lab and hospital settings.	2	Practical Training 28.3	PSY-GUD	Shows-how	IBL,DL,D IS
CO1,CO2	Identify normal and pathogenic human microbiota in relation with Sahaja/ Vaikarika Bhuta.	1	Experiential-Learning 28. 1	AFT-REC	Does	PL,BS,TP W,TBL,D IS
CO1,CO2,CO3 ,CO4,CO8	Recognize role of Vikrita Vayu and Jala in a given case/ scenario.	3	Experiential-Learning 28. 2	AFT-VAL	Does	SIM,D-B ED,CD,R P,BS
CO1,CO2,CO3 ,CO4,CO8	Recognize role of Vikrita Desha and Kala in disease manifestation in a given case/ scenario.	3	Experiential-Learning 28. 3	AFT-VAL	Does	RP,BS,D-BED,SIM ,CD
CO5	Calculate parameters of Healthcare-Associated Infections (HAIs).	1	Experiential-Learning 28.	CAP	Does	PBL,IBL, CBL

		4				
CO5	Demonstrates modern sterilization methods and Quality Control.	4	Experiential-Learning 28.5	AFT-VAL	Does	RLE,PL,SDL
CO5,CO8	Demonstrates spill and needle stick injury management.	1	Experiential-Learning 28.6	AFT-VAL	Does	RLE,SDL,RP,PER

Practical Training Activity

Practical Training 28.1 : Maintenance of common laboratory equipments.

Microbiology lab posting
Teacher's instructions:
Step 1. Make a list of the instruments to be demonstrated like Autoclaves, Incubators, Microscopes, Pipettes, Refrigerators and Freezers, Biosafety Cabinets etc.
Step 2.Divide students in small groups and designate instruments to each group in rotational manner.
Step 3. Demonstrate the maintenance of the instruments and will discuss their principle, applications, and common handling errors.

Practical Training 28.2 : Case studies of different Upasargajanya Vyadhi.

Microbiology lab posting
Teacher's instructions:
Step 1. Select 2–3 real or simulated case scenarios of common infectious diseases.
Step 2. Present each case highlighting source, transmission mode, host factors, and clinical features.
Step 3. Describe the Ayurveda perspective of Upasargajanya Vyadhi like classification, Nidana, and Rogi-Bala etc.
Step 4. Conclude with linking modern and Ayurveda concepts.

Practical Training 28.3 : Use of sterilizers (indicators) in hospital settings.

Microbiology lab posting
Teacher's instructions:
Step 1. Demonstrate various types of sterilizers, their working principles, and indicators (biological, chemical, mechanical).
Step 2. While demonstration, ensure all safety protocols are followed during handling of sterilizers.

Step 3. Supervise student participation and clarify doubts through demonstrations and discussions.

Experiential learning Activity

Experiential-Learning 28.1 : Normal and abnormal human microbiota in relation with Bhuta.

Microbiology lab posting
Teacher's instructions:
Step 1. Compile a list of both normal and pathogenic microorganisms.
Step 2.Distribute list to students and instruct them to categorize the microorganisms according to the functions of Bhuta (Sahaja/Vaikarika).
Student's instructions:
Step 1.Investigate and review scientific literature, including textbooks, microbiome studies, and pertinent Ayurveda texts, on human microbiota.
Step 2. Classify each microorganism according to the concept of Bhuta (Vaikarika/ Avaikarika), providing scientific rationale and references to support your classification.
Step 3. Present your findings to the class.

Experiential-Learning 28.2 : Relating environmental surveillance with Ayurveda Perspectives on Vikrita Vayu and Vikrita Jala in disease spread.

Microbiology lab posting
Teacher's instructions:
Step 1.Assign real or simulated patient cases presenting with infections or environment-related illnesses to students OR Conduct a community survey in selected rural and urban areas to collect data on environmental factors and common disease.
Student's instructions:
Step 1.Take environmental exposure history focusing on possible Vikrita Vayu and Vikrita Jala factors.
Step 2. Identify potential transmission pathways and risk factors based on the patient's/community living or working environment.
Step 3. Correlate environmental data with disease patterns and Ayurveda descriptions.
Step 4. Compile observations and present the findings.

Experiential-Learning 28.3 : Epidemiological patterns of infectious diseases in relation to Vikrita Desha and Vikrita Kala.

Microbiology lab posting
Teacher's instructions:
Step 1. Assign patient cases or field-based epidemiological scenarios with endemic diseases or seasonal epidemics. to students for case history.
Student's instructions:
Step 1. Identify Vikrita Desha and Vikrita Kala contributing to disease manifestation.

Step 2.Discuss and document possible transmission sources, risk factors,role of Vikrita Desha and Vikrita Kala in the pathogenesis of infectious disease and preventive measures.

Step 3. Present group findings linking Ayurveda concepts with epidemiological patterns of infectious diseases.

Experiential-Learning 28.4 : HAIs parameter calculation.

Microbiology lab posting

Teacher's instructions:

Step 1. Provide real/dummy clinical data of patients on devices (urinary catheter, central line, ventilator) and patients admitted following surgeries.

Student's instructions:

Step 1. Calculate CAUTI Rate (catheter-associated urinary tract infection rate), CLABSI Rate (central line-associated bloodstream infection rate), VAE Rate (Ventilator-associated event rate) and SSI Rate (Surgical site infections rate) from the data provided.

Step 2. Interpret the result and present the findings with clinical interpretation.

Experiential-Learning 28.5 : Contemporary sterilization methods and Quality Control.

Microbiology lab posting

Teacher's instructions:

Step 1 Arrange necessary equipments and materials and demonstrate activity related to Sterilization Methods and Quality Control.

Step 2. Designate activity to each student in rotational manner.

Student's instructions:

Step 1. Perform the complete sterilization process using provided materials and follow standard protocols under teacher supervision.

Step 2. Record observations including time, temperature, pressure, and indicator color changes or results.

Step 3. Use chemical and biological indicators to validate the sterilization outcome.

Step 4. Discuss findings in small groups, identify any process gaps or failures, and suggest preventive measures based on observations.

Experiential-Learning 28.6 : Spill and needle stick injury management.

Microbiology lab posting

Teacher's instructions:

Step 1.Assign one student to perform role play of healthcare worker managing spill and needle stick injury

Step 2. Instruct rest students to observe and discuss any errors if any occurred during role play.

Student's instructions:

Step 1.Assigned student will perform role play by following standard steps of spill and needle stick injury management.

Step 2.Peers will observe the steps carefully.
Step 3. At the end, discuss with teacher regarding errors (if any noticed), standard steps and their significance.

Modular Assessment

Assessment method	Hour
Instructions - Conduct a structured modular assessment. The assessment will be for 25 marks. Keep a structured marking pattern. Use different assessment methods in each module for the semester. Keep a record of the structured pattern used for assessment. Calculate the modular grade point as per Table 6C. Theory Based Assessment – 25 Marks. This component includes theory questions designed to assess conceptual clarity, integrative thinking, and the ability to apply learned contexts. Questions can be framed from any instructional unit, ensuring alignment with the intended learning outcomes. Or Any practical in converted form can be taken for assessment. (25 Marks). Or Any experiential as portfolio/ reflections/ presentations, can be taken as an assessment. (25 Marks). Methods: OSPE/OSCE/CBA	2

Semester No : 5

Module 29 : Vyadhikshamatva Pareeksha

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

1. Interpret the immunopathological mechanisms of autoimmune and immune-mediated disorders through the lens of Ayurveda principles such as Bala, Vyadhikshamatva, and Oja-Kshaya.
2. Perform and analyze essential laboratory investigations including ELISA, flow cytometry, and immunofluorescence relevant to immune function and immunological disorders.
3. Interpret and integrate clinical presentations of immune-related disorders using Ayurveda diagnostic frameworks, correlating them with laboratory findings for a comprehensive assessment.

M 29 Unit 1 Vyadhikshamatva Pareeksha 1.Disorders related to Bala, Vyadhikshamatva and Oja: Exploration of immune dysfunctions including Types I–IV hypersensitivity, autoimmune diseases and immunodeficiency with Ayurveda concepts of Bala, Vyadhikshamatva and Oja-Kshaya.

2.Vyadhikshamatva Pareeksha Siddhant, Yantra Evam Vidhi: Immunological Diagnostic Techniques- ELISA, flow cytometry, immunofluorescence, and other techniques for immune status assessment.

3.Rasa Rakta Pareeksha (Serodiagnosis) in relation to Vyadhikshamatva: Laboratory interpretation of immune markers and serological findings.

4.Ayurveda Interpretation of immune-related disorders and associated laboratory tests: Correlating clinical and laboratory findings of immune dysfunctions with Ayurveda fundamental concepts for integrated diagnosis.

References: 241,242,243,244,245,246,247,248,249,250,257,258,259,260,276,277,278

3A	3B	3C	3D	3E	3F	3G
CO1,CO3	Appraise and interpret Hypersensitivity reactions, types, pathophysiology, mechanisms, diagnosis with Ayurveda principles.	1	Lecture	CS	Knows-how	L_VC,L&PPT ,L&GD
CO1,CO2,CO3	Appraise and interpret Autoimmunity, mechanisms, diagnostic techniques with Ayurveda principles.	1	Lecture	CS	Knows-how	L&GD,L_VC,L&PPT
CO1,CO2,CO3	Appraise and interpret immunodeficiency disorders, types, pathophysiology, diagnosis with Ayurveda principles.	1	Lecture	CS	Knows-how	L&PPT , L&GD,L_VC
CO1,CO2,CO3	Appraise and interpret principles and applications of immunological testing.	2	Lecture	CS	Knows-how	L&PPT , L_VC,L&GD
CO5,CO8	Demonstrate common tests related to conventional immunodiagnostic and newer techniques.	4	Practical Training 29.1	PSY-GUD	Shows-how	IBL,DL,DIS
CO5,CO8	Demonstrate operation and maintenance of ELISA reader and washer.	2	Practical Training 29.2	PSY-GUD	Shows-how	DL,DIS,IBL

CO2,CO3,CO4,CO5,CO8	Demonstrate integrative interpretation of immunology diagnostics through Ayurveda principles.	4	Practical Training 29.3	PSY-GUD	Shows-how	D-BED,IBL,TBL,DL,BS
CO5,CO8	Perform independently operation and maintenance of ELISA reader and washer.	2	Experiential-Learning 29.1	PSY-GUD	Shows-how	DIS,DL,IBL
CO5,CO8	Perform common tests related to conventional immunodiagnostic techniques.	5	Experiential-Learning 29.2	PSY-GUD	Shows-how	DIS,DL,LRI
CO2,CO3,CO4,CO5,CO8	Interpret Immune related disorders as per Ayurveda with their appropriate diagnostic laboratory tests.	5	Experiential-Learning 29.3	PSY-GUD	Shows-how	LRI,SDL,CBL,RLE,D-BED
CO2,CO3,CO6	Review and interpret recent open-access research articles focusing on contemporary and Ayurveda Immunology.	1	Experiential-Learning 29.4	AFT-VAL	Shows-how	BS,DIS,SDL

Practical Training Activity

Practical Training 29.1 : Conventional immunodiagnostic techniques and tests demonstration.

Microbiology lab posting
Teacher's instructions:
Step 1. Demonstrate common tests based on precipitation, agglutination etc.
Step 2. Demonstrate sample preparation and reagent addition for tests like Widal, VDRL, or ELISA. Latex agglutination (RA, ASO, CRP), RPR card, tube agglutination, gold conjugate rapid card, and ANA by IFA.
Step 3. Show incubation, agglutination or color development, and interpretation of results.
Step 4. Summarize principles and clinical relevance of each technique in diagnosing immune-related conditions.

Practical Training 29.2 : Operation and maintenance of ELISA reader and washer.

Microbiology lab posting

Teacher's instructions:

Step 1. Demonstrate setup of ELISA reader and washer, including calibration and QC checks.

Step 2. Operate the system with a loaded plate, perform washing, and record absorbance readings.

Step 3. Show post-use cleaning, flushing procedures, and routine maintenance for both devices.

Practical Training 29.3 : Integrative interpretation of immunology diagnostics through Ayurveda principles.

Microbiology lab posting

Teacher's instructions:

Step 1. Demonstrate interpretation of laboratory tests in clinical cases of immune related disorders.

Step 2: Interpret the findings with Ayurveda concepts.

Step 3: Discuss the rationale behind interpretation and its clinical relevance.

Experiential learning Activity

Experiential-Learning 29.1 : Operation and maintenance of ELISA reader and washer.

Microbiology lab posting

Student's instructions:

Step 1. Set up and calibrate the ELISA reader and washer, including power-on, blank reading, and filter selection.

Step 2. Perform sample reading and washing, demonstrating proper plate loading, reading absorbance, and executing wash cycles.

Step 3. Carry out maintenance, including cleaning lenses, flushing washer tubes, and documenting routine care procedures.

Experiential-Learning 29.2 : Performance of common tests related to conventional immunodiagnostic techniques.

Microbiology lab posting

Student's instructions:

Step 1. Prepare samples and reagents for RA, ASO, CRP (latex), RPR card, tube agglutination, ANA (IF), and rapid card tests.

Step 2. Perform tests as per protocols: mix sample with reagents, incubate if needed, and observe reactions (agglutination, flocculation, fluorescence, color change).

Step 3. Record and interpret results based on visible changes or fluorescence patterns, and discuss clinical significance.

Experiential-Learning 29.3 : Ayurveda interpretation of immune related disorders and its laboratory tests.

Microbiology lab posting

Teacher's instructions:

Step 1: Allot each student or group (depending on class size) known cases with laboratory-confirmed immunological disorders (e.g., autoimmune diseases, immune deficiencies).

Student's instructions:

Step 1: Take detailed history and perform clinical examination for the assigned cases, focusing on immune-related signs and symptoms.

Step 2: Interpret immunological investigations (e.g., ANA, CRP, immunoglobulin levels) in conjunction with Ayurveda principles (e.g., Bala, Oja, Vyadhikshamatva) and present integrated clinical, laboratory, and Ayurveda interpretations.

(Student's shall perform activity in at least 5 cases)

Experiential-Learning 29.4 : Recent open-access research articles focusing on contemporary and Ayurveda Immunology.

Teacher's instructions:

Step 1. Divide students into small groups and assign recent open-access research papers focusing on immune pathogenesis, diagnostic approaches in immunological disorders, and Ayurveda perspectives on immune dysfunctions one day prior to the activity.

Step 2: Ask each group to review the assigned paper, summarizing key findings.

Step 3: Each group will present a 5–7 minute summary followed by open discussion and faculty feedback.

Modular Assessment

Assessment method	Hour
Instructions - Conduct a structured modular assessment. The assessment will be for 25 marks. Keep a structured marking pattern. Use different assessment methods in each module for the semester. Keep a record of the structured pattern used for assessment. Calculate the modular grade point as per Table 6C. Theory Based Assessment – 25 Marks. This component includes theory questions designed to assess conceptual clarity, integrative thinking, and the ability to apply learned contexts. Questions can be framed from any instructional unit, ensuring alignment with the intended learning outcomes. Or Any practical in converted as OSPE or any form can be taken for assessment. (25 Marks). Or Any experiential as CBA/ LRI/ portfolio/ reflections/ presentations, can be taken as an assessment. (25 Marks).	2

Module 30 : Upasargajanya Vyadhi Pareeksha I – Sukshma Bhuta Vinischaya (Bacteriology)

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

1. Appraise the fundamentals of bacteriology and their application by using Ayurveda principles
2. Discuss medically important Sukshma Bhuta (bacteria) and the diagnostic methods employed for their identification
3. Analyze a given sample to identify medically important Sukshma Bhuta (bacteria) and interpret their clinical significance.
4. Perform antibiotic susceptibility testing and evaluate the antimicrobial potential of Ayurveda formulations.
5. Demonstrate proficiency in the use of standard automated systems employed in bacteriological diagnostics.

M 30 Unit 1 Sukshma Bhuta Vinischaya -Rachana Evam Nidana (Morphology and Identification of bacteria)1. Morphology and classification of (Sukshma Bhuta) bacteria, Bacterial taxonomy and bacterial genetics.
2. Specimen collection, direct detection (staining and others) culture media and methods, isolation and identification of (Sukshma Bhuta) bacteria.

References: 3,241,242,243,244,245,246,247,248,249,250,257,258,259,260,279,280,281

3A	3B	3C	3D	3E	3F	3G
CO2	Appraise Sukshma Bhuta (bacteria) morphology, classification, taxonomy, and genetics in the context of Ayurveda fundamental principles.	1	Lecture	CS	Knows-how	L&PPT , L&GD,L _VC
CO2	Describe laboratory diagnosis of Sukshma Bhuta (bacteria) infections.	1	Lecture	CC	Knows-how	L&PPT , L&GD,L _VC
CO2,CO5	Demonstrate microscopy for stained and unstained preparations.	2	Practical Training 30.1	PSY-GUD	Shows-how	DIS,LRI, CBL,DL
CO2,CO5	Demonstrate preparation and pouring of culture media.	2	Practical Training 30.2	PSY-GUD	Shows-how	DL,DIS,L RI,CBL
CO2,CO5	Demonstrate inoculation of liquid and solid media.	1	Practical Training 30.3	PSY-GUD	Shows-how	LRI,DIS, DL,CBL
CO2,CO5	Demonstrate Sukshma Bhuta (bacteria) identification tests.	3	Practical	PSY-	Shows-	LRI,DL,D

			Training 30.4	GUD	how	IS
CO2,CO5,CO8	Demonstrates collection, transportation, and handling of clinical samples.	1	Experiential-Learning 30.1	AFT-VAL	Does	SIM,RP,PBL,DL,DIS
CO2,CO5	Perform differential and special staining techniques independently.	2	Experiential-Learning 30.2	PSY-GUD	Shows-how	DL,LRI,DIS,CBL
CO2,CO5	Demonstrate media preparation, inoculation, and bacterial identification.	5	Experiential-Learning 30.3	PSY-GUD	Shows-how	DIS,LRI,SDL,TBL,DL

M 30 Unit 2 Sukshma Bhuta (Bacteria) of medical importance & Ayurveda interpretation1.Overview of Sukshma Bhuta (Bacteria) of medical importance including:

-Gram positive cocci including Staphylococcus, Streptococcus, Pneumococcus etc,

-Gram negative cocci of medical importance including Neisseria etc,

-Gram positive bacilli of medical importance including Lactobacillus, Bacillus etc,

-Gram negative bacilli of medical importance including Vibrios , Pseudomonas etc.,

-Others like Enterobacteriaceae, Mycobacteria, Chlamydia etc.

2. Sukshma Bhuta (Bacteria) Pareeksha Siddhant, Yantra Evam Vidhi : Bacterial culture, antibiotic sensitivity, and Ayurveda formulation testing: Methods for culturing Sukshma Bhuta (bacteria), performing antibiotic sensitivity tests, and evaluating antimicrobial activity of Ayurveda formulations.

3. Ayurveda interpretation and integrated clinical and laboratory reporting of Sukshma Bhuta bacterial infections: Correlating culture results, sensitivity patterns, and Sukshma Bhuta (bacterial) markers with Ayurveda diagnostic principlesfor integrated clinical and laboratory reporting of Sukshma Bhuta bacterial infections.

References: 3,6,241,242,243,244,245,246,247,248,249,250,257,258,259,260

3A	**3B**	**3C**	**3D**	**3E**	**3F**	**3G**
CO1,CO3	Appraise Gram positive cocci of medical importance including Staphylococcus, Streptococcus, Pneumococcus, etc.	3	Lecture	CS	Knows-how	L&PPT , L_VC,L&GD

CO1,CO3	Appraise Gram negative cocci of medical importance including Neisseria etc.	1	Lecture	CS	Does	L_VC,L&GD,L&PPT
CO1,CO3	Appraise Gram positive bacilli of medical importance including Lactobacillus, Bacillus, etc.	1	Lecture	CS	Knows-how	L&PPT , L_VC,L&GD
CO1,CO3	Appraise Gram negative bacilli of medical importance including Vibrios, Pseudomonas, etc.	1	Lecture	CS	Knows-how	L&PPT , L_VC,L&GD
CO1,CO3	Appraise Enterobacteriaceae.	1	Lecture	CS	Knows-how	L_VC,L&PPT ,L&GD
CO1,CO3	Appraise Mycobacteria and Chlamydia.	1	Lecture	CS	Knows-how	L&PPT , L_VC,L&GD
CO2,CO5	Demonstrate identification of medically important Sukshma Bhuta (bacteria) up to species level	3	Practical Training 30.5	PSY-GUD	Shows-how	DL,LRI,DIS,CD
CO2,CO5	Demonstrate semi-quantitative and quantitative analysis of urine for significant bacteriuria.	1	Practical Training 30.6	PSY-GUD	Shows-how	DL,DSN,CBL
CO2,CO5	Demonstrate antibiotic sensitivity/ susceptibility testing.	2	Practical Training 30.7	PSY-GUD	Shows-how	CBL,DIS,LRI,DL
CO2,CO5	Demonstrate antimicrobial susceptibility and sensitivity testing using Ayurveda-based herbal extracts and formulations.	2	Practical Training 30.8	PSY-GUD	Shows-how	DIS,LRI,DL,IBL
CO2,CO5	Demonstrate automated blood culture and bacterial identification systems.	1	Practical Training 30.9	PSY-GUD	Shows-how	DL,IBL,FV,LRI,CBL

CO2,CO5	Demonstrate AFB (Acid-Fast Bacilli) culture and sensitivity.	1	Practical Training 30.10	PSY-GUD	Shows-how	FV,DIS,DL,CBL
CO2,CO3,CO4,CO5,CO8	Demonstrate integrative interpretation of bacterial diagnostics.	2	Practical Training 30.11	PSY-GUD	Shows-how	DIS,DL,CBL
CO2,CO5,CO8	Identify and perform semi-quantitative analysis of bacteria independently.	4	Experiential-Learning 30.4	AFT-VAL	Shows-how	BS,LRI,DL,DIS,CBL
CO2,CO5,CO8	Identify Sukshma Bhuta (bacteria) in sample other than urine(pus, body fluids, stool etc.).	4	Experiential-Learning 30.5	AFT-RES	Shows-how	PAL,TBL,IBL,LRI
CO2,CO5	Perform antibiotic sensitivity/ susceptibility testing.	4	Experiential-Learning 30.6	PSY-GUD	Shows-how	IBL,DL,LRI,TBL
CO2,CO3,CO4,CO5,CO8	Formulate integrative interpretation of bacterial diagnostics.	5	Experiential-Learning 30.7	PSY-GUD	Shows-how	BS,CD,DL,LRI,CBL
CO2,CO3,CO6	Critical review and discussion of recent open-access research articles focusing on contemporary and Ayurveda bacteriology.	1	Experiential-Learning 30.8	AFT-VAL	Shows-how	BL,ML,SDL,JC,LS

Practical Training Activity

Practical Training 30.1 : Microscopy of wet mounts and stained slides.

Microbiology lab posting
Teacher's instructions:
Step 1.Demonstrate preparation of wet mount (unstained) and stained slides (e.g., Gram stain, Ziehl-Neelsen) to observe microorganisms.

Step 2.Students will observe motility and morphology in wet mounts, and structural details such as shape, arrangement, and staining characteristics in stained slides.

Step 3. Guide proper slide handling, focusing techniques, and safety protocols during microscopy.

Step 4. Students will record and compare findings from both methods, discussing diagnostic features and clinical relevance.

Practical Training 30.2 : Preparation and pouring of culture media.

Microbiology lab posting

Teacher's instructions:

Step 1.Demonstrate steps of media preparation for common used media

Step 2. Allot specific media students for culture preparation, following aseptic techniques and standardized protocols.

Step 3. Instruct students to pour the media into sterile Petri dishes or tubes under laminar airflow and allow them to solidify.

Step 4. Demonstrate quality check (e.g., sterility, consistency), label media and store appropriately.

Step 5.Explain the clinical use and significance of each medium in isolation and identification of specific organisms.

Practical Training 30.3 : Inoculation of liquid and solid media.

Microbiology lab posting

Teacher's instructions:

Step 1. Demonstrate aseptic techniques for inoculating solid media and liquid.

Step 2. Students will practice inoculation with assigned bacterial cultures.

Step 3. Demonstrate incubation of inoculated media at appropriate temperature and duration for optimal growth.

Step 4.Students will observe growth patterns and record findings.

Step 5. Discuss clinical significance of each inoculation techniques.

Practical Training 30.4 : Sukshma Bhuta (bacteria) identification tests.

Microbiology lab posting

Teacher's instructions:

Step 1. Demonstrate procedure of common biochemical tests used in Sukshma Bhuta (bacteria) identification.

Step 2. Students will perform under supervision selected tests on given Sukshma Bhuta (bacteria) isolates using standard aseptic techniques.

Step 3. Incubate specimen and students will interpret color changes or reactions to identify Sukshma Bhuta (bacterial) characteristics.

Step 4. Students will compare results with standard identification charts for presumptive Sukshma Bhuta (bacterial) identification.

Step 5. Discuss clinical relevance of each test and its role in diagnosing Sukshma Bhuta (bacterial) infections.

Practical Training 30.5 : Identification of medically important Sukshma Bhuta (bacteria).

Microbiology lab posting
Teacher's instructions:
Step 1.Demonstrate the step-wise approach for bacterial identification, including observation of colony morphology, Gram staining, and motility testing.
Step 2. Perform Biochemical tests such as Catalase, Coagulase, TSI, Urease, and IMViC cultures.
Step 3. Describe interpretation of test results using standard identification charts and databases.
Step 4. Discuss clinical significance of identified organisms.

Practical Training 30.6 : Semi-quantitative and quantitative analysis of urine.

Microbiology lab posting
Teacher's instructions:
Step 1. Demonstrate Semi-Quantitative Method for urine analysis.
Step 2. Demonstrate Quantitative Method (Pour Plate).
Step 3. Mix a measured volume of urine with sterile molten agar, pour into plates, incubate, and use colony counts to calculate bacterial load.
Step 4. Ask students to compare results from both methods and interpret findings.
Step 5. Highlight clinical applications of quantitative analysis and emphasize aseptic technique during sample handling.

Practical Training 30.7 : Antibiotic sensitivity/ susceptibility testing.

Microbiology lab posting
Teacher's instructions:
Step 1. Demonstrate disc diffusion method using standardized bacterial inoculums to students.
Step 2. Place and incubate antibiotic discs aseptically on the inoculated agar plate.
Step 3. Demonstrate students the correct method for measuring zones of inhibition around the antibiotic discs.
Step 4. Discuss the appropriate method and clinical relevance of microbiological lab reporting of antibiotic susceptibility testing.

Practical Training 30.8 : Antimicrobial susceptibility and sensitivity testing using Ayurveda-based herbal extracts and formulations.

Microbiology lab posting
Teacher's instructions:
Step 1. Apply herbal extract discs on agar plates inoculated with bacterial pathogens.
Step 2. Incubate the plates and measure zones of inhibition.

Step 3. Discuss interpretation of results and compare with standard antibiotics as controls.

Step 4. Discuss scientific evaluation of traditional formulations and their potential role in integrative infection management.

Practical Training 30.9 : Integrative interpretation of bacterial diagnostics.

Microbiology lab posting

Teacher's instructions:

Step 1. Demonstrate interpretation of bacterial culture reports, including colony characteristics, bacterial load, and antibiotic sensitivity (including MDR patterns) in clinical cases.

Step 2: Interpret the findings with Ayurveda concepts.

Step 3: The teacher will discuss the rationale behind interpretation and its clinical relevance.

Practical Training 30.10 : Automated blood culture and bacterial identification systems.

Microbiology lab posting/Field visit

Teacher's instructions:

Step 1. Demonstrate the working principle and operation of the automated blood culture system either through an in-house session or by arranging a lab visit to another institute or diagnostic centre.

Step 2. Explain steps for loading blood culture bottles, monitoring growth, and interpreting system alerts.

Step 3. Demonstrate operation of the automated blood culture system, including card insertion, bacterial identification, and antibiotic susceptibility testing.

Step 4. Explain the interpretation of data outputs and guide students in correlating automated results with appropriate clinical decision-making.

Step 4. Highlight safety practices and advantages of automation in enhancing the speed and accuracy of diagnostic procedures.

Practical Training 30.11 : AFB (Acid-Fast Bacilli) culture and sensitivity.

Microbiology lab posting/ Field visit

Teacher's instructions:

Step 1. Demonstrate collection, decontamination, and inoculation of clinical samples (e.g., sputum) onto Lowenstein-Jensen (LJ) medium or liquid media either through an in-house session or by arranging a lab visit to another institute or diagnostic centre.

Step 2. Describe incubation conditions, duration required, colony characteristics and identification methods.

Step 3. Demonstrate drug susceptibility testing (DST) for Mycobacterium tuberculosis using proportion method or automated systems.

Step 4. Discuss interpretation of results for first-line and second-line anti-tubercular drugs in context of national TB control guidelines.

Step 5. Conclude with highlighting biosafety measures, clinical importance of culture and DST in TB management.

Experiential learning Activity
Experiential-Learning 30.1 : Collection, transportation, and handling of clinical samples.
Microbiology lab posting Teacher's instructions: Step 1. Assign different types of clinical samples such as urine, blood, sputum, throat swab, stool, pus to different students/groups (depending on the number). Student's instructions: Step 1: Demonstrate appropriate sample collection techniques using sterile containers with correct labelling. Step 2: Simulate proper transport procedures, including temperature maintenance, transport media use (if required), and initial processing protocols. Step 3: Strictly follow biosafety measures and standard infection control guidelines throughout the activity.
Experiential-Learning 30.2 : Differential and special staining techniques.
Microbiology lab posting Student's instructions: Step 1: Independently prepare wet mounts and stained slides using provided microbial specimens. Step 2: Observe motility and morphology in wet mounts, and examine shape, arrangement, and staining characteristics in stained preparations under the microscope. Step 3: Record and interpret their findings, compare observations across methods, and identify diagnostic features relevant to clinical microbiology.
Experiential-Learning 30.3 : Media preparation, inoculation, and bacterial identification.
Microbiology lab posting Teacher's instructions: Step 1. Assign bacterial cultures/ specimens to students for inoculation and bacterial identifications. Student's instructions: Step 2. Prepare and pour various culture media such as Nutrient Agar, MacConkey Agar, TSI, and Nutrient Broth using standard procedures. Step 3. After solidification, inoculate assigned bacterial cultures into both liquid and solid media using aseptic techniques. Step 4. Incubate at appropriate conditions, observe and record growth characteristics. Step 5. Conduct biochemical identification tests on the grown cultures. Step 6. Interpret results using standard charts, and discuss the probable identity and clinical relevance of the organisms.
Experiential-Learning 30.4 : Semi-quantitative analysis, and reporting of Sukshma Bhuta (bacteria) in urine.

Microbiology lab posting

Student's instructions:

Step 1. Perform urine culture using standard techniques to isolate and quantify Sukshma Bhuta (bacterial) growth.

Step 2. Identify the organism through microscopy and biochemical tests, and interpret clinical relevance based on findings.

Step 3. Prepare structured report including observations, results, and diagnostic significance.

Experiential-Learning 30.5 : Sukshma Bhuta (bacteria) in Clinical Samples (Pus, Body Fluids, Stool, etc.).

Microbiology lab posting

Student's instructions:

Step 1. Collect the clinical sample (e.g., pus, CSF, stool) using sterile technique and transport promptly to the lab.

Step 2. Inoculate appropriate culture media (aerobic/anaerobic/selective) based on sample type.

Step 3. Incubate at optimal temperature and duration; observe colony morphology and perform Gram staining.

Step 4. Conduct relevant biochemical and serological tests for bacterial identification.

Step 5. Record source, culture findings, and identified organism in a structured lab report with interpretation.

Experiential-Learning 30.6 : Antibiotic sensitivity/ susceptibility testing.

Microbiology lab posting

Student's instructions:

Step 1. Perform antibiotic susceptibility testing on patient-derived bacterial isolates using the disc diffusion method.

Step 2. Measure zones of inhibition and interpret sensitivity patterns as per standard guidelines.

Step 3. Prepare a report highlighting the organism antibiotic profile and its clinical implications.

Experiential-Learning 30.7 : Integrative interpretation of bacterial diagnostics with Ayurveda correlation.

Microbiology lab posting

Teacher's instructions:

Step 1. Allot each student or group of students (depending on number) known cases of laboratory confirmed bacterial diseases.

Student's instructions:

Step 1. Take detailed history and conduct clinical examinations for each assigned case.

Step 2. Interpret lab investigations in conjunction with the Ayurveda principles and present findings integrating laboratory, clinical and classical interpretation.

(Student's shall perform activity in at least 5 cases)

Experiential-Learning 30.8 : Review and interpret the summary of recent advances focusing on contemporary and Ayurveda bacteriology.

Teacher's instructions:
Step 1. Divide students into small groups and assign recent open-access research papers focusing on bacterial pathogenesis, diagnostic approaches in bacteriology, and Ayurveda perspectives on bacterial diseases one day prior to activity
Step 2: Ask each group to review the assigned paper, summarizing key findings.
Step 3: Each group will present a 5–7 minute summary followed by open discussion and faculty feedback.

Modular Assessment

Assessment method	Hour
Instructions - Conduct a structured Modular assessment. The assessment will be for 50 marks. Keep a structured marking pattern. Keep a record of the structured pattern used for assessment. Theory Based Assessment – 25 Marks This component includes theory questions, designed to assess conceptual clarity, integrative thinking, and the ability to apply learned concepts in clinical, diagnostic, or problem-solving contexts. Questions may be framed from any instructional unit, ensuring alignment with the intended learning outcomes. Any one of the following can be selected for assessment (25 Marks): Any practical converted into an assessment format based on skills or demonstrations relevant to the module (25 Marks). and Any experiential learning method such as reflective tasks, or presentations, conducted individually or in groups, that reflect applied understanding of the subject (25 Marks).	4

Module 31 : Upasargajanya Vyadhi Pareeksha II – Anu Bhuta Vinischaya (Virology)

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

1. Appraise the fundamentals of Anu Bhuta Vinischaya (Virology) along with their applied relevance in Ayurveda and contemporary science.
2. Analyze the clinical significance, transmission, and pathogenesis of medically important viruses.
3. Perform independently various laboratory diagnostic tests to identify medically important viruses.
4. Interpret clinical and laboratory findings, including viral markers and serological test results.

5. Create comprehensive diagnostic strategies by integrating Ayurveda principles with modern virological investigations.

M 31 Unit 1 Anu Bhuta Vinischaya (Virology) 1. Fundamentals of Anu Bhuta (virology): General properties, classification, genetics, replication mechanisms, and identification methods of viruses.

2. Anu Bhuta (Virus) of medical importance: Overview of clinically significant viruses such as Pox viruses, Herpes viruses, Adeno viruses, Picorna virus, Myxovirus, Enteroviruses, Human immunodeficiency virus, Hepatitis viruses etc.

3. Ayurveda interpretation and integrated clinical and laboratory reporting of Anu Bhuta (viral) Infections: Correlating laboratory findings, viral markers, and serological tests with Ayurveda fundamental principles for integrated patient evaluation.

References: 3,241,242,243,244,245,246,247,248,249,250,257,258,259,260

3A	3B	3C	3D	3E	3F	3G
CO1,CO3	Analyze Anu Bhuta Vinischaya (Virology) and Its relevance in Roga Nidana.	1	Lecture	CAN	Knows-how	L_VC,L& PPT ,L&GD
CO1,CO2,CO3	Describe the structure, classification, pathogenesis, and clinical significance of medically important Anu Bhuta (Viruses).	3	Lecture	CC	Knows-how	L&GD,L _VC,L&P PT
CO1,CO2,CO3	Discuss and relate modern and Ayurveda diagnostic approaches to viral infections.	1	Lecture	CAN	Knows-how	L_VC,L& GD,L&P PT
CO5,CO8	Demonstrate Rapid tests for diagnosis of viral infections like HIV, Hepatitis, Dengue, Chikungunya, Japanese encephalitis etc.	4	Practical Training 31.1	PSY-GUD	Shows-how	LRI,DIS, DL
CO5	Demonstrate Advaanced Laboratory Investigations in Viral Diagnostics	2	Practical Training 31.2	PSY-GUD	Shows-how	FV,D,ML ,DIS
CO2,CO3,CO4 ,CO5,CO8	Demonstrate integrative interpretation of viral diagnostics with Ayurveda correlation.	4	Practical Training 31.3	PSY-GUD	Shows-how	LRI,D-B ED,BS,P

						BL,DL
CO5,CO8	Perform independently rapid tests for diagnosis of viral infections.	6	Experiential-Learning 31.1	PSY-GUD	Shows-how	IBL,DL,DIS
CO2,CO3,CO4,CO5,CO8	Demonstrates integrative interpretation of viral diagnostics with Ayurveda correlation.	6	Experiential-Learning 31.2	PSY-GUD	Shows-how	PBL,SDL,IBL,D-BED,BS
CO2,CO3,CO6	Review and interpret the summary of publications of recent research articles focusing on contemporary and Ayurveda Anu Bhuta Vinischaya (virology).	1	Experiential-Learning 31.3	AFT-VAL	Shows-how	SDL,DIS

Practical Training Activity

Practical Training 31.1 : Demonstration of rapid tests for diagnosis of viral infections.

Posting in Microbiology Lab
Teacher's instructions
Step 1. Demonstrate the procedure for performing rapid diagnostic tests for viral infections such as HIV, Hepatitis, Dengue, Chikungunya, Japanese Encephalitis etc. following the standard protocol in microbiology lab.
Step 2. Interpret the results obtained from the rapid tests.
Step 3. Lead a discussion on the principles underlying each test, the methodology used, how to interpret the results, and the various applications of these rapid diagnostic tests.

Practical Training 31.2 : Demonstration of Advaanced Laboratory Investigations in Viral Diagnostics

Microbiology Lab Posting/ Field Visit
Teacher's instructions:
Step 1. Demonstrate (or show video/demo slides of) selected tests such as RT-PCR, ELISA, Tzanck smear, or viral culture setup, explaining test principles and result interpretations to students
Step 2. Students will analyze the given reports (e.g., RT-PCR Ct values, IgM/IgG patterns, ELISA absorbance values, viral load, LFTs, CD4 counts) and correlate them with infection stage and disease severity.
Step 3. Discuss the underlying principles of each test, the methodology used, how to interpret the results, and the various applications of these tests.

Practical Training 31.3 : Demonstration of integrative interpretation of viral diagnostics
Microbiology Lab Posting Teacher's instructions: Step 1. Demonstrate stage-wise interpretation of viral markers (PCR, antigen, antibodies, viral load) in clinical cases. Step 2. Correlate laboratory test results with Shadkriyakala, highlighting diagnostic windows and progression, antibody profiles with Vyadhikshamatva, viral load with Roga Bala and clinical symptoms with Nidana Panchaka etc. Step 3. Perform an interaction with students regarding possible Ayurveda correlation with viral diagnostics
Experiential learning Activity
Experiential-Learning 31.1 : Rapid tests for diagnosis of viral infections.
Posting in Microbiology Lab Teacher's instructions: Step 1. Assign each student or group of students (depending on number) common rapid tests such as HIV, Hepatitis, Dengue, Chikungunya, Japanese Encephalitis etc. used for viral identification in Step 2. Follow standard protocol of rapid tests for diagnosis of viral infections. Step 3. Interpret the observations and will report to the teacher. (Student's shall perform rapid tests in minimum 10 samples and correlate clinically)
Experiential-Learning 31.2 : Integrative interpretation of viral diagnostics.
Posting in Microbiology Lab Teacher's instructions: Step 1. Allot each student or group of students (depending on number) known cases with laboratory confirmed viral diseases. Student's instructions: Step 1. Take a detailed history and conduct clinical examinations for each assigned case. Step 2. Coorelate lab investigations in conjunction with the Ayurveda principles and present findings integrating laboratory, clinical and classical interpretation. (Student's shall perform activity in at least 5 cases)
Experiential-Learning 31.3 : Review of recent open-access research papers on Anu Bhuta Vinischaya (Virology).
Teacher's instructions:

Step 1. Divide students into small groups and assign recent open-access research papers focusing on viral pathogenesis, diagnostic approaches in Anu Bhuta Vinischaya (Virology), and Ayurveda perspectives on viral diseases one day prior to activity.

Step 2: Ask each group to review the assigned paper, summarizing key findings.

Step 3: Each group will present a 5–7 minute summary followed by open discussion and faculty feedback.

Modular Assessment

Assessment method	Hour
Instructions - Conduct a structured modular assessment. The assessment will be for 25 marks. Keep a structured marking pattern. Use different assessment methods in each module for the semester. Keep a record of the structured pattern used for assessment. Calculate the modular grade point as per Table 6C. Theory Based Assessment – 25 Marks. This component includes theory questions designed to assess conceptual clarity, integrative thinking, and the ability to apply learned contexts. Questions can be framed from any instructional unit, ensuring alignment with the intended learning outcomes. Or Any practical in converted as OSPE form can be taken for assessment. (25 Marks). Or Any experiential as OSCE/ CBA/ portfolio/ reflections/ presentations, can be taken as an assessment. (25 Marks).	2

Semester No : 6

Module 32 : Upasargajanya Vyadhi Pareeksha III – Kledaja Bhuta Vinischaya Evam Krimi Vijnana (Mycology & Parasitology)

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

1. Appraise the fundamentals of medical Kledaja Bhuta Vinischaya (Mycology) and Krimi Vijnana (Parasitology)in the context of Ayurveda and contemporary science.
2. Analyze the clinical relevance, transmission, and pathogenesis of key Kledaja Bhuta (fungal) infections.
3. Perform laboratory diagnostic techniques for Kledaja Bhuta (fungal) and Krimi (parasitic) identification, including microscopy, staining, and culture-based methods.
4. Interpret clinical and laboratory findings of Kledaja Bhuta (fungal) and Krimi (parasitic) infections using contemporary diagnostic tools.
5. Create integrative diagnostic approaches combining Ayurveda insights with modern mycological and parasitological investigations.

M 32 Unit 1 Kledaja Bhuta Vinischaya (Mycology) 1. Fundamentals of Kledaja Bhuta Vinischaya (Medical Mycology): Fundamentals of Kledaja Bhuta (fungi), their classification, morphology, and pathogenic potential.

2. Common Kledaja Bhuta (Fungal) Infections of Clinical Importance: Overview of superficial, subcutaneous, systemic, and opportunistic fungal infections.

3. Kledaja Bhuta Pareeksha Siddhant, Yantra Evam Vidhi (Diagnostic Approaches in Mycology): Specimen collection, direct microscopy, culture methods, and identification techniques for Kledaja Bhuta (fungal pathogens).

4. Ayurveda interpretation of laboratory findingsbycorrelating laboratory-confirmed (Kledaja Bhuta) fungal infections with fundamentals of Ayurveda.

References: 3,241,242,243,244,245,246,247,248,249,250,257,258,259,260,279,281

3A	3B	3C	3D	3E	3F	3G
CO1,CO3	Describe general characteristics, classification, reproduction of Kledaja Bhuta (fungi).	1	Lecture	CC	Knows-how	L_VC,L&PPT,L&GD
CO1,CO2,CO3	Discuss superficial and subcutaneous mycoses.	1	Lecture	CAP	Knows-how	L&GD,L_VC,L&PPT
CO1,CO2,CO3	Describe systemic and opportunistic mycoses.	2	Lecture	CAP	Knows-how	L_VC,L&GD,L&PPT
CO1,CO2,CO3	Discuss and relate Nidana Panchaka of common Kledaja Bhuta (fungal) like diseases mentioned in classical texts with contemporary science.	1	Lecture	CAN	Knows-how	L&GD,L&PPT,L_VC
CO2,CO5	Demonstrate laboratory diagnosis of Candida albicans.	1	Practical Training 32.1	PSY-GUD	Shows-how	DL,DIS,LRI,IBL
CO2,CO5	Demonstrate negative staining for fungus.	1	Practical Training 32.2	PSY-GUD	Shows-how	DIS,DL,D-M,LRI

CO2,CO5	Demonstrate LPCB mount.	1	Practical Training 32.3	PSY-GUD	Shows-how	LRI,D,DL
CO2,CO5	Demonstrate culture media and methods for mycotic organisms.	2	Practical Training 32.4	PSY-GUD	Shows-how	LRI,DIS,FV,DL
CO2,CO5	Demonstrate histo-pathological slides of fungi.	1	Practical Training 32.5	PSY-GUD	Shows-how	DIS,DL
CO2,CO3,CO4,CO5,CO8	Demonstrate integrative interpretation of mycotic diagnostics with Ayurveda correlation.	4	Practical Training 32.6	PSY-ORG	Shows-how	CBL,BS,D-BED,DL,DIS
CO2,CO5,CO8	Perform independently KOH wet mount.	2	Experiential-Learning 32.1	AFT-VAL	Shows-how	IBL,LRI,DL,DIS
CO2,CO5	Perform independently Germ Tube Test.	2	Experiential-Learning 32.2	AFT-VAL	Shows-how	IBL,LRI,DIS,DL
CO2,CO5,CO8	Identify mycotic infection in common specimens like skin, hair, nail scrapping, ear scrapping, pus, sputum etc.	3	Experiential-Learning 32.3	AFT-VAL	Shows-how	IBL,DIS,DL
CO2,CO3,CO4,CO5,CO8	Demonstrates integrative interpretation of Kledaja Bhuta (fungal) diagnostics using Ayurveda principles.	5	Experiential-Learning 32.4	AFT-SET	Does	BS,RLE,DIS,CBL,DL
CO2,CO3,CO6	Critical review and discussion of recent open-access research articles focusing on contemporary and Ayurveda mycology.	1	Experiential-Learning 32.5	AFT-VAL	Does	DIS,SDL,BS,LS

M 32 Unit 2 Krimi Vijnana Pareeksha - Parasitology1.Introduction to Krimi Vijnana (Medical Parasitology): Overview of medically important parasites, transmission, and clinical relevance.

2. Adrishta Krimi (Protozoal Parasites) of Clinical Importance: General features, classification, life cycle, clinical manifestations and identification methods for Kakeruka (Entamoeba histolytica), Sasula (Entamoeba coli), Antrada(Giardia), Yoni Ashrita Adrishta Krimi (Trichomonas), Raktaja Krimi (Leishmania, Trypanosoma, Plasmodium) etc.

3. Drishta Krimi (Helminths) of Clinical Importance: Classification, characteristics, life cycle, clinical manifestations and identification techniques for Cestodes - Udarada (tapeworms), Trematodes - Basti Ashrit Drishta Krimi(Schistosoma), Yakritashrita Anu Krimi(Fasciola hepatica) and Nematodes - Mahaguda(roundworms).

4. Diagnostic Methods in Krimi Vijnana (Parasitology): Specimen collection, microscopic examination, culture and molecular methods.

5. Ayurveda reporting of Krimi (Parasitic) diseases and laboratory tests: Interpretation and documentation of laboratory findings of parasitic infections in alignment with Ayurveda principles.

References: 3,247,248,249,250,251,252,253,254,255,256,268,270,271,279,281

3A	3B	3C	3D	3E	3F	3G
CO2,CO5	Demonstrate Giemsa staining for thin and thick peripheral blood smears.	1	Practical Training 32.7	PSY-GUD	Shows-how	LRI,DL,DIS
CO2,CO5	Demonstrate microscopic identification of blood parasites.	2	Practical Training 32.8	PSY-GUD	Shows-how	LRI,IBL,DIS,DL
CO1,CO3	Appraise Ayurveda understanding of parasitic diseases.	1	Lecture	CS	Knows-how	L&PPT ,L&GD
CO1,CO2,CO3	Analyze general characters, classification, life cycle, pathogenesis and diagnosis of Adrishta Krimi (protozoal parasites).	2	Lecture	CAN	Knows-how	L&PPT , L&GD,L_VC
CO1,CO2,CO3	Appraise general characters, classification, life cycle, pathogenesis and diagnosis of Drishta Krimi (Helminths) of medical importance.	2	Lecture	CS	Shows-how	L_VC,L&GD,L&PPT
CO1,CO5	Demonstrate stool wet mount for R/M and stool concentration techniques	2	Practical Training 32.9	PSY-GUD	Shows-how	IBL,DIS,LRI,DL
CO1,CO5	Demonstrate Serological Diagnostic Techniques for Parasitic Infections	1	Practical Training 32.1	PSY-GUD	Shows-how	DIS,LRI,IBL,DL

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CO2,CO3,CO4,CO5,CO8	Interpret parasitology diagnostics with Ayurveda correlation.	4	Practical Training 32.11	PSY-ADT	Shows-how	DL,LRI,PBL,D-BED,IBL
CO1,CO5	Perform Giemsa staining and microscopy for thin and thick peripheral blood smears independently.	2	Experiential-Learning 32.6	PSY-GUD	Shows-how	DIS,IBL,DL
CO1,CO5	Perform stool concentration techniques for parasite detection.	1	Experiential-Learning 32.7	PSY-GUD	Shows-how	DL,IBL,DIS,LRI
CO1,CO5	Perform stool wet mount for routine microscopy.	4	Experiential-Learning 32.8	PSY-GUD	Shows-how	SDL,LRI
CO2,CO3,CO4,CO5,CO8	Demonstrate integrative interpretation of parasitology diagnostics with Ayurveda correlation.	5	Experiential-Learning 32.9	AFT-SET	Shows-how	PSM,IBL,DL,D-BED
CO2,CO3,CO6	Review and interpret the findings of publications on recent research articles focusing on contemporary and Ayurveda parasitology.	1	Experiential-Learning 32.10	AFT-VAL	Shows-how	LS,JC,BS

Practical Training Activity

Practical Training 32.1 : Demonstration of Laboratory Diagnosis of Candida albicans.

Microbiology Lab Posting
Teacher's instructions:
Step 1: Discuss clinical relevance of Candida albicans and outline common clinical specimens used for its detection.
Step 2: Demonstrate direct microscopic examination using KOH mount and Gram staining, followed by inoculation on Sabouraud Dextrose Agar to observe typical colony morphology.

Step 3: Perform the germ tube test for presumptive identification and briefly discuss confirmatory methods like sugar assimilation or chromogenic agar.

Practical Training 32.2 : Negative staining for fungus.

In house posting/ Field Posting to an External Microbiology Diagnostic Centre

Teacher's instructions:

Step 1: Explain the principle and diagnostic utility of negative staining in highlighting Kledaja Bhuta (fungal) structures against a dark background.

Step 2: Demonstrate slide preparation using India ink or nigrosin with a Kledaja Bhuta (fungal) specimen, followed by microscopic examination.

Step 3: Guide students in identifying key features such as capsules or budding yeast, while emphasizing biosafety and proper slide disposal.

Practical Training 32.3 : LPCB mount.

In house posting/ field Posting to an External Microbiology Diagnostic Centre

Teacher's instructions:

Step 1: Place a drop of LPCB stain on a clean slide and transfer a small amount of Kledaja Bhuta (fungal) growth.

Step 2: Tease the sample gently, cover with a coverslip, and avoid air bubbles.

Step 3: Observe under the microscope to identify Kledaja Bhuta (fungal) structures like hyphae and spores.

Practical Training 32.4 : Culture media and methods for mycotic organisms.

In house posting/ field Posting to an external Microbiology Diagnostic Centre

Teacher's instructions:

Step 1: Display commonly used culture media.

Step 2: Demonstrate sample inoculation, incubation conditions, and precautions for Kledaja Bhuta (fungal) cultures.

Step 3: Explain colony morphology, pigment production, and slow growth characteristics of fungi.

Practical Training 32.5 : Demonstration of histopathological slides of Kledaja Bhuta (fungal) infections.

Microbiology/ Pathology Lab Posting

Teacher's instructions:

Step 1: Show stained tissue sections to identify Kledaja Bhuta (fungal) elements like hyphae or spores.

Step 2: Highlight characteristic features of common fungi such as Candida, Aspergillus, and Mucor.

Step 3: Describe tissue reactions and diagnostic significance in systemic infections.

Practical Training 32.6 : Integrative interpretation of Kledaja Bhuta (fungal) diagnostics.

Microbiology/ Pathology Lab Posting

Teacher's instructions:

Step 1: Show stained tissue sections to identify Kledaja Bhuta (fungal) elements like hyphae or spores.

Step 2: Highlight characteristic features of common fungi such as Candida, Aspergillus, and Mucor.

Step 3: Describe tissue reactions and diagnostic significance in systemic infections.

Practical Training 32.7 : Giemsa staining for thin and thick peripheral blood smears.

Microbiology/ Pathology Lab Posting

Teacher's instructions:

Step 1: Explain the difference between thin and thick smears and their diagnostic significance.

Step 2: Demonstrate smear preparation on clean slides - thin for morphology and thick for parasite concentration.

Step 3: Stain the slides following standard protocol.

Step 4: Show microscopic examination of parasitic forms and blood cell details to students.

Practical Training 32.8 : Microscopic identification of blood parasites.

Microbiology Lab Posting

Teacher's instructions:

Step 1: Display stained thin and thick blood smears under the microscope.

Step 2: Demonstrate key morphological features of common blood parasites (e.g., Plasmodium, Trypanosoma, Microfilaria).

Step 3: Explain identification points such as parasite shape, location in blood cells, and diagnostic significance.

Practical Training 32.9 : Stool wet mount for R/M and stool concentration techniques

Microbiology Lab Posting

Teacher's instructions:

Step 1: Describe collection, preservation, and macroscopic examination of stool samples.

Step 2: Demonstrate saline and iodine wet mount preparation for detection of trophozoites, cysts, ova, and larvae.

Step 3: Show concentration techniques (e.g., formalin-ether sedimentation) and observe under microscope for enhanced parasite recovery.

Practical Training 32.10 : Serological Diagnostic Techniques for Parasitic Infections

Microbiology Lab Posting

Teacher's instructions:

Step 1: Describe the principles and clinical utility of serological testing in diagnosing parasitic infections, highlighting the detection of antibodies or antigens.

Step 2: Demonstrate a serological method (e.g., ELISA or a rapid diagnostic test), detailing sample preparation, reagent use, and the testing procedure.

Step 3: Guide students through interpreting test results and correlating these findings with specific parasitic infections and their clinical presentations.

Practical Training 32.11 : Integrative interpretation of parasitology diagnostics with Ayurveda correlation.

Microbiology lab posting

Teacher's instructions:

Step 1: Present laboratory findings of confirmed parasitic infections clinical cases along with their important clinical findings.

Step 2: Interpret the findings with Ayurveda concepts.

 Step 3: Discuss the rationale behind interpretation and its clinical relevance

Experiential learning Activity

Experiential-Learning 32.1 : KOH wet mount for fungal detection.

Microbiology Lab Posting

Student's instructions:

Step 1. Collect the specimen (e.g., skin scrapings) and place it on a clean slide with KOH.

Step 2. Apply a coverslip and gently heat.

Step 3. Examine under the microscope and identify Kledaja Bhuta (fungal) elements like hyphae or spores.

Experiential-Learning 32.2 : Perform Germ Tube Test for identification of Candida albicans.

Microbiology Lab Posting

Student's instructions:

Step 1: Inoculate yeast colonies into human or sheep serum and incubate.

Step 2: Place a drop of the incubated sample on a slide, cover with a coverslip.

Step 3: Examine under a microscope for germ tubes and record your observations.

Experiential-Learning 32.3 : Mycotic infection identification in common clinical specimens.

Microbiology Lab Posting

Student's instructions:

Step 1: Collect samples such as skin or ear scrapings, pus, or sputum using aseptic technique.

Step 2: Prepare KOH wet mounts and examine microscopically for Kledaja Bhuta (fungal) elements like hyphae or spores.

Step 3: Record observations and correlate findings with type and site of infection.

Experiential-Learning 32.4 : Integrative interpretation of Kledaja Bhuta (fungal) diagnostics.

Microbiology Lab Posting

Teacher's instructions:

Step 1. Allot each student or group of students (depending on number) known cases with laboratory confirmed Kledaja Bhuta (fungal) diseases.

Student's instructions:

Step 2. Take detailed history and conduct clinical examinations for each assigned case.

Step 3. Interpret lab investigations in conjunction with the Ayurveda principles and present their findings integrating laboratory, clinical and classical interpretation.

(Student's shall perform activity in at least 5 cases)

Experiential-Learning 32.5 : Critical review of recent open-access research articles focusing on contemporary and Ayurveda mycology.

Teacher's instructions:

Step 1. Divide students into small groups and assign recent open-access research papers focusing on Kledaja Bhuta (fungal) pathogenesis, diagnostic approaches in Mycology, and Ayurveda perspectives on Kledaja Bhuta (fungal) diseases one day prior to activity.

Step 2: Ask each group to review the assigned paper, summarizing key findings.

Step 3: Each group will present a 5–7 minute summary followed by open discussion and faculty feedback.

Experiential-Learning 32.6 : Giemsa staining for thin and thick peripheral blood smears.

Microbiology/Pathology Lab Posting

Teacher's instructions:

Step 1: Explain the difference between thin and thick smears and their diagnostic significance.

Step 2: Demonstrate smear preparation on clean slides - thin for morphology and thick for parasite concentration.

Step 3: Stain the slides following standard protocol.

Step 4: Show microscopic examination of parasitic forms and blood cell details to students.

Experiential-Learning 32.7 : Stool concentration techniques for parasite detection.

Microbiology lab posting

Student's instructions:

Step 1: Perform stool concentration using sedimentation or floatation methods (e.g., formalin-ether technique).

Step 2: Prepare slides from the concentrated sample and examine under a microscope for increased detection sensitivity.

Step 3: Compare findings with direct wet mount results to evaluate diagnostic accuracy and yield.

Experiential-Learning 32.8 : Stool wet mount for R/M and stool concentration techniques.

Microbiology Lab Posting

Teacher's instructions:

Step 1: Explain collection, preservation, and macroscopic examination of stool samples.

Step 2: Demonstrate saline and iodine wet mount preparation for detection of trophozoites, cysts, ova, and larvae.

Step 3: Show concentration techniques (e.g., formalin-ether sedimentation) and observe under microscope for enhanced parasite recovery.

Experiential-Learning 32.9 : Integrative interpretation of parasitic diagnostics.

Microbiology lab posting

Teacher's instructions:

Step 1. Allot each student or group of students (depending on number) known cases of laboratory confirmed parasitic diseases

Student's instructions:

Step 2. Take detailed history and conduct clinical examinations for each assigned case.

Step 3. Coorelate lab investigations in conjunction with the Ayurveda principles and will present their findings integrating laboratory, clinical and classical interpretation.

(Student's shall perform activity in at least 5 cases)

Experiential-Learning 32.10 : Review of recent open-access research papers on contemporary and Ayurveda parasitology.

Teacher's instructions:

Step 1: Divide students into small groups and assign recent open-access research papers focusing on parasitic pathogenesis, diagnostic approaches in parasitology, and Ayurveda perspectives on parasitic diseases one day prior to activity.

Step 2: Ask each group to review the assigned paper, summarizing key findings.

Step 3: Each group will present a 5–7 minute summary followed by open discussion and faculty feedback.

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 6C. Theory Based Assessment – 25 Marks. This component includes theory questions designed to assess conceptual clarity, integrative thinking, and the ability to apply learned contexts. Questions can be framed from any instructional unit, ensuring alignment with the intended learning outcomes. And Any practical in converted form can be taken for assessment. (25 Marks). Or Any experiential as portfolio/ reflections/ presentations, can be taken as an assessment. (25 Marks).	4

Module 33 : Recent advancements in Chhaya Evam Vikiran Vijnana, Bhuta and Krimi Vijnana.

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

1. Describe the scope and basic principles of Interventional Radiology, and outline its common procedures and clinical applications.
2. Explain the principles and identify clinical applications of Nuclear Medicine, including SPECT, CT, and Molecular Imaging, in diagnosis and therapy.
3. Discuss recent advances and technological innovations in X-ray, Ultrasound, CT, and MRI, and evaluate their impact on diagnostic accuracy and patient care.
4. Understand the structure and demonstrate the use of Picture Archiving and Communication System (PACS), Radiology Information System (RIS), and Hospital Information System (HIS) for effective image storage, access, and reporting.
5. Apply quality assurance measures and adhere to regulatory guidelines including safety protocols, explain biological effects of radiation, and implement radiation protection principles such as ALARA (As Low As Reasonably Achievable), including use of radiation dosimetry, dose limits, protection equipment, and awareness of regulatory bodies.
6. Describe the role and demonstrate the utility of Teleradiology, Telemedicine, and e-learning tools in remote diagnostics, education, and collaborative healthcare delivery.
7. Explore the applications of Artificial Intelligence (AI) in diagnostic imaging, and analyze how AI is transforming image acquisition, interpretation, and workflow efficiency in radiology
8. Explain core molecular biology and diagnostic imaging techniques (e.g., PCR, NGS, MRI, CT, SPECT) and their clinical applications in infection, cancer, and systemic disorders.
9. Evaluate host - microbiome interactions and apply advanced molecular diagnostics in parasitic and microbial disease detection.

M 33 Unit 1 Recent advancements and Quality assurance in Chhaya Evam Vikiran Vijnana1. Introduction to Interventional Radiology.
2. Introduction and applications of Nuclear Medicine (SPECT, CT) and molecular imaging, Bone Density Imaging, gastrointestinal imaging and endoscopy, echo-cardiography, angiography.
3. Picture Archiving and Communication System (PACS) and Radiology Information System (RIS) & HIS.
4. Quality Assurance & Regulatory guidelines - safety protocols, biological effects of radiation & principles of radiation protection including ALARA, radiation dosimetry, dose recommendations, radiation protection equipment & regulatory boards.
5. Tele-Radiology, Telemedicine & e-learning tools.
6. AI in diagnostic imaging.

References: 282,283,284,285,286,287,288,289,290,291,292,293

3A	3B	3C	3D	3E	3F	3G
CO1,CO2	Identify recent advancements in X-ray, USG, CT, and MRI technologies, including hybrid imaging techniques, and evaluate their principles and applications in modern diagnostic radiology and Ayurveda diagnostics.	1	Lecture	CC	Knows-how	L_VC,L&GD,L&PPT ,L
CO1,CO2	Describe the principles, techniques, and clinical applications of Nuclear Medicine (SPECT, PET), Molecular Imaging, and Interventional Radiology, and evaluate their relevance in diagnosing conditions described in Ayurveda.	1	Lecture	CC	Knows-how	L_VC,L&PPT ,L&GD,L
CO1	Discuss the components, functions, and workflows of Picture Archiving and Communication Systems (PACS), Radiology Information Systems (RIS), and Hospital Information Systems (HIS), and assess their adaptation within Ayurveda diagnostic systems.	1	Lecture	CC	Knows-how	DIS,L&GD,L_VC, L,L&PPT
CO5	Discuss principles of radiation measurement, dosimetry, and protection to ensure safety, plan diagnostic departments under regulatory standards, and evaluate biological effects of radiation in relation to Ayurveda clinical practice.	1	Lecture	CC	Knows-how	L,L_VC, L&PPT ,L&GD
CO6	Define the role and applications of Artificial Intelligence (AI) in diagnostic imaging. Discuss the core principles, workflow, and clinical utility of tele-radiology platforms and	1	Lecture	CC	Knows-how	L&GD,L, L&PPT

	virtual radiology simulation tools, and mention their use in Ayurveda diagnostics, including how remote imaging can support Ayurveda clinical assessments, monitor disease progression, and enhance interdisciplinary collaborations for patient care, education.				,L_VC
CO1,CO2	Demonstrate the procedures and clinical applications of Nuclear Medicine (SPECT, PET), Molecular Imaging, and Interventional Radiology, and relate their applications in Ayurveda diagnostics.	2	Practical Training 33.1	PSY-GUD	Shows-how	D,SIM,IBL,BL,CBL
CO5,CO6	Simulate an entire radiology workflow from the patient's admission to the hospital (via HIS) to scheduling an Imaging (via RIS), storing and interpreting the images (via PACS), and generating a report. Demonstrate the radiologist's practical role in using these systems.	2	Practical Training 33.2	PSY-GUD	Shows-how	DIS,D,CD,TUT,CBL
CO5	Perform standard safety procedures during X-ray, USG, CT, and MRI imaging, demonstrating proper use of protective equipment, patient positioning, and safety checks	4	Practical Training 33.3	PSY-GUD	Shows-how	DIS,IBL,C_L,BS,D
CO5,CO6	Describe the role of Artificial Intelligence (AI) in radiology workflows and apply basic AI tools to support image analysis, reporting, and workflow efficiency. Demonstrate the use of AI-based radiology platforms.	2	Practical Training 33.4	PSY-GUD	Shows-how	CBL,GBL,DIS,TUT,D
CO1,CO2,CO4,CO6	Identify Ayurveda diseases where advanced imaging modalities support diagnosis, monitoring, or clinical correlation. Present integrated findings with references, justifying the role of imaging in Ayurveda diagnostic. Understand how modern imaging can complement Ayurveda concepts.	6	Experiential-Learning 33.1	PSY-GUD	Shows-how	IBL,PER,DIS,C_L,JC
CO1,CO8	Apply radiation safety protocols in the radiology department. Biological effects of radiation and apply appropriate protection measures - including the use of protective equipment - in alignment with regulatory norms and their relevance to Ayurveda clinical practice.	3	Experiential-Learning 33.2	PSY-GUD	Shows-how	DIS,PER,D,PBL,PAL
CO5	Perform planning and designing diagnostic (X-ray) departments, including safety standards and regulatory guidelines.	3	Experiential-Learning 33.	CAP	Shows-how	PBL,TPW,PrBL,

					3			BS,IBL
CO6	Synthesize a scholarly review article that critically examines modern diagnostic imaging modalities and advances, their applications, integrative potential in Ayurveda diagnostics, and relevant Ayurveda interpretation and terminologies, with the goal of submission to a peer-reviewed journal.	4	Experiential-Learning 33.4	AFT-VAL	Shows-how	PL,TBL, Mnt,C_L, BS

M 33 Unit 2 Recent advancements in Bhuta Vijnana (Microbiology and Parasitology))1.Introduction to molecular biology: Concepts of molecular cloning, gel electrophoresis, DNA sequencing, Western Blotting and ELISA and their clinical applications.

2. Advanced molecular diagnostic tools: Knowledge of Polymerase Chain Reaction (PCR) Real-time PCR (qPCR), Reverse Transcriptase PCR (RT-PCR), Multiplex PCR, Next-Generation Sequencing (NGS), DNA microarrays etc. in microbial and parasitic diagnostics.

3. Microbial ecosystems and host interaction: Microbial ecosystems and their interaction with the human body like gut microbiome, skin microbiome, respiratory microbiome etc.

4. Emerging trends and integrative approaches in Bhuta Vijnana (microbiology and parasitology): Recent developments in integrative strategies combining molecular advances with Ayurveda principles.

References: 241,242,243,244,245,251,252,253,258,259,260,261,262,263,264,265,266,267,269,270,271,272,273,274,275

3A	3B	3C	3D	3E	3F	3G
CO1,CO2,CO3 ,CO6	Analyze the principles and application of molecular cloning, gel electrophoresis, and DNA sequencing.	1	Lecture	CS	Knows-how	L&GD,L &PPT ,L
CO1,CO2,CO3 ,CO6	Compare conventional PCR, qPCR, RT-PCR, and multiplex PCR in terms of sensitivity, specificity, and clinical decision-making.	1	Lecture	CS	Knows-how	L,L&GD, L_VC,L& PPT ,BS
CO1,CO2,CO3 ,CO6	Synthesize current research on gut, skin, and respiratory microbiomes. Interpret their interactions with host immunity and metabolism.	2	Lecture	CS	Knows-how	L,L&GD, L&PPT ,L_VC
CO1,CO2,CO3 ,CO6,CO7	Correlate systems microbiology and Bhuta Vijnana.	1	Lecture	CAN	Knows-how	L&GD,L &PPT ,L,L_VC

CO2,CO5	Demonstrate advance techniques like PCR, microbiome analysis, TB-TMA, RT-PCR etc.	10	Practical Training 33.5	PSY-GUD	Shows-how	DIS,IBL, DL
CO1,CO2,CO3 ,CO6,CO7	Discuss newer techniques related to molecular biology, systems microbiology and other advancements.	10	Experiential-Learning 33.5	AFT-VAL	Shows-how	BL,DIS,IBL

Practical Training Activity

Practical Training 33.1 : Nuclear Medicine, Molecular Imaging & Interventional Radiology.

Visit to a tertiary hospital/radiology center equipped with:

- Nuclear Medicine Unit (SPECT & PET-CT).
- Molecular Imaging Lab.
- Interventional Radiology Suite.

The teacher shall elaborate on the applications of imaging modalities, integrating Ayurveda perspectives during the visit
Students must submit a brief report covering:

- Summary of procedures observed.
- 2–3 conditions where this imaging can enhance Ayurveda-based diagnostic understanding.
- Ideas for integrative diagnostic models.

Practical Training 33.2 : Radiology workflow and the process of generating reports using HIS, RIS, and PACS.

Brief overview of digital workflow in radiology.
Simulated Workflow Demonstration
Step 1: Step 1: Patient Registration (HIS)

- Teacher logs into a simulated HIS interface.
- Enters dummy patient data (name, age, symptoms, physician order for MRI/CT).
- Emphasizes how patient data flows from HIS to RIS.

Step 2: Imaging Request & Scheduling (RIS)

- The teacher shows how an MRI request is scheduled in the RIS.
- Assigns modality, technician, time slot.
- Demonstrates how RIS communicates with PACS and scanner consoles.

Step 3: Image Acquisition (Demo/Simulation)

- Show pre-acquired CT or MRI images.
- Explain how DICOM files are automatically stored in PACS post-acquisition.

Step 4: Image Interpretation (PACS Viewer)

- Open images using a PACS viewer (RadiAnt, OsiriX, etc.).
- Annotates image and shows how notes are stored digitally.

Step 5: Report Generation

- Demonstrates structured radiology reporting using sample templates.
- Shows how the final report is sent back via RIS to HIS for the clinician's access.

Practical Training 33.3 : Standard safety procedures during X-ray, USG, CT, and MRI imaging.

Radiographer/ radio technician:

Explain the 3 cardinal rules of radiation protection

X-RAY SAFETY DEMO

Demonstrate:

- Room preparation and radiation signage.
- Use of lead aprons, thyroid shield for patient and staff.
- Collimation and exposure setting adjustments.
- Patient positioning for chest/lumbar X-ray.
- Standing behind lead barrier or in control booth.
- Logging dose in patient record.
- Explain ALARA principle, risk-benefit discussion, radiation effects.

ULTRASOUND SAFETY DEMO

Demonstrate:

- Use of non-ionizing modality in pregnant patient cases.
- Checking for probe temperature, transducer hygiene.
- Proper gel use and probe cleaning.
- Ergonomic positioning for long USG scans.
- Explain no radiation risk, but emphasize infection control and bio-safety.

CT SAFETY DEMO

Demonstrate:

•Radiation safety protocols in CT, emphasizing ALARA.

•Patient preparation and positioning for contrast and non-contrast CT scans.

•Use of lead shields, checking pregnancy status, and radiation dose modulation.

•Contrast administration protocols – check renal function, consent, emergency tray.

•Use of immobilizers and instructions for breath-hold or stillness during scans.

•Console interface: Selecting scan parameters (kVp, mAs, slice thickness).

•Post-scan observation for contrast reactions and patient care.

• Explain biological effects of ionizing radiation, safety guidelines by AERB/ICRP.

MRI SAFETY DEMO

Demonstrate:

•Magnetic field safety protocols: Patient and personnel screening for implants (e.g., pacemaker, aneurysm clips).

•Use of MRI-safe accessories and furniture (e.g., non-magnetic wheelchairs, trolleys).

• Patient preparation: Remove metallic objects, wear cotton gowns, explain noise and confined space.

•Use of earplugs/headphones to reduce acoustic noise.

•Emergency procedures: Quench button, fire safety inside magnet zone.

•Coil placement and positioning: Head coil, spine coil, extremity scans.

•Explain no radiation exposure, but stress serious risks of magnetic attraction and projectile accidents.

Practical Training 33.4 : Artificial Intelligence (AI) in radiology workflows.

Teacher Will Demonstrate:

Case studies illustrating the use of:

- Machine Learning (ML) for prediction or triage.
- Deep Learning (DL) for automated image interpretation.
- Natural Language Processing (NLP) for auto-generating structured reports.

Use of a real or demo AI-enabled radiology platform for:

X-ray interpretation & CT interpretation.

Student instructions:

- Split into two teams per case:

Team A: Interpret the image with AI assistance (view AI-generated findings and draft report).

Team B: Interpret the same image manually, without AI input.

- Compare and present Key findings, Confidence in diagnosis.

And the time taken to interpret
• Group discussion to evaluate Differences in interpretation outcomes and role and reliability of AI in routine practice.

Practical Training 33.5 : Demonstration of advance techniques like PCR, microbiome analysis, TB-TMA, RT-PCR etc.

Microbiology Lab Posting/Field Visit
Teacher's instructions:
Step 1: Introduce principles, clinical relevance, and workflow of advanced techniques such as PCR, RT-PCR, TB-TMA (Transcription-Mediated Amplification), and microbiome analysis.
Step 2: Demonstrate each technique step-by-step using available lab setups/ video simulations, focusing on sample preparation, amplification/ detection, and data interpretation.
Step 3: Explain diagnostic significance of results obtained from each technique and discuss applicability to clinical or microbial investigations.

Experiential learning Activity

Experiential-Learning 33.1 : Aadvanced imaging modalities support diagnosis, monitoring, or clinical correlation of Ayurveda diseases.

Seminar- Pair students

- List Ayurveda diseases as per classical texts or clinical practice, and online database.
- Identify where advanced imaging is useful for Ayurveda diagnosis and monitoring.
- Students shall do a presentation sharing their key insights along with justification and references.
- The teacher shall facilitate group discussion and at the end summarize key concepts.

Experiential-Learning 33.2 : Radiation safety protocols, effects of radiation and application of appropriate protection measures.

Gamification:

Plan a quiz /CBL/PBL Provide the student with a scenario on principles of radiation measurement, dosimetry, protection, and guidelines. Also on radiation safety in clinical practice,Biological effects of radiation .

Step 1 : Finalize what students should know and apply by the end.

E.g., ALARA, radiation units, biological effects, safety guidelines).

Step 2 : Design the Content of CBL/ PBL/ Quiz/ MCQ.

Step3: Create/Set Up Online Tools.

Step4: conduct the Session.

Step 5: Ask the students to write the reflection.

Step 6: Recap key takeaways and summarize.

Experiential-Learning 33.3 : Design, safety and compliance - A field-based evaluation of diagnostic imaging centers.

Step 1: Conduct an orientation session; brief students on objectives, provide AERB/ NABH checklists, and assign groups.

Step 2: Organize field visits to 2–3 diagnostic centers (X-ray, USG, CT, MRI); instruct students to observe layout, workflow, safety features, and regulatory compliance.

Step 3: Students document safety features, effective practices, gaps, and missing elements; compare findings with standard guidelines; note strengths and areas for improvement.

Step 4: Students submit a comprehensive report with findings, analysis, and reflections.

Experiential-Learning 33.4 : Scholarly review article on emerging radiological technologies and their relevance in Ayurveda diagnostics.

Step 1:Each student selects or is assigned a specific imaging modality (e.g., MRI, PET-CT, Interventional Radiology, SPECT, USG, CT, or hybrid imaging techniques).

Step 2:Students conduct a comprehensive literature review and begin writing a structured review article on the selected modality, focusing on:

- Principles and recent advancements
- Clinical applications
- Potential integration and relevance in Ayurveda diagnostics and research
- Ayurveda imaging terminologies.

Step 3: Students submit a complete draft of the review article for evaluation.

Step 4: Facilitate peer discussions or organize an expert panel review. Reviewers will provide constructive feedback on scientific quality, clarity, depth, and interdisciplinary relevance.

Experiential-Learning 33.5 : Discussion on emerging techniques in molecular biology and microbial screening techniques in molecular biology and microbial sciences.

Microbiology Lab Posting/ Field Visit
Student's instructions:
Step 1: Select and research one recent advancement or technique in molecular biology, systems microbiology, or microbial diagnostics (e.g., CRISPR, qPCR, metagenomics, NGS, microfluidics).
Step 2: Prepare a brief presentation or poster summarizing the principle, methodology, and its clinical or research applications.
Step 3: Present your findings to the class, highlighting the innovation's relevance to current medical or Ayurveda integrative practices. Discussion on emerging techniques in molecular biology and microbial sciences.

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 6C. Theory Based Assessment/ Seminar/ Journal Presentation Based Assessment – 25 Marks. This component includes theory questions designed to assess conceptual clarity, integrative thinking, and the ability to apply learned contexts. Questions can be framed from any instructional unit, ensuring alignment with the intended learning outcomes. Or Any practical in converted form can be taken for assessment. (25 Marks). And Any experiential as portfolio/ reflections/ presentations, can be taken as an assessment. (25 Marks).	4

Table 4 : Practical Training Activity

(*Refer table 3 of similar activity number)		
Practical No*	**Practical name**	**Hours**

1.1	Systematic approach to case taking and examination.	5
1.2	Systematic approach to conduct differential diagnosis.	5
2.1	Clinical assessment of fever case.	10
2.2	Clinical assessment of fever in an immunocompromised patient.	10
2.3	Clinical assessment of intestinal infestation.	10
3.1	Assessment of bleeding disorders.	3
3.2	Assessment of Dushta Rakta.	3
3.3	Clinical assessment of Kushta spectrum of disorders.	10
3.4	Clinical assessment of Pandu and Haleemaka.	4
4.1	Clinical assessment of disorders related to impaired appetite, digestion, and vomiting.	10
4.2	Clinical assessment of abdominal pain.	10
5.1	Clinical assessment in patients presenting with joint-related disorders.	7
5.2	Clinical assessment of upper and lower limb musculoskeletal disorders.	6
5.3	Clinical assessment of musculoskeletal disorders (Hanustambha, Manyastambha, Katigraha).	7
6.1	Clinical assessment of hiccup.	5
6.2	Clinical assessment of breathlessness and cough.	5
6.3	Clinical assessment of blunt injury to the chest.	5
6.4	Clinical assessment of sharp injury to the chest.	5
7.1	Clinical assessment and interpretation of signs and symptoms of Gata Vata.	7
7.2	Clinical assessment and diagnostic interpretation of Avarana conditions.	7

7.3	Clinical identification, reasoning, and differentiation of Margavarana.	6
8.1	Clinical assessment of Phiranga and Upadamsha.	7
8.2	Clinical assessment of Klaibya.	7
8.3	Clinical evaluation of Vandhyatva.	6
9.1	Clinical assessment of weight gain and weight loss.	10
9.2	Clinical assessment of polyuria.	10
10.1	Clinical assessment of altered state of consciousness.	10
10.2	Clinical assessment of Unmada, Atatwabhinivesha, and Vishada.	10
11.1	Clinical assessment of colorectal carcinoma.	2
11.2	Clinical assessment of gastric carcinoma.	2
11.3	Clinical assessment of hepatocellular carcinoma.	2
11.4	Clinical assessment of pancreatic cancer.	2
11.5	Clinical assessment of renal cancer.	2
11.6	Clinical assessment of thoracic carcinoma.	2
11.7	Clinical assessment of brain tumor.	2
11.8	Clinical assessment of bone cancer.	1
11.9	Clinical assessment of lymphoma.	1
11.10	Clinical assessment of leukaemia.	1
11.11	Clinical assessment of skin cancer.	2
11.12	Clinical assessment of thyroid cancer.	1

12.1	Clinical assessment of gastrointestinal disorders.	10
12.2	Clinical assessment of anorectal disorders.	10
13.1	Clinical assessment of non – rhythmical involuntary movement disorders.	7
13.2	Clinical assessment of seizure like disorders.	7
13.3	Clinical assessment of seizure disorders.	6
14.1	Clinical assessment of chest pain.	4
14.2	Clinical assessment of swelling (Part 1).	4
14.3	Clinical assessment of swelling (Part 2).	4
14.4	Clinical assessment of inflammatory and suppurative conditions.	4
14.5	Clinical assessment of hepatosplenic and gastrointestinal conditions.	4
15.1	Clinical evaluation for diseases of central nervous system.	6
15.2	Clinical assessment of diseases of peripheral nervous system.	6
15.3	Clinical assessment for Padadaha.	4
15.4	Clinical assessment for Padaharsha.	4
16.1	Clinical assessment of diseases of the urinary tract (Part 1).	10
16.2	Clinical assessment of diseases of the urinary tract (Part 2).	10
17.1	Examination of Rakta Dhatu	1
17.2	Utility of Rakta Dhatu examination	1
17.3	Sampling techniques and requirements in haematology.	2
17.4	Manual and automated procedures, quality control, troubleshooting in haematology	8

17.5	Interpretation of observations in haematology investigations	6
17.6	SOP development of interpretation of biochemistry investigations as per Ayurveda.	2
18.1	Laboratory techniques in biochemistry (Sampling, procedures, quality measures, troubleshooting, data management)	10
18.2	Interpretation of biochemistry investigations	5
18.3	Recent advance in biochemistry	2
18.4	SOP development of interpretation of biochemistry investigations as per Ayurveda.	3
19.1	Laboratory techniques in serology (sampling, procedures, quality measures, data management)	10
19.2	Interpretation of serology test findings	5
19.3	Advance testing in serology	2
19.4	SOP development of interpretation of serology tests as per Ayurveda.	3
20.1	Mootra Taila Bindu Pareeksha, (Oil droplet test), its laboratory requirements and processing techniques, interpretation, quality measures.	4
20.2	Urine examination procedures (routine and rapid diagnostics), lab requirements and reporting of urine analysis.	6
20.3	Laboratory methods, quality control and reporting of stool examination as per Ayurveda	4
20.4	Stool examination procedures (routine and rapid diagnostics), lab requirements and reporting in stool examination	6
21.1	Lab parameters of semen examination as per Ayurveda, lab requirements, procedure, SOP	2
21.2	Laboratory procedures of semen examination and semen wash.	4
21.3	SOP development of interpretation of semen analysis as per Ayurveda.	2
21.4	Lab parameters of sputum examination as per Ayurveda, lab requirements, SOP of procedures	4
21.5	Laboratory methods in sputum examination and its reporting.	6
21.6	SOP development of interpretation of sputum examination per Ayurveda.	2

22.1	Sample grossing, specimen preparation, staining, microscopic examination for HPE and SOP for machine operations in HPE	3
22.2	Interpretation and reporting in histopathology.	3
22.3	Sampling, specimen preparation, staining and lab requirements and in cytology.	3
22.4	Interpretation and reporting in cytology	3
22.5	Sampling, general IHC protocols, methods of antibody labelling and quality assessment protocols.	3
22.6	Stain patterns, scoring systems, case histories to interpret immunohistochemistry.	3
22.7	SOP development of interpretation of histopathological, cytological and immunohistochemistry per Ayurveda.	2
23.1	Sampling techniques and clinical indications cavity fluids gastric analysis.	10
23.2	Lab procedures of cavity fluids and gastric analysis	4
23.3	Identify variations in findings of cavity fluid, gastric analysis to arrive at a diagnosis.	3
23.4	SOP development of interpretation of cavity fluid and gastric analysis per Ayurveda.	3
24.1	Laboratory requirements, sampling and lab procedures in molecular biology and its reporting.	3
24.2	PCR techniques and automation in PCR	3
24.3	PCR techniques and automation in PCR	3
24.4	Hybridization assay techniques in Molecular biology.	3
24.5	Laboratory techniques, machine handling and performing special tests like FISH technique in forensic science, gender determination and parentage testing and their reporting criteria.	4
24.6	Lab procedures in cancer marker testing, quality control and standardization measures.	2
24.7	POCT set up, its significance, importance of quality assessment and troubleshooting management in POCT.	2
25.1	Shadangas: Gross anatomy.	3
25.2	Shadangas: Cross-sectional anatomy.	3

25.3	Approach to the patient in the radiology unit.	2
25.4	Structured radiology reporting.	2
26.1	conventional & digital radiography	2
26.2	Fluoroscopy, mammography, DEXA scan.	2
26.3	Radiography of the Shakha, Greeva and Prushta – (limbs and spine)	4
26.4	Radiography of the Anatradhi:-Urah/ Vaksha (chest)	4
26.5	Radiography of Anataradhi:-Udara and Sronih (abdomen and pelvis)	4
26.6	Radiography of the Sirah (skull, orbit, sinuses).	4
26.7	Ultrasound examination of the Antaradhi:- Udara and Sronih (Abdomen & pelvis) & Elastography of Koshtangas	4
26.8	Ultrasound examination of the Antaradhi:- Urah/ Vaksha	2
26.9	Stanah (Breast) ultrasound	2
26.10	Asrugvaha:-sira:Dhaman? (Vascular) ultrasound:	2
27.1	CT Shira (head)	3
27.2	CT Greeva (neck)	3
27.3	CT Antaradhi - Udaraha and Sronih (abdomen and pelvis)	3
27.4	CT Antaradhi - Udaraha and Sronih (abdomen and pelvis)	3
27.5	CT Shakah: Urdhva/ Adhah and Prushtam (spine and limbs).	3
27.6	MRI Shirah and Greeva (Head & Neck)	3
27.7	MRI Antaradhi:- Urah/ Vaksha (thorax)	3
27.8	MRI Udaraha and Sronih (Abdomen and pelvis)	3

27.9	MRI Shakah: Urdhva/ Adhah (upper and lower limbs)	3
27.10	MRI Prushtam (spine)	3
28.1	Maintenance of common laboratory equipments.	4
28.2	Case studies of different Upasargajanya Vyadhi.	4
28.3	Use of sterilizers (indicators) in hospital settings.	2
29.1	Conventional immunodiagnostic techniques and tests demonstration.	4
29.2	Operation and maintenance of ELISA reader and washer.	2
29.3	Integrative interpretation of immunology diagnostics through Ayurveda principles.	4
30.1	Microscopy of wet mounts and stained slides.	2
30.2	Preparation and pouring of culture media.	2
30.3	Inoculation of liquid and solid media.	1
30.4	Sukshma Bhuta (bacteria) identification tests.	3
30.5	Identification of medically important Sukshma Bhuta (bacteria).	3
30.6	Semi-quantitative and quantitative analysis of urine.	1
30.7	Antibiotic sensitivity/ susceptibility testing.	2
30.8	Antimicrobial susceptibility and sensitivity testing using Ayurveda-based herbal extracts and formulations.	2
30.9	Integrative interpretation of bacterial diagnostics.	2
30.10	Automated blood culture and bacterial identification systems.	1
30.11	AFB (Acid-Fast Bacilli) culture and sensitivity.	1
31.1	Demonstration of rapid tests for diagnosis of viral infections.	4

31.2	Demonstration of Advaanced Laboratory Investigations in Viral Diagnostics	2
31.3	Demonstration of integrative interpretation of viral diagnostics	4
32.1	Demonstration of Laboratory Diagnosis of Candida albicans.	1
32.2	Negative staining for fungus.	1
32.3	LPCB mount.	1
32.4	Culture media and methods for mycotic organisms.	2
32.5	Demonstration of histopathological slides of Kledaja Bhuta (fungal) infections.	1
32.6	Integrative interpretation of Kledaja Bhuta (fungal) diagnostics.	4
32.7	Giemsa staining for thin and thick peripheral blood smears.	1
32.8	Microscopic identification of blood parasites.	2
32.9	Stool wet mount for R/M and stool concentration techniques	2
32.10	Serological Diagnostic Techniques for Parasitic Infections	1
32.11	Integrative interpretation of parasitology diagnostics with Ayurveda correlation.	4
33.1	Nuclear Medicine, Molecular Imaging & Interventional Radiology.	2
33.2	Radiology workflow and the process of generating reports using HIS, RIS, and PACS.	2
33.3	Standard safety procedures during X-ray, USG, CT, and MRI imaging.	4
33.4	Artificial Intelligence (AI) in radiology workflows.	2
33.5	Demonstration of advance techniques like PCR, microbiome analysis, TB-TMA, RT-PCR etc.	10

Table 5 : Experiential learning Activity

(*Refer table 3 of similar activity number)		
Experiential learning No*	**Experiential name**	**Hours**
1.1	Comprehensive and structured patient history and examination.	7
1.2	Systematic approach for differential diagnosis.	6
2.1	Subjective and objective assessment of fever case.	6
2.2	Planning for investigations and diagnosis of fever.	5
2.3	Initial review for FUO, assessing its causes and redflags.	6
2.4	Subjective and objective assessment of immunocompromised patient with fever.	6
2.5	Planning for investigation and diagnosis of fever in immunocompromised patient.	5
2.6	Subjective and objective assessment of patient suspected of intestinal infestation.	6
2.7	Planning for investigation and diagnosis of intestinal infestation.	5
3.1	Subjective and objective assessment of patients with suspected bleeding disorders.	3
3.2	Planning for investigations and diagnosis of bleeding disorders.	3
3.3	Hematological study on samples from Rakta Pradoshaja Vikara.	2
3.4	Subjective and objective assessment of dermatological conditions.	5
3.5	Planning for investigation and diagnosis of dermatological conditions.	5
3.6	Subjective and objective assessment of Pandu and Haleemaka.	2
3.7	Planning for investigation and diagnosis of Pandu or Haleemaka.	2
3.8	Subjective and objective assessment of Kamala or Kumbhakamala.	2

3.9	Planning for investigation and diagnosis of Kamala or Kumbhakamala.	2
4.1	Subjective and objective assessment of patients with digestive disorders.	7
4.2	Planning for investigation and diagnosis for digestion-related disorders.	6
4.3	Subjective and objective assessment of abdominal pain.	7
4.4	Planning for investigation and diagnosis of abdominal pain.	6
5.1	Subjective and objective assessment of joint pain and swelling.	5
5.2	Planning for investigation and diagnosis of joint pain with or without swelling.	4
5.3	Subjective and objective assessment of joint pain localized to the shoulder, elbow, wrist, hip, ankle, or foot, with or without swelling.	5
5.4	Planning for investigation and diagnosis of joint pain with or without swelling.	4
5.5	Subjective and objective aassessment of musculoskeletal disorders (Hanustambha, Manyastambha, Katigraha).	4
5.6	Planning for investigation and diagnosis of musculoskeletal disorders (Hanustambha, Manyastambha, Katigraha).	4
6.1	Subjective and objective assessment in patients with hiccup.	4
6.2	Planning for investigation and diagnosis in hiccup.	4
6.3	Subjective and objective assessment in patients presenting with breathlessness and cough.	4
6.4	Planning for investigation and diagnosis in patients with cough and breathlessness.	4
6.5	Subjective and objective assessment in patients with blunt chest trauma.	3
6.6	Planning for investigation and diagnosis for blunt chest trauma.	2
6.7	Subjective and objective assessment in patients with sharp chest trauma.	3
6.8	Planning for investigation and diagnosis for sharp chest trauma.	2

7.1	Subjective and objective assessment of Gata Vata.	5
7.2	Planning for investigation and diagnosis of Gata Vata.	4
7.3	Subjective and objective assessment of functional disturbances and structural derangements to identify Avaraka and Avrita.	5
7.4	Diagnosis of Avarana Vata.	4
7.5	Subjective and objective assessment of Margavarana.	4
7.6	Planning for investigation and diagnosis of Margavarana involving Rasa-Rakta Marga.	4
8.1	Subjective and objective assessment of Phiranga and Upadamsha.	5
8.2	Planning for investigation and diagnosis of genital lesions.	4
8.3	Subjective and objective assessment in a patient presenting with difficulty in conception.	5
8.4	Planning for investigation and diagnosis in a case of Klaibya.	4
8.5	Subjective and objective assessment in a patient presenting with difficulty in conception.	4
8.6	Planning for investigation and diagnosis for Vandhyatva.	4
9.1	Subjective and objective assessment in a patient presenting with weight gain and weight loss.	7
9.2	Planning for investigation and diagnosis for weight gain and weight loss.	6
9.3	Subjective and objective assessment in a patient presenting with polyuria.	7
9.4	Planning for investigation and diagnosis for polyuria.	6
10.1	Subjective and objective assessment of patients with altered state of consciousness.	7
10.2	Planning for investigation and diagnosis in patients with altered state of consciousness.	6
10.3	Subjective and objective assessment in patients presenting with obsessions, compulsions and delusions, relevant physical symptoms, or abnormal social behavior.	7

10.4	Planning for investigation and diagnosis in patients with psychiatric disturbances.	6
11.1	Subjective and objective assessment, planning for investigation and diagnosis in patients presenting with complaints of colorectal carcinoma.	3
11.2	Subjective and objective assessment, planning for investigation and diagnosis in patients presenting with complaints of gastric carcinoma.	2
11.3	Subjective and objective assessment, planning for investigation and diagnosis in patients presenting with complaints of hepatocellular carcinoma.	2
11.4	Subjective and objective assessment, planning for investigation and diagnosis in patients presenting with complaints of pancreatic cancer.	2
11.5	Subjective and objective assessment, planning for investigation and diagnosis in patients presenting with complaints of renal cancer.	2
11.6	Subjective and objective assessment, planning for investigation and diagnosis in patients presenting with complaints of thoracic carcinoma.	3
11.7	Subjective and objective assessment, planning for investigation and diagnosis in patients presenting with complaints of brain tumor.	2
11.8	Subjective and objective assessment, planning for investigation and diagnosis in patients presenting with complaints of bone cancer.	2
11.9	Subjective and objective assessment, planning for investigation and diagnosis in patients presenting with complaints of lymphoma.	2
11.10	Subjective and objective assessment, planning for investigation and diagnosis in patients presenting with complaints of leukaemia.	2
11.11	Subjective and objective assessment, planning for investigation and diagnosis in patients presenting with complaints of skin cancer.	2
11.12	Subjective and objective assessment, planning for investigation and diagnosis in patients presenting with complaints of thyroid cancer.	2
12.1	Subjective and objective assessment in gastrointestinal disorders.	7
12.2	Planning for investigation and diagnosis in gastrointestinal disorders.	6
12.3	Subjective and objective assessment in a patient presenting with anorectal complaints.	7
12.4	Planning for investigation and diagnosis for anorectal disorders.	6
13.1	Subjective and objective assessment, planning for investigation and diagnosis in patients presenting with non – rhythmical involuntary movement disorders.	9

13.2	Subjective and objective assessment, planning for investigation and diagnosis in patients presenting with seizure like disorders.	8
13.3	Subjective and objective assessment, planning for investigation and diagnosis in patients presenting with seizure disorders.	9
14.1	Subjective and objective assessment in patients with chest pain.	3
14.2	Planning for investigation and diagnosis in patients with chest pain.	2
14.3	Subjective and objective assessment in cases with swelling (Part 1).	3
14.4	Planning for investigation and diagnosis in cases with swelling (Part 1).	2
14.5	Subjective and objective assessment in patients presenting swelling (Part 2)	3
14.6	Planning for investigation and diagnosis in patients with swelling (Part 2).	2
14.7	Subjective and objective assessment of inflammatory or suppurative conditions.	3
14.8	Planning for investigation and diagnosis of inflammatory and suppurative conditions.	3
14.9	Subjective and objective assessment in patients presenting with hepatosplenic and gastrointestinal complaints.	3
14.10	Planning for investigation and diagnosis for hepatosplenic and GI conditions.	2
15.1	Subjective and objective assessment for diseases of central nervous system.	4
15.2	Planning for investigation and diagnosis of central nervous system.	3
15.3	Subjective and objective assessment for diseases of peripheral nervous system.	4
15.4	Planning for investigation and diagnosis for diseases of peripheral nervous system.	3
15.5	Subjective and objective assessment in patients presenting with Padadaha.	3
15.6	Planning for investigation and diagnosis to confirm Padadaha.	3
15.7	Subjective and objective assessment in cases of Padaharsha.	3

15.8	Planning for investigation and diagnosis to identify Padaharsha.	3
16.1	Subjective and objective assessment in patient presenting with urinary complaints (Part 1).	7
16.2	Planning for investigation and diagnosis for urinary tract disease (Part 1).	6
16.3	Subjective and objective assessment in patient presenting with oliguria or anuria (Part 2).	7
16.4	Planning for investigation and diagnosis for oliguria or anuria (Part 2).	6
17.1	Assessment of Rakta Dhatu	2
17.2	Practical utility of Rakta examination in Dosha-Dushyadi Vijnana.	1
17.3	Manual and automated procedures, quality control, troubleshooting, data management in haematology	8
17.4	Clinical correlation of the interpretation and report generation in haematology.	10
17.5	Interpretation and reporting of advance tests in haematology	2
17.6	Interpret haematological investigations in terms of Ayurveda.	3
18.1	Laboratory techniques in biochemistry (Sampling, procedures, quality measures, troubleshooting, data management)	10
18.2	Interpretation, clinical correlation and report generation of biochemistry investigations	9
18.3	Advancements in biochemistry	3
18.4	Interpret biochemical investigations in terms of Ayurveda.	4
19.1	Laboratory techniques in serology (sampling, it's errors, various procedures, quality measures, data management)	10
19.2	Clinical correlation of serology test findings	10
19.3	Qualitative and quantitative tests, advance testing in serology, their advantages and disadvantages in laboratory procedures and in-patient care.	2
19.4	Interpret serology test results as per Ayurveda by administering SOP.	4
20.1	Utility of urine examination as per Ayurveda	6

20.2	Clinical correlation, quality assessment and advance technology and researches in urine examination.	4
20.3	Interpret urine analysis by applying fundamental principles of Dosha-Dushyadi Vijnana to understand clinical conditions as per Ayurveda.	4
20.4	Utility of stool examination as per Ayurveda	4
20.5	Clinical correlation, quality assessment and advance technology and researches in stool analysis.	5
20.6	Interpret stool analysis by applying fundamental principles of Dosha-Dushyadi Vijnana to understand clinical conditions as per Ayurveda.	3
21.1	Lab parameters of semen examination as per Ayurveda, lab requirements, procedure, SOP	2
21.2	Laboratory procedures of semen examination and semen wash	6
21.3	Interpretation of semen examination as per fundamental principles of Ayurveda	2
21.4	Clinical correlation, clinical and therapeutic relevance and interpretation of observations of sputum examination as per Ayurveda.	4
21.5	Laboratory methods in sputum examination and its reporting.	9
21.6	Interpret sputum examination as per fundamental principles of Ayurveda by administering SOP.	3
22.1	Microscopy, quality assessment, clinical correlation, AI and digital pathology in HPE examination.	8
22.2	Microscopy, quality assessment, clinical correlation, AI assistance and digital pathology in cytopathology.	8
22.3	Benefits, limitations, challenges, automation and simulation in IHC.	8
22.4	Interpret histopathology, cytology and immunohistochemistry as per Ayurveda by administering SOP.	2
23.1	Sampling techniques and clinical indications cavity fluids gastric analysis.	10
23.2	Lab procedures of cavity fluids and gastric analysis.	10
23.3	Clinical implications -Variations in cavity and gastric analysis.	2
23.4	Interpret fluid examination and gastric analysis as per Ayurveda by administering SOP.	4

24.1	Laboratory requirements, sampling and lab procedures in molecular biology and its reporting.	6
24.2	Reporting of hybridization assay techniques in Molecular biology.	6
24.3	Reporting of hybridization arrays with respect in various scenarios, limitations, advantages and disadvantages of hybridization arrays with study of recent researches.	3
24.4	Interpretation of cytogenetics as per fundamental principles of Ayurveda	3
24.5	Knowledge of newer cancer and tumour markers and emerging techniques through publication search.	4
24.6	Interpretation of cancer and tumour markers as per fundamental principles of Ayurveda.	4
25.1	Gross anatomy, cross-sectional anatomy of the Shadanga.	6
25.2	Main radiographic densities and their Ayurveda interpretation.	3
25.3	Approach to the patient.	4
26.1	X-Ray Shakha (Urdwa/ Adho),	9
26.2	Xray Antaradhih:- Urah/ Vaksha (Chest/Thorax)	9
26.3	X-Ray Antaradhi:- Udara and Sronih (Abdomen and pelvis)	3
26.4	X-ray - Sirah (skull, orbit, and sinus)	3
26.5	Ultrasound examination of the Kukshi: Udarah and Sronih, Shira-Greeva.	6
26.6	Ultrasound examination of the Antaradhih:- Urah/ Vaksha and Shakah (Limbs) Greeva & Prushta.	3
26.7	Stanah (Breast) ultrasound.	3
26.8	Asrugvaha:- Sira - Dhamani (Vascular) ultrasound.	3
27.1	CT Sirah (Head)	5
27.2	CT Greeva (neck)	3

27.3	CT Antaradhi:- Urah/ Vaksha (thorax)	5
27.4	CT Antaradhi:- Udarah and Sronih (abdomen & pelvis)	5
27.5	CT Shakah: Urdhva/ Adhah and Prushtam (spine and limbs)	3
27.6	MRI Shirah and Greeva (Head and Neck)	4
27.7	MRI Prushtam (spine)	4
27.8	MRI Antaradhi:- Urah/ Vaksha (thorax)	3
27.9	MRI Antaradhi:- Udarah and Sroni (abdomen and pelvis)	3
27.10	MRI - Shakah: Urdhva/ Adhah (limbs)	4
28.1	Normal and abnormal human microbiota in relation with Bhuta.	1
28.2	Relating environmental surveillance with Ayurveda Perspectives on Vikrita Vayu and Vikrita Jala in disease spread.	3
28.3	Epidemiological patterns of infectious diseases in relation to Vikrita Desha and Vikrita Kala.	3
28.4	HAIs parameter calculation.	1
28.5	Contemporary sterilization methods and Quality Control.	4
28.6	Spill and needle stick injury management.	1
29.1	Operation and maintenance of ELISA reader and washer.	2
29.2	Performance of common tests related to conventional immunodiagnostic techniques.	5
29.3	Ayurveda interpretation of immune related disorders and its laboratory tests.	5
29.4	Recent open-access research articles focusing on contemporary and Ayurveda Immunology.	1
30.1	Collection, transportation, and handling of clinical samples.	1

30.2	Differential and special staining techniques.	2
30.3	Media preparation, inoculation, and bacterial identification.	5
30.4	Semi-quantitative analysis, and reporting of Sukshma Bhuta (bacteria) in urine.	4
30.5	Sukshma Bhuta (bacteria) in Clinical Samples (Pus, Body Fluids, Stool, etc.).	4
30.6	Antibiotic sensitivity/ susceptibility testing.	4
30.7	Integrative interpretation of bacterial diagnostics with Ayurveda correlation.	5
30.8	Review and interpret the summary of recent advances focusing on contemporary and Ayurveda bacteriology.	1
31.1	Rapid tests for diagnosis of viral infections.	6
31.2	Integrative interpretation of viral diagnostics.	6
31.3	Review of recent open-access research papers on Anu Bhuta Vinischaya (Virology).	1
32.1	KOH wet mount for fungal detection.	2
32.2	Perform Germ Tube Test for identification of Candida albicans.	2
32.3	Mycotic infection identification in common clinical specimens.	3
32.4	Integrative interpretation of Kledaja Bhuta (fungal) diagnostics.	5
32.5	Critical review of recent open-access research articles focusing on contemporary and Ayurveda mycology.	1
32.6	Giemsa staining for thin and thick peripheral blood smears.	2
32.7	Stool concentration techniques for parasite detection.	1
32.8	Stool wet mount for R/M and stool concentration techniques.	4
32.9	Integrative interpretation of parasitic diagnostics.	5
32.10	Review of recent open-access research papers on contemporary and Ayurveda parasitology.	1

33.1	Aadvanced imaging modalities support diagnosis, monitoring, or clinical correlation of Ayurveda diseases.	6
33.2	Radiation safety protocols, effects of radiation and application of appropriate protection measures.	3
33.3	Design, safety and compliance - A field-based evaluation of diagnostic imaging centers.	3
33.4	Scholarly review article on emerging radiological technologies and their relevance in Ayurveda diagnostics.	4
33.5	Discussion on emerging techniques in molecular biology and microbial screening techniques in molecular biology and microbial sciences.	10

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
AYPG-RN	4	100 x 4 Papers = 400	400	800

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

Credit frame work

AYPG-RN consists of 33 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 : Semester 2 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 (Vyadhi Vijnana I)						
M1 Ayurveda Diagnostic Approach	1	30		25		
M2 Lakshana Niroopana 1.1	3	90		75		
Paper No : 2 (Vyadhi Vijnana II)						
M9 Lakshana Niroopana 2.1	2	60		50		
M10 Lakshana Niroopana 2.2	2	60		50		
Paper No : 3 (Vikriti Pareeksha I (Clinical Pathology)						
M17 Rakta Vikriti Vijnana (Haematology)	2	60		50		
M18 Dhatwansha Pareeksha (Biochemistry)	2	60		50		
Paper No : 4 (Vikriti Pareeksha II (Microbiology and Imaging)						
M25 Fundamentals of Chhaya Evam Vikiran Vijnana	1	30		25		

M26 Chhaya Evam Vikiran Vijnana–1 (Radiography & Ultrasonography)	3	90		75		
	16	480		400		
Semester No : 4						
Paper No : 1 (Vyadhi Vijnana I)						
M3 Lakshana Niroopana 1.2	2	60		50		
M4 Lakshana Niroopana 1.3	2	60		50		
Paper No : 2 (Vyadhi Vijnana II)						
M11 Lakshana Niroopana 2.3	2	60		50		
M12 Lakshana Niroopana 2.4	2	60		50		
Paper No : 3 (Vikriti Pareeksha I (Clinical Pathology)						
M19 Rakta-Rasa Pareeksha (Serology)	2	60		50		
M20 Mootra and Pureesha Pareeksha (Urine and Stool examination)	2	60		50		
Paper No : 4 (Vikriti Pareeksha II (Microbiology and Imaging)						
M27 Chhaya Evam Vikiran Vijnana – 2 (CT & MRI)	3	90		75		
M28 Fundamentals of Bhuta Vijnana	1	30		25		
	16	480		400		
Semester No : 5						
Paper No : 1 (Vyadhi Vijnana I)						
M5 Lakshana Niroopana 1.4	2	60		50		
M6 Lakshana Niroopana 1.5	2	60		50		
Paper No : 2 (Vyadhi Vijnana II)						
M13 Lakshana Niroopana 2.5	2	60		50		
M14 Lakshana Niroopana 2.6	2	60		50		
Paper No : 3 (Vikriti Pareeksha I (Clinical Pathology)						
M21 Retasa and Shthivana Pareeksha (Semen and Sputum examination)	2	60		50		
M22 Uti Vikriti Vijnana (Histopathology), Kosha - Vikriti Vijnana (Cytology) and Dhatupratiraksha Vijnana (Immunohistochemistry)	2	60		50		

Paper No : 4 (Vikriti Pareeksha II (Microbiology and Imaging)						
M29 Vyadhikshamatva Pareeksha	1	30		25		
M30 Upasargajanya Vyadhi Pareeksha I – Sukshma Bhuta Vinischaya (Bacteriology)	2	60		50		
M31 Upasargajanya Vyadhi Pareeksha II – Anu Bhuta Vinischaya (Virology)	1	30		25		
	16	480		400		
Semester No : 6						
Paper No : 1 (Vyadhi Vijnana I)						
M7 Lakshana Niroopana 1.6	2	60		50		
M8 Lakshana Niroopana 1.7	2	60		50		
Paper No : 2 (Vyadhi Vijnana II)						
M15 Lakshana Niroopana 2.7	2	60		50		
M16 Lakshana Niroopana 2.8	2	60		50		
Paper No : 3 (Vikriti Pareeksha I (Clinical Pathology)						
M23 Deh Drava (Cavity fluid examination and Gastric analysis)	2	60		50		
M24 Jaiva Anu Vijnana (Molecular biology), Koshika Vansh Vikrii Vijanana (Cytogenetics), Dehadhatu Vikriti Sanketaka (Cancer and Tumour markers), Drut Pareekshan Paddhati (Point of care testing (POCT)	2	60		50		
Paper No : 4 (Vikriti Pareeksha II (Microbiology and Imaging)						
M32 Upasargajanya Vyadhi Pareeksha III – Kledaja Bhuta Vinischaya Evam Krimi Vijnana (Mycology & Parasitology)	2	60		50		
M33 Recent advancements in Chhaya Evam Vikiran Vijnana, Bhuta and Krimi Vijnana.	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 Vyadhi Vijnana I		
A **S.No**	**B** **Module number and Name**	**C** **MGP**
1	M1.Ayurveda Diagnostic Approach	C1
2	M2.Lakshana Niroopana 1.1	C2
Paper No : 2 Vyadhi Vijnana II		
A **S.No**	**B** **Module number and Name**	**C** **MGP**
3	M9.Lakshana Niroopana 2.1	C3
4	M10.Lakshana Niroopana 2.2	C4
Paper No : 3 Vikriti Pareeksha I (Clinical Pathology		
A **S.No**	**B** **Module number and Name**	**C** **MGP**
5	M17.Rakta Vikriti Vijnana (Haematology)	C5
6	M18.Dhatwansha Pareeksha (Biochemistry)	C6
Paper No : 4 Vikriti Pareeksha II (Microbiology and Imaging		
A **S.No**	**B** **Module number and Name**	**C** **MGP**
7	M25.Fundamentals of Chhaya Evam Vikiran Vijnana	C7
8	M26.Chhaya Evam Vikiran Vijnana–1 (Radiography & Ultrasonography)	C8
	Semester Grade point Average (SGPA)	(C1+C2+C3+C4+C5+C6+C7+C8) / Number of modules(8)
Semester No : 4		
Paper No : 1 Vyadhi Vijnana I		
A	**B**	**C**

S.No	Module number and Name	MGP
1	M3.Lakshana Niroopana 1.2	C1
2	M4.Lakshana Niroopana 1.3	C2

Paper No : 2 Vyadhi Vijnana II

A S.No	B Module number and Name	C MGP
3	M11.Lakshana Niroopana 2.3	C3
4	M12.Lakshana Niroopana 2.4	C4

Paper No : 3 Vikriti Pareeksha I (Clinical Pathology

A S.No	B Module number and Name	C MGP
5	M19.Rakta-Rasa Pareeksha (Serology)	C5
6	M20.Mootra and Pureesha Pareeksha (Urine and Stool examination)	C6

Paper No : 4 Vikriti Pareeksha II (Microbiology and Imaging

A S.No	B Module number and Name	C MGP
7	M27.Chhaya Evam Vikiran Vijnana – 2 (CT & MRI)	C7
8	M28.Fundamentals of Bhuta Vijnana	C8
	Semester Grade point Average (SGPA)	(C1+C2+C3+C4+C5+C6+C7+C8) / Number of modules(8)

Semester No : 5

Paper No : 1 Vyadhi Vijnana I

A S.No	B Module number and Name	C MGP
1	M5.Lakshana Niroopana 1.4	C1
2	M6.Lakshana Niroopana 1.5	C2

Paper No : 2 Vyadhi Vijnana II

A S.No	B Module number and Name	C MGP

3	M13.Lakshana Niroopana 2.5	C3
4	M14.Lakshana Niroopana 2.6	C4

Paper No : 3 Vikriti Pareeksha I (Clinical Pathology

A S.No	B Module number and Name	C MGP
5	M21.Retasa and Shthivana Pareeksha (Semen and Sputum examination)	C5
6	M22.Uti Vikriti Vijnana (Histopathology), Kosha - Vikriti Vijnana (Cytology) and Dhatupratiraksha Vijnana (Immunohistochemistry)	C6

Paper No : 4 Vikriti Pareeksha II (Microbiology and Imaging

A S.No	B Module number and Name	C MGP
7	M29.Vyadhikshamatva Pareeksha	C7
8	M30.Upasargajanya Vyadhi Pareeksha I – Sukshma Bhuta Vinischaya (Bacteriology)	C8
9	M31.Upasargajanya Vyadhi Pareeksha II – Anu Bhuta Vinischaya (Virology)	C9
	Semester Grade point Average (SGPA)	(C1+C2+C3+C4+C5+C6+C7+C8+C9) / Number of modules(9)

Semester No : 6

Paper No : 1 Vyadhi Vijnana I

A S.No	B Module number and Name	C MGP
1	M7.Lakshana Niroopana 1.6	C1
2	M8.Lakshana Niroopana 1.7	C2

Paper No : 2 Vyadhi Vijnana II

A S.No	B Module number and Name	C MGP
3	M15.Lakshana Niroopana 2.7	C3
4	M16.Lakshana Niroopana 2.8	C4

Paper No : 3 Vikriti Pareeksha I (Clinical Pathology

A S.No	B Module number and Name	C MGP

5	M23.Deh Drava (Cavity fluid examination and Gastric analysis)	C5
6	M24.Jaiva Anu Vijnana (Molecular biology), Koshika Vansh Vikrii Vijanana (Cytogenetics), Dehadhatu Vikriti Sanketaka (Cancer and Tumour markers), Drut Pareekshan Paddhati (Point of care testing (POCT)	C6

Paper No : 4 Vikriti Pareeksha II (Microbiology and Imaging

A S.No	B Module number and Name	C MGP
7	M32.Upasargajanya Vyadhi Pareeksha III – Kledaja Bhuta Vinischaya Evam Krimi Vijnana (Mycology & Parasitology)	C7
8	M33.Recent advancements in Chhaya Evam Vikiran Vijnana, Bhuta and Krimi Vijnana.	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

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MD/MS Ayurveda Examination
AYPG-RN
Sem VI
Time: 3 Hours ,**Maximum Marks:** 100
INSTRUCTIONS: All questions compulsory

</div>

		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 (Vyadhi Vijnana I)				
(M-1)Ayurveda Diagnostic Approach (Marks: Range 5-20)				
1	(U-1) Trividha Pramana Pareeksha.	Yes	Yes	No
2	(U-2) Sapeksha and Vyavachedaka Nidana.	Yes	Yes	No
3	(U-3) Vyadhi Vinischaya based on Trividha Bodhya Sangraha.	Yes	Yes	No
(M-2)Lakshana Niroopana 1.1 (Marks: Range 5-20)				
1	(U-1) Jwara.	Yes	Yes	Yes
2	(U-2) Rajayakshma.	No	Yes	Yes
3	(U-3) Krimi.	Yes	Yes	Yes
(M-3)Lakshana Niroopana 1.2 (Marks: Range 5-20)				
1	(U-1) Raktapitta.	Yes	Yes	Yes
2	(U-2) Kushta – Visarpa, Kshudra Roga (Twak adhishtana), Shwitra, Sheetapitta, Udarda, Kotha, Utkotha.	Yes	Yes	Yes
3	(U-3) Pandu, Haleemaka, Kamala, and Kumbhakamala.	Yes	Yes	Yes
(M-4)Lakshana Niroopana 1.3 (Marks: Range 5-20)				
1	(U-1) Ashraddha/ Anannabhilasha/ Abhaktachanda/ Arochaka/ Bhaktadvesha, Bhojyanam Avarodha/ Bhojyoparodha, Pratyadhmana, Ajeerna, Amlapitta, Chhardi.	No	Yes	Yes
2	(U-2) Gulma, Shoola, Parinama Shoola, Annadrava Shoola, Parshwa Shoola, Kukshi Shoola, Vit Shoola, Anna Shoola, Mootra Shoola, Antar Vidradhi, Adho Nabhi Gata Koshta Bhedha Lakshana, Baddhagudodara, Parisravi Udara Lakshana.	Yes	Yes	Yes
(M-5)Lakshana Niroopana 1.4 (Marks: Range 5-20)				
1	(U-1) Sandhigata Vata, Amavata, Vatarakta, Kroshtuka Sheersha, Sandhiga Sannipata Jwara.	Yes	Yes	Yes
2	(U-2) Amsa Shosha, Avabahuka, Vatakantaka, Padakantaka.	Yes	Yes	Yes
3	(U-3) Hanustambha, Manyastambha, Katigraha.	Yes	Yes	Yes
(M-6)Lakshana Niroopana 1.5 (Marks: Range 5-20)				
1	(U-1) Hikka.	Yes	Yes	Yes
2	(U-2) Shwasa, Kasa.	Yes	Yes	Yes
3	(U-3) Kshata - Ksheena/ Urakshata - Urdhwa Nabhi Gata Koshta Bheda Lakshana/ Pranavaha Sroto Viddha Lakshana.	No	Yes	Yes

(M-7)Lakshana Niroopana 1.6 (Marks: Range 5-20)					
1	(U-1) Gata Vata.	Yes	Yes	Yes
2	(U-2) Avarana Vata.	No	Yes	Yes
(M-8)Lakshana Niroopana 1.7 (Marks: Range 5-20)					
1	(U-1) Phiranga, Upadamsha.	No	Yes	Yes
2	(U-2) Klaibya.	No	Yes	Yes
3	(U-3) Vandhyatva.	No	Yes	Yes

S.No	List of Module/Unit	ABQ	SAQ	LAQ
Paper No : 2 (Vyadhi Vijnana II)				
(M-9)Lakshana Niroopana 2.1 (Marks: Range 5-20)				
1	(U-1) Sthoulya, Karshya, Shosha.	Yes	Yes	Yes
2	(U-2) Prameha.	Yes	Yes	Yes
(M-10)Lakshana Niroopana 2.2 (Marks: Range 5-20)				
1	(U-1) Mada, Murcha, Sanyasa.	No	Yes	Yes
2	(U-2) Unmada, Atatwabhinivesha, Vishada.	No	Yes	Yes
(M-11)Lakshana Niroopana 2.3 (Marks: Range 5-20)				
1	(U-1) Granthi, Arbudha, Apachi.	Yes	Yes	Yes
2	(U-2) Yavaprakhya, Andhalaji, Kacchapika, Panasika, Granthi Visarpa, Rakta Granthi/ Mootra Granthi, Vatashteela.	Yes	Yes	Yes
3	(U-3) Galaganda, Gandamala.	No	Yes	Yes
(M-12)Lakshana Niroopana 2.4 (Marks: Range 5-20)				
1	(U-1) Anaha, Adhmana, Atopa, Atisara, Grahani, Visoochika, Alasaka, Vilambika, Pravahika, Nisaraka, Vit Vibandha.	Yes	Yes	Yes
2	(U-2) Arshas, Parikartika, Sannirudhaguddha, Gudabhramsha.	Yes	Yes	Yes
(M-13)Lakshana Niroopana 2.5 (Marks: Range 5-20)				
1	(U-1) Akshepaka, Apatanaka, Dandapatanaka, Antarayama, Bahirayama, Apantantraka, Vrunayama.	No	Yes	Yes
2	(U-2) Apasmara.	Yes	Yes	Yes
(M-14)Lakshana Niroopana 2.6 (Marks: Range 5-20)				
1	(U-1) Hrut Shoola, Hrudroga.	No	Yes	Yes
2	(U-2) Shotha.	Yes	Yes	Yes
3	(U-3) Shopha, Bahya Vidradhi, Asthi Majja Paripaka.	Yes	Yes	Yes
4	(U-4) Udara, Pleeha Roga.	Yes	Yes	Yes
(M-15)Lakshana Niroopana 2.7 (Marks: Range 5-20)				
1	(U-1) Ekanga Roga, Pakshagata, Sarvanga Roga, Ardita, Adharanga Vata, Vepathu Vata, Khanja and Pangu.	Yes	Yes	Yes
2	(U-2) Gridhrasi, Vishwachi.	Yes	Yes	Yes
3	(U-3) Padaharsha, Padadaha.	No	Yes	Yes
(M-16)Lakshana Niroopana 2.8 (Marks: Range 5-20)				

1	(U-1) Mootra Shoola, Ashmari, Mootrakrichra, Tuni.	Yes	Yes	Yes
2	(U-2) Mootraghata.	Yes	Yes	Yes

S.No	List of Module/Unit	ABQ	SAQ	LAQ
Paper No : 3 (Vikriti Pareeksha I (Clinical Pathology)				
(M-17)Rakta Vikriti Vijnana (Haematology) (Marks: Range 5-20)				
1	(U-1) Rakta Pareeksha	No	Yes	No
2	(U-2) Haematological procedures and interpretations	Yes	Yes	Yes
3	(U-3) Interpretation of haematological tests using fundamental principles of Roganidana - Vikritivijnana	No	No	Yes
(M-18)Dhatwansha Pareeksha (Biochemistry) (Marks: Range 5-20)				
1	(U-1) Introduction to Biochemistry	No	Yes	No
2	(U-2) Biochemical procedures and their interpretation	Yes	Yes	Yes
3	(U-3) Interpretation of biochemical tests using fundamental principles of Roganidana - Vikritivijnana	No	No	Yes
(M-19)Rakta-Rasa Pareeksha (Serology) (Marks: Range 5-20)				
1	(U-1) Introduction to serology	No	Yes	No
2	(U-2) Serological procedures and interpretation	Yes	Yes	Yes
3	(U-3) Interpretation of serology tests using fundamental principles of Roganidana - Vikritivijnana	No	No	Yes
(M-20)Mootra and Pureesha Pareeksha (Urine and Stool examination) (Marks: Range 5-20)				
1	(U-1) Mootra Pareeksha	No	Yes	Yes
2	(U-2) Urine examination	Yes	Yes	Yes
3	(U-3) Pureesha Pareeksha	Yes	Yes	Yes
4	(U-4) Stool examination	Yes	Yes	Yes
(M-21)Retasa and Shthivana Pareeksha (Semen and Sputum examination) (Marks: Range 5-20)				
1	(U-1) Retasa Pareeksha	No	Yes	No
2	(U-2) Semen examination	Yes	Yes	Yes
3	(U-3) Sthivana Pareeksha	No	Yes	No
4	(U-4) Sputum examination	Yes	Yes	Yes
(M-22)Uti Vikriti Vijnana (Histopathology), Kosha - Vikriti Vijnana (Cytology) and Dhatupratiraksha Vijnana (Immunohistochemistry) (Marks: Range 5-20)				
1	(U-1) Uti Vikriti Vijnana (Histopathology (HPE) - Basic knowledge, techniques and laboratory requirements	No	Yes	Yes
2	(U-2) Kosha - Vikriti Vijnana (Cytology) - Basic knowledge,	No	Yes	Yes

	techniques and laboratory requirements			
3	(U-3) Dhatupratiraksha Vijnana (Immunohistochemistry (IHC) - Basic knowledge, techniques and laboratory requirements	No	Yes	Yes
4	(U-4) Interpretation in Histopathology, Cytology and Immunohistochemistry	No	Yes	No

(M-23)Deh Drava (Cavity fluid examination and Gastric analysis) (Marks: Range 5-20)

1	(U-1) Introduction to cavity fluids and gastric fluid	No	Yes	No
2	(U-2) Fluid examination procedure and interpretation	Yes	Yes	Yes
3	(U-3) Interpretation of cavity fluid and Gastric analysis using fundamental principles of Roganidana - Vikritivijnana	No	Yes	No
4	(U-4) DELET	Yes	Yes	Yes

(M-24)Jaiva Anu Vijnana (Molecular biology), Koshika Vansh Vikrii Vijanana (Cytogenetics), Dehadhatu Vikriti Sanketaka (Cancer and Tumour markers), Drut Pareekshan Paddhati (Point of care testing (POCT) (Marks: Range 5-20)

1	(U-1) Jaiva Anu Vijnana (Molecular biology)	No	Yes	Yes
2	(U-2) Koshika Vansh Vikriti Vijanana (Cytogenetics)	No	Yes	Yes
3	(U-3) Dehadhatu Vikriti Sanketaka (Cancer and Tumour markers)	No	Yes	Yes
4	(U-4) Drut Pareekshan Paddhati (Point of care testing (POCT)	No	Yes	No

S.No	List of Module/Unit	ABQ	SAQ	LAQ
Paper No : 4 (Vikriti Pareeksha II (Microbiology and Imaging)				
(M-25)Fundamentals of Chhaya Evam Vikiran Vijnana (Marks: Range 5-15)				
1	(U-1) Fundamentals of Chhaya Evam Vikiran Vijanana.	No	Yes	Yes
(M-26)Chhaya Evam Vikiran Vijnana–1 (Radiography & Ultrasonography) (Marks: Range 5-15)				
1	(U-1) Vikiran Vijnana Siddhant, Yantra Evam Vidhi: Radiography	No	Yes	Yes
2	(U-2) Vikiran Vijnana Siddhant, Yantra Evam Vidhi - Ultrasonography and doppler	No	Yes	Yes
(M-27)Chhaya Evam Vikiran Vijnana – 2 (CT & MRI) (Marks: Range 5-15)				
1	(U-1) Sharira Avayava Anuccheda Drushya: Computed Tomography	No	Yes	Yes
2	(U-2) Sharira Avayava anuccheda Drushya : Magnetic Resonance Imaging (MRI)	No	Yes	Yes
(M-28)Fundamentals of Bhuta Vijnana (Marks: Range 5-15)				
1	(U-1) Fundamentals of Bhuta Vijnana	No	Yes	Yes
(M-29)Vyadhikshamatva Pareeksha (Marks: Range 5-20)				
1	(U-1) Vyadhikshamatva Pareeksha	Yes	Yes	Yes
(M-30)Upasargajanya Vyadhi Pareeksha I – Sukshma Bhuta Vinischaya (Bacteriology) (Marks: Range 5-20)				
1	(U-1) Sukshma Bhuta Vinischaya -Rachana Evam Nidana (Morphology and Identification of bacteria)	No	Yes	Yes
2	(U-2) Sukshma Bhuta (Bacteria) of medical importance & Ayurveda interpretation	Yes	Yes	Yes
(M-31)Upasargajanya Vyadhi Pareeksha II – Anu Bhuta Vinischaya (Virology) (Marks: Range 5-20)				
1	(U-1) Anu Bhuta Vinischaya (Virology)	No	Yes	Yes
(M-32)Upasargajanya Vyadhi Pareeksha III – Kledaja Bhuta Vinischaya Evam Krimi Vijnana (Mycology & Parasitology) (Marks: Range 5-20)				
1	(U-1) Kledaja Bhuta Vinischaya (Mycology)	No	Yes	Yes
2	(U-2) Krimi Vijnana Pareeksha - Parasitology	Yes	Yes	Yes
(M-33)Recent advancements in Chhaya Evam Vikiran Vijnana, Bhuta and Krimi Vijnana. (Marks: Range 5-20)				
1	(U-1) Recent advancements and Quality assurance in Chhaya Evam Vikiran Vijnana	Yes	Yes	Yes

| 2 | (U-2) Recent advancements in Bhuta Vijnana (Microbiology and Parasitology) | 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 or procedure/ Major practical:** **4 (1 Clinical Skills – Naturalizing Level (Psychomotor) – 25 Marks, 1 Bedside Case Presentation – 25 Marks, 1 Biochemistry/ Haematology performance and interpretation – 25 Marks, 1 Radiology/ Microbiology performance and interpretation – 25 Marks)**	100
2	**Short case or procedure/ Minor practical:** **4 (1 Clinical Vignette – 20 Marks, 1 Communication and counselling – 10 Marks, 1 Ayurveda interpretation of diagnostic tests – 20 Marks)**	50
3	**Spotters:** **As mentioned below (Specific NoS mentioned):** **1. Flash cards on disease identification (Pictures or cluster of features/ clinical examination, etc.) – 10 Marks (5 NoS)** **2. Instruments and equipment related to clinical examination/ laboratory investigation, etc. – 10 Marks (5 NoS)** **3. Histopathology/ Haematology/ Cytology/ Microbiology slides. – 10 Marks (5 NoS)** **4. Case based audio spotters – 10 Marks (5 NoS)** **5. Report interpretations. – 10 Marks (5 NoS)**	50
4	**Assessing teaching ability:**	20

	Evaluation will focus on clinically relevant knowledge with Ayurveda–modern integration, clear planning and organization, effective communication and engagement, appropriate use of teaching aids, and proper closure with summary and brief assessment.	
5	**Assessing presentation skills:** Evaluation will be based on knowledge with Ayurveda–modern relevance, clear organization, effective delivery, use of appropriate visual aids, and audience engagement with a concise conclusion.	20
6	**Viva (4 examiners: 20 marks/ each examiner):** Examiners should cover different domains without overlap, use stepwise questioning from basics to application, and ensure fair, consistent scoring with brief feedback when appropriate.	80
7	**Dissertation Viva:** Students should demonstrate clear understanding of the topic, apply critical thinking to justify methods and interpret results with practical relevance, and present confidently with clarity, relevant data, and effective handling of questions.	40
8	**Logbook (Activity record):** All activities should be recorded regularly without gaps, factually accurate, neat and well-formatted, aligned with syllabus or posting objectives, and verified with timely faculty signatures.	20
9	**Practical/ Clinical Record:**	20

	All required activities and procedures (minimum 10 covering from each paper - total of 40) should be documented with correct clinical details, presented neatly and in proper format, aligned with syllabus/posting objectives, and duly verified with timely faculty signatures and stamp.	
Total Marks		**400**

Reference Books/ Resources

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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		

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