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

தொட்டனைத் தூறும் மணற்கேணி மாந்தர்க்குக் கற்றனைத் தூறும் அறிவு

Semester III-VI
Pura Maruthuvam
(External medicine)
(SUBJECT CODE : SIDPG-PUM)

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

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।। आयुषे सर्वलोकानाम्।।

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

PREFACE

Medicine, as both a science and an art, holds the profound responsibility of alleviating human suffering. While internal medicine addresses ailments through oral route of drug administration, *Pura Maruthuvam* is the branch of external medicine offers a distinctive approach by treating diseases through external methods. It is a cornerstone of Siddha medicines that emphasizes non-invasive treatments to restore health and realm. By incorporating various therapeutic modalities like topical applications, Thokkanam (Physical manipulation techniques), heat therapies, and natural remedies, external medicine helps in the restoration of equilibrium within the body, specifically by addressing the three primary humours *Vatham*, *Pitham*, and *Kabam* that govern bodily functions.

This field, deeply rooted in the rich traditions of Siddha medicine, has evolved over centuries. In recognition of this ongoing evolution, the new syllabus for the Post graduated branch of *Pura Maruthuvam* seeks to bridge the gap between time-honored practices and the growing body of modern scientific evidence. This curriculum emphasizes evidence-based methodologies, ensuring that external treatments are applied safely and effectively in clinical settings. The primary goal of this syllabus is to equip medical specialists in understanding the role of external medicine in contemporary healthcare with the tools and knowledge necessary for applying these therapies with confidence. We aim to foster a deeper appreciation for the therapeutic methods and philosophies that underpin this vital field of medicine.

In this programme , students will explore the techniques of external therapy, including the preparation, its application to various conditions supported by the latest research and clinical evidences. By examining real-world applications and the scientific principles behind them, students will be empowered to utilize external medicine effectively in diverse clinical scenarios. This comprehensive programme aims not only to enhance clinical skills but also to promote research and academic rigor. Through hands-on training, interdisciplinary collaborations, and a robust curriculum, we seek to cultivate specialists who can integrate traditional Siddha medicine with modern scientific approaches, fostering clinical excellence and innovation in the field of external medicine. We hope that this syllabus serves as a valuable resource for both current practitioners and future leaders in the field, helping them navigate the integration of traditional and contemporary medical knowledge to improve patient outcomes and expand the scope of *Pura Maruthuvam* in modern healthcare

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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)

Competency-Based Dynamic Curriculum MD/ MS SIDDHA

Pura Maruthuvam (SIDPG-PUM)

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 (Principles and Practices of Pura Maruthuvam)			
M1 Fundamental principles of Pura Maruthuvam & Therapeutic application of external medicine for Pun (Ulcer), Kiranthi (Chronic ulcers), Katti (Abscess), Veekkam (Swelling) & silaipun (Sinus & Fistula)	2	60	50
M2 Therapeutic application of external medicine for Moolam-Pouthiram-Adithallal (Ano rectal diseases), Vithai noikal and Aankuri noikal (Testicular diseases & Diseases of male genitalia), Penkuri noikal & Magalir noikal (Diseases of female external genitalia and reproductive organ diseases) and Umizh neer kola noikal & Veethana kola noikal (Diseases of salivary gland & thyroid gland)	2	60	50
Paper No : 2 (Preparation and Applications of Pura Marunthukal)			
M9 Preparation of Pura Marunthukal	2	60	50
M10 Siddha topical application I	2	60	50
Paper No : 3 (Thokkanam, Biomechanics and Physical Medicine)			
M17 Essentials of stability, mobility, Therapeutic exercise and Traction	2	60	50
M18 Thasai Enbu Mandala Kayangal (Common Musculo skeletal system injuries), Electrotherapy, Cryotherapy, Heat therapy	2	60	50
Paper No : 4 (Essentials of Orthopaedics and Traumatology)			
	2	60	50

M25 General orthopaedics and congenital deformities			
M26 Common metabolic and endocrine disease of bone	2	60	50
Total	**16**	**480**	**400**
Semester No : 4			
Paper No : 1 (Principles and Practices of Pura Maruthuvam)			
M3 Therapeutic application of external medicine for Kann noikal (eye diseases), Sevi noikal (Ear diseases), Mookku noikal (Nasal diseases) and Vaai noikal (Diseases of mouth)	2	60	50
M4 Therapeutic application of external medicine for Naakku & Pal noikal (Diseases of tongue & Dental disorders), Ammai noikal (Viral skin infections), Thol noikal (Dermatological disorders) and Nagirkatti (Lump of the mammary gland)	2	60	50
Paper No : 2 (Preparation and Applications of Pura Marunthukal)			
M11 Nasal, Ophthalmic and Auricular application	2	60	50
M12 Bloodletting and bone setting techniques	2	60	50
Paper No : 3 (Thokkanam, Biomechanics and Physical Medicine)			
M19 Surface anatomy related to Thokkanam – Upper body & Lower body	2	60	50
M20 Elements of clinical reasoning, principles of movement & Procedures of Thokkanam	2	60	50
Paper No : 4 (Essentials of Orthopaedics and Traumatology)			
M27 Diseases of joints and cervical spine	2	60	50
M28 Diseases of upper limb, lower limb and spine	2	60	50
Total	**16**	**480**	**400**
Semester No : 5			
Paper No : 1 (Principles and Practices of Pura Maruthuvam)			
M5 Therapeutic application of external medicine for Iraippu noi (Bronchial asthma), Soolai noi (Rheumatism), Manjal noi (Jaundice) and Siruneerpathai noikal (Urethral diseases)	2	60	50
M6 Therapeutic application of external medicine for vaatha noikal, keelvayu , Thasai mattrum narambu mandala noikal (Musculoskeletal, neurological and neuromuscular disorder) and Enbu murivu noikal (Traumatology)	2	60	50
Paper No : 2 (Preparation and Applications of Pura Marunthukal)			
M13 Physical therapy and Heat therapy I	2	60	50
M14 Heat therapy II and Surgical medicines	2	60	50

Paper No : 3 (Thokkanam, Biomechanics and Physical Medicine)			
M21 Thokkanam types and it's applications	2	60	50
M22 Udal seyaliyal matrangal (Physiological response) of thokkanam and sports rehabilitation	2	60	50
Paper No : 4 (Essentials of Orthopaedics and Traumatology)			
M29 Injuries of bone, joint and upper extremities	2	60	50
M30 Injuries of lower extremities	2	60	50
Total	**16**	**480**	**400**
Semester No : 6			
Paper No : 1 (Principles and Practices of Pura Maruthuvam)			
M7 Therapeutic application of external medicine for Matha noikal (Psychological disorders), Rathanaala noikal, Ninaneer kola noikal ((Diseases of vascular system and lymphatic system), Muthiyor noikal (Geriatric diseases) and Kuzhanthaikal noikal (Pediatric diseases)	2	60	50
M8 Establishing and Managing Siddha external therapy hospital	2	60	50
Paper No : 2 (Preparation and Applications of Pura Marunthukal)			
M15 Topical application II	2	60	50
M16 Innovation and Opportunities in Siddha external therapy Entrepreneurship	2	60	50
Paper No : 3 (Thokkanam, Biomechanics and Physical Medicine)			
M23 Postural disturbance, lymphatic, peripheral vascular disease and Rehabilitation of neuromuscular disease	2	60	50
M24 Diseases treated with thokkanam -Cumulative trauma disorder (CTD) & Others	2	60	50
Paper No : 4 (Essentials of Orthopaedics and Traumatology)			
M31 Injuries of spine soft tissue and sports injury	2	60	50
M32 Neurological and neuromuscular disorder	2	60	50
Total	**16**	**480**	**400**
Grand Total	**64**	**1920**	**1600**

Credit frame work

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

Important Note: The User Manual MD/MS Siddha is a valuable resource that provides comprehensive details about the

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

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

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

Paper -4	100		Logbook (Activity record)	25
			Practical/Clinical Record	25
Semester VI University examination – 800 Marks				

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

Course Code and Name of Course

Course code	Name of Course
SIDPG-PUM	Pura Maruthuvam (External medicine)

Table 1 : Course learning outcomes and mapped Program learning outcomes

CO No	A1 Course learning Outcomes (CO) SIDPG-PUM At the end of the course SIDPG-PUM, the students should be able to-	B1 Course learning Outcomes mapped with program learning outcomes.
CO1	Develop comprehensive knowledge of the fundamental principles of *Pura Maruthuvam*, diagnosis of disease, selection of *puramarunthugal*, and application of *puramarunthugal*	PO1
CO2	Demonstrate competency in *En Vagai Thervu* (Siddha diagnostic techniques), *puramaruthuvam* procedures by integrating scientific advancements and artificial intelligence in both Siddha and modern diagnostic techniques.	PO1,PO2
CO3	Demonstrate the application of *Mooligai* (herbal), *Thathu* (mineral), and *Seevam* (animal) origin medicines in *pura maruthuvam*, and selecting appropriate formulations that comply with ethical and safety standards.	PO4
CO4	Establish a competent *Pura Maruthuvam* practitioner; provides personalized, patient-centered care by integrating the principles of *Mukkutra Seersei Maruthuvam* and engaging in interdisciplinary collaboration to achieve holistic and effective treatment outcomes.	PO1,PO2,PO4
CO5	Prescribe and demonstrate appropriate *Pura Maruthuvam* techniques incorporating *Pathiyam* (diet plans) and *Siddhar Vazhiviyal Nerimuraigal* (lifestyle modifications) to enhance overall wellness, prevent health issues and support comprehensive patient care.	PO2,PO3
CO6	Engage in innovating and advancing *Pura Maruthuvam* through rigorous research, evidence-based practices and academic leadership, cultivating innovative therapeutic approaches, curriculum development and interdisciplinary collaboration.	PO4,PO5,PO7,PO8
CO7	Practice Pura Maruthuvam, uphold the highest ethical standards, ensuring patient confidentiality, comfort, and informed consent, while adhering to national and international regulations and guidelines.	PO3
CO8	Exhibit proficiency in Ayush-guided practice management, strategic business acumen, and the innovative development of specialized medicines and treatment	PO3,PO4,PO6

	methodologies.	

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

Paper No : 1 (Principles and Practices of Pura Maruthuvam)						
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 Fundamental principles of Pura Maruthuvam & Therapeutic application of external medicine for Pun (Ulcer), Kiranthi (Chronic ulcers), Katti (Abscess), Veekkam (Swelling) & silaipun (Sinus & Fistula)** **This module introduces the basics of Pura Maruthuvam, Covers core concepts, philosophies, and treatment methods and explains the application of Pura Maruthuvam in managing *Pun* (ulcer), *Kiranthi* (chronic ulcers), *Katti* (abscess), *Veekkam* (swelling), and *Silaipun* (sinus and fistula)** • **M1U1 Principles of Pura Maruthuvam** 1.1.1 Principles of *puramaruthuvam* 1.1.2 Metabolic response to tissue injury 1.1.3 Mukkutra theory in tissue injury, inflammation, degeneration, spasm and rigidity 1.1.4 Wounds, Tissue repair & Scars 1.1.5 Condition of *udal thathukkal* in tissue injury and tissue repair	2	10	20	30	60

	1.1.6 Principle of degeneration, inflammation, spasm and rigidity 1.1.7 Introduction to trauma early assessment & management 1.1.8 Introduction to pathological diseases assessment and management 1.1.9 Basics of Surgical/Para surgical procedures and other external medicine/therapy 1.1.10 Investigation & diagnostic imaging and *envagai thervukal* • **M1U2 Mukkutra seersei(Restoration) maruthuvam** 1.2.1 Principles of *Mukkutra seersei* (Restoration) maruthuvam 1.2.2 *Peechu* (Enema) 1.2.3 *Vamanam* (Vomiting) 1.2.4 *Ennai kuliyal* (Oleation) 1.2.5 *Pancha karpavidhi* 1.2.6 *Bethi* (Purgation) 1.2.7 *Vedhu* (Steam) 1.2.8 *Nasiyam* (Nasal drops) 1.2.9 *Anjanam* (Collyrium) 1.2.10 *Thokkanam* (Physical manipulation) 1.2.11 *Kuruthi vaangal* (Bloodletting) • **M1U3 Pun (Ulcer), Kiranthi (Chronic ulcers)** 1.3.1 *Pun* (Ulcer) *1.3.2 Kiranthi* (Chronic ulcer) • **M1U4 Katti (Abscess) & Veekkam (Swelling)** 1.4.1 Dermoid cyst, Irattha kazhalai (Hemangioma), Erysipelas 1.4.2 Cellulitis, Abscess, Boils, Pilavai (Carbuncle) 1.4.3 Papilloma, Fibroma, Lipoma, Neurofibroma, Lymphangioma 1.4.4 Moles, Sebaceous cyst, Warts, Callosity & Kaalani (Corn), Seborrhic warts, Solar keratosis, Pyogenic granuloma • **M1U5 Silaipun (Sinus and Fistula)** 1.5.1 *Silaipun* (Sinus and Fistula)					
2	**M-2 Therapeutic application of external medicine for Moolam-Pouthiram-**	2	10	20	30	60

Adithallal (Ano rectal diseases), Vithai noikal and Aankuri noikal (Testicular diseases & Diseases of male genitalia), Penkuri noikal & Magalir noikal (Diseases of female external genitalia and reproductive organ diseases) and Umizh neer kola noikal & Veethana kola noikal (Diseases of salivary gland & thyroid gland)

This module focuses on the application of Puramaruthuvam principles in various conditions: *Moolam-Pouthiram-Adithallal* (Ano rectal diseases), *Vithai noikal* and *Aankuri noikal* (Testicular diseases & Diseases of male genitalia), *Penkuri noikal* & *Magalir noikal* (Diseases of female external genitalia and reproductive organ diseases) and *Umizh neer kola noikal & Veethana kola noikal* (Diseases of salivary gland & thyroid gland)

• **M2U1 Moolam-Pouthiram-Adithallal (Ano rectal diseases)**

2.1.1 *Moolam* (Hemorrhoids), *Powthiram* (Fistula in ano), *Asanavai vedippu* (Fissure), Pruritis ani

2.1.2 Postanal dermoid, Sacro coccygeal teratoma, Anal abscess, Pilonidal sinus

2.1.3 *Adithallal* (Rectal prolapse), Rectal carcinoma

• **M2U2 Vithai noikal and Aankuri noikal (Testicular diseases & Diseases of male genitalia)**

2.2.1 *Kudal vatham* (Inguinal hernia), *Kumizh noi* (Umbilical hernia), Femoral hernia

2.2.2 Benign Prostrate Hypertrophy, varicocele, Hydrocele, Epididymo Orchitis

2.2.3 Sebaceous cyst of scrotum, Cyst of epididymis, Phimosis, Balenoprostatiti

• **M2U3 Penkuri noikal & Magalir noikal (Diseases of female external genitalia and Reproductive organ diseases)**

2.3.1 Hernia, *Kothippu yoni* (Vaginitis), Endometriosis, Cyst, Vulvovaginitis, *Moothirapai thabitham* (Cystitis) & Salpingitis

2.3.2 Lichen planus, *Karuppai adithallal* (Uterine prolapse), Vaginal yeast infection & *Vellai* (Leucorrhea)

2.3.3 *Magapperinmai* (Infertility)

	• **M2U4 Umizh neer kola noikal & Veethana kola noikal (Diseases of salivary gland & thyroid gland)** 2.4.1 Parotid gland swelling, Acute & chronic parotitis, Parotid tumours, Acute suppurative parotiditis 2.4.2 Diseases of submandibular salivary glands 2.4.3 Diseases of sublingual salivary glands 2.4.4 Torticollis, Colloid goitre, Primary & Secondary toxic goitre, Nodular goitre& Thyroiditis					
		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 Therapeutic application of external medicine for Kann noikal (eye diseases), Sevi noikal (Ear diseases), Mookku noikal (Nasal diseases) and Vaai noikal (Diseases of mouth)** **This module explores the application of Puramaruthuvam principles in treating specific conditions: *Kann noikal* (Eye diseases), *Sevi noikal* (Ear diseases), *Mookku noikal* (Nasal diseases) and *Vaai noikal* (Diseases of mouth)** • **M3U1 Kann noikal (Eye diseases)** 3.1.1 *Kan azharchi* (Conjuctivitis)	2	10	20	30	60

	3.1.2 Dry eyes 3.1.3 *Kan katti* (Stye) 3.1.4 *Kan kasam* (Cataract), *Vellezhuthu* (Presbyopia) • **M3U2 Sevi noikal (Ear diseases)** 3.2.1 *Sevi soolai* (Acute Otitis media, Suppurative Otitis media, Non suppurative Otitis media) 3.2.2 *Sevi sanni* (Vertigo, Tinitus),*Sevidu* (Deafness) 3.2.3 Meniere's diseases, Otitis externa, *Kirumikantha thalai nokkadu* (Mastoiditis) • **M3U3 Mookku noikal (Nasal diseases)** 3.3.1 *Nasika peedam* (Nasal polyp) 3.3.2 *Mokkilratha ozhukku* (Epistaxis) 3.3.3 Acute and chronic sinusitis, *Neer mookkadaippu* (Allergic rhinitis) • **M3U4 Vaai noikal (Diseases of mouth)** 3.4.1 *Vaippun* (Aphthous ulcer), *Akkaram* (Stomatitis), *Annakku thooru azharchi* (Tonsilitis), *Mookadiyan* (Adenoids) 3.4.2 Mucous retentional cyst, Leukoplakia					
4	**M-4 Therapeutic application of external medicine for Naakku & Pal noikal (Diseases of tongue & Dental disorders), Ammai noikal (Viral skin infections), Thol noikal (Dermatological disorders) and Nagirkatti (Lump of the mammary gland)** **This module introduces the application of Puramaruthuvam principles in treating *Naakku & Pal noikal* (Diseases of tongue & Dental disorders), *Ammai noikal* (Viral skin infections), *Thol noikal* (Dermatological disorders) and *Nagirkatti* (Lump of the mammary gland)** • **M4U1 Naakku noikal & Pal noikal (Diseases of mouth & dental disorders)** 4.1.1 *Naakku pungal* (Ulcers of tongue), *Naakku pilavai* (Fissuring of tongue) 4.1.2 Glossitis, Sublingual dermoid 4.1.3 Dental carries, Sensitive Tooth, *Pal niram maral* (Tooth discolorisation)	2	10	20	30	60

	4.1.4 *Thantha vaayu* (Gingivitis), Periodontitis • **M4U2 Ammai noi (Viral skin infections)** 4.2.1 *Chinnammai* (Chicken pox) 4.2.2 *Thattammai* (Measles) 4.2.3 *Poottu thaalammai* (Mumps) • **M4U3 Thol noikal (Dermatological disorders)** 4.3.1 *Thozhunoi* (Leprosy), *Venkuttam* (Vitiligo), *Sori,sirangu* (Scabies), *Karappan* (Eczema), *Thol putru* (Skin cancer) *Padukkai pun* (Bed sores) *Setru pun* (Tinea pedis), *Thee pun*(Burns), *Pithavedippu* (Crack foot), *Kaal aani*(Callus), *Nagasutru* (Paronychia), *Vaaipun* (Stomatitis), *Verkuru*(Miliaria), *Kodai koppulam, Mugaparu* (Acne vulgaris), *Thol varatchi* (Xeroderma), *Thadippugal, Kaanakadi* (Urticaria), *Silvidathadippu,Sirupaambu kadi, Padarthamarai, Padai,Themal* (Tinea versicolor) *Puzhuvettu Narai, Mayiruthiral, Vazhukkai, Podugu, Paalunni* (Moluscum contagiosum), *Marul* (Wart), *Macham, Mega thazhumbu, Ammaithazhumbu,Akki* (Herpes zoster), *Thazhumbu* (Keloid) *ThabithamKalanjagapadai* (Psoriasis), *Paengal* 4.3.2 Fungal infections:Dermatophytosis, Onychomycosis, Tinea versicolor (pityriasis versicolor), Candidiasis, Tinea nigra, Piedra (triphosporosis), Deep fungal infections. 4.3.3 Infestations and protozoal infections & Tuberculosis of skin (cutaneous tuberculosis) 4.3.4 Connective tissue disorders and vasculitis: Lupus erythematosus, Scleroderma, Polymyositis/dermatomyositis, Mixed connective tissue disease, Sjogren's syndrome 4.3.5 Urticaria, Pruritus and drug eruptions Urticaria, Pruritus(Itching), Drug eruptions (Cutaneous drug reactions) 4.3.6 Disorders of pigmentation: Hypermelanosis, Hypomelanosis 4.3.7 Disorders of keratinization: Ichthyosis, Palmoplantar keratodermas, Corns and Callosities, Darier's disease, Porokeratosis of mibelli, Acanthosis nigricans. 4.3.8 Genodermatoses (Neurocutaneous syndromes): Neurofibromatosis 4.3.9 Nutritional and metabolic disorders:Nutritional disorders, Metabolic disorders 4.3.10 Disorders of sebaceous and sweat glands & Disorders of hair and nails 4.3.11 Systemic diseases and skin 4.3.12 Benign, premalignant and malignant tumors of the skin • **M4U4 Nagir katti (Lump of the mammary gland)** 4.4.1 *Nagir katti* (Lump of the mammary gland)					

		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**
5	**M-5 Therapeutic application of external medicine for Iraippu noi (Bronchial asthma), Soolai noi (Rheumatism), Manjal noi (Jaundice) and Siruneerpathai noikal (Urethral diseases)** **This module describes the application of Pura maruthuvam principles in treating specific conditions: *Iraippu noi* (Bronchial asthma), *Soolai noi* (Rheumatism), *Manjal noi* (Jaundice) and *Siruneerpathai noikal* (Urethral diseases)** • **M5U1 Iraippu noi (Bronchial asthma)** 5.1.1 *Iraippu noi* (Bronchial asthma) • **M5U2 Soolai noi (Rheumatism)** 5.2.1 *Thasai vali* (Myalgia) 5.2.2 Dermatomyalgia 5.2.3 *Uthara vatha suronitham* (Rheumatoid arthritis) • **M5U3 Manjal noi (Jaundice)** 5.3.1 Manjal noi (Jaundice)	2	10	20	30	60

	• **M5U4 Siruneerpathai noikal (Urethral diseases)** 5.4.1 Stricture urethra 5.4.2 *Siruneernaala thaabitham* (Urethritis)					
6	**M-6 Therapeutic application of external medicine for vaatha noikal, keelvayu , Thasai mattrum narambu mandala noikal (Musculoskeletal, neurological and neuromuscular disorder) and Enbu murivu noikal (Traumatology)** **This module emphasizes the application of Pura maruthuvam principles in the treatment of specific conditions: *vaatha noikal, keelvayu, Thasai mattrum narambu mandala noikal* (Musculoskeletal, neurological and neuromuscular disorder) and *Enbu murivu noikal* (Traumatology)** • **M6U1 Vaatha noikal-Keel vayu (Bone and joint disorders)** 6.1.1 Infective & Inflammatory joint diseases 6.1.2 Congenital bone disorders and Degenerative joint disorders 6.1.3 Generalised bone disorders, avascular necrosis 6.1.4 Regional condition of spine and lower limb 6.1.5 Regional condition of neck and upper limbs • **M6U2 Thasai mattrum narambu mandala noigal (Musculoskeletal, neurological and neuromuscular disorder)** 6.2.1 Peripheral nerves diseases, hemiplegia, paraplegia, epilepsy, Multiple sclerosis 6.2.2 Motor neuron diseases, Peripheral neuropathy, muscular dystrophy, Amyotrophic Lateral Sclerosis (ALS) 6.2.3 Migraine, Headache, Bell's palsy, Trigeminal neuralgia, Parkinsons diseases, diabetic neuropathy, guillain barre's syndrome, Tremors, Ataxia • **M6U3 Enbu murivu (Traumatology)** 6.3.1 Injuries of upper limb 6.3.2 Injuries of lower limb 6.3.3 Injuries of the spine and pelvis	2	10	20	30	60

	6.3.4 Polytrauma, soft tissue injury, vascular injury, nerve injury					
		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 Therapeutic application of external medicine for Matha noikal (Psychological disorders), Rathanaala noikal, Ninaneer kola noikal ((Diseases of vascular system and lymphatic system), Muthiyor noikal (Geriatric diseases) and Kuzhanthaikal noikal (Pediatric diseases)** **This module explores the application of Pura maruthuvam principles in treating specific conditions: *Matha noikal* (Psychological disorders), *Rathanaala noikal, Ninaneer kola noikal* ((Diseases of vascular system and lymphatic system), *Muthiyor noikal* (Geriatric diseases) and *Kuzhanthaikal noikal* (Pediatric diseases)** • **M7U1 Matha noikal (Psychological disorders)** 7.1.1 Kirigai, Brahmai (Hallucination), Unmatham (Insanity), Matha azhivu and Matha noi (Egomania disorder) 7.1.2 Valippu (Epilepsy), Moorchai (Syncope), Abasmaram (Panic attack disorder), Soothigavatham (Histeria), *Manakalakkam* (Anxiety disorders), Sleep disorders, Depression, Stress, Schizophrenia	2	10	20	30	60

	• **M7U2 Naala vibhatham, Kanda maalai, Yaanai kaal noi, Raththa nala noikal , ninaneer naala and ninaneer kola noikal (Diseases of vascular system and lymphatic system)** 7.2.1 Deep vein thrombosis, Gangrene, Non healing ulcer, Varicose vein, Varicose ulcer, Chronic venous insufficiency 7.2.2 Atherosclerotic diseases, Vasculitis, Thrombophlebitis, Thromboangitis obliterens, Yaanai kaal noi (Elephantiasis) • **M7U3 Muthiyor noikal (Geriatric diseases)** 7.3.1 Dementia, Alzheimer's, Padukkai pun (Bedsores), Sevidu (Hearing loss) 7.3.2 Stroke, Epilepsy, Parkinsonism, Delirium, Peripheral Neuropathy, Obesity and *Kirigai* (Schizophrenia) • **M7U4 Kuzhanthaikal noikal (Pediatric diseases)** 7.4.1 Autism spectrum disorder (ASD), Cerebral Palsy, Muscular Dystrophy, Bone & joint diseases, Headache and Migraine					
8	**M-8 Establishing and Managing Siddha external therapy hospital** **This module focuses on the comprehensive establishment and management of a Siddha external therapy hospital. It aims to equip with the knowledge and skills necessary to set up and run a hospital that specializes in Siddha external therapies, ensuring high standards of patient care and treatment efficacy** • **M8U1 Hospital Planning and Infrastructure for Siddha external therapy hospital** 8.1.1 Legal and Regulatory Compliance adherence with NCISM regulations 8.1.2 Infrastructure and Facilities Planning. 8.1.3 Human Resources and Staffing 8.1.4 Technology and Accessibility 8.1.5 Sustainability and Supply Management • **M8U2 Accreditation and Licensing: QCI, NABH, and Government Norms** 8.2.1 Accreditation Processes and Requirements	2	10	20	30	60

	8.2.2 Application and Approval Process 8.2.3 Quality Control and Safety Protocols 8.2.4 Legal and Regulatory Compliance 8.2.5 Maintaining Accreditation and Continuous Improvement • **M8U3 Marketing and Financing Strategies for Hospital Projects** 8.3.1 Business and Financial Planning 8.3.2 Hospital Financing and Government Schemes 8.3.3 Marketing and Branding 8.3.4 Local Marketing and Patient Referral Networks 8.3.5 Pricing Strategies and Affordability • **M8U4 Hospital Operations: Execution, Management, and Growth** 8.4.1 Operational and Patient Care Management 8.4.2 Staff and Resource Management 8.4.3 Data-Driven Decision-Making 8.4.4 Partnerships and Service Expansion					
		4	**20**	**40**	**60**	**120**
		16	**80**	**160**	**240**	**480**

Paper No : 2 (Preparation and Applications of Pura Marunthukal)

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 Preparation of Pura Marunthukal**	2	10	20	30	60

This module explores the fundamentals of Pura Maruthuvam, focusing on medicine preparation and topical drug delivery. It also deals the kaayakalpam in puramaruthuvam Covers core concepts and therapeutic applications of various formulations in line with modern pharmacological principles.Includes practical understanding of topical applications such as *Kattu, Patru, Poochu, and Kalimbu.*Builds knowledge and skills to apply these techniques effectively in managing different conditions.

- **M9U1 Overview of Pura Marunthukal**

9.1.1 Introduction
9.1.2 Commonly used Pura Marunthugal
9.1.3 Topical drug delivery
9.1.4 kaayakalapam in puramaruthuvam

- **M9U2 Kattu (Bandage)**

9.2.1 Introduction
9.2.2 *Mukkutra iyal*
9.2.3 Mechanism / principles
9.2.4 Materials and Equipment
9.2.5 Medicinal preparation
9.2.6 Therapeutic application
9.2.7 Procedure
9.2.8 Importance
9.2.9 Contraindication
9.2.10 Complications
9.2.11 Recent advances in *Kattu* / Bandaging techniques

- **M9U3 Patru (Poultice)**

9.3.1 Introduction
9.3.2 *Mukkutra iyal*
9.3.3 Mechanism /principles
9.3.4 Materials and Equipment
9.3.5 Medicinal preparation
9.3.6 Therapeutic application
9.3.7 Procedure
9.3.8 Importance
9.3.9 Contraindication
9.3.10 Complications
9.3.11 Recent advances / Plaster techniques

- **M9U4 Poochu (Liquid application)**

9.4.1 Introduction
9.4.2 *Mukkutra iyal*
9.4.3 Mechanism/principles
9.4.4 Materials and Equipment
9.4.5 Procedure
9.4.6 Importance
9.4.7 Therapeutic Application
9.4.8 Contraindication
9.4.9 Complications
9.4.10 Recent advances

- **M9U5 Kalimbu (Oinment)**

9.5.1 Introduction
9.5.2 *Mukkutra iyal*
9.5.3 Mechanism/principles
9.5.4 Materials and Equipment
9.5.5 Medicinal preparation
9.5.6 Therapeutic application
9.5.7 Procedure
9.5.8 Importance
9.5.9 Contraindication

	9.5.10 Complications 9.5.11 Recent advances					
10	**M-10 Siddha topical application I** **This module covers *Seelai, Varthi, Pasai, Kali, Podi, and Neer.* Focuses on both theory and practical application.Highlights the principles of *Mukkutra Iyal,* medicine preparation, and treatment methods.** • **M10U1 Seelai (Medicated gauze)** 10.1.1 Introduction 10.1.2 *Mukkutra iyal* 10.1.3 Mechanism/principles 10.1.4 Materials and Equipment 10.1.5 Medicinal preparation 10.1.6 Therapeutic application 10.1.7 Procedure 10.1.8 Importance 10.1.9 Contraindication 10.1.10 Complications 10.1.11 Recent advances • **M10U2 Kaaram & Varthi (Medicated wick & Chemical cautery)** 10.2.1 Introduction 10.2.*2 Mukkutra iyal* 10.2.3Mechanism/principles 10.2.4Materials and Equipment 10.2.5Medicinal preparation 10.2.6Therapeutic application 10.2.7Procedure	2	10	20	30	60

	10.2.8Importance 10.2.9 Contraindication 10.2.10 Complications 10.2.11 Recent advances • **M10U3 Pasai (Cream)** 10.3.1 Introduction 10.3.2 *Mukkutra iyal* 10.3.3 Mechanism/principles 10.3.4 Materials and Equipment 10.3.5 Procedure 10.3.6 Importance 10.3.7 Therapeutic application 10.3.8 Contraindication 10.3.9 Complications 10.3.10 Recent advances • **M10U4 kali (Paste)** 10.4.1 Introduction 10.4.2 *Mukkutra iyal* 10.4.3 Mechanism/principles 10.4.4 Materials and Equipment 10.4.5 Procedure 10.4.6 Importance 10.4.7 Therapeutic application 10.4.8 Contraindication 10.4.9 Complications 10.4.10 Recent advances • **M10U5 Podi and Neer (Powder & Medicated liquid)** 10.5.1 Introduction 10.5.2 *Mukkutra iyal* 10.5.3 Mechanism/principles 10.5.4 Materials and Equipment 10.5.5 Medicinal preparation						

	10.5.6 Therapeutic application 10.5.7 Procedure 10.5.8 Importance 10.5.9 Contraindication 10.5.10 Complications 10.5.11 Recent advances					
		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 Nasal, Ophthalmic and Auricular application** **This module describes the traditional therapeutic practices, on *Nasiyam, Nasigabaranam, Oodhal, Mai,* and *Kalikkam.* It focuses on both theory and practical application in understanding these techniques using *Mukkutra Iyal.*** • **M11U1 Nasiyam (Nasal drop)** 11.1.1 Introduction 11.1.2 *Mukkutra iyal* 11.1.3 Mechanism/principles 11.1.4 Materials and Equipment 11.1.5 Medicinal preparation	2	10	20	30	60

	11.1.6 Therapeutic application 11.1.7 Procedure 11.1.8 Importance 11.1.9 Contraindication 11.1.10 Complications 11.1.11 Recent advances in *Nasiyam* • **M11U2 Nasikabaranam (Insufflation)** 11.2.1 Introduction 11.2.2 *Mukkutra iyal* 11.2.3 Mechanism /principles 11.2.4 Materials and Equipment 11.2.5 Medicinal preparation 11.2.6 Therapeutic application 11.2.7 Procedure 11.2.8 Importance 11.2.9 Contraindication 11.2.10 Complications 11.2.11 Recent advances/ Insuflation technique • **M11U3 Oodhal (Blowing)** 11.3.1 Introduction 11.3.2 *Mukkutra iyal* 11.3.3 Mechanism/principles 11.3.4 Materials and Equipment 11.3.5 Procedure 11.3.6 Importance 11.3.7 Therapeutic application 11.3.8 Contraindication 11.3.9 Complications 11.3.10 Recent advances/ Blowing techinique • **M11U4 Mai,Kalikkam (Collyrium & Eye drop)** 11.4.1 Introduction 11.4.2 *Mukkutra iyal*						

	11.4.3 Mechanism/principles 11.4.4 Materials and Equipment 11.4.5 Medicinal preparation 11.4.6 Therapeutic application 11.4.7 Procedure 11.4.8 Importance 11.4.9 Contraindication 11.4.10 Complications 11.4.11 Recent advances					
12	**M-12 Bloodletting and bone setting techniques** **This module provides an understanding of fundamentals, *mukkutra iyal,* and the mechanism of *kuruthivangal, urinchal, attaividal, murichal,* and *Kombukattal.* It explores the procedure and therapeutic application of bloodletting and bone setting for various diseases including advantages and recent advances.** • **M12U1 Kuruthivaangal &Urinchal (Venesuction & Sucction)** 12.1.1 Introduction 12.1.2 *Mukkutra iyal* 12.1.3 Mechanism/principles 12.1.4 Materials and Equipment 12.1.5 Therapeutic application 12.1.6 Procedure 12.1.7 Importance 12.1.8 Contraindication 12.1.9 Complications 12.1.10 Recent advances • **M12U2 Attaividal (Leech application)** 12.2.1 Introduction 12.2.2 *Mukkutra iyal* 12.2.3 List 12.2.4 Medicinal leech 12.2.5 Mechanism/principles 12.2.6 Materials and Equipment 12.2.7 Therapeutic application 12.2.8 Procedure	2	10	20	30	60

	12.2.9 Farming 12.2.10 Nutrition 12.2.11 Room set up 12.2.12 Storage 12.2.13 Transport 12.2.14 Importance 12.2.15 Contraindication 12.2.16 Complications 12.2.17 Recent advances • **M12U3 Murichal (Bone restructuring)** 12.3.1 Introduction 12.3.2 *Mukkutra iyal* 12.3.3 Mechanism/principles 12.3.4 Materials and Equipment 12.3.5 Procedure 12.3.6 Importance 12.3.7 Therapeutic Application 12.3.8 Contraindication 12.3.9 Complications 12.3.10 Recent advances • **M12U4 Kombukattal (Fracture splinting)** 12.4.1 Introduction 12.4.2 Types 12.4.3 *Mukkutra iyal* 12.4.4 Mechanism/principles 12.4.5 Materials and Equipment 12.4.6 Procedure 12.4.7 Importance 12.4.8 Therapeutic application 12.4.9 Contraindication 12.4.10 Complications 12.4.11 Recent advances					

		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 Physical therapy and Heat therapy I** **This module describes the fundamentals, mukkutra iyal and mechanism of *podithimirdhal, vedhu, pottanam* and *suttigai*. This module explores the preparation of medicines and the therapeutic application of physical therapy and heat therapy for various diseases.** • **M13U1 Podithimirthal (Powder manipulation)** 13.1.1 Introduction 13.1.2 *Mukkutra iyal* 13.1.3 Mechanism/principles 13.1.4 Materials and Equipment 13.1.5 Procedure 13.1.6 Importance 13.1.7 Therapeutic Application 13.1.8 Contraindication 13.1.9 Complications 13.1.10 Recent advances	2	10	20	30	60

	• **M13U2 Vedhu (Steam therapy)** 13.2.1 Introduction 13.2.2 *Mukkutra iyal* 13.2.3 Mechanism/principles 13.2.4 Materials and Equipment 13.2.5 Procedure 13.2.6 Importance 13.2.7 Therapeutic Application 13.2.8 Contraindication 13.2.9 Complications 13.2.10 Recent advances • **M13U3 Pottanam (medicated pouch)** 13.3.1 Introduction 13.3.2 *Mukkutra iyal* 13.3.3 Mechanism/principles 13.3.4 Materials and Equipment 13.3.5 Medicinal preparation 13.3.6 Therapeutic application 13.3.7 Procedure 13.3.8 Importance 13.3.9 Contraindication 13.3.10 Complications 13.3.11 Recent advances • **M13U4 Suttigai (Cautery)** 13.4.1 Introduction 13.4.2 *Mukkutra iyal* 13.4.3 Mechanism/principles 13.4.4 Materials and Equipment 13.4.5 Procedure 13.4.6 Importance 13.4.7 Therapeutic Application 13.4.8 Contraindication						

	13.4.9 Complications 13.4.10 Recent advances					
14	**M-14 Heat therapy II and Surgical medicines** **This module equips the skills and knowledge necessary to apply *Otradam, Pugai, Aruvai, Keeral, Salagai* and *Peechu.* This module explores the preparation of surgical medicines and the therapeutic application of heat therapy for various diseases.** • **M14U1 Otradam (Fomentation)** 14.1.1 Introduction 14.1.2 *Mukkutra iyal* 14.1.3 Mechanism/principles 14.1.4 Materials and Equipment 14.1.5 Medicinal preparation 14.1.6 Therapeutic application 14.1.7 Procedure 14.1.8 Importance 14.1.9 Contraindication 14.1.10 Complications 14.1.11 Recent advances • **M14U2 Pugai (Fumigation)** 14.2.1 Introduction 14.2.2 *Mukkutra iyal* 14.2.3 Mechanism/principles 14.2.4 Materials and Equipment 14.2.5 Medicinal preparation 14.2.6 Procedure 14.2.7 Therapeutic application 14.2.8 Importance	2	10	20	30	60

	14.2.9 Contraindication 14.2.10 Complications 14.2.11 Recent advances • **M14U3 Aruvai, keeral, salaagai (Excition, Incision & Probe)** 14.3.1 Introduction 14.3.2 Mukkutra iyal 14.3.3 Mechanism/principles 14.3.4 Materials and Equipment 14.3.5 Therapeutic application 14.3.6 Procedure 14.3.7 Importance 14.3.8 Contraindication 14.3.9 Complications 14.3.10 Recent advances • **M14U4 Peechu (Douche)** 14.4.1 Introduction 14.4.2 *Mukkutra iyal* 14.4.3 Mechanism/principles 14.4.4 Materials and Equipment 14.4.5 Procedure 14.4.6 Importance 14.4.7 Therapeutic application 14.4.8 Contraindication 14.4.9 Complications 14.4.10 Recent advances					
		4	**20**	**40**	**60**	**120**

Semester No : 6						
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
15	**M-15 Topical application II** **This module explores the comprehensive understanding of procedures, preparation of medicines, and therapeutic applications of *Thaarai,Thappalam, Thuvalai, Ennai muzhukku, Ennai thekkam* and *Puravalaiyam* for various conditions** • **M15U1 Thaarai, Puravalaiyam** 15.1.1 Introduction 15.1.2 Types 15.1.3 *Mukkutra iyal* 15.1.4 Mechanism/principles 15.1.5 Materials and Equipment 15.1.6 Procedure 15.1.7 Importance 15.1.8 Therapeutic application 15.1.9 Contraindication 15.1.10 Complications 15.1.11 Recent advances • **M15U2 Thappalam** 15.2.1 Introduction 15.2.2 *Mukkutra iyal* 15.2.3 Mechanism/principles	2	10	20	30	60

	15.2.4 Materials and Equipment 15.2.5 Procedure 15.2.6 Importance 15.2.7 Therapeutic application 15.2.8 Contraindication 15.2.9 Complications 15.2.10 Recent advances • **M15U3 Dhuvalai (Embrocation)** 15.3.1 Introduction 15.3.2 *Mukkutra iyal* 15.3.3 Mechanism/principles 15.3.4 Materials and Equipment 15.3.5 Medicinal preparation 15.3.6 Therapeutic application 15.3.7 Procedure 15.3.8 Importance 15.3.9 Contraindication 15.3.10 Complications 15.3.11 Recent advances • **M15U4 Ennai Muzhukku, Ennai thekkam** 15.4.1 Introduction 15.4.2 *Mukkutra iyal* 15.4.3 Mechanism/principles 15.4.4 Materials and Equipment 15.4.5 Medicinal preparation 15.4.6 Therapeutic application 15.4.7 Procedure 15.4.8 Importance 15.4.9 Contraindication 15.4.10 Complications 15.4.11 Recent advances					

16	**M-16 Innovation and Opportunities in Siddha external therapy Entrepreneurship** **This module explores the innovative aspects and entrepreneurial opportunities within the field of siddha external therapy. The module focuses on how the therapy can be adapted to modern wellness and integrative medicine. Equips with the knowledge to innovate within the traditional practice, fostering entrepreneurship in the evolving health and wellness industry.** • **M16U1 Pharmaceutical Development, equipment development and New Product Opportunities** 16.1.1 Siddha external medicine Pharmaceutical Units 16.1.2 Siddha external therapy equipments developing units 16.1.3 Market Gaps and Product Development 16.1.4 Formulation and Product Design 16.1.5 Regulatory and Compliance 16.1.6 Product Launch and Distribution • **M16U2 Government Subsidies and Product Approval for Pharmaceuticals** 16.2.1 Programs for Siddha Products 16.2.2 Eligibility and Application for Financial Support 16.2.3 Navigating Regulatory Bodies for Approvals 16.2.4 Product Approval and Compliance 16.2.5 Tax Incentives and Government Contracts • **M16U3 Export Opportunities and Global Market for Siddha external medicine** 16.3.1 Global Demand for Siddha External Medicine 16.3.2 International Market Exploration 16.3.3 Building an Export Strategy 16.3.4 Export Incentives and Marketing • **M16U4 Innovative Ventures in Siddha external therapy hospital**	2	10	20	30	60

	16.4.1Telemedicine service 16.4.2 Wellness centers 16.4.3 Mobile apps 16.4.4 Wellness programs for various public sectors Launching a Siddha external theray Telemedicine Service					
		4	**20**	**40**	**60**	**120**
		16	**80**	**160**	**240**	**480**

Paper No : 3 (Thokkanam, Biomechanics and Physical Medicine)

Semester No : 3

2A Module Number	**2B Modules & units**	**2C Number of Credits**	**Notional Learning hours**			
			2D Lectures	**2E Practical Training**	**2F Experiential Learning including Modular Assessment**	**2G Total**
17	**M-17 Essentials of stability, mobility, Therapeutic exercise and Traction** **This module deals with the fundamentals of biomechanics, human posture and types of movement & locomotion. This mdule also deals with muscles, nerves involved in movements and locomotion , therapeutic exercise and traction** • **M17U1 Basic concepts of Bio mechanics** 17.1.1 Kinetics 17.1.2 Kinematics 17.1.3 Center of gravity	2	10	20	30	60

	17.1.4 Line of gravity 17.1.5 Base of support 17.1.6 Anatomical planes of our body 17.1.7 Axes of our body • **M17U2 Principles of posture** 17.2.1 Overview of vaayu bootha koorukal 17.2.2 Ideal alignment of body segments 17.2.3 Spinal curvatures 17.2.4 Posture types • **M17U3 Basics of human movement** 17.3.1 Movement and its types 17.3.2 Anatomical movements 17.3.3 Muscles for movement • **M17U4 Essentials of Locomotion** 17.4.1Types of locomotion 17.4.2 Gait cycle 17.4.3 Muscles for gait 17.4.4 Nervous control for gait • **M17U5 Overview of Therapeutic exercise** 17.5.1 Balance and coordination exercise 17.5.2 Strengthening exercise 17.5.3 Mobilisation exercise 17.5.4 Stretching exercise • **M17U6 Overview of traction** 17.6.1 Methods of traction 17.6.2 Traction at different levels 17.6.3 Indications and contra indications 17.6.4 Massage and manipulation methods					
18	**M-18 Thasai Enbu Mandala Kayangal (Common Musculo skeletal system injuries), Electrotherapy, Cryotherapy, Heat therapy**	2	10	20	30	60

This module deals with the common injury mechanism of muscle, tendon, ligaments, fascia, intervertebral discs and nerves. It describes the pain and pain modulating factors, electro therapy, cryo therapy and heat therapy.

- **M18U1 Muscle & tendon injuries**

18.1.1 Muscle injuries
18.1.1.1 Muscle fatigue
18.1.1.2 Accumulation of metabolites
18.1.1.3 Neuronal fatigue
18.1.1.4 Muscle spasm
18.1.1.5 Cramps
18.1.1.6 Spasticity
18.1.1.7 Strain
18.1.1.8 Contusion
18.1.1.9 Disuse atrophy
18.1.1.10 Denervation
18.1.2.Effects of immobility in extra cellular matrix
18.1.3. Stages of inflammation.
18.1.4.Tendon injuries
18.1.4.1.Tendinitis.
18.1.4.2.Tendinosis
18.1.4.3.Tenosynovitis.

- **M18U2 Ligament & fascia injuries**

18.2.1 Pathologies of ligament
18.2.1.1 Grading system of ligament injury
18.2.2 Pathologies of fascia
18.2.2.1 Adhesion
18.2.2.2 Trigger points

- **M18U3 Narambu & Inter vertebral discs (IVD) pathippukal**

18.3.1 Intervertebral disc diseases
18.3.1.1 Disc bulge
18.3.1.2 Protrusion

18.3.1.3 Extrusion
18.3.1.4 Sequestration
18.3.1.5 Annular tear
18.3.1.6 Herniated disc
18.3.1.7 Stenosis
18.3.2 Nerve diseases
18.3.2.1 Axonotmesis
18.3.2.2 Neurotmesis
18.3.2.3 Neuropraxia
18.3.3 Compression pathology (external & internal)
18.3.4 Internal tension pathology
18.3.5 Impingements

• **M18U4 Concepts of Pain**

18.4.1 Neurobiology of pain
18.4.2 Pain conduction pathway
18.4.3 Theories of pain
18.4.4 Modulating factors of pain.

• **M18U5 Electrical Stimulation**

18.5.1 Galvanic current
18.5.2 Faradic current
18.5.3 Choice of current
18.5.4 Indications and contra indications and intensity of stimulation
18.5.5 Preparation,application and selection of electrodes
18.5.6 Inter Ferential Therapy (IFT)
18.5.7 Transcutaneous Electrical Nerve Stimulation (TENS)

• **M18U6 Cryo Therapy, Hydrotherapy, Photo Dynamic Therapy, Micro Needling**

18.6.1 Cryotherapy
18.6.2 Hydrotherapy
18.6.3 Photo dynamic therapy
18.6.4 Micro needling

	• **M18U7 Heat Therapy** 18.7.1 Superficial heat therapy 18.7.1.1 Hydro collateral pack 18.7.1.2 Paraffin wax bath 18.7.1.3 Suana 18.7.1.4 IRR (Infra Red Radiation Therapy) 18.7.1.5 Fluido therapy 18.7.2 Deep heat therapy 18.7.2.1 Ultra sound therapy 18.7.2.2 Short wave diathermy 18.7.2.3 Infra red radiation 18.7.2.4 Laser 18.7.2.5 Microwave diathermy					
		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 Surface anatomy related to Thokkanam – Upper body & Lower body** **This module deals with the palpatory procedures of head & neck, shoulder, elbow, knee, ankle, lumbo sacral area and the surface anatomy of upper and**	2	10	20	30	60

	lower body • **M19U1 Palpatory procedures of Head & Neck** 19.1.1 Starting position for head & neck palpation 19.1.2 Palpable structures of posterior side 19.1.3 Palpable structures of lateral side 19.1.4 Palpable structures of anterior side • **M19U2 Palpatory procedures of Shoulder** 19.2.1 Starting position for shoulder palpation 19.2.2 Palpable structures of posterior side 19.2.3 Palpable structures of anterior side 19.2.4.Palpable structures of antero lateral side • **M19U3 Palpatory procedures of Elbow & Wrist** 19.3.1 Starting position for elbow &Wrist palpation 19.3.2 Palpable structures of anterior side 19.3.3 Palpable structures of lateral side 19.3.4 Palpable structures of medial side • **M19U4 Palpatory procedures of lumbosacral area** 19.4.1.Starting position for Lumbosacral palpation 19.4.2.Palpable structures of lumbosacral area • **M19U5 Palpatory procedures of knee** 19.5.1 Starting position for knee palpation 19.5.2 Palpable structures of anterior side 19.5.3 Palpable structures of medial side 19.5.4 Palpable structures of lateral side • **M19U6 Palpatory procedures of Ankle** 19.6.1.Starting position for ankle palpation 19.6.2.Palpable structures of anterior side 19.6.3.Palpable structures of medial side 19.6.4.Palpable structures of lateral side 19.6.5.Palpable structures of posterior side					

20	**M-20 Elements of clinical reasoning, principles of movement & Procedures of Thokkanam** **This module deals with the assessment of musculoskeletal system pathologies, dasanadikal & its varmangal , the line of muscle pull and tensegrity structure . It also deals with the professional ethics and contra indications of thokkanam** • **M20U1 Inspection related to musculo skeletal system's pathologies** 20.1.1 Colour changes in skin 20.1.2 Localised swelling 20.1.3 Postural changes 20.1.3.1 Spinal curvatures 20.1.3.2 Congenital and acquired deformities 20.1.3.2.1 Shoulder 20.1.3.2.2 Neck 20.1.3.2.3 Elbow 20.1.3.2.4 Wrist 20.1.3.2.5 Hip 20.1.3.2.6 Knee 20.1.3.2.7 Ankle • **M20U2 Palpation related to musculo skeletal system's pathologies** 20.2.1 Nature of the skin 20.2.2 Quality of the skin 20.2.2.1 Elasticity 20.2.2.2 Hydration 20.2.3 Skin consistency tests 20.2.3.1 Displacement test 20.2.3.2 Skin lifting test 20.2.3.3 Skin rolling test	2	10	20	30	60

	20.2.4 Temperature measurement 20.2.5 Sensation of the skin • **M20U3 Percussion related to musculo skeletal system's pathologies** 20.3.1 Vibration sense tests 20.3.2 Pallesthesia 20.3.3 Palhypesthesia 20.3.4 Tactile allodynia 20.3.5 Vibration perception threshold test • **M20U4 Test for the range of motion to rule out the functional imbalances of the joints** 20.4.1 Head & neck joint 20.4.2 Shoulder joint 20.4.3 Elbow & wrist joint 20.4.4 Lumbosacral joint 20.4.5 Knee joint 20.4.6 Ankle joint • **M20U5 Other special tests to rule out disorders of joints and its components** 20.5.1 Head & neck joint disorders 20.5.2 Shoulder joint disorders 20.5.3 Elbow & wrist joint disorders 20.5.4 Sacroiliac joint disorders 20.5.5 Knee joint disorders 20.5.6 Ankle joint disorders • **M20U6 Dasanadikal - Functional principles of movement** 20.6.1 Dasanadikal and its varmangal 20.6.1.1 Idakalai nadi and its varmangal 20.6.1.2 Pinkalai nadi and its varmangal 20.6.1.3 Suzhumunai nadi and its varmangal 20.6.1.4 Siguvai nadi and its varmangal 20.6.1.5 Atthi nadi and its varmangal 20.6.1.6 Alampudai nadi and its varmangal						

20.6.1.7 Kanthari nadi and its varmangal
20.6.1.8 Purudan nadi and its varmangal
20.6.1.9 Sangini nadi and its varmangal
20.6.1.10 Kugu nadi and its varmangal

• **M20U7 Line of muscle pull and tensegrity**

20.7.1.Tensegrity 20.7.1.1.Definition of tensegrity 20.7.1.2.The balance between compression and tension 20.7.1.3.Advantages and disadvantages of a tensegrity structure 20.7.1.4.Macro and micro tensegrity structures of our body 20.7.2.Line of muscle pull and its function in movement and posture 20.7.2.1 Superficial back lines 20.7.2.2 Superficial front lines 20.7.2.3 Lateral lines 20.7.2.4 Spiral lines 20.7.2.5 Arm lines 20.7.2.6 Functional lines 20.7.2.7 Deep front line

• **M20U8 Ethics, principles and practice of thokkanam**

20.8.1 History taking
20.8.2 Lab investigations
20.8.3 Patient education
20.8.4 Safety procedures (Hygiene – hand and table)
20.8.5 Working posture of the therapist and height of the table
20.8.6 Unit of hand pressure

• **M20U9 Contra indications of thokkanam**

20.9.1 List of conditions to do thokkanam cautiously
20.9.1.1 Back pain in children with the age below 12
20.9.1.2 Pain due to massive trauma
20.9.1.3 Constant or progressive pain at night
20.9.1.4 Cancer patients (specific conditions)
20.9.1.5 Patient under systemic steroid treatment
20.9.1.6 Difficulty in urinating
20.9.1.7 Deep vein thrombosis
20.9.1.8 Fractures
20.9.1.9 Limitation of spinal movement
20.9.1.10 Skin infections
20.9.1.11 Open injury

	20.9.1.12 Hemophilia 20.9.2. Mallaga sambirathayam					
		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 Thokkanam types and it's applications** **The module elaborates on the types of Thokkanam, principles, therapeutic benefits, and practical applications. Emphasis is placed on understanding the physiological basis, indications and contraindications. It will be guided through practical demonstrations and supervised hands-on sessions to develop competency in therapeutic application** • **M21U1 Mechanism of thattal** 21.1.1 Description of thattal 21.1.2 Types of thattal 21.1.3 Benefits of thattal • **M21U2 Mechanism of irukkal** 21.2.1 Description of irukkal 21.2.2.Types of irukkal 21.2.3 Benefits of Irukkal.	2	10	20	30	60

	• **M21U3 Mechanism of piditthal** 21.3.1 Description of piditthal 21.3.2 Types of piditthal 21.3.3 Benefits of piditthal • **M21U4 Mechanism of murukkal** 21.4.1 Description of murukkal 21.4.2 Types of murukkal 21.4.3 Benefits of murukkal • **M21U5 Mechanism of kaikattal** 21.5.1 Description of kaikattal 21.5.2 Types of kaikattal 21.5.3 Benefits of kaikattal • **M21U6 Mechanism of azhutthal** 21.6.1 Description of azhutthal 21.6.2 Types of azhutthal 21.6.3 Benefits of azhutthal • **M21U7 Mechanism of izhutthal** 21.7.1 Description of izhutthal 21.7.2 Types of izhutthal 21.7.3 Benefits of izhutthal • **M21U8 Mechanism of mallatthuthal** 21.8.1 Description of mallatthuthal 21.8.2 Types of mallatthuthal 21.8.3 Benefits of mallatthuthal • **M21U9 Mechanism of asaitthal** 21.9.1 Description of asaitthal 21.9.2 Types of asaitthal 21.9.3 Benefits of asaitthal					
22	**M-22 Udal seyaliyal matrangal (Physiological response) of thokkanam and sports rehabilitation**	2	10	20	30	60

This module focuses on the physiological effects of Thokkanam, and explores its clinical integration in areas such as sports rehabilitation, stress response modulation, neurological disorders, and mobility enhancement.

- **M22U1 Mechanical responses of thokkanam**

22.1.1 Definition of Mechanobiology
22.1.2 Fluid mechanics
22.1.3 Cellular exchange
22.1.4 Changes in muscle mass
22.1.5 Changes in extracellular matrix
22.1.6 Changes in bone

- **M22U2 Relaxation responses of thokkanam**

22.2.1 Neuroendocrine system
22.2.2 Hypothalamus Pituitary Gonadal axis (HPG axis)
22.2.3 Serotonin
22.2.4 Dopamine
22.2.5 Oxytocin.

- **M22U3 Stress response and thokkanam**

22.3.1 Cortisol function
22.3.2 Hypothalamus -Pituitary - Adrenal axis (HPA axis)

- **M22U4 Orthosis for spine and extremities**

22.4.1 Spinal assessment
22.4.1.1 Thoraco lumbar orthosis
22.4.1.2 Low back orthosis
22.4.1.3 Spinal postural correction orthosis
22.4.2 Milwalky brace
22.4.3 Spinal braces

- **M22U5 Mobility Aids**

22.5.1 Crutch
22.5.2 Cane
22.5.3 Walker
22.5.4 Sticks(dipod, tripod, tetrapod)

22.5.5 Wheelchair
22.5.6 Tricycle
22.5.7 Modification
22.5.8 Prothestics

- **M22U6 Orthosis in neurological disorders**

22.6.1 Neurological Assesssment
22.6.2 Assisitve instruments
22.6.3 Splints
22.6.3.1 Aeroplane splint
22.6.3.2 Dynamic splint
22.6.3.3 Wrist drop splint
22.6.3.4 Foot drop splint
22.6.3.5 Cockup splint
22.6.4 Hip, Knne, Foot, Ankle Orthosis(HKFAO)
22.6.5 Knne, Foot, Ankle Orthosis (KAFO),
22.6.6 Ankle Foot Orthosis (AFO)
22.6.7 Footware modifications

- **M22U7 Overview of sports medicine**

22.7.1 Scopes of sports medicine
22.7.2 Treatment of sports injuries
22.7.3 Prevention of sports injuries
22.7.4 Diagnosis and rehabilitation of sports injuries
22.7.5 Training
22.7.6 Cognitive skill
22.7.7 Resting heart rate
22.7.8 Running speed etc
22.7.9 Exercise to improve the muscle power
22.7.10 Strengthening and endurance

- **M22U8 Overview of rehabilitation in sport injury**

22.8.1 Stress fractures
22.8.1.1 Causes
22.8.1.2 Sites

	22.8.1.3 Symptoms 22.8.1.4 Risk factors 22.8.1.5 Complication 22.8.1.6 Preventions 22.8.2 Management and rehabilitaion 22.8.3 First aid management 22.8.4 Rehabilitation of sports injury					
		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 Postural disturbance, lymphatic, peripheral vascular disease and Rehabilitation of neuromuscular disease** **This module is designed to provide comprehensive knowledge and clinical competencies in evaluating and managing postural imbalances, lymphatic disorders, peripheral vascular diseases (PVD), and conditions requiring neuromuscular rehabilitation. Emphasizing an integrative approach combining traditional therapy principles with modern rehabilitation science** • **M23U1 Postural disorders of head & neck and its management** 23.1.1 Forward head posture	2	10	20	30	60

23.1.2 Acquired torticollis
23.1.3 Semispinalis capitis syndrome
23.1.4 Splenius capitis syndrome
23.1.5 Levator scapulae syndrome
23.1.6 Cerviogenic head ache
23.1.7 Muscular tension headaches
23.1.8 Trapezitis

• **M23U2 Postural disorders of elbow & lumbosacral and its management**

23.2.1 Hyper lordosis
23.2.2 Excessive kyphosis
23.2.3 Scoliosis
23.2.4 Lateral pelvic tilt
23.2.5 Anterior pelvic tilt
23.2.6 Posterior pelvic tilt.
23.2.7 Cubital tunnel syndrome
23.2.8 Cubitus valgus
23.2.9 Cubitus varus

• **M23U3 Postural disorders of knee & ankle and its management**

23.3.1 Genu valgum
23.3.2 Genu varum
23.3.3 Genu recurvatum.
23.3.4 Calcaneal valgus
23.3.5 Calcaneal varus
23.3.6 Pes planus
23.3.6 Pes cavus
23.3.7 Hallux valgus
23.3.8 Morton toe

• **M23U4 Postural disorders of shoulder & pakkavatham and its management**

23.4.1 Costcoclavicular syndrome
23.4.2 Pectoralis minor syndrome
23.4.3 Pakkavatham

	• **M23U5 Overview of lymphatic and peripheral vascular disease** 23.5.1 Arterial diseases 23.5.2 Venous disease 23.5.3 Lymphatic disease • **M23U6 Rehabilitation of neuromuscular disease** 23.6.1 Brain and spinal cord injuries 23.6.2 Peripheral nerve injury 23.6.3 Muscular disease 23.6.4 Cancer 23.6.5 Geriatric rehabilitation 23.6.6 Neurological disease rehabilitation					
24	**M-24 Diseases treated with thokkanam -Cumulative trauma disorder (CTD) & Others** **This module explains the cumulative trauma disorders of head and neck, lumbosacral, cervical, shoulder, elbow,wrist, knee, ankle and systemic diseases and its thokkanam management. It explores the management of rheumatological conditions and orthopaedic conditions** • **M24U1 Cumulative trauma disorders of ankle & knee and its management** 24.1.1 Ankle Sprains (Lateral & medial) 24.1.2 Plantar fasciitis 24.1.3 Tarsal tunnel syndrome 24.1.4 Sinus tarsi syndrome 24.1.5 Morton’s neuroma 24.1.6 Achilles tendinosis. 24.1.7 Knee : 24.1.7.1 Anterior cruciate ligament injury 24.1.7.2 Posterior cruciate ligament injury 24.1.7.3 Medial collateral ligament injury	2	10	20	30	60

24.1.7.4 Lateral collateral ligament injury
24.1.7.5 Medial and lateral meniscus injury
24.1.7.6 Patella femoral pain syndrome (PFPS)
24.1.7.7 Chondromalacia patellae
24.1.7.8 Patella tendinosis
24.1.7.9 Patella alta
24.1.7.10 Patella baja
24.1.7.11 Osgood schlatter's
24.1.7.12 Sinding larsen johansson syndrome
24.1.7.13 Ileo Tibial Band (ITB) friction syndrome
24.1.7.14 Hamstring strain
24.1.7.15 Adductor strain

• **M24U2 Cumulative trauma disorders of lumbosacral & cervical and its management**

24.2.1 Lumbosacral area
24.2.1.1 Piriformis syndrome
24.2.1.2 Sacroiliac joint dysfunction
24.2.1.3 Lumbago
24.2.1.4 Lumbar spondylosis
24.2.1.5 Facet joint arthritis
24.2.1.6 Spondylolisthesis.
24.2.2 Cervical
24.2.2.1 Whiplash injury
24.2.2.2 Cervical spondylosis

• **M24U3 Cumulative trauma disorders of elbow, wrist and shoulder and its management**

24.3.1 Elbow 24.3.1.1 Lateral epicondylitis 24.3.1.2 Medial epicondylitis 24.3.1.3 Pronator teres syndrome 24.3.1.4 Radial tunnel syndrome 24.3.2 Wrist 24.3.2.1 Carpal tunnel syndrome 24.3.2.2 Inter section syndrome 24.3.2.3 De quervain's syndrome. 24.3.3 Shoulder 24.3.3.1 Adhesive capsulitis 24.3.3.2 Supra spinatus tendinosis 24.3.3.3 Rotator cuff tear 24.3.3.4 Superior labral from anterior to posterior (SLAP) tear 24.3.3.5 Biceps tendinosis

	• **M24U4 Systemic , metabolic disorders and other diseases treated with thookkanam** 24.4.1 Spinal cord injury 24.4.2 Osteoporosis 24.4.3 Chronic obstructive pulmonary disease (COPD) 24.4.4 Diabetes – Foot care 24.4.5 Cerebral palsy 24.4.6 Fibromyalgia 24.4.7 Stress management. • **M24U5 Management of orthopedic condition** 24.5.1 Congential conditions 24.5.2 Trauamatic conditions 24.5.3 Degenerative conditions 24.5.4 Inflamative joint and bone conditions 24.5.5 Soft tissue injury • **M24U6 Management of Rheumatological conditions** 24.6.1 Rheumatoid arthriits 24.6.2 Collagen disease 24.6.3 Systemic Lupus Erythematosis 24.6.4 Metabolic bone and joint disease.					
		4	**20**	**40**	**60**	**120**
		16	**80**	**160**	**240**	**480**

Paper No : 4 (Essentials of Orthopaedics and Traumatology)

Semester No : 3

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

					including Modular Assessment	
25	**M-25 General orthopaedics and congenital deformities** **This module provides an in-depth understanding of general principles in orthopedics and a focused study of congenital deformities affecting the upper and lower limbs. It is designed to equip the foundational knowledge of musculoskeletal development, biomechanics, and common orthopedic conditions** • **M25U1 General orthopaedics** 25.1.1 History of orthopedics in india 25.1.2 Emblem 25.1.3 Deformities 25.1.4 Acquired deformities 25.1.5 Principles and management gait 25.1.6 Identify abnormal gait 25.1.7 Antalgic gait 25.1.8 Unstable hip 25.1.9 Gluteus maximus gait 25.1.10 Quadriceps gait 25.1.11 High stepping gait 25.1.12 Short leg scissoring gait 25.1.13 Stiff knee gait • **M25U2 Congenital deformities of lower limb** 25.2.1 Classification, causes, risk factors, diagnosis, treatment and complications 25.2.2 Osteogenesis imperfecta 25.2.3 Achondroplasia 25.2.4 Congenital pes cavus 25.2.5 Congenital pes planus 25.2.6 Toe deformities 25.2.7 Congenital talipes equinovarus 25.2.8 Developmental dysplasia of the hip 25.2.9 Congenital coxa vara 25.2.10 Congenital coxa valga 25.2.11 Congenital genu recurvatum • **M25U3 Congential deformities of upper limb**	2	10	20	30	60

	25.3.1 Classification,causes, risk factors,diagnosis,treatment and complications 25.3.2 Upper limb 25.3.2.1 Sprengel's shoulder 25.3.2.2 Radio-ulnar synostosis 25.3.3 Madelung's deformity 25.3.4 Syndactylism 25.3.5 Polydactylism 25.3.6 Congenital skeletal Limb deficiencies 25.3.7 Congenital absence of the radius 25.3.8 Congenital absence of fibula 25.3.9 Neck and spine 25.3.10 Congenital torticollis 25.3.11 Spine bifida 25.3.12 congenital scoliosis					
26	**M-26 Common metabolic and endocrine disease of bone** **This module describes the common, metabolic, endocrine, and infectious diseases of bone. It includes conditions such as osteoporosis, rickets, osteomalacia, and Paget's disease under metabolic disorders. Endocrine disorders affecting bone health are also covered. Infectious diseases such as osteomyelitis and skeletal tuberculosis are discussed. The module emphasizes etiology, clinical features, diagnosis, and management of these bone conditions.** • **M26U1 Infectious diseases** 26.1.1 Classification, causes, risk factors, diagnosis, treatment and complications 26.1.2 Osteomyelitis 26.1.3 Tuberculosis 26.1.4 Suppurative arthritis 26.1.5 Gout & Pseudo gout 26.1.6 Gonococcal arthritis	2	10	20	30	60

	26.1.7 Complication of infectious diseases like fixed flexion deformity,triple deformity and other deformities • **M26U2 Metabolic diseases of bone** 26.2.1 Metabolic bone diseases and endocrine bone diseases 26.2.2 Classification, causes and risk factors, diagnosis, treatment and complications 26.2.3 Rickets 26.2.4 Osteoporosis 26.2.5 Scurvy 26.2.6 Endocrine disorders 26.2.7 Parathyroid 26.2.8 Osteodystrophy 26.2.9 Secondary hyper parathyroids • **M26U3 Miscellanous disease of bone** 26.3.1 Disease of the reticulo endothelial system 26.3.2 Eosinophilic granuloma of bone 26.3.3 Hand schuller christian disease 26.3.4 Diseases of the haemopoietic system 26.3.5 Miscellaneous 26.3.6 Paget's disease- 26.3.7 Fluorosis 26.3.8 Hypervitaminosis A 26.3.9 Hypervitaminosis D 26.3.10 Infantile cortical hyperostosis					
		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 Diseases of joints and cervical spine** **This module describes condition of neck, classification of joint diseases and avascular necrosis of bone** • **M27U1 Diseases of joint** 27.1.1 Introduction of arthritis 27.1.2 Classification of arthritis 27.1.3 Rheumatoid arthritis 27.1.4 Juvenile arthritis 27.1.5 Rheumatoid arthritis 27.1.6 Sero negative spondyloarthropathy 27.1.7 Ankylosing spondylitis 27.1.8 Reiter's disease 27.1.9 Psoriatic arthritis 27.1.10 Enteropathy arthritis 27.1.11 Degenerative arthritis 27.1.12 Oteoarthrosis knee 27.1.13 Osteoarthritis of hip joint 27.1.14 Neuropathic joints 27.1.15 Crystal synovitis 27.1.16 Gout pseudo gout 27.1.17 Alkaptonuria arthritis 27.1.18 Hemophilic arthritis 27.1.19 Reactive arthritis 27.1.20 Appraise the miscellaneous conditions 27.1.21 Villonodular synovitis 27.1.22 Synovial chrondromatosis 27.1.23 Pulmonary hypertrophic osteo arthropathy hysterical joint	2	10	20	30	60

	• **M27U2 Avascular necrosis of bone and epiphyseal osteochondritis** 27.2.1 Definition,pathogenesis,pathology,Classification,treatment 27.2.2 Clinical features radiological staging 27.2.3 Other imaging techniques 27.2.4 Functional exploration of bone 27.2.5 Fracture neck of femur 27.2.6 Osteo necrosis 27.2.7 Caisson's disease 27.2.8 Drug induced osteo necrosis 27.2.9 Sickle cell anemia 27.2.10 Epiphyseal osteochondritis 27.2.11 Perthes's disease 27.2.12 Osgood- Schlatter's disease 27.2.13 Osteo chondritis dissecans • **M27U3 Regional conditions of neck** 27.3.1 Cervical spondylosis 27.3.2 Cervical rib 27.3.3 Brachial neuralgia Intervertebral disc prolapsed 27.3.4 Torticollis 27.3.5 Shoulder Supraspinatus tendinitis calcification 27.3.6 Rupture of rotator cuff periarthritis shoulder 27.3.7 Deltoid fibrosis					
28	**M-28 Diseases of upper limb, lower limb and spine** **This module provides comprehensive knowledge about the common diseases and disorders affecting the upper limb,lower limb and spine, with emphasis on anatomical regions, clinical presentation, diagnosis, and management. It will gain an in-depth understanding of musculoskeletal and neurological conditions that impair movement, cause pain, or result in deformity**	2	10	20	30	60

• **M28U1 Regional conditions of upperlimb** 28.1.1 Regional conditions of elbow 28.1.2 Tennis elbow 28.1.3 Recurrent subluxation of the ulnar nerve 28.1.4 Cubitus valgus 28.1.5 Cubitus varus 28.1.6 Wrist and Hand ganglion 28.1.7 De Quervain’s disease 28.1.8 Trigger finger 28.1.9 Trigger thumb 28.1.10 Carpal tunnel syndrome 28.1.11 Dupuytren’s contracture • **M28U2 Regional conditions of spine** 28.2.1 Spine deformities 28.2.2 Kyphosis 28.2.3 Spondylolisthesis 28.2.4 Backache 28.2.5 lumbosacral strain 28.2.6 Fibrositis back 28.2.7 Sacralisation of 5th lumbar vertebra 28.2.8 Intervertebral disc prolapsed 28.2.9 Lumbar canal stenosis 28.2.10 Scoliosis • **M28U3 Regional conditions of lower limb** 28.3.1 Lower limb deformities 28.3.2 Coxa vara 28.3.3 Slipped upper femoral epiphysis 28.3.4 Idiopathic chondrolysis of hip 28.3.5 Knee deformities 28.3.6 Genu valgum 28.3.7 Genu varum 28.3.8 Tibia varum 28.3.9 Genu recurvatum 28.3.10 Quadriceps fibrosis 28.3.11 Recurrent dislocation of patella 28.3.12 Bursae around the knee 28.3.13 Loose bodies in the knee 28.3.14 Anterior knee pain 28.3.15 Chondromalacia patella 28.3.16 Foot diseases such as 28.3.17 Painful heel 28.3.18 Plantar fasciitis 28.3.19 Posterior heel pain 28.3.20 Rat foot 28.3.21 Foot strain 28.3.22 Pain in the fore foot 28.3.23 Hallux valgus 28.3.24 Anterior metatarsalgia						

		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 Injuries of bone, joint and upper extremities** **This Module aims to provide a foundational understanding of injuries of bones, shoulder and elbow** • **M29U1 Injuries to bones and joints** 29.1.1 Fractures, types of fractures 29.1.2 Mechanism of fracture 29.1.3 Biology of fracture 29.1.4 Healing Factors which influence fracture heal 29.1.5 General Principles of management of fractures diagnosis 29.1.6 Conservative management functional cast bracing 29.1.7 Open reduction and internal fixation 29.1.8 Complications of fracture 29.1.9 Volkmann ischaemic contracture 29.1.10 Myositis ossificans 29.1.11 Fat embolism	2	10	20	30	60

29.1.12 Non-union
29.1.13 Malunion
29.1.14 Cross union
29.1.15 Sudeck’s osteodystrophy
29.1.16 Birth fractures
29.1.17 Battered baby syndrome
29.1.18 Epiphyseal injuries
29.1.19 Pathological fracture
29.1.20 Dislocation of joints
29.1.21 Traumatic dislocation
29.1.22 Pathological dislocation
29.1.23 Paralytic dislocation

- **M29U2 Injuries of the shoulder and arm**

29.2.1 The shoulder
29.2.2 Fracture clavicle
29.2.3 Dislocation of the acromioclavicular joint
29.2.4 Dislocation of the shoulder joint
29.2.5 Recurrent dislocation of shoulder
29.2.6 Tabulate the arm
29.2.7 Fracture of the proximal end of humorous
29.2.8 Fracture of the greater tuberosity
29.2.9 Fracture neck of humerus
29.2.10 Fracture of the shaft of the humorous

- **M29U3 Injuries of the elbow forearm and wrist**

29.3.1 Examination of the elbow
29.3.2 Supracondylar fracture
29.3.3 Inter condylar fracture
29.3.4 Fracture of the medial epicondyle
29.3.5 Fracture of the lateral condyle of the humerus
29.3.6 Fracture capitulum
29.3.7 Dislocation of the elbow
29.3.8 Pulled elbow

	29.3.9 Fractures of the proximal end of the radius 29.3.10 Fractures of the neck of the radius 29.3.11 Fractures of the olecranon 29.3.12 Examination the forearm 29.3.13 Fracture both bones forearm 29.3.14 Monteggia fracture dislocation 29.3.15 Galeazzi fracture dislocation 29.3.16 Classify the wrist 29.3.17 Colles'fracture 29.3.18 Fracture separation of lower epiphysis of radius 29.3.19 Smith's fracture 29.3.20 Barton's fracture 29.3.21 Fracture of the scaphoid 29.3.22 Dislocation of the lunate bone					
30	**M-30 Injuries of lower extremities** **This module aims to provide enormous understanding of dislocation,fracture and all the injuries of hip,thigh,knee,ankle and foot** • **M30U1 Injuries of the hip and thigh** 30.1.1 Dislocation of the hip joint 30.1.2 Posterior dislocation anterior 30.1.3 Dislocation central dislocation 30.1.4 Old unreduced dislocation of the hip 30.1.5 Intra capsular fracture 30.1.6 Neck of femur fracture 30.1.7 Trochanteric fracture of femur 30.1.8 Fracture shaft of the femur 30.1.9 Proximal third middle third distal third fracture femur in children 30.1.10 Complications of fracture femur	2	10	20	30	60

	• **M30U2 Injuries of the knee** 30.2.1 Knee fracture 30.2.2 Fracture of the femoral condyles 30.2.3 Fracture of the tibial condyles 30.2.4 Fracture patella 30.2.5 Injuries of the extensor mechanism 30.2.6 Dislocation of the knee 30.2.7 Traumatic dislocation of patella • **M30U3 Injuries of leg ankle and foot** 30.3.1 Leg fractures 30.3.2 Fracture of tibia 30.3.3 Fibula fracture 30.3.4 Ankle fracture 30.3.5 Dislocation of the ankle 30.3.6 Epiphyseal injury lower end of tibia 30.3.7 Foot fractures 30.3.8 Fracture of talus 30.3.9 Fractures of calcaneum 30.3.10 Fractures of metatarsals 30.3.11 Fractures phalanges 30.3.12 Jones fracture					
		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**	**2G Total**

					Assessment	
31	**M-31 Injuries of spine soft tissue and sports injury** **This module provide the comprehensive knowledge on injuries of spine,soft tissues and sports injuries. Its aims to equip the knowledge and practical skills to diagnose and provide rehabilitation for sports injuries** • **M31U1 Injuries of the spine** 31.1.1 Classification- thoraco- lumbar spine 31.1.2 Mechanism and types of injuries 31.1.3 Stable fractures 31.1.4 Management of paraplegia 31.1.5 Bed sore 31.1.6 Bladder care 31.1.7 Lower cervical spine injuries 31.1.8 Upper cervical spine injuries 31.1.9 Fractures of the pelvis ring 31.1.10 Mechanism of fracture 31.1.11 Classification of fracture 31.1.12 Management of fracture 31.1.13 Fractures of the acetabulum 31.1.14 Fractures of the sacrum 31.1.15 Fractures of the coccyx 31.1.16 Incidence primary survey Glasgow coma scale 31.1.17 Triage resuscitation-management 31.1.18 Classification-emergency surgical treatment-management of wound 31.1.19 Evaluate the management of fracture 31.1.20 Management of infected open fracture 31.1.21 Complication of open wound 31.1.22 Management of the crush injury gunshot injury • **M31U2 Soft tissue injuries** 31.2.1 Ankle joint-knee joint-internal derangements 31.2.2 Collateral ligament injuries 31.2.3 Cruciate ligament injuries 31.2.4 Injuries to semilunar cartilage 31.2.5 Pathology rupture of the biceps brachi 31.2.6 Rupture of the supraspinatus 31.2.7 Rupture of the tendo achillies 31.2.8 Nerve injuries-injuries of peripheral nerves 31.2.9 Classification- mechanism of closed nerve injuries	2	10	20	30	60

	31.2.10 Diagnosis of nerve lesion- 31.2.11 Clinical examination-management of nerve injuries 31.2.12 Radial nerve injuries 31.2..13 Median nerve injuries 31.2.14 Ulnar nerve injuries 31.2.15 Brachial plexus injuries 31.2.16 Erb's palsy 31.2.17 Klumpke's palsy 31.2.18 Sciatic nerve injuries 31.2.19 Lateral popliteal nerve injuries • **M31U3 Sports injuries** 31.3.1 Classification etiology pathology clinical presentation and management 31.3.2 Subfascial compartment syndrome 31.3.3 Brachial artery injury 31.3.4 Popliteal artery injuries 31.3.5 Injuries of tibia arteries 31.3.6 Types selection of level of amputation 31.3.7 Stump and its management 31.3.8 Complication 31.3.9 Amputation in children 31.3.10 Prosthetic fitting and rehabilitation					
32	**M-32 Neurological and neuromuscular disorder** **This module provides the comprehensive understanding on neuromuscluar disorders and able to evaluate the lab report investigation also provides clear understanding on motor neuron disorders and spinal disorders** • **M32U1 Neuromuscular skeletal disorders** 32.1.1 Extra pyramidal lesions 32.1.2 Parkinsonism	2	10	20	30	60

	32.1.3 Neurological features of wilson disease 32.1.4 Huntington’s disease 32.1.5 Tardine dyskinesia 32.1.6 Restless leg syndrome 32.1.7 Demylinating lesion 32.1.8 Multiple sclerosis 32.1.9 Children’s diffuse cerebral sclerosis • **M32U2 Motor neuron disorder** 32.2.1 Disease of cerebellum 32.2.2 Motor neuron disease 32.2.3 Ataxias 32.2.4 Amyotrophic lateral sclerosis 32.2.5 Spinal muscular atrophies 32.2.6 Hemiplegia 32.2.7 Paraplegia 32.2.8 Quadriplegia 32.2.9 Bulbar palsy • **M32U3 Spinal card disorders** 32.3.1 Disease of spinal cord 32.3.2 Myelopathy 32.3.3 Nerve Root and plexuses 32.3.4 Disease of vertebral column discuss 32.3.5 Klippel feil syndrome 32.3.6 Arnold-chiari malformation 32.3.7 Peripheral nervous syndrome 32.3.8 Guillain-barre’s syndrome 32.3.9 Diabetic neuropathy 32.3.10 Neuralgic amyotrophy 32.3.11 Disease of muscles 32.3.12 Muscular dystrophy 32.3.13 Polymyositis					

		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 Principles and Practices of Pura Maruthuvam						
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 : Fundamental principles of Pura Maruthuvam & Therapeutic application of external medicine for Pun (Ulcer), Kiranthi (Chronic ulcers), Katti (Abscess), Veekkam (Swelling) & silaipun (Sinus & Fistula)						
Module Learning Objectives **(At the end of the module, the students should be able to)** Describe the principles of pura Maruthuvam and importance of *Mukkutra seer sei* (Restoration) maruthuvam Analyze the *Mukkutra iyal* in maintaining health and preventing diseases Identify the benefits of *Mukkutra seer sei* (Restoration) maruthuvam Develop and apply mukkutra iyal based treatment specific to the different types of Pun (Ulcer), Kiranthi (Chronic ulcers), Katti (Abscess), Veekkam (Swelling) & Silaipun (Sinus & Fistula)						
M 1 Unit 1 Principles of Pura Maruthuvam 1.1.1 Principles of *puramaruthuvam* 1.1.2 Metabolic response to tissue injury 1.1.3 Mukkutra theory in tissue injury, inflammation, degeneration, spasm and rigidity 1.1.4 Wounds, Tissue repair & Scars 1.1.5 Condition of *udal thathukkal* in tissue injury and tissue repair 1.1.6 Principle of degeneration, inflammation, spasm and rigidity 1.1.7 Introduction to trauma early assessment & management 1.1.8 Introduction to pathological diseases assessment and management 1.1.9 Basics of						

Surgical/Para surgical procedures and other external medicine/therapy 1.1.10 Investigation & diagnostic imaging and *envagai thervukal*

References: 7,18,19,20,23,35

3A	3B	3C	3D	3E	3F	3G
CO1	Describe puramaruthuvam, including its surgical and parasurgical procedures, and its fundamental principles such as degeneration, inflammation, spasm, and rigidity	1	Lecture	CAN	Knows-how	L&PPT ,L&GD
CO1	Conduct the assessment of metabolic responses to tissue injury, correlate *Udalthathukkal* with wound healing mechanisms, and execute early intervention strategies for trauma and pathological conditions with clinical reasoning	2	Practical Training 1.1	PSY-GUD	Shows-how	RP,DIS,CBL
CO1	Interpret diagnostic imaging modalities and analyze *Envagai Thervugal* findings through hands-on clinical observation and guided case-based practice	2	Experiential-Learning 1.1	PSY-GUD	Does	DIS,D,CBL

M 1 Unit 2 Mukkutra seersei(Restoration) maruthuvam

1.2.1 Principles of *Mukkutra seersei* (Restoration) maruthuvam 1.2.2 *Peechu* (Enema) 1.2.3 *Vamanam* (Vomiting) 1.2.4 *Ennai kuliyal* (Oleation) 1.2.5 *Pancha karpavidhi* 1.2.6 *Bethi* (Purgation) 1.2.7 *Vedhu* (Steam) 1.2.8 *Nasiyam* (Nasal drops) 1.2.9 *Anjanam* (Collyrium) 1.2.10 *Thokkanam* (Physical manipulation) 1.2.11 *Kuruthi vaangal* (Bloodletting)

References: 7,9,10,14,18,19,142

3A	3B	3C	3D	3E	3F	3G
CO1,CO2,CO3 ,CO4	Describe the types of *mukkutra seersei* (Restoration) maruthuvam, procedure of application and its therapeutic benefits	2	Lecture	CC	Knows-how	L&PPT ,L&GD
CO1,CO2,CO3 ,CO4	Illustrate the *mukkutra seersei* (Restoration) maruthuvam techniques and monitor the responses	4	Practical Training 1.2	PSY-GUD	Shows-how	CBL,D-BED
CO1,CO2,CO3 ,CO4	Document the efficacy of *mukkutra seersei maruthuvam*	4	Experiential-Learning 1.2	PSY-ORG	Does	D-BED,CB

						L

M 1 Unit 3 Pun (Ulcer), Kiranthi (Chronic ulcers)

1.3.1 *Pun* (Ulcer) *1.3.2 Kiranthi* (Chronic ulcer)

References: 7,18,19,20,22,29,53,55

3A	3B	3C	3D	3E	3F	3G
CO1,CO2	Describe the definitions, causes and different types of *pun, kiranthi* and ulcer	3	Lecture	CAN	Knows-how	L&GD,L &PPT
CO2,CO3,CO4	Demonstrate the clinical assessment, diagnosis and treatment of ulcers with the application of *mukkutra iyal*, ulcers based on theoretical knowledge and clinical findings, document the stages of wound healing & understand the pathophysiology of ulcers	6	Practical Training 1.3	PSY-GUD	Shows-how	CBL,DIS, D-BED
CO1,CO2,CO3 ,CO4	Interpret the siddha diagnostic investigations by performing it, *mukkutra iyal* based treatment plans for patients care, research on the stages and mechanisms of wound healing in different patient populations and *mukkutra iyal* based treatments for ulcers.	8	Experiential-Learning 1.3	PSY-GUD	Does	CBL,PBL ,RLE

M 1 Unit 4 Katti (Abscess) & Veekkam (Swelling)

1.4.1 Dermoid cyst, Irattha kazhalai (Hemangioma), Erysipelas 1.4.2 Cellulitis, Abscess, Boils, Pilavai (Carbuncle) 1.4.3 Papilloma, Fibroma, Lipoma, Neurofibroma, Lymphangioma 1.4.4 Moles, Sebaceous cyst, Warts, Callosity & Kaalani (Corn), Seborrhic warts, Solar keratosis, Pyogenic granuloma

References: 7,18,35

3A	3B	3C	3D	3E	3F	3G
CO1,CO2	Describe the definitions, causes and different types of *katti & vekkam* and lump/swelling	2	Lecture	CC	Knows-how	L&PPT , L&GD,DIS

CO2,CO3	Demonstrate the clinical assessment, diagnosis and treatment of lump/swelling with the application of *mukkutra iyal*	4	Practical Training 1.4	PSY-GUD	Shows-how	DIS,CBL,L_VC
CO2,CO3,CO4	Document the efficacy of *mukkutra iyal* based treatments for lump/swelling.	6	Experiential-Learning 1.4	PSY-GUD	Does	LS,DIS,CBL

M 1 Unit 5 Silaipun (Sinus and Fistula)

1.5.1 *Silaipun* (Sinus and Fistula)

References: 7,9,15,16,18,20

3A	3B	3C	3D	3E	3F	3G
CO1,CO2	Describe the definitions, causes and different types of *silaipun* and sinus	2	Lecture	CC	Knows-how	L&PPT,L&GD
CO2,CO3	Demonstrate the clinical assessment, diagnosis and treatment of sinus & fistula with the application of *mukkutra iyal*	4	Practical Training 1.5	PSY-GUD	Shows-how	L_VC,DIS,CBL,D
CO2,CO3,CO4	Document the efficacy of *mukkutra iyal* based treatments for *silaipun* through the patient clinical trials.	6	Experiential-Learning 1.5	PSY-GUD	Does	CBL,DIS

Practical Training Activity

Practical Training 1.1 : Assessment of trauma & pathological diseases

Total learning hours (2 Hours)
Case based learning & Roleplays
Treatment Strategies: Teacher discuss the immediate interventions and their impact on patient outcomes.
Case Studies: Use real-life case studies to highlight the benefits of early assessment and treatment.
Role-Playing: Engage participants in role-playing scenarios to practice early assessment and intervention techniques.

Practical Training 1.2 : *Mukkutra seersei* (Restoration) maruthuvam

Total learning hours (4 hours)
Case based learning (4 hours)
Preparation (30 mins)
Study Techniques: The teacher explains the different techniques of Mukkutra Samana Skitchai (enema, vomiting, purgation, steam therapy, nasal drops, physical manipulation).
Gather Materials: Ensure all necessary tools and materials are ready.
Patient Assessment (30 mins) Health Evaluation: Conduct a thorough health assessment to determine suitability for Mukkutra Samana Skitchai.
Consent: Explain procedures and obtain informed consent from patients.
Perform Techniques (1 hour 30 Mins)
Enema (Peechu): Administer enema, monitor for immediate effects.
Vomiting (Vamanam): Induce vomiting, observe patient response.
Purgation (Bethi): Administer purgation, ensure patient comfort.
Steam Therapy (Vedhu): Apply steam therapy, monitor skin and respiratory responses.
Nasal Drops (Nasiyam): Administer nasal drops, observe effects.
Physical Manipulation (Thokkanam): Perform gentle manipulation, assess pain relief and mobility.
Monitor Responses (30 mins)
Immediate Observation: Justify immediate reactions to the techniques.
Follow-Up: Schedule follow-up visits to assess ongoing effects.
Patient Feedback: Encourage patients to report their experiences and any changes.
Data Justification (30 mins)
Record Findings: Maintain detailed records of patient responses, improvements, and any adverse effects.
Analyze Data: Compare pre- and post-treatment data to evaluate efficacy.
Reflection and Adjustment (30 mins)
Group Discussions: Share experiences and insights with colleagues.
Self-Reflection: Reflect on the effectiveness of treatments and patient outcomes.Adjust Treatments: Modify therapies based on patient feedback and observed results.

Practical Training 1.3 : Clinical assessment, diagnosis and treatment of ulcers

Tota learning hours (6 hours)
Case-Based Learning (CBL) & Group Discussion (GD)
Teacher explains the context of the practical task by use visual aids or examples and allow students to perform each step under supervision - 1 hour

Clinical Observation & Diagnosis: -2 hour
- Learn patient history-taking related to ulcers.
- Conduct physical examination focusing on ulcers.
- Identify symptoms of ulcers.
- Differentiate the conditions based on theoretical knowledge and clinical signs.

Case-Based Learning (CBL) & Group Discussion (GD): 3 hour
- Engage in small group discussions about different patient case studies.
- Present and debate on various therapeutic approaches.
- Reflect on clinical experiences and outcomes, understanding the integration of modern and Siddha medicine

Practical Training 1.4 : Clinical assessment, diagnosis and treatment of lump/swelling

Total learning hours (4 hours)
Case-Based Learning (CBL) & Group Discussion (GD)
Teacher explains the context of the practical task by use visual aids or examples and allow students to perform each step under supervision - 1 hour
Clinical Observation & Diagnosis: 1 hour
- Learn patient history-taking related to lump/swelling
- Conduct physical examination focusing on lump/swelling
- Identify symptoms of lump/swelling
- Differentiate the conditions based on theoretical knowledge and clinical signs.

Case-Based Learning (CBL) & Group Discussion (GD): 2 hours
- Engage in small group discussions about different patient case studies.
- Present and debate on various therapeutic approaches.
- Reflect on clinical experiences and outcomes, understanding the integration of modern and Siddha medicine.

Practical Training 1.5 : Clinical assessment, diagnosis and treatment of sinus & fistula

Total learning hours (4 hours)
Case-Based Learning (CBL) & Group Discussion (GD)
Teacher explains the context of the practical task by use visual aids or examples and allow students to perform each step under supervision -1 hour
1. Clinical Observation & Diagnosis: 2 hours
- Learn patient history-taking related to sinus.

- Conduct physical examination focusing on sinus.
- Identify symptoms of sinus.
- Differentiate the conditions based on theoretical knowledge and clinical signs.

2. Case-Based Learning (CBL) & Group Discussion (GD): 2 hours
- Engage in small group discussions about different patient case studies.
- Present and debate on various therapeutic approaches.
- Reflect on clinical experiences and outcomes, understanding the integration of modern and Siddha medicine

Experiential learning Activity

Experiential-Learning 1.1 : Diagnostic image modalities and *envagai thervugal*

Total activity hours (2 hours)
Demonstration of Imaging Techniques (30 mins)
Overview of different imaging techniques relevant to the study.
Live demonstration of imaging procedures.
Explanation of technical aspects and best practices.
Hands-on Practice & Case Studies (30 mins)
Hands-on training in using imaging equipment/software.
Guided practice with real-time supervision.
Case study analysis with imaging examples.
Interpretation of Envagai Thervugal (30 mins)
Explanation of Envagai Thervugal (Naadi, Niram, Mozhi, Vizhi, Malam, Moothiram, Sparisam).
Correlation with imaging findings.
Interactive session to interpret clinical data.
Discussion & Q&A - 30 mins
Group discussions on key takeaways.
Case-based discussions for deeper understanding.

Experiential-Learning 1.2 : The efficacy of *mukkutra seersei maruthuvam*

Total activity hours (4 hours)
Case-Based Learning (CBL) - 4 hours
Preparation (30 mins)

Review Literature: Study existing research on Mukkutra iyal based treatments.
Design the Study & methodology (30 mins)
Select Participants: Set inclusion/exclusion criteria and recruit participants.
Conduct the Examination (45 mins)
Baseline Data: Collect initial health data from all participants.
Administer Treatments: Apply Mukkutra iyal based treatments to the patients
Monitor Responses (30 mins)
Observation: before and after treatment responses.
Follow-Up: Schedule regular follow-ups to assess progress.
Data Collection (15 mins)
Quantitative Data: Use health assessments, lab tests, etc., to collect numerical data.
Qualitative Data: Gather patient feedback and observations for qualitative insights.
Data Analysis & discussion (30 mins)
Statistical Analysis: Use software to analyze quantitative data.
Qualitative Analysis: Analyze patient diaries and feedback for common themes.
Interpretation (15 mins)
Draw Conclusions: Determine the efficacy of the Mukkutra iyal based treatments.
Justifyation (15 mins)
Record Findings: Justify all findings comprehensively.
Prepare Reports: Write detailed reports and research papers.
Reflection and Feedback (15 mins)
Group Discussions: Facilitate discussions to share insights and learnings.
Self-Reflection: Encourage participants to reflect on their experiences.
Continuous Improvement (15 mins)
Review Process: Evaluate the study process and identify areas for improvement.
Further Research: Plan future studies based on findings.

Experiential-Learning 1.3 : *Mukkutra iyal* based treatments for ulcers

Total activity hours (8 hours)
Case-Based Learning (CBL) & Group Discussion (GD)
Preparation – Begin by reviewing literature on Mukkutra Iyal-based treatments to understand existing research, theories, and previous studies. (45 minutes)
Design the Study & Methodology – Select participants by defining inclusion/exclusion criteria and finalize the methodology for conducting the study. (45 minutes)

Conduct the Examination – Collect baseline data on participants' health and administer the Mukkutra Iyal-based treatments as per the study plan. (1 hour)
Monitor Responses – Observe participant responses before and after treatment and schedule follow-ups to track progress. (30 minutes)
Data Collection – Gather quantitative data through health assessments and lab tests, and qualitative data through patient feedback and observations. (60 minutes)
Data Analysis & Discussion – Perform statistical analysis for quantitative data and thematic analysis for qualitative insights, discussing findings in detail. (60 minutes)
Interpretation – Draw conclusions based on the analyzed data to determine the efficacy of the treatments. (45 minutes)
Justification – Record all findings comprehensively and prepare detailed reports, ensuring accuracy and validity. (45 minutes)
Reflection & Feedback – Conduct group discussions to share insights and encourage participant self-reflection. (45 minutes)
Continuous Improvement – Review the entire study process, identify areas for improvement, and plan future research directions. (45 minutes)

Experiential-Learning 1.4 : *Mukkutra iyal* based treatments for lump/swelling

Total activity hours (6 hours)
Case-Based Learning (CBL) & Group Discussion (GD)
Preparation – Begin by reviewing literature on Mukkutra Iyal-based treatments to understand existing research, theories, and previous studies. (30 minutes)
Design the Study & Methodology – Select participants by defining inclusion/exclusion criteria and finalize the methodology for conducting the study. (30 minutes)
Conduct the Examination – Collect baseline data on participants' health and administer the Mukkutra Iyal-based treatments as per the study plan. (1 hour)
Monitor Responses (30 minutes) – Observe participant responses before and after treatment and schedule follow-ups to track progress. (30 minutes)
Data Collection – Gather quantitative data through health assessments and lab tests, and qualitative data through patient feedback and observations. (45 minutes)
Data Analysis & Discussion – Perform statistical analysis for quantitative data and thematic analysis for qualitative insights, discussing findings in detail. (45 minutes)
Interpretation – Draw conclusions based on the analyzed data to determine the efficacy of the treatments. (30 minutes)
Justification – Record all findings comprehensively and prepare detailed reports, ensuring accuracy and validity. (30 minutes)
Reflection & Feedback – Conduct group discussions to share insights and encourage participant self-reflection. (30 minutes)
Continuous Improvement – Review the entire study process, identify areas for improvement, and plan future research directions. (30 minutes)

Experiential-Learning 1.5 : *Mukkutra iyal* based treatments for *silaipun*

Total activity hours (6 hours)
Case-Based Learning (CBL)
Preparation – Begin by reviewing literature on Mukkutra Iyal-based treatments to understand existing research, theories, and previous studies. (30 minutes)
Design the Study & Methodology – Select participants by defining inclusion/exclusion criteria and finalize the methodology for conducting the study. (30 minutes)
Conduct the Examination – Collect baseline data on participants' health and administer the Mukkutra Iyal-based treatments as per the study plan. (1 hour)
Monitor Responses – Observe participant responses before and after treatment and schedule follow-ups to track progress. (30 minutes)
Data Collection – Gather quantitative data through health assessments and lab tests, and qualitative data through patient feedback and observations. (45 minutes)

Data Analysis & Discussion – Perform statistical analysis for quantitative data and thematic analysis for qualitative insights, discussing findings in detail. (45 minutes)
Interpretation – Draw conclusions based on the analyzed data to determine the efficacy of the treatments. (30 minutes)
Justification – Record all findings comprehensively and prepare detailed reports, ensuring accuracy and validity. (30 minutes)
Reflection & Feedback – Conduct group discussions for sharing insights and encourage self-reflection among participants. (30 minutes)
Continuous Improvement – Review the entire study process, identify areas for improvement, and plan future research directions. (30 minutes)

Modular Assessment

Assessment method	**Hour**
Instructions: Conduct a structured modular assessment. Assessment will be 50 marks. Keep 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. MCQ - 20 Marks 20 questions from all units. Each question will have 1 marks. 20*1 = 20 marks Each questions will have 4 options. 2. Class presentation on the impact of Mukkutra seer sei (Restoration) maruthuvam among the patients - 30 Marks Mark distribution : Content - 15 marks Presentation skills - 10 marks Visual aids & Materials - 3 marks Time management - 2 marks Or Any practical in converted form can be taken for assessment (25 marks) and Any of the 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/ Experientia**	**3E Domain/ Sub Domain**	**3F Level (Does/Shows how/ Knows h**	**3G Teaching Learning**

			l Learning		ow/Know)	Methods

Module 2 : Therapeutic application of external medicine for Moolam-Pouthiram-Adithallal (Ano rectal diseases), Vithai noikal and Aankuri noikal (Testicular diseases & Diseases of male genitalia), Penkuri noikal & Magalir noikal (Diseases of female external genitalia and reproductive organ diseases) and Umizh neer kola noikal & Veethana kola noikal (Diseases of salivary gland & thyroid gland)

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

Describe the *Moolam-Pouthiram-Adithallal* (Ano rectal diseases), *Vithai noikal* and *Aankuri noikal* (Testicular diseases & Diseases of male genitalia), *Penkuri noikal* & *Magalir noikal* (Diseases of female external genitalia and reproductive organ diseases) and *Umizh neer kola noikal & Veethana kola noikal* (Diseases of salivary gland & thyroid gland) in siddha aspects and also recent advances
Analyze the role of *Mukkutra iyal* in the diagnostic methods
Develop a treatment protocol on the basis of *Mukkutra iyal*

M 2 Unit 1 Moolam-Pouthiram-Adithallal (Ano rectal diseases)

2.1.1 *Moolam* (Hemorrhoids), *Powthiram* (Fistula in ano), *Asanavai vedippu* (Fissure), Pruritis ani 2.1.2 Postanal dermoid, Sacro coccygeal teratoma, Anal abscess, Pilonidal sinus 2.1.3 *Adithallal* (Rectal prolapse), Rectal carcinoma

References: 7,18,19,20,42

3A	3B	3C	3D	3E	3F	3G
CO1,CO2	Describe the definitions, causes and different types of *moolam, pouthiram, adithallal* and anorectal diseases	3	Lecture	CC	Knows-how	L&GD,L&PPT
CO2,CO3	Demonstrate the clinical assessment, diagnosis and treatment of anorectal diseases with the application of *mukkutra iyal and* understand the pathophysiology of anorectal	6	Practical Training 2.1	PSY-GUD	Shows-how	CBL,L_VC

	diseases					
CO2,CO3	Document the efficacy of *mukkutra iyal* based treatments for anorectal diseases in the clinical.	7	Experiential-Learning 2.1	PSY-GUD	Does	CBL,DIS,PL

M 2 Unit 2 Vithai noikal and Aankuri noikal (Testicular diseases & Diseases of male genitalia)

2.2.1 *Kudal vatham* (Inguinal hernia), *Kumizh noi* (Umbilical hernia), Femoral hernia 2.2.2 Benign Prostrate Hypertrophy, varicocele, Hydrocele, Epididymo Orchitis 2.2.3 Sebaceous cyst of scrotum, Cyst of epididymis, Phimosis, Balenoprostatiti

References: 7,9,10,18,19,20,56

3A	3B	3C	3D	3E	3F	3G
CO1,CO2,CO3	Describe the definitions, causes and different types of vithai noigal, aankuri noigal (Testicular diseases & Diseases of male genitalia)	2	Lecture	CC	Knows-how	L&PPT,L&GD
CO1,CO2,CO3	Perform the clinical assessment, diagnosis and treatment of Testicular diseases & diseases of male genitalia with the application of mukkutra iyal	4	Practical Training 2.2	PSY-ADT	Shows-how	CBL,DIS
CO1,CO2,CO3	Document the efficacy of *mukkutra iyal* based treatments for Testicular diseases & diseases of male genitalia in patient.	6	Experiential-Learning 2.2	AFT-RES	Does	DIS,LS,CBL

M 2 Unit 3 Penkuri noikal & Magalir noikal (Diseases of female external genitalia and Reproductive organ diseases)

2.3.1 Hernia, *Kothippu yoni* (Vaginitis), Endometriosis, Cyst, Vulvovaginitis, *Moothirapai thabitham* (Cystitis) & Salpingitis 2.3.2 Lichen planus, *Karuppai adithallal* (Uterine prolapse), Vaginal yeast infection & *Vellai* (Leucorrhea) 2.3.3 *Magapperinmai* (Infertility)

References: 7,9,10,18,19,20,27,28,38,39,42,44,45

3A	3B	3C	3D	3E	3F	3G
CO1,CO2	Describe the definitions, causes and different types of *Penkuri noigal, Magalir janana uruppu noigal* and diseases of female external genitalia and reproductive organ diseases	2	Lecture	CC	Know	L&GD,L_VC,L&PPT

CO1,CO2,CO3	Perform clinical assessment, diagnosis and treatment of diseases of female external genitalia and reproductive organ diseases with the application of *mukkutra iyal*	4	Practical Training 2.3	PSY-GUD	Shows-how	L_VC,DIS,CBL
CO1,CO2,CO3 ,CO4	Analyze the efficacy of *Mukkutra iyal* based treatments for diseases of female genitalia & female reproductive organs in the patient.	6	Experiential-Learning 2.3	CAN	Does	DIS,CBL

M 2 Unit 4 Umizh neer kola noikal & Veethana kola noikal (Diseases of salivary gland & thyroid gland)

2.4.1 Parotid gland swelling, Acute & chronic parotitis, Parotid tumours, Acute suppurative parotiditis 2.4.2 Diseases of submandibular salivary glands 2.4.3 Diseases of sublingual salivary glands 2.4.4 Torticollis, Colloid goitre, Primary & Secondary toxic goitre, Nodular goitre& Thyroiditis

References: 7,9,10,18,19,20,38,42,115,116

3A	3B	3C	3D	3E	3F	3G
CO1,CO2	Describe the definitions, causes and different types of *Surappu kola noigal*	3	Lecture	CAN	Knows-how	L&GD,L &PPT
CO1,CO2,CO3	Perform the clinical assessment, diagnosis and treatment of diseases of salivary gland & thyroid gland with the application of *mukkutra iyal*	6	Practical Training 2.4	PSY-GUD	Shows-how	D-BED,CBL
CO1,CO2,CO3 ,CO4	Document the efficacy of *Mukkutra iyal* based treatments for *surappu kola noigal* in patient.	7	Experiential-Learning 2.4	AFT-RES	Does	CBL,DIS,LS

Practical Training Activity

Practical Training 2.1 : Clinical assessment, diagnosis and treatment of anorectal diseases

Total learning hours (6 hours)
Case Based Learning
Teacher explains the context of the practical task by use visual aids or examples and allow students to perform each step under supervision.
Case Selection & Preparation (30 minutes)
Selection of Case

Choose a Relevant Case: Select a case study that is relevant to the learning objectives. Gather Information: Collect all necessary data about the case, including patient history, symptoms, diagnostic reports, and treatment plans.
Preparation
Prepare the patient for the clinical examination
Initial Assessment (30 minutes)
Patient History: Start with a thorough review of the patient's history.
Symptom Analysis: Discuss the presenting symptoms and possible underlying causes.
Diagnosis (60 minutes)
Diagnostic Procedures: Perform the uyir thathukkal, udal thathukkal & envagai thervu examination.
Formulate Diagnosis: Based on the observed data, encourage students to make a diagnosis.
Treatment Plan (30 minutes)
Develop Treatment Options: Discuss possible treatment plans based on the diagnosis.
Select Treatment: Choose the most appropriate treatment plan and justify the choice.
Implementation & Monitoring (60 minutes)
Apply Treatment: Describe how the treatment was implemented in the case.
Monitor Progress: Discuss the patient's progress during the treatment.
Outcome Evaluation (30 minutes)
Assess Outcomes: Evaluate the effectiveness of the treatment plan.
Assessment & Justification of Findings (2 hours)
Individual Assessment
Practical assessment of patient history-taking, examination skills.
Diagnosing the case and formulating a treatment plan.
Group Discussion & Review
Justification of findings and evaluation of outcomes.
Feedback from faculty and improvements for future cases.

Practical Training 2.2 : *Mukkutra iyal* based treatments for anorectal diseases

Total learning hours (4 hours)
Case Based Learning
Teacher explains the context of the practical task and allow students to perform each step under supervision.
1. Case Selection & Preparation (15 minutes)
1.1 Selection of Case

Choose a Relevant Case: Select a case study that is relevant to the learning objectives. Gather Information: Collect all necessary data about the case, including patient history, symptoms, diagnostic reports, and treatment plans.
1.2 Preparation
Prepare the patient for the clinical examination
2. Initial Assessment (15 minutes)
2.1 Patient History: Start with a thorough review of the patient's history.
2.2 Symptom Analysis: Discuss the presenting symptoms and possible underlying causes.
3. Diagnosis (60 minutes)
3.1 Diagnostic Procedures: Perform the uyir thathukkal, udal thathukkal & envagai thervu examination.
3.2 Formulate Diagnosis: Based on the observed data, encourage students to make a diagnosis.
4. Treatment Plan (30 minutes)
4.1 Develop Treatment Options: Discuss possible treatment plans based on the diagnosis.
4.2 Select Treatment: Choose the most appropriate treatment plan and justify the choice.
5. Implementation & Monitoring (60 minutes)
5.1 Apply Treatment: Describe how the treatment was implemented in the case.
5.2 Monitor Progress: Discuss the patient's progress during the treatment.
6. Outcome Evaluation (15 minutes)
Assess Outcomes: Evaluate the effectiveness of the treatment plan.
7. Assessment & Justification of Findings (45 minutes)
7.1 Individual Assessment
7.1.1 Practical assessment of patient history-taking, examination skills.
7.1.2 Diagnosing the case and formulating a treatment plan.
7.2 Group Discussion & Review
7.2.1 Justification of findings and evaluation of outcomes.
7.2.2 Feedback from faculty and improvements for future cases.

Practical Training 2.3 : Clinical assessment, diagnosis and treatment of diseases of female external genitalia and reproductive organ diseases

Total learning hours (4 hours)
Case Based Learning
Teacher explains the context of the practical task by use visual aids or examples and allow students to perform each step under supervision.
1. Case Selection & Preparation (15 minutes)
1.1 Selection of Case

Choose a Relevant Case: Select a case study that is relevant to the learning objectives. Gather Information: Collect all necessary data about the case, including patient history, symptoms, diagnostic reports, and treatment plans.
1.2 Preparation
Prepare the patient for the clinical examination
2. Initial Assessment (15 minutes)
2.1 Patient History: Start with a thorough review of the patient's history.
2.2 Symptom Analysis: Discuss the presenting symptoms and possible underlying causes.
3. Diagnosis (60 minutes)
3.1 Diagnostic Procedures: Perform the uyir thathukkal, udal thathukkal & envagai thervu examination.
3.2 Formulate Diagnosis: Based on the observed data, encourage students to make a diagnosis.
4. Treatment Plan (30 minutes)
4.1 Develop Treatment Options: Discuss possible treatment plans based on the diagnosis.
4.2 Select Treatment: Choose the most appropriate treatment plan and justify the choice.
5. Implementation & Monitoring (60 minutes)
5.1 Apply Treatment: Describe how the treatment was implemented in the case.
5.2 Monitor Progress: Discuss the patient's progress during the treatment.
6: Outcome Evaluation (30 minutes)
Assess Outcomes: Evaluate the effectiveness of the treatment plan.
7. Assessment & Justification of Findings (30 minutes)
7.1 Individual Assessment
Practical assessment of patient history-taking, examination skills.
Diagnosing the case and formulating a treatment plan.
7.2 Group Discussion & Review
Justification of findings and evaluation of outcomes.
Feedback from faculty and improvements for future cases.

Practical Training 2.4 : Clinical assessment, diagnosis and treatment of diseases of salivary gland & thyroid gland

Total learning hours (6 hours)
Case Based Learning & Bed side Demonstration
Teacher explains the context of the practical task and allow students to perform each step under supervision.
1. Case Selection & Preparation (30 minutes)
1.1 Selection of Case

Choose a Relevant Case: Select a case study that is relevant to the learning objectives. Gather Information: Collect all necessary data about the case, including patient history, symptoms, diagnostic reports, and treatment plans.
1.2 Preparation
Prepare the patient for the clinical examination
2. Initial Assessment (30 minutes)
2.1 Patient History: Start with a thorough review of the patient's history.
2.2 Symptom Analysis: Discuss the presenting symptoms and possible underlying causes.
3. Diagnosis (60 minutes)
3.1 Diagnostic Procedures: Perform the uyir thathukkal, udal thathukkal & envagai thervu examination.
3.2 Formulate Diagnosis: Based on the observed data, encourage students to make a diagnosis.
4. Treatment Plan (30 minutes)
4.1 Develop Treatment Options: Discuss possible treatment plans based on the diagnosis.
4.2 Select Treatment: Choose the most appropriate treatment plan and justify the choice.
5. Implementation & Monitoring (60 minutes)
5.1 Apply Treatment: Describe how the treatment was implemented in the case.
5.2 Monitor Progress: Discuss the patient's progress during the treatment.
6. Outcome Evaluation (30 minutes)
Assess Outcomes: Evaluate the effectiveness of the treatment plan.
7. Assessment & Justification of Findings (2 Hours)
7.1 Individual Assessment
Practical assessment of patient history-taking, examination skills.
Diagnosing the case and formulating a treatment plan.
7.2 Group Discussion & Review
Justification of findings and evaluation of outcomes.
Feedback from faculty and improvements for future cases.

Experiential learning Activity

Experiential-Learning 2.1 : *Mukkutra iyal* based treatments for anorectal diseases

Total activity hours (7 hours)
Case based learning
Preparation – Conduct an in-depth literature review on mukkutra iyal-based treatments, exploring existing research, methodologies, and findings to build a strong

foundation. (45 minutes)
Design the Study & Methodology – Define the inclusion/exclusion criteria for participant selection, refine the study design, and finalize the methodology, ensuring clarity in objectives and execution. (45 minutes)
Collect baseline health data from participants and administer the Mukkutra Iyal-based treatments, ensuring careful documentation of procedures. (1 hour 15 minutes)
Monitor Responses – Observe participants' pre- and post-treatment responses, noting any immediate effects, and schedule follow-ups for ongoing assessment. (45 minutes)
Data Collection – Gather quantitative data through health assessments, lab tests, and clinical evaluations while also collecting qualitative insights through patient feedback and detailed observations. (1 hour)
Data Analysis & Discussion – Use statistical tools to analyze quantitative data and thematic methods to assess qualitative responses, followed by discussions to interpret findings. (1 hour)
Interpretation (45 minutes) – Draw conclusions based on the analyzed data, identifying the efficacy, strengths, and potential limitations of the treatments. (45 minutes)
Justification (45 minutes) – Record findings in a structured manner, ensuring comprehensive documentation, and prepare detailed reports to support the study's credibility. (45 minutes)
Reflection & Feedback – Facilitate group discussions for participants to share insights, engage in self-reflection, and evaluate their learning experiences. (45 minutes)
Continuous Improvement – Review the entire process, identify areas for refinement, and propose future research directions to enhance the study's impact. (30 minutes)

Experiential-Learning 2.2 : *Mukkutra iyal* based treatments for Testicular diseases & diseases of male genitalia

Total activity hours (6 hours)
Case based learning
Preparation – Begin by reviewing literature on mukkutra iyal-based treatments to understand existing research, theories, and previous studies. (30 minutes)
Design the Study & Methodology - Select participants by defining inclusion/exclusion criteria and finalize the methodology for conducting the study. (30 minutes)
Collect baseline data on participants' health and administer the Mukkutra Iyal-based treatments as per the study plan. (1 hour)
Monitor Responses – Observe participant responses before and after treatment and schedule follow-ups to track progress. (30 minutes)
Data Collection – Gather quantitative data through health assessments and lab tests, and qualitative data through patient feedback and observations. (45 minutes)
Data Analysis & Discussion – Perform statistical analysis for quantitative data and thematic analysis for qualitative insights, discussing findings in detail. (45 minutes)
Interpretation – Draw conclusions based on the analyzed data to determine the efficacy of the treatments. (30 minutes)
Justification – Record all findings comprehensively and prepare detailed reports, ensuring accuracy and validity. (30 minutes)
Reflection & Feedback – Conduct group discussions for sharing insights and encourage self-reflection among participants. (30 minutes)
Continuous Improvement – Review the entire study process, identify areas for improvement, and plan future research directions. (30 minutes)

Experiential-Learning 2.3 : *Mukkutra iyal* based treatments for diseases of female genitalia & female reproductive organs

Total activity hours (6 hours)

Case based learning
Preparation – Begin by reviewing literature on Mukkutra Iyal-based treatments to understand existing research, theories, and previous studies. (30 minutes)
Design the Study & Methodology – Select participants by defining inclusion/exclusion criteria and finalize the methodology for conducting the study. (30 minutes)
Collect baseline data on participants' health and administer the Mukkutra Iyal-based treatments as per the study plan. (1 hour)
Monitor Responses – Observe participant responses before and after treatment and schedule follow-ups to track progress. (30 minutes)
Data Collection – Gather quantitative data through health assessments and lab tests, and qualitative data through patient feedback and observations. (45 minutes)
Data Analysis & Discussion – Perform statistical analysis for quantitative data and thematic analysis for qualitative insights, discussing findings in detail. (45 minutes)
Interpretation – Draw conclusions based on the analyzed data to determine the efficacy of the treatments. (30 minutes)
Justification – Record all findings comprehensively and prepare detailed reports, ensuring accuracy and validity. (30 minutes)
Reflection & Feedback – Conduct group discussions for sharing insights and encourage self-reflection among participants. (30 minutes)
Continuous Improvement – Review the entire study process, identify areas for improvement, and plan future research directions. (30 minutes)

Experiential-Learning 2.4 : *Mukkutra iyal* based treatments for *surappu kola noigal*

Total activity hours (7 hours)
Case based learning
Preparation – Conduct an in-depth literature review on Mukkutra Iyal-based treatments, exploring existing research, methodologies, and findings to build a strong foundation. (45 minutes)
Design the Study & Methodology – Define the inclusion/exclusion criteria for participant selection, refine the study design, and finalize the methodology, ensuring clarity in objectives and execution. (45 minutes)
Collect baseline health data from participants and administer the Mukkutra Iyal-based treatments, ensuring careful documentation of procedures. (1 hour 15 minutes)
Monitor Responses – Observe participants’ pre- and post-treatment responses, noting any immediate effects, and schedule follow-ups for ongoing assessment. (45 minutes)
Data Collection – Gather quantitative data through health assessments, lab tests, and clinical evaluations while also collecting qualitative insights through patient feedback and detailed observations. (1 hour)
Data Analysis & Discussion – Use statistical tools to analyze quantitative data and thematic methods to assess qualitative responses, followed by discussions to interpret findings. (1 hour)
Interpretation – Draw conclusions based on the analyzed data, identifying the efficacy, strengths, and potential limitations of the treatments. (45 minutes)
Justification – Record findings in a structured manner, ensuring comprehensive documentation, and prepare detailed reports to support the study’s credibility. (45 minutes)
Reflection & Feedback – Facilitate group discussions for participants to share insights, engage in self-reflection, and evaluate their learning experiences. (45 minutes)
Continuous Improvement – Review the entire process, identify areas for refinement, and propose future research directions to enhance the study's impact. (30 minutes)

Modular Assessment

Assessment method	Hour
Instructions: Conduct a structured modular assessment. Assessment will be 50 marks. Keep structured marking pattern. Use different assessment methods in each module for the semester. Keep a record of the structured pattern used for assessment. Calculate the modular grade point as per table 6c. 1. Clinical video case presentation -25 marks Instructions: 1. The clinical video case presentation should be 10-15 minutes long. 2. The presentation should include a clear and concise case presentation, a video recording of the patient, and a clinical analysis and discussion. 3. The presenter should provide accurate and complete case details. 4. The video recording should be of good quality, with clear audio and visual aids. 5. The presenter should demonstrate confidence and clarity, and engage with the audience. 6. The presentation should adhere to the time limit and patient confidentiality and consent. 7. The presenter should be prepared to answer questions from the other students. Mark distribution : - Case Presentation (10 marks) - Video Recording (5 marks) - Clinical Analysis and Discussion (5 marks) - Presentation Skills (3 marks) - Overall Impression (2 marks) 2. Each students making posters based on the compilation of treatment reports - 25 marks Instructions: 1. The poster should be compiled on the theme of treatment reports. 2. The poster should be visually appealing and easy to read. 3. The content should be accurate, complete, and well-organized. 4. The poster should include images, diagrams, and charts to support the written content. 5. The compilation and analysis of treatment reports should be clear and concise. 6. The poster should be able to draw meaningful conclusions from the data. 7. The poster should adhere to the given theme and guidelines. 8. The poster should be submitted on the due date and time. Mark distribution : - Content (10 marks) - Visual Presentation (8 marks)	4

- Compilation and Analysis (4 marks) - Overall Impression (3 marks) Or Any practical in converted form can be taken for assessment (25 marks) and Any of the experiential as portfolio/reflections/presentations can be taken as an assessment (25 marks)	

Semester No : 4

3A Course Outcome	3B Learning Objective (At the end of the (lecture/practical training /experiential learning) session, the students should be able to)	3C Notional learning Hours	3D Lecture/ Practical Training/ Experiential Learning	3E Domain/ Sub Domain	3F Level (Does/Shows how/ Knows how/Know)	3G Teaching Learning Methods
Module 3 : Therapeutic application of external medicine for Kann noikal (eye diseases), Sevi noikal (Ear diseases), Mookku noikal (Nasal diseases) and Vaai noikal (Diseases of mouth)						
Module Learning Objectives **(At the end of the module, the students should be able to)** Describe the *Kann noikal* (Eye diseases), *Sevi noikal* (Ear diseases), *Mookku noikal* (Nasal diseases) and *Vaai noikal* (Diseases of mouth) in siddha aspects and also recent advances Analyze the role of *Mukkutra iyal* in the diagnostic methods Design a external medicine treatment protocol on the basis of *Mukkutra iyal*						

M 3 Unit 1 Kann noikal (Eye diseases)

3.1.1 *Kan azharchi* (Conjuctivitis) 3.1.2 Dry eyes 3.1.3 *Kan katti* (Stye) 3.1.4 *Kan kasam* (Cataract), *Vellezhuthu* (Presbyopia)

References: 7,19,20,22,35,36,151,152,156,159

3A	3B	3C	3D	3E	3F	3G
CO1,CO2	Discuss the definitions, causes and different types of of *Kan noigal* and eye diseases	3	Lecture	CAP	Knows-how	L_VC,L&PPT ,L&GD
CO1,CO2,CO3	Demonstrate the clinical assessment, diagnosis and treatment of eye diseases with the application of *mukkutra iyal*	6	Practical Training 3.1	PSY-GUD	Shows-how	CBL
CO1,CO2,CO3 ,CO4	Conduct patient examination and document the efficacy of Mukkutra Iyal-based treatments for Kann Noigal	8	Experiential-Learning 3.1	PSY-MEC	Does	CBL

M 3 Unit 2 Sevi noikal (Ear diseases)

3.2.1 *Sevi soolai* (Acute Otitis media, Suppurative Otitis media, Non suppurative Otitis media) 3.2.2 *Sevi sanni* (Vertigo, Tinitus),*Sevidu* (Deafness) 3.2.3 Meniere's diseases, Otitis externa, *Kirumikantha thalai nokkadu* (Mastoiditis)

References: 7,18,20,25,26,30,31,35,36

3A	3B	3C	3D	3E	3F	3G
CO1,CO2	Describe the definitions and causes of *sevi noigal*, the different types of diseases of ear and the medical treatment approaches	3	Lecture	CC	Knows-how	L&PPT , L_VC,L&GD
CO1,CO2,CO3	Demonstrate the clinical assessment, diagnosis and treatment of ear diseases with the application of mukkutra iyal	6	Practical Training 3.2	PSY-GUD	Shows-how	D-BED,CB

						L
CO1,CO2,CO3 ,CO4	Evaluate and document the efficacy of Mukkutra Iyal-based treatments for Sevi Noigal through conducting and analyzing patient in clinic	8	Experiential-Learning 3.2	PSY-MEC	Does	DIS,CBL

M 3 Unit 3 Mookku noikal (Nasal diseases)

3.3.1 *Nasika peedam* (Nasal polyp) 3.3.2 *Mokkilratha ozhukku* (Epistaxis) 3.3.3 Acute and chronic sinusitis, *Neer mookkadaippu* (Allergic rhinitis)

References: 7,17,18,25,26,31,35,36,48,49,153

3A	3B	3C	3D	3E	3F	3G
CO1,CO2	Describe the definitions, causes and different types of *Mookku noigal*	2	Lecture	CC	Knows-how	L&GD,L &PPT ,L_VC
CO1,CO2,CO3	Demonstrate the clinical assessment, diagnosis and treatment of nasal diseases with the application of mukkutra iyal	4	Practical Training 3.3	PSY-GUD	Shows-how	CD,CBL
CO1,CO2,CO3 ,CO4	Document the efficacy of *mukkutra iyal* based treatments for the *mookku noigal* through patient in clinic.	5	Experiential-Learning 3.3	AFT-RES	Does	CBL,DIS

M 3 Unit 4 Vaai noikal (Diseases of mouth)

3.4.1 *Vaippun* (Aphthous ulcer), *Akkaram* (Stomatitis), *Annakku thooru azharchi* (Tonsilitis), *Mookadiyan* (Adenoids) 3.4.2 Mucous retentional cyst, Leukoplakia

References: 7,17,18,20,35

3A	3B	3C	3D	3E	3F	3G
CO1,CO2	Describe the definition, causes and different types of *Vaai noigal*	2	Lecture	CAN	Knows-how	L&PPT ,L_VC,L

CO1,CO2,CO3	Demonstrate the clinical assessment, diagnosis and treatment of diseases of mouth with the application of mukkutra iyal	4	Practical Training 3.4	PSY-GUD	Shows-how	D-BED,CBL
CO1,CO2,CO3 ,CO4	Document the efficacy of *mukkutra iyal* based treatments for *vaai noigal* through patient in clinic.	5	Experiential-Learning 3.4	AFT-RES	Does	CBL,DIS

Practical Training Activity

Practical Training 3.1 : Clinical assessment, diagnosis and treatment of eye diseases

Total learning hours (6 hours)
Case Based Learning
Teacher explains the context of the practical task by use visual aids or examples and allow students to perform each step under supervision.
Case Selection & Preparation (30 minutes)
Selection of Case
Choose a Relevant Case: Select a case study that is relevant to the learning objectives. Gather Information: Collect all necessary data about the case, including patient history, symptoms, diagnostic reports, and treatment plans.
Preparation
Prepare the patient for the clinical examination
Initial Assessment (30 minutes)
Patient History: Start with a thorough review of the patient's history.
Symptom Analysis: Discuss the presenting symptoms and possible underlying causes.
Diagnosis (60 minutes)
Diagnostic Procedures: Perform the uyir thathukkal, udal thathukkal & envagai thervu examination.
Formulate Diagnosis: Based on the observed data, encourage students to make a diagnosis.
Treatment Plan (30 minutes)
Develop Treatment Options: Discuss possible treatment plans based on the diagnosis.
Select Treatment: Choose the most appropriate treatment plan and justify the choice.
Implementation & Monitoring (60 minutes)
Apply Treatment: Describe how the treatment was implemented in the case.
Monitor Progress: Discuss the patient's progress during the treatment.
Outcome Evaluation (30 minutes)

Assess Outcomes: Evaluate the effectiveness of the treatment plan.
Assessment & Justification of Findings (2 hours)
Individual Assessment
Practical assessment of patient history-taking, examination skills.
Diagnosing the case and formulating a treatment plan.
Group Discussion & Review
Justification of findings and evaluation of outcomes.
Feedback from faculty and improvements for future cases.

Practical Training 3.2 : Clinical assessment, diagnosis and treatment of ear diseases

Total learning hours (6 hours)
Case Based Learning
Teacher explains the context of the practical task by use visual aids or examples and allow students to perform each step under supervision.
Case Selection & Preparation (30 minutes)
Selection of Case
Choose a Relevant Case: Select a case study that is relevant to the learning objectives. Gather Information: Collect all necessary data about the case, including patient history, symptoms, diagnostic reports, and treatment plans.
Preparation
Prepare the patient for the clinical examination
Initial Assessment (30 minutes)
Patient History: Start with a thorough review of the patient's history.
Symptom Analysis: Discuss the presenting symptoms and possible underlying causes.
Diagnosis (60 minutes)
Diagnostic Procedures: Perform the uyir thathukkal, udal thathukkal & envagai thervu examination.
Formulate Diagnosis: Based on the observed data, encourage students to make a diagnosis.
Treatment Plan (30 minutes)
Develop Treatment Options: Discuss possible treatment plans based on the diagnosis.
Select Treatment: Choose the most appropriate treatment plan and justify the choice.
Implementation & Monitoring (60 minutes)
Apply Treatment: Describe how the treatment was implemented in the case.
Monitor Progress: Discuss the patient's progress during the treatment.
Outcome Evaluation (30 minutes)

Assess Outcomes: Evaluate the effectiveness of the treatment plan.
Assessment & Justification of Findings (2 hours)
Individual Assessment
Practical assessment of patient history-taking, examination skills.
Diagnosing the case and formulating a treatment plan.
Group Discussion & Review
Justification of findings and evaluation of outcomes.
Feedback from faculty and improvements for future cases.

Practical Training 3.3 : Clinical assessment, diagnosis and treatment of nasal diseases

Total learning hours (4 hours)
Case Based Learning & Case diagnosis
Teacher explains the context of the practical task by use visual aids or examples and allow students to perform each step under supervision.
Case Selection & Preparation (15 minutes)
Selection of Case
Choose a Relevant Case: Select a case study that is relevant to the learning objectives. Gather Information: Collect all necessary data about the case, including patient history, symptoms, diagnostic reports, and treatment plans.
Preparation
Prepare the patient for the clinical examination
Initial Assessment (15 minutes)
Patient History: Start with a thorough review of the patient's history.
Symptom Analysis: Discuss the presenting symptoms and possible underlying causes.
Diagnosis (60 minutes)
Diagnostic Procedures: Perform the uyir thathukkal, udal thathukkal & envagai thervu examination.
Formulate Diagnosis: Based on the observed data, encourage students to make a diagnosis.
Treatment Plan (15 minutes)
Develop Treatment Options: Discuss possible treatment plans based on the diagnosis.
Select Treatment: Choose the most appropriate treatment plan and justify the choice.
Implementation & Monitoring (60 minutes)
Apply Treatment: Describe how the treatment was implemented in the case.
Monitor Progress: Discuss the patient's progress during the treatment.
Outcome Evaluation (15 minutes)

Assess Outcomes: Evaluate the effectiveness of the treatment plan.
Assessment & Justification of Findings (60 minutes)
Individual Assessment
Practical assessment of patient history-taking, examination skills.
Diagnosing the case and formulating a treatment plan.
Group Discussion & Review
Justification of findings and evaluation of outcomes.
Feedback from faculty and improvements for future cases.

Practical Training 3.4 : Clinical assessment, diagnosis and treatment of diseases of mouth

Total learning hours (4 hours)
Case Based Learning
Teacher explains the context of the practical task by use visual aids or examples and allow students to perform each step under supervision.
Case Selection & Preparation (15 minutes)
Selection of Case
Choose a Relevant Case: Select a case study that is relevant to the learning objectives. Gather Information: Collect all necessary data about the case, including patient history, symptoms, diagnostic reports, and treatment plans.
Preparation
Prepare the patient for the clinical examination
Initial Assessment (15 minutes)
Patient History: Start with a thorough review of the patient's history.
Symptom Analysis: Discuss the presenting symptoms and possible underlying causes.
Diagnosis (60 minutes)
Diagnostic Procedures: Perform the uyir thathukkal, udal thathukkal & envagai thervu examination.
Formulate Diagnosis: Based on the observed data, encourage students to make a diagnosis.
Treatment Plan (15 minutes)
Develop Treatment Options: Discuss possible treatment plans based on the diagnosis.
Select Treatment: Choose the most appropriate treatment plan and justify the choice.
Implementation & Monitoring (60 minutes)
Apply Treatment: Describe how the treatment was implemented in the case.
Monitor Progress: Discuss the patient's progress during the treatment.
Outcome Evaluation (15 minutes)

Assess Outcomes: Evaluate the effectiveness of the treatment plan.
Assessment & Justification of Findings (60 minutes)
Individual Assessment
Practical assessment of patient history-taking, examination skills.
Diagnosing the case and formulating a treatment plan.
Group Discussion & Review
Justification of findings and evaluation of outcomes.
Feedback from faculty and improvements for future cases.

Experiential learning Activity

Experiential-Learning 3.1 : *Mukkutra iyal* based treatments for *kan noigal*

Total activity hours (8 hours)
Case based learning
Preparation – Conduct an extensive literature review on Mukkutra Iyal-based treatments, exploring existing research, methodologies, and findings to build a strong theoretical foundation. (1 hour)
Design the Study & Methodology – Define participant selection criteria, refine the study design, and finalize the methodology, ensuring clear objectives and ethical considerations. (1 hour)
Collect baseline health data from participants and administer the Mukkutra Iyal-based treatments while maintaining detailed records and ensuring accuracy.(1 hour 30 minutes)
Monitor Responses – Observe participants' pre- and post-treatment responses, record any immediate effects, and schedule follow-ups for ongoing assessment. (1 hour)
Data Collection – Gather both quantitative data (health assessments, lab results) and qualitative data (patient feedback, observations, and experiences). (1 hour)
Data Analysis & Discussion – Perform statistical analysis on quantitative data and thematic analysis on qualitative responses, followed by discussions to interpret findings. (1 hour 15 minutes)
Interpretation – Draw well-supported conclusions based on the analyzed data, identifying the effectiveness, strengths, and limitations of the treatments. (45 minutes)
Justification – Document all findings comprehensively and prepare detailed reports and research papers to support the study's credibility. (45 minutes)
Reflection & Feedback – Facilitate group discussions for participants to share insights, engage in self-reflection, and evaluate their learning experiences. (45 minutes)
Continuous Improvement – Review the entire research process, identify areas for enhancement, and propose directions for future studies. (30 minutes)

Experiential-Learning 3.2 : *Mukkutra iyal* based treatments for *sevi noigal*

Total activity hours (8 hours)
Case based learning

Preparation – Conduct an extensive literature review on Mukkutra Iyal-based treatments, exploring existing research, methodologies, and findings to build a strong theoretical foundation. (1 hour)
Design the Study & Methodology – Define participant selection criteria, refine the study design, and finalize the methodology, ensuring clear objectives and ethical considerations. (1 hour)
Collect baseline health data from participants and administer the Mukkutra Iyal-based treatments while maintaining detailed records and ensuring accuracy.(1 hour)
Monitor Responses – Observe participants' pre- and post-treatment responses, record any immediate effects, and schedule follow-ups for ongoing assessment. (1 hour)
Data Collection – Gather both quantitative data (health assessments, lab results) and qualitative data (patient feedback, observations, and experiences). (1 hour)
Data Analysis & Discussion – Perform statistical analysis on quantitative data and thematic analysis on qualitative responses, followed by discussions to interpret findings. (1 hour)
Interpretation – Draw well-supported conclusions based on the analyzed data, identifying the effectiveness, strengths, and limitations of the treatments. (30 minutes)
Justification – Document all findings comprehensively and prepare detailed reports and research papers to support the study's credibility. (30 minutes)
Reflection & Feedback – Facilitate group discussions for participants to share insights, engage in self-reflection, and evaluate their learning experiences. (30 minutes)
Continuous Improvement – Review the entire research process, identify areas for enhancement, and propose directions for future studies. (30 minutes)

Experiential-Learning 3.3 : *Mukkutra iyal* based treatments for the *mookku noigal*

Total activity hours (5 hours)
Case based learning
Preparation – Conduct a literature review on Mukkutra Iyal-based treatments to understand existing research and methodologies. (30 minutes)
Design the Study & Methodology – Define participant selection criteria, finalize study objectives, and establish a clear research methodology. (30 minutes)
Collect baseline health data from participants and administer the Mukkutra Iyal-based treatments, ensuring careful observation and documentation. (1 hour)
Monitor Responses – Observe and record participants' pre- and post-treatment responses, noting significant changes and scheduling necessary follow-ups. (30 minutes)
Data Collection – Gather quantitative data (e.g., health assessments, lab results) and qualitative data (e.g., patient feedback, observations). (45 minutes)
Data Analysis & Discussion – Conduct statistical analysis for quantitative data and thematic analysis for qualitative feedback, followed by discussions on findings. (45 minutes)
Interpretation & Justification – Draw conclusions based on the analyzed data and justify findings with comprehensive documentation. (30 minutes)
Reflection & Continuous Improvement – Facilitate group discussions, encourage self-reflection, and identify areas for improvement in the study process for future research. (30 minutes)

Experiential-Learning 3.4 : *Mukkutra iyal* based treatments for *vaai noigal*

Total activity hours (5 hours)
Case based learning

Preparation – Conduct a literature review on Mukkutra Iyal-based treatments to understand existing research and methodologies. (30 minutes)
Design the Study & Methodology – Define participant selection criteria, finalize study objectives, and establish a clear research methodology. (30 minutes)
Collect baseline health data from participants and administer the Mukkutra Iyal-based treatments, ensuring careful observation and documentation. (1 hour)
Monitor Responses – Observe and record participants' pre- and post-treatment responses, noting significant changes and scheduling necessary follow-ups. (30 minutes)
Data Collection – Gather quantitative data (e.g., health assessments, lab results) and qualitative data (e.g., patient feedback, observations). (45 minutes)
Data Analysis & Discussion – Conduct statistical analysis for quantitative data and thematic analysis for qualitative feedback, followed by discussions on findings. (45 minutes)
Interpretation & Justification – Draw conclusions based on the analyzed data and justify findings with comprehensive documentation. (30 minutes)
Reflection & Continuous Improvement – Facilitate group discussions, encourage self-reflection, and identify areas for improvement in the study process for future research. (30 minutes)

Modular Assessment

Assessment method	**Hour**
Instructions: Conduct a structured modular assessment. Assessment will be 50 marks. Keep 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. Conduct a online quiz - 20 marks MCQ & True or false type questions from all units. Each units will have 5 marks. Mark Distribution: - Multiple Choice Questions (MCQs) (15 marks) - 15 questions x 2 marks each = 15 marks - Each question will have 4 options (A, B, C,and D) - Participants must choose the correct answer for each question - True or False Questions (5 marks) - 5 questions x 1 mark each = 5 marks - Students must identify whether each statement is true or false Instructions: 1. The online quiz will be conducted on Google form. 2. Participants will have 25 minutes to complete the quiz. 3. The quiz will consist of MCQs, True or False questions. 4. Students must answer all questions to the best of their ability. 5. Students can only submit their answers once.	4

6. The quiz will be timed, and Students must complete it within the allotted time.
2. Group powerpoint presentation based on the compilation of treatment reports - 30 marks
Mark Distribution:
- Content (12 marks)
- Design and Visuals (8 marks)
- Presentation Skills (6 marks)
- Overall Impression (4 marks)
Instructions:
1. The group presentation should be based on the compilation of treatment reports.
2. The presentation should be 10-15 minutes long.
3. Each group member should participate in the presentation.
4. The presentation should include a clear introduction, body, and conclusion.
5. The presentation should use relevant medical terminology and concepts.
6. The presentation should include visual aids such as images, diagrams, and charts.
7. The group should submit a copy of the presentation slides to the instructor before the presentation.
8. The presentation will be evaluated on the criteria mentioned above.
Group Presentation Guidelines:
1. Each group should consist of 3-4 members.
2. Each group member should contribute to the presentation.
Or
Any practical in converted form can be taken for assessment (25 marks)
and
Any of the 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 4 : Therapeutic application of external medicine for Naakku & Pal noikal (Diseases of tongue & Dental disorders), Ammai noikal (Viral skin infections), Thol noikal (Dermatological disorders) and Nagirkatti (Lump of the mammary gland)

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

Describe the *Naakku & Pal noikal* (Diseases of tongue & Dental disorders), *Ammai noikal* (Viral skin infections), *Thol noikal* (Dermatological disorders) and *Nagirkatti* (Lump of the mammary gland)in siddha aspects and also recent advances
Observe the role of Mukkutra iyal in the diagnostic methods
Develop a treatment protocol on the basis of Mukkutra iyal

M 4 Unit 1 Naakku noikal & Pal noikal (Diseases of mouth & dental disorders)

4.1.1 *Naakku pungal* (Ulcers of tongue), *Naakku pilavai* (Fissuring of tongue) 4.1.2 Glossitis, Sublingual dermoid 4.1.3 Dental carries, Sensitive Tooth, *Pal niram maral* (Tooth discolorisation) 4.1.4 *Thantha vaayu* (Gingivitis), Periodontitis

References: 7,17,18,20,25,26,31,35,36

3A	3B	3C	3D	3E	3F	3G
CO1,CO2	Describe the definitions, causes and different types of *Naakku noigal and pal noigal*	2	Lecture	CAN	Knows-how	L&GD,L &PPT ,L_VC
CO1,CO2,CO3	Demonstrate the clinical assessment, diagnosis and treatment of diseases of tongue & dental diseases with the application of *mukkutra iyal*	4	Practical Training 4.1	PSY-GUD	Shows-how	D-BED,CBL
CO1,CO2,CO3 ,CO4	Document the efficacy of *mukkutra iyal* based treatments for tongue and dental diseases through patients in clinic.	5	Experiential-Learning 4.1	AFT-RES	Does	CBL

M 4 Unit 2 Ammai noi (Viral skin infections)

4.2.1 *Chinnammai* (Chicken pox) 4.2.2 *Thattammai* (Measles) 4.2.3 *Poottu thaalammai* (Mumps)

References: 7,17,18,20,31,35,41,50,164,165,168

3A	3B	3C	3D	3E	3F	3G
CO1,CO2	Describe the definitions, causes and different types of Ammai noi	2	Lecture	CC	Knows-how	L&GD,L &PPT
CO1,CO2,CO3	Demonstrate the clinical assessment, diagnosis and treatment of viral skin infections with the application of *mukkutra iyal*	4	Practical Training 4.2	PSY-GUD	Shows-how	
CO1,CO2,CO3 ,CO4	Discuss the efficacy of *Mukkutra iyal-based* treatments for *ammai noigal*	6	Experiential-Learning 4.2	AFT-RES	Does	CBL,DIS, PL

M 4 Unit 3 Thol noikal (Dermatological disorders)

4.3.1 *Thozhunoi* (Leprosy), *Venkuttam* (Vitiligo), *Sori,sirangu* (Scabies), *Karappan* (Eczema), *Thol putru* (Skin cancer) *Padukkai pun* (Bed sores) *Setru pun* (Tinea pedis), *Thee pun*(Burns), *Pithavedippu* (Crack foot), *Kaal aani*(Callus), *Nagasutru* (Paronychia), *Vaaipun* (Stomatitis), *Verkuru*(Miliaria), *Kodai koppulam, Mugaparu* (Acne vulgaris), *Thol varatchi* (Xeroderma), *Thadippugal, Kaanakadi* (Urticaria), *Silvidathadippu, Sirupaambu kadi, Padarthamarai, Padai,Themal* (Tinea versicolor) *Puzhuvettu Narai, Mayiruthiral, Vazhukkai, Podugu, Paalunni* (Moluscum contagiosum), *Marul* (Wart), *Macham, Mega thazhumbu, Ammaithazhumbu,Akki* (Herpes zoster), *Thazhumbu* (Keloid) *Thabitham Kalanjagapadai* (Psoriasis), *Paengal* 4.3.2 Fungal infections:Dermatophytosis, Onychomycosis, Tinea versicolor (pityriasis versicolor), Candidiasis, Tinea nigra, Piedra (triphosporosis), Deep fungal infections. 4.3.3 Infestations and protozoal infections & Tuberculosis of skin (cutaneous tuberculosis) 4.3.4 Connective tissue disorders and vasculitis: Lupus erythematosus, Scleroderma, Polymyositis/dermatomyositis, Mixed connective tissue disease, Sjogren's syndrome 4.3.5 Urticaria, Pruritus and drug eruptions Urticaria, Pruritus(Itching), Drug eruptions (Cutaneous drug reactions) 4.3.6 Disorders of pigmentation: Hypermelanosis, Hypomelanosis 4.3.7 Disorders of keratinization: Ichthyosis, Palmoplantar keratodermas, Corns and Callosities, Darier's disease, Porokeratosis of mibelli, Acanthosis nigricans. 4.3.8 Genodermatoses (Neurocutaneous syndromes): Neurofibromatosis 4.3.9 Nutritional and metabolic disorders:Nutritional disorders, Metabolic disorders 4.3.10 Disorders of sebaceous and sweat glands & Disorders of hair and nails 4.3.11 Systemic diseases and skin 4.3.12 Benign, premalignant and malignant tumors of the skin

References: 7,17,18,20,29,31,35,41,50,164,165

3A	3B	3C	3D	3E	3F	3G
CO1,CO2	Describe the definitions, causes and different types of *Thol noigal*	4	Lecture	CC	Knows-how	L_VC,L&GD,L&PPT
CO1,CO2,CO3	Perform the clinical assessment, diagnosis and treatment of dermatological diseases with the application of *mukkutra iyal*	8	Practical Training 4.3	PSY-GUD	Shows-how	D-BED,CBL
CO1,CO2,CO3	Document the efficacy of *mukkutra iyal* based treatments for *thol noigal* through patient in clinic.	9	Experiential-Learning 4.3	AFT-RES	Does	DIS,CBL

M 4 Unit 4 Nagir katti (Lump of the mammary gland)

4.4.1 *Nagir katti* (Lump of the mammary gland)

References: 7,18,20,31

3A	3B	3C	3D	3E	3F	3G
CO1,CO2,CO3	Describe the definitions, causes and different types of *Nagirkatti* and lump & swelling of breast	2	Lecture	CC	Knows-how	L&PPT,L&GD
CO1,CO2,CO3	Demonstrate the clinical assessment, diagnosis and treatment of Lump of the mammary gland with the application of *mukkutra iyal*	4	Practical Training 4.4	PSY-GUD	Shows-how	D-BED,CBL
CO1,CO2,CO3	Conduct patient clinical trials and document the efficacy of Mukkutra Iyal-based treatments for Nagir Katti	6	Experiential-Learning 4.4	CE	Does	CBL,DIS

Practical Training Activity

Practical Training 4.1 : Clinical assessment, diagnosis and treatment of diseases of tongue & dental diseases

Total learning hours (4 hours)
Case Based Learning
Teacher explains the context of the practical task by use visual aids or examples and allow students to perform each step under supervision.
Case Selection & Preparation (15 minutes)
Selection of Case
Choose a Relevant Case: Select a case study that is relevant to the learning objectives. Gather Information: Collect all necessary data about the case, including patient history, symptoms, diagnostic reports, and treatment plans.
Preparation
Prepare the patient for the clinical examination
Initial Assessment (15 minutes)
Patient History: Start with a thorough review of the patient's history.
Symptom Analysis: Discuss the presenting symptoms and possible underlying causes.
Diagnosis (60 minutes)
Diagnostic Procedures: Perform the uyir thathukkal, udal thathukkal & envagai thervu examination.
Formulate Diagnosis: Based on the observed data, encourage students to make a diagnosis.
Treatment Plan (30 minutes)
Develop Treatment Options: Discuss possible treatment plans based on the diagnosis.
Select Treatment: Choose the most appropriate treatment plan and justify the choice.
Implementation & Monitoring (60 minutes)
Apply Treatment: Describe how the treatment was implemented in the case.
Monitor Progress: Discuss the patient's progress during the treatment.
Outcome Evaluation (30 minutes)
Assess Outcomes: Evaluate the effectiveness of the treatment plan.
Assessment & Justification of Findings (30 minutes)
Individual Assessment
Practical assessment of patient history-taking, examination skills.
Diagnosing the case and formulating a treatment plan.
Group Discussion & Review
Justification of findings and evaluation of outcomes.
Feedback from faculty and improvements for future cases.

Practical Training 4.2 : Clinical assessment, diagnosis and treatment of viral skin infections

Total learning hours (4 hours)
Flipped Classroom - 4 HOURS
The faculty member instructs the students to prepare the certain given topic and after the preparation, case discussion and group activities were done on faculty observation through flipped class room method.
Flipped Classroom Structure
Pre-Class (Self-Directed Learning) - 2 HRS
1. Watch video lectures
2. Read assigned articles/chapters.
3. Complete online quizzes.
In-Class (Interactive Session) - 2 HRS
1. Case discussions.
2. Group activities.
3. Expert panel discussion.

Practical Training 4.3 : Clinical assessment, diagnosis and treatment of dermatological diseases

Total learning hours (8 hours)
Case Based Learning
Teacher explains the context of the practical task by use visual aids or examples and allow students to perform each step under supervision.
Case Selection & Preparation (30 minutes)
Selection of Case
Choose a Relevant Case: Select a case study that is relevant to the learning objectives. Gather Information: Collect all necessary data about the case, including patient history, symptoms, diagnostic reports, and treatment plans.
Preparation
Prepare the patient for the clinical examination
Initial Assessment (30 minutes)
Patient History: Start with a thorough review of the patient's history.
Symptom Analysis: Discuss the presenting symptoms and possible underlying causes.
Diagnosis (60 minutes)
Diagnostic Procedures: Perform the uyir thathukkal, udal thathukkal & envagai thervu examination.
Formulate Diagnosis: Based on the observed data, encourage students to make a diagnosis.
Treatment Plan (60 minutes)

Develop Treatment Options: Discuss possible treatment plans based on the diagnosis.
Select Treatment: Choose the most appropriate treatment plan and justify the choice.
Implementation & Monitoring (60 minutes)
Apply Treatment: Describe how the treatment was implemented in the case.
Monitor Progress: Discuss the patient's progress during the treatment.
Outcome Evaluation (60 minutes)
Assess Outcomes: Evaluate the effectiveness of the treatment plan.
Assessment & Justification of Findings (3 hours)
Individual Assessment
Practical assessment of patient history-taking, examination skills.
Diagnosing the case and formulating a treatment plan.
Discussion & Review
Justification of findings and evaluation of outcomes.
Feedback from faculty and improvements for future cases.

Practical Training 4.4 : Clinical assessment, diagnosis and treatment of Lump of the mammary gland

Total learning hours (4 hours)
Case Based Learning
Teacher explains the context of the practical task by use visual aids or examples and allow students to perform each step under supervision.
Case Selection & Preparation (15 minutes)
Selection of Case
Choose a Relevant Case: Select a case study that is relevant to the learning objectives. Gather Information: Collect all necessary data about the case, including patient history, symptoms, diagnostic reports, and treatment plans.
Preparation
Prepare the patient for the clinical examination
Initial Assessment (15 minutes)
Patient History: Start with a thorough review of the patient's history.
Symptom Analysis: Discuss the presenting symptoms and possible underlying causes.
Diagnosis (60 minutes)
Diagnostic Procedures: Perform the uyir thathukkal, udal thathukkal & envagai thervu examination.
Formulate Diagnosis: Based on the observed data, encourage students to make a diagnosis.
Treatment Plan (30 minutes)

Develop Treatment Options: Discuss possible treatment plans based on the diagnosis.
Select Treatment: Choose the most appropriate treatment plan and justify the choice.
Implementation & Monitoring (60 minutes)
Apply Treatment: Describe how the treatment was implemented in the case.
Monitor Progress: Discuss the patient's progress during the treatment.
Outcome Evaluation (30 minutes)
Assess Outcomes: Evaluate the effectiveness of the treatment plan.
Assessment & Justification of Findings (30 minutes)
Individual Assessment
Practical assessment of patient history-taking, examination skills.
Diagnosing the case and formulating a treatment plan.
Group Discussion & Review
Justification of findings and evaluation of outcomes.
Feedback from faculty and improvements for future cases.

Experiential learning Activity

Experiential-Learning 4.1 : *Mukkutra iyal* based treatments for tongue and dental diseases

Total activity hours (5 hours)
case based learning
Preparation – Conduct a literature review on mukkutra iyal-based treatments to understand existing research and methodologies. (30 minutes)
Design the Study & Methodology – Define participant selection criteria, finalize study objectives, and establish a clear research methodology. (30 minutes)
Collect baseline health data from participants and administer the Mukkutra Iyal-based treatments, ensuring careful observation and documentation. (1 hour)
Monitor Responses – Observe and record participants' pre- and post-treatment responses, noting significant changes and scheduling necessary follow-ups. (30 minutes)
Data Collection – Gather quantitative data (e.g., health assessments, lab results) and qualitative data (e.g., patient feedback, observations). (45 minutes)
Data Analysis & Discussion – Conduct statistical analysis for quantitative data and thematic analysis for qualitative feedback, followed by discussions on findings. (45 minutes)
Interpretation & Justification – Draw conclusions based on the analyzed data and justify findings with comprehensive documentation. (30 minutes)
Reflection & Continuous Improvement – Facilitate group discussions, encourage self-reflection, and identify areas for improvement in the study process for future research. (30 minutes)

Experiential-Learning 4.2 : *Ammai noigal - Mukkutra iyal* based treatment

Total activity hours (6 hours)
Case based learning (3 hours)
Present individual case studies of success with mukkutra iyal treatments. Encourage participants to share experiences or insights from their practices.
Conclusion
Summary of Findings: Summarize the overall efficacy of mukkutra iyal for ammai noigal based on the discussed literature.
Future Directions: Highlight areas for future research, including larger-scale studies, more diverse populations, and integration strategies with conventional medicine.
Discussion (3 hours)
Encourage open discussion about the findings, including:
Participants' personal experiences with mukkutra iyal.
The importance of a personalized approach in treatment.
Ethical considerations in promoting external therapies.

Experiential-Learning 4.3 : *Mukkutra iyal* based treatments for *thol noigal*

Total activity hours (9 hours)
Case based learning
Preparation – Conduct an in-depth literature review on Mukkutra Iyal-based treatments, analyzing existing research, methodologies, and findings to establish a strong knowledge base. (1 hour)
Design the Study & Methodology – Define participant selection criteria, refine the study framework, and finalize the methodology, ensuring ethical considerations and a structured research plan. (1 hour)
Collect baseline health data from participants and administer the Mukkutra Iyal-based treatments, ensuring detailed documentation of procedures and observations. (1 hour)
Monitor Responses – Observe pre- and post-treatment responses, note immediate effects, and schedule follow-ups to track progress over time. (1 hour)
Data Collection – Gather quantitative data (health assessments, lab results) and qualitative data (patient feedback, detailed observations) for a comprehensive dataset. (1 hour)
Data Analysis & Discussion – Perform statistical analysis on quantitative data and thematic analysis on qualitative feedback, followed by discussions on trends, patterns, and findings. (1 hour)
Interpretation – Draw well-supported conclusions based on data analysis, evaluating the efficacy, strengths, and potential limitations of the treatments. (1 hour)
Justification – Record findings in detail, ensuring comprehensive documentation and preparing structured reports or research papers to validate the study. (1 hour)
Reflection & Feedback – Facilitate group discussions for participants to share insights, engage in self-reflection, and evaluate key learnings from the process. (30 minutes)
Continuous Improvement – Review the research process, identify areas for enhancement, and propose recommendations for future studies and improvements. (30 minutes)

Experiential-Learning 4.4 : *Mukkutra iyal* based treatments for *nagir katti*

Total activity hours (6 hours)
Case based learning
Preparation – Begin by reviewing literature on Mukkutra Iyal-based treatments to understand existing research, theories, and previous studies. (30 minutes)
Design the Study & Methodology – Select participants by defining inclusion/exclusion criteria and finalize the methodology for conducting the study. (30 minutes)
Conduct the Trials (1 hour) – Collect baseline data on participants' health and administer the Mukkutra Iyal-based treatments as per the study plan.
Monitor Responses – Observe participant responses before and after treatment and schedule follow-ups to track progress. (30 minutes)
Data Collection – Gather quantitative data through health assessments and lab tests, and qualitative data through patient feedback and observations. (45 minutes)
Data Analysis & Discussion – Perform statistical analysis for quantitative data and thematic analysis for qualitative insights, discussing findings in detail. (45 minutes)
Interpretation – Draw conclusions based on the analyzed data to determine the efficacy of the treatments. (30 minutes)
Justification – Record all findings comprehensively and prepare detailed reports, ensuring accuracy and validity. (30 minutes)
Reflection & Feedback – Conduct group discussions for sharing insights and encourage self-reflection among participants. (30 minutes)
Continuous Improvement – Review the entire study process, identify areas for improvement, and plan future research directions. (30 minutes)

Modular Assessment

Assessment method	**Hour**
Instructions: Conduct a structured modular assessment. Assessment will be 50 marks. Keep 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. Creative writing - 20 marks The students will be given case scenarios and asked to write therapeutic regimen as per the individual thega ilakkanam and altered kutram. 2. Making of charts/ posters- 30 marks Students will be given different topics and asked to prepare charts/ posters on the given topics. Or Any practical in converted form can be taken for assessment (25 marks) and Any of the experiential as portfolio/reflections/presentations can be taken as an assessment (25 marks)	4

Semester No : 5

3A Course	3B Learning Objective (At the end of the (lecture/practical training /experiential	3C Notional	3D Lecture/	3E Domain/	3F Level (D	3G Teachin

Outcome	learning) session, the students should be able to)	learning Hours	Practical Training/ Experientia l Learning	Sub Domain	oes/Sho ws how/ Knows h ow/Kno w)	g Learnin g Methods
Module 5 : Therapeutic application of external medicine for Iraippu noi (Bronchial asthma), Soolai noi (Rheumatism), Manjal noi (Jaundice) and Siruneerpathai noikal (Urethral diseases)						
Module Learning Objectives **(At the end of the module, the students should be able to)** Describe the *Iraippu noi* (Bronchial asthma), *Soolai noi* (Rheumatism), *Manjal noi* (Jaundice) and *Siruneerpathai noikal* (Urethral diseases) in siddha aspects and also recent advances Describe the role of *mukkutra iyal* in the diagnostic methods Develop a treatment protocol on the basis of *mukkutra iyal.*						
M 5 Unit 1 Iraippu noi (Bronchial asthma) 5.1.1 *Iraippu noi* (Bronchial asthma) **References:** 7,18,19,31,35,36,164						
3A	**3B**	**3C**	**3D**	**3E**	**3F**	**3G**
CO1,CO2	Describe the definitions, causes and different types of Iraippu noi in Siddha and bronchial asthma in modern science	2	Lecture	CC	Knows-how	L&PPT ,L&GD
CO1,CO2	Demonstrate the clinical assessment, diagnosis and treatment of bronchial asthma with the application of mukkutra iyal	4	Practical Training 5.1	PSY-GUD	Shows-how	D-BED,CB

						L
CO1,CO2	Document the efficacy of *mukkutra iyal* based treatments in patients.	5	Experiential-Learning 5.1	AFT-RES	Shows-how	CBL

M 5 Unit 2 Soolai noi (Rheumatism)

5.2.1 *Thasai vali* (Myalgia) 5.2.2 Dermatomyalgia 5.2.3 *Uthara vatha suronitham* (Rheumatoid arthritis)

References: 2,3,5,6,7,31,164,165

3A	3B	3C	3D	3E	3F	3G
CO1,CO2	Describe the definitions, causes and different types of Soolai noi in siddha and rheumatism in modern science	4	Lecture	CC	Knows-how	L&PPT ,L&GD
CO1,CO2	Demonstrate the clinical assessment, diagnosis and treatment of rheumatism with the application of *mukkutra iyal*	7	Practical Training 5.2	PSY-GUD	Knows-how	CBL,L_VC,D-BED
CO1,CO2	Document the efficacy of mukkutra iyal based treatments in patient.	9	Experiential-Learning 5.2	AFT-RES	Shows-how	CBL

M 5 Unit 3 Manjal noi (Jaundice)

5.3.1 Manjal noi (Jaundice)

References: 18,19,31,55,164

3A	3B	3C	3D	3E	3F	3G
CO1,CO2,CO3	Describe the definitions, causes and different types of *Manjal noi* in siddha and jaundice in modern science	2	Lecture	CC	Knows-how	L&PPT ,L&GD
CO1,CO2,CO3	Demonstrate the clinical assessment, diagnosis and treatment of jaundice with the application of mukkutra iyal	5	Practical Training 5.3	PSY-GUD	Knows-how	L_VC,CBL

CO1,CO2,CO3	Document the efficacy of mukkutra iyal based treatments in patients.	6	Experiential-Learning 5.3	AFT-RES	Shows-how	CBL

M 5 Unit 4 Siruneerpathai noikal (Urethral diseases)

5.4.1 Stricture urethra 5.4.2 *Siruneernaala thaabitham* (Urethritis)

References: 18,19,20,31,164,165,166,167

3A	3B	3C	3D	3E	3F	3G
CO1,CO2,CO3	Describe the definitions, causes and different types of Siruneer noigal in siddha and urethral diseases in modern science	2	Lecture	CC	Knows-how	L&GD,L &PPT
CO1,CO2,CO3	Demonstrate the clinical assessment, diagnosis and treatment of urethral diseases with the application of mukkutra iyal	4	Practical Training 5.4	PSY-GUD	Shows-how	CBL,D-BED
CO1,CO2,CO3	Document the efficacy of mukkutra iyal based treatments for siruneeraka noikal in patients.	6	Experiential-Learning 5.4	AFT-RES	Shows-how	CBL,DIS

Practical Training Activity

Practical Training 5.1 : Clinical assessment, diagnosis and treatment of bronchial asthma

Total learning hours (4 hours)
Case Based Learning
Teacher explains the context of the practical task by use visual aids or examples and allow students to perform each step under supervision.
Case Selection & Preparation (15 minutes)
Selection of Case
Choose a Relevant Case: Select a case study that is relevant to the learning objectives. Gather Information: Collect all necessary data about the case, including patient history, symptoms, diagnostic reports, and treatment plans.
Preparation
Prepare the patient for the clinical examination
Initial Assessment (15 minutes)

Patient History: Start with a thorough review of the patient's history.
Symptom Analysis: Discuss the presenting symptoms and possible underlying causes.
Diagnosis (60 minutes)
Diagnostic Procedures: Perform the uyir thathukkal, udal thathukkal & envagai thervu examination.
Formulate Diagnosis: Based on the observed data, encourage students to make a diagnosis.
Treatment Plan (30 minutes)
Develop Treatment Options: Discuss possible treatment plans based on the diagnosis.
Select Treatment: Choose the most appropriate treatment plan and justify the choice.
Implementation & Monitoring (60 minutes)
Apply Treatment: Describe how the treatment was implemented in the case.
Monitor Progress: Discuss the patient's progress during the treatment.
Outcome Evaluation (30 minutes)
Assess Outcomes: Evaluate the effectiveness of the treatment plan.
Assessment & Justification of Findings (30 minutes)
Individual Assessment
Practical assessment of patient history-taking, examination skills.
Diagnosing the case and formulating a treatment plan.
Group Discussion & Review
Justification of findings and evaluation of outcomes.
Feedback from faculty and improvements for future cases.

Practical Training 5.2 : Clinical assessment, diagnosis and treatment of rheumatism

Total learning hours (7 hours)
Case Based Learning
Teacher explains the context of the practical task by use visual aids or examples and allow students to perform each step under supervision.
Case Selection & Preparation (60 minutes)
Selection of Case
Choose a Relevant Case: Select a case study that is relevant to the learning objectives. Gather Information: Collect all necessary data about the case, including patient history, symptoms, diagnostic reports, and treatment plans.
Preparation
Prepare the patient for the clinical examination
Initial Assessment (60 minutes)

Patient History: Start with a thorough review of the patient's history.
Symptom Analysis: Discuss the presenting symptoms and possible underlying causes.
Diagnosis (60 minutes)
Diagnostic Procedures: Perform the uyir thathukkal, udal thathukkal & envagai thervu examination.
Formulate Diagnosis: Based on the observed data, encourage students to make a diagnosis.
Treatment Plan (30 minutes)
Develop Treatment Options: Discuss possible treatment plans based on the diagnosis.
Select Treatment: Choose the most appropriate treatment plan and justify the choice.
Implementation & Monitoring (60 minutes)
Apply Treatment: Describe how the treatment was implemented in the case.
Monitor Progress: Discuss the patient's progress during the treatment.
Outcome Evaluation (30 minutes)
Assess Outcomes: Evaluate the effectiveness of the treatment plan.
Assessment & Justification of Findings (120 minutes)
Individual Assessment
Practical assessment of patient history-taking, examination skills.
Diagnosing the case and formulating a treatment plan.
Group Discussion & Review
Justification of findings and evaluation of outcomes.
Feedback from faculty and improvements for future cases.

Practical Training 5.3 : Clinical assessment, diagnosis and treatment of jaundice

Total learning hours (5 hours)
Case Based Learning
Teacher explains the context of the practical task by use visual aids or examples and allow students to perform each step under supervision.
Case Selection & Preparation (30 minutes)
Selection of Case
Choose a Relevant Case: Select a case study that is relevant to the learning objectives. Gather Information: Collect all necessary data about the case, including patient history, symptoms, diagnostic reports, and treatment plans.
Preparation
Prepare the patient for the clinical examination
Initial Assessment (30 minutes)

Patient History: Start with a thorough review of the patient's history.
Symptom Analysis: Discuss the presenting symptoms and possible underlying causes.
Diagnosis (60 minutes)
Diagnostic Procedures: Perform the uyir thathukkal, udal thathukkal & envagai thervu examination.
Formulate Diagnosis: Based on the observed data, encourage students to make a diagnosis.
Treatment Plan (30 minutes)
Develop Treatment Options: Discuss possible treatment plans based on the diagnosis.
Select Treatment: Choose the most appropriate treatment plan and justify the choice.
Implementation & Monitoring (60 minutes)
Apply Treatment: Describe how the treatment was implemented in the case.
Monitor Progress: Discuss the patient's progress during the treatment.
Outcome Evaluation (30 minutes)
Assess Outcomes: Evaluate the effectiveness of the treatment plan.
Assessment & Justification of Findings (60 minutes)
Individual Assessment
Practical assessment of patient history-taking, examination skills.
Diagnosing the case and formulating a treatment plan.
Group Discussion & Review
Justification of findings and evaluation of outcomes.
Feedback from faculty and improvements for future cases.

Practical Training 5.4 : Clinical assessment, diagnosis and treatment of urethral diseases

Total learning hours (4 hours)
Case Based Learning
Teacher explains the context of the practical task by use visual aids or examples and allow students to perform each step under supervision.
Case Selection & Preparation (15 minutes)
Selection of Case
Choose a Relevant Case: Select a case study that is relevant to the learning objectives. Gather Information: Collect all necessary data about the case, including patient history, symptoms, diagnostic reports, and treatment plans.
Preparation
Prepare the patient for the clinical examination
Initial Assessment (15 minutes)

Patient History: Start with a thorough review of the patient's history.
Symptom Analysis: Discuss the presenting symptoms and possible underlying causes.
Diagnosis (60 minutes)
Diagnostic Procedures: Perform the uyir thathukkal, udal thathukkal & envagai thervu examination.
Formulate Diagnosis: Based on the observed data, encourage students to make a diagnosis.
Treatment Plan (30 minutes)
Develop Treatment Options: Discuss possible treatment plans based on the diagnosis.
Select Treatment: Choose the most appropriate treatment plan and justify the choice.
Implementation & Monitoring (60 minutes)
Apply Treatment: Describe how the treatment was implemented in the case.
Monitor Progress: Discuss the patient's progress during the treatment.
Outcome Evaluation (30 minutes)
Assess Outcomes: Evaluate the effectiveness of the treatment plan.
Assessment & Justification of Findings (30 minutes)
Individual Assessment
Practical assessment of patient history-taking, examination skills.
Diagnosing the case and formulating a treatment plan.
Group Discussion & Review
Justification of findings and evaluation of outcomes.
Feedback from faculty and improvements for future cases

Experiential learning Activity

Experiential-Learning 5.1 : *Mukkutra iyal* based treatments for *Iraippu noi* through patient.

Total activity hours (5 hours)
Case based learning
Preparation – Conduct a literature review on Mukkutra Iyal-based treatments to understand existing research and methodologies. (30 minutes)
Design the Study & Methodology – Define participant selection criteria, finalize study objectives, and establish a clear research methodology. (30 minutes)
Collect baseline health data from participants and administer the Mukkutra Iyal-based treatments, ensuring careful observation and documentation. (1 hour)
Monitor Responses – Observe and record participants' pre- and post-treatment responses, noting significant changes and scheduling necessary follow-ups. (30 minutes)
Data Collection – Gather quantitative data (e.g., health assessments, lab results) and qualitative data (e.g., patient feedback, observations). (45 minutes)
Data Analysis & Discussion – Conduct statistical analysis for quantitative data and thematic analysis for qualitative feedback, followed by discussions on findings. (45

minutes)
Interpretation & Justification – Draw conclusions based on the analyzed data and justify findings with comprehensive documentation. (30 minutes)
Reflection & Continuous Improvement – Facilitate group discussions, encourage self-reflection, and identify areas for improvement in the study process for future research. (30 minutes)

Experiential-Learning 5.2 : *Mukkutra iyal* based treatments for *Soolai noi*

Total activity hours (9 hours)
Case based learning
Preparation – Conduct an in-depth literature review on Mukkutra Iyal-based treatments, analyzing existing research, methodologies, and findings to establish a strong knowledge base. (1 hour 15 minutes)
Design the Study & Methodology – Define participant selection criteria, refine the study framework, and finalize the methodology, ensuring ethical considerations and a structured research plan. (1 hour)
Collect baseline health data from participants and administer the Mukkutra Iyal-based treatments, ensuring detailed documentation of procedures and observations. (1 hour 30 minutes)
Monitor Responses – Observe pre- and post-treatment responses, note immediate effects, and schedule follow-ups to track progress over time. (1 hour)
Data Collection – Gather quantitative data (health assessments, lab results) and qualitative data (patient feedback, detailed observations) for a comprehensive dataset. (1 hour 15 minutes)
Data Analysis & Discussion – Perform statistical analysis on quantitative data and thematic analysis on qualitative feedback, followed by discussions on trends, patterns, and findings. (1 hour 15 minutes)
Interpretation – Draw well-supported conclusions based on data analysis, evaluating the efficacy, strengths, and potential limitations of the treatments. (1 hour)
Justification – Record findings in detail, ensuring comprehensive documentation and preparing structured reports or research papers to validate the study. (1 hour)
Reflection & Feedback – Facilitate group discussions for participants to share insights, engage in self-reflection, and evaluate key learnings from the process. (45 minutes)
Continuous Improvement – Review the research process, identify areas for enhancement, and propose recommendations for future studies and improvements. (30 minutes)

Experiential-Learning 5.3 : Mukkutra iyal based treatments for Manjal noi

Total activity hours (6 hours)
Case based learning
Preparation – Begin by reviewing literature on Mukkutra Iyal-based treatments to understand existing research, theories, and previous studies. (30 minutes)
Design the Study & Methodology – Select participants by defining inclusion/exclusion criteria and finalize the methodology for conducting the study. (30 minutes)
Collect baseline data on participants' health and administer the Mukkutra Iyal-based treatments as per the study plan. (1 hour)
Monitor Responses – Observe participant responses before and after treatment and schedule follow-ups to track progress. (30 minutes)

Data Collection – Gather quantitative data through health assessments and lab tests, and qualitative data through patient feedback and observations. (45 minutes)
Data Analysis & Discussion – Perform statistical analysis for quantitative data and thematic analysis for qualitative insights, discussing findings in detail. (45 minutes)
Interpretation – Draw conclusions based on the analyzed data to determine the efficacy of the treatments. (30 minutes)
Justification – Record all findings comprehensively and prepare detailed reports, ensuring accuracy and validity. (30 minutes)
Reflection & Feedback – Conduct group discussions for sharing insights and encourage self-reflection among participants. (30 minutes)
Continuous Improvement – Review the entire study process, identify areas for improvement, and plan future research directions. (30 minutes)

Experiential-Learning 5.4 : Mukkutra iyal based treatments for Siruneeraka noikal

Total activity hours (6 hours)
Case based learning
Preparation – Begin by reviewing literature on Mukkutra Iyal-based treatments to understand existing research, theories, and previous studies. (30 minutes)
Design the Study & Methodology – Select participants by defining inclusion/exclusion criteria and finalize the methodology for conducting the study. (30 minutes)
Collect baseline data on participants' health and administer the Mukkutra Iyal-based treatments as per the study plan. (1 hour)
Monitor Responses – Observe participant responses before and after treatment and schedule follow-ups to track progress. (30 minutes)
Data Collection – Gather quantitative data through health assessments and lab tests, and qualitative data through patient feedback and observations. (45 minutes)
Data Analysis & Discussion – Perform statistical analysis for quantitative data and thematic analysis for qualitative insights, discussing findings in detail. (45 minutes)
Interpretation – Draw conclusions based on the analyzed data to determine the efficacy of the treatments. (30 minutes)
Justification – Record all findings comprehensively and prepare detailed reports, ensuring accuracy and validity. (30 minutes)
Reflection & Feedback – Conduct group discussions for sharing insights and encourage self-reflection among participants. (30 minutes)
Continuous Improvement – Review the entire study process, identify areas for improvement, and plan future research directions. (30 minutes)

Modular Assessment

Assessment method	**Hour**
Instructions: Conduct a structured modular assessment. Assessment will be 50 marks. Keep 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. Cross word clue - 20 marks** **From All the units.** * Mark Distribution: - Accuracy (8 marks) - Completeness (4 marks) - Time Management (4 marks)	4

- Overall Impression (4 marks)
Instructions:
1. The crossword clue will be provided to you, and you will have 30 minutes to complete it.
2. The crossword grid will consist of 20 words and 40 clues.
3. You must fill in the answers to the clues in the corresponding squares in the grid.
4. You can ask for clarification on any clue, but this will not stop the timer.
5. You must complete the crossword on your own, without any external assistance.
6. When you have completed the crossword, submit it to the instructor for evaluation.
7. The completed crossword will be evaluated based on the criteria mentioned above.
Crossword Conventions:
1. The crossword grid will be symmetrical.
2. The answers will be placed horizontally or vertically in the grid.
3. The clues will be written in a way that requires you to think creatively and make connections between words.
4. The crossword will include a mix of easy, medium-level, and challenging clues.
2. Open book MCQ test - 20 marks
Instructions:
1. The test will consist of 20 multiple-choice questions (MCQs).
2. The test will be open book, meaning you can refer to your notes, textbooks, and other study materials during the test.
3. Each question will have four options (A, B, C, and D).
4. You must choose the correct answer for each question.
5. You will have 30 minutes to complete the test.
6. You must submit your answers on the provided answer sheet.
3. LAQ - 1*10= 10 marks
Long Answer Question from Unit 4.
Or
Any practical in converted form can be taken for assessment (25 marks)
and
Any of the experiential as portfolio/reflections/presentations can be taken as an assessment (25 marks)

3A Course	3B Learning Objective (At the end of the (lecture/practical training /experiential	3C Notional	3D Lecture/	3E Domain/	3F Level (D	3G Teachin

Outcome	learning) session, the students should be able to)	learning Hours	Practical Training/ Experientia l Learning	Sub Domain	oes/Sho ws how/ Knows h ow/Kno w)	g Learnin g Methods
Module 6 : Therapeutic application of external medicine for vaatha noikal, keelvayu , Thasai mattrum narambu mandala noikal (Musculoskeletal, neurological and neuromuscular disorder) and Enbu murivu noikal (Traumatology)						
Module Learning Objectives **(At the end of the module, the students should be able to)** Discuss the *vaatha noikal, keelvayu , Thasai mattrum narambu mandala noikal* (Musculoskeletal, neurological and neuromuscular disorder) and *Enbu murivu noikal* (Traumatology) in siddha aspects and also recent advances Apply the role of mukkutra iyal in the diagnostic methods Prepare a treatment protocol on the basis of mukkutra iyal						
M 6 Unit 1 Vaatha noikal-Keel vayu (Bone and joint disorders) 6.1.1 Infective & Inflammatory joint diseases 6.1.2 Congenital bone disorders and Degenerative joint disorders 6.1.3 Generalised bone disorders, avascular necrosis 6.1.4 Regional condition of spine and lower limb 6.1.5 Regional condition of neck and upper limbs **References:** 2,3,4,5,6,7						
3A	**3B**	**3C**	**3D**	**3E**	**3F**	**3G**
CO1,CO2,CO3	Describe the definitions, causes and different types of Vaatha noigal-Keel vayu in Siddha and bone and joint, disorder in modern science	4	Lecture	CC	Knows-how	L&GD,L &PPT
CO1,CO2,CO3	Perform the clinical assessment, diagnosis and treatment of bone and joint diseases with	8	Practical	PSY-	Shows-	

	the application of mukkutra iyal		Training 6.1	ADT	how	
CO1,CO2,CO3	Document the efficacy of mukkutra iyal based treatments for bone and joint disorders in patients.	9	Experiential-Learning 6.1	AFT-RES	Shows-how	DIS,CBL

M 6 Unit 2 Thasai mattrum narambu mandala noigal (Musculoskeletal, neurological and neuromuscular disorder)

6.2.1 Peripheral nerves diseases, hemiplegia, paraplegia, epilepsy, Multiple sclerosis 6.2.2 Motor neuron diseases, Peripheral neuropathy, muscular dystrophy, Amyotrophic Lateral Sclerosis (ALS) 6.2.3 Migraine, Headache, Bell's palsy, Trigeminal neuralgia, Parkinsons diseases, diabetic neuropathy, guillain barre's syndrome, Tremors, Ataxia

References: 2,3,4,5,6,7

3A	3B	3C	3D	3E	3F	3G
CO1,CO2,CO3	Describe the definitions, causes and different types of Thasai mattrum narambu mandala noigal in siddha and musculoskeletal, neurological and neuromuscular disorder in modern science	3	Lecture	CC	Knows-how	L&PPT ,L&GD
CO1,CO2,CO3	Demonstrate the clinical assessment, diagnosis and treatment of musculoskeletal, neurological and neuromuscular disorder with the application of mukkutra iyal	6	Practical Training 6.2	PSY-GUD	Shows-how	DIS,CBL, X-Ray
CO1,CO2,CO3	Document the efficacy of mukkutra iyal based treatments of musculoskeletal, neurological disorders in patients.	8	Experiential-Learning 6.2	AFT-RES	Does	DIS,CBL

M 6 Unit 3 Enbu murivu (Traumatology)

6.3.1 Injuries of upper limb 6.3.2 Injuries of lower limb 6.3.3 Injuries of the spine and pelvis 6.3.4 Polytrauma, soft tissue injury, vascular injury, nerve injury

References: 2,3,4,5,6,7

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

CO1,CO2,CO3	Describe the definitions, causes and different types of Enbu murivu in siddha and Traumatology in modern science	3	Lecture	CC	Knows-how	L&PPT ,L&GD
CO1,CO2,CO3	Perform the clinical assessment, diagnosis and treatment of Traumatology with the application of mukkutra iyal & X-ray	6	Practical Training 6.3	PSY-GUD	Shows-how	CBL,LRI, X-Ray
CO1,CO2,CO3	Document the efficacy of mukkutra iyal based treatments for management of Traumatic conditions in patients.	9	Experiential-Learning 6.3	AFT-RES	Does	CBL,DIS

Practical Training Activity

Practical Training 6.1 : Clinical assessment, diagnosis and treatment of bone and joint diseases with the application of mukkutra iyal

Total learning hours (8 hours)
Flipped Classroom
The faculty member instructs the students to prepare the certain given topic and after the preparation case discussion and group activities were done on faculty observation through flipped class room method
Flipped Classroom Structure
Pre-Class (Self-Directed Learning) - 4 Hours
1. Watch video lectures
2. Read assigned articles/chapters.
3. Complete online quizzes.
In-Class (Interactive Session) - 4 Hours
1. Case discussions.
2. Group activities.
3. Expert panel discussion.

Practical Training 6.2 : Clinical assessment, diagnosis and treatment of musculoskeletal, neurological and neuromuscular disorder with the application of mukkutra iyal

Total learning hours (6 hours)
Case-Based Learning & Group Discussion (6 Hours)
Phase 1: Introduction & Group Formation (30 minutes)
Faculty introduces objectives: case study discussions, therapeutic debates, and integrating modern & Siddha medicine.
Divide students into small groups, assigning each a patient case study.

Overview of discussion guidelines and expected outcomes.
Phase 2: Case Study Review & Discussion (90 minutes)
Patient Case Study Analysis: Groups review case history, symptoms, and clinical data.
Identifying Key Clinical Features: Discuss presenting complaints, diagnosis, and treatment considerations.
Comparing Approaches: Evaluate modern medical treatments vs. Siddha therapeutic approaches.
Phase 3: Therapeutic Debate & Decision-Making (90 minutes)
Group Presentations: Each group presents their diagnosis and proposed treatment plan.
Therapeutic Debates: Groups discuss advantages, limitations, and best practices for different therapies.
Faculty Moderation & Feedback: Guidance on integrating modern and Siddha medicine effectively.
Phase 4: Reflection on Clinical Experiences (60 minutes)
Real-Life Case Integration: Students share clinical experiences and relate them to discussed case studies.
Lessons Learned: Identifying best practices and key takeaways for clinical practice.
Phase 5: Advanced Case Discussions & Problem-Solving (60 minutes)
Complex Case Review: Faculty presents challenging cases for group analysis.
Problem-Solving Exercise: Groups develop innovative solutions for managing patient conditions.
Phase 6: Conclusion & Final Insights (30 minutes)
Faculty summarizes key learnings and best practices in case-based discussions.
Q&A session and future applications in clinical practice.

Practical Training 6.3 : Clinical assessment, diagnosis and treatment of Traumatology with the application of mukkutra iyal & X-ray

Total learning hours (6 hours)
X-ray Interpretation & Clinical Case Learning (6 Hours)
Phase 1: Introduction & Overview (30 minutes)
Faculty introduces the session objectives: X-ray reading, fracture diagnosis, and critical thinking.
Basics of X-ray imaging: Types, principles, and common views used in trauma cases.
Safety guidelines and radiation precautions while handling X-rays.
Phase 2: X-ray Identification & Anatomy (60 minutes)
Recognizing Normal Anatomy: Understanding bones, joints, and soft tissues in X-ray images.
Common Injury Patterns: Identifying different types of fractures (simple, compound, comminuted, greenstick, etc.).
Phase 3: Case-Based Learning – Fracture Diagnosis (90 minutes)
Real-Life Case 1: Faculty presents an X-ray case, students analyze and diagnose.
Real-Life Case 2: Students practice identifying fractures and dislocations under faculty supervision.

Group Discussion: Compare different interpretations and refine diagnostic skills.
Phase 4: Problem-Solving & Critical Thinking (90 minutes)
Complicated Cases: Faculty presents challenging X-rays with multiple fractures/dislocations.
Differential Diagnosis: Students discuss possible diagnoses and justify their reasoning.
Treatment Planning: Discuss possible management strategies for different fracture types.
Phase 5: Hands-On X-ray Interpretation (60 minutes)
Independent Analysis: Students individually interpret provided X-rays and document findings.
Peer Review & Faculty Feedback: Students present their findings and receive feedback.
Phase 6: Wrap-Up & Key Takeaways (30 minutes)
Summary of key learning points and best practices in X-ray interpretation.
Q&A session and faculty recommendations for further learning

Experiential learning Activity

Experiential-Learning 6.1 : Documentation of the efficacy of mukkutra iyal based treatments of bone and joint diseases through patients.

Total activity hours (9 hours)
case based learning
Preparation (1 hour) – Conduct an in-depth literature review on Mukkutra Iyal-based treatments, analyzing existing research, methodologies, and findings to establish a strong knowledge base.
Design the Study & Methodology (1 hour) – Define participant selection criteria, refine the study framework, and finalize the methodology, ensuring ethical considerations and a structured research plan.
(1 hour) Collect baseline health data from participants and administer the Mukkutra Iyal-based treatments, ensuring detailed documentation of procedures and observations.
Monitor Responses (1 hour) – Observe pre- and post-treatment responses, note immediate effects, and schedule follow-ups to track progress over time.
Data Collection (1 hour) – Gather quantitative data (health assessments, lab results) and qualitative data (patient feedback, detailed observations) for a comprehensive dataset.
Data Analysis & Discussion (1 hour) – Perform statistical analysis on quantitative data and thematic analysis on qualitative feedback, followed by discussions on trends, patterns, and findings.
Interpretation (1 hour) – Draw well-supported conclusions based on data analysis, evaluating the efficacy, strengths, and potential limitations of the treatments.
Justification (1 hour) – Record findings in detail, ensuring comprehensive documentation and preparing structured reports or research papers to validate the study.
Reflection & Feedback (30 minutes) – Facilitate group discussions for participants to share insights, engage in self-reflection, and evaluate key learnings from the process.
Continuous Improvement (30 minutes) – Review the research process, identify areas for enhancement, and propose recommendations for future studies and improvements.

Experiential-Learning 6.2 : Documentation of the efficacy of mukkutra iyal based treatments of musculoskeletal, neurological disorder through patients.

Total activity hours (8 hours)
case based learning
Preparation (1 hour) – Conduct an extensive literature review on Mukkutra Iyal-based treatments, exploring existing research, methodologies, and findings to build a strong theoretical foundation.
Design the Study & Methodology (1 hour) – Define participant selection criteria, refine the study design, and finalize the methodology, ensuring clear objectives and ethical considerations.
(1 hour) – Collect baseline health data from participants and administer the Mukkutra Iyal-based treatments while maintaining detailed records and ensuring accuracy.
Monitor Responses (1 hour) – Observe participants' pre- and post-treatment responses, record any immediate effects, and schedule follow-ups for ongoing assessment.
Data Collection (1 hour) – Gather both quantitative data (health assessments, lab results) and qualitative data (patient feedback, observations, and experiences).
Data Analysis & Discussion (1 hour) – Perform statistical analysis on quantitative data and thematic analysis on qualitative responses, followed by discussions to interpret findings.
Interpretation (30 minutes) – Draw well-supported conclusions based on the analyzed data, identifying the effectiveness, strengths, and limitations of the treatments.
Justification (30 minutes) – Document all findings comprehensively and prepare detailed reports and research papers to support the study's credibility.
Reflection & Feedback (30 minutes) – Facilitate group discussions for participants to share insights, engage in self-reflection, and evaluate their learning experiences.
Continuous Improvement (30 minutes) – Review the entire research process, identify areas for enhancement, and propose directions for future studies.

Experiential-Learning 6.3 : Documentation of the efficacy of mukkutra iyal based treatments for traumatic conditions

Total activity hours (9 hours)
case based learning
Preparation (1 hour) – Conduct an in-depth literature review on Mukkutra Iyal-based treatments, analyzing existing research, methodologies, and findings to establish a strong knowledge base.
Design the Study & Methodology (1 hour) – Define participant selection criteria, refine the study framework, and finalize the methodology, ensuring ethical considerations and a structured research plan.
(1 hour) – Collect baseline health data from participants and administer the Mukkutra Iyal-based treatments, ensuring detailed documentation of procedures and observations.
Monitor Responses (1 hour) – Observe pre- and post-treatment responses, note immediate effects, and schedule follow-ups to track progress over time.
Data Collection (1 hour) – Gather quantitative data (health assessments, lab results) and qualitative data (patient feedback, detailed observations) for a comprehensive dataset.
Data Analysis & Discussion (1 hour) – Perform statistical analysis on quantitative data and thematic analysis on qualitative feedback, followed by discussions on trends, patterns, and findings.

Interpretation (1 hour) – Draw well-supported conclusions based on data analysis, evaluating the efficacy, strengths, and potential limitations of the treatments.
Justification (1 hour) – Record findings in detail, ensuring comprehensive documentation and preparing structured reports or research papers to validate the study.
Reflection & Feedback (30 minutes) – Facilitate group discussions for participants to share insights, engage in self-reflection, and evaluate key learnings from the process.
Continuous Improvement (30 minutes) – Review the research process, identify areas for enhancement, and propose recommendations for future studies and improvements.

Modular Assessment

Assessment method	**Hour**
Instructions: Conduct a structured modular assessment. Assessment will be 50 marks. Keep 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. Quiz from Clinical video case presentation (50 marks)** Quiz format - Team based i. MCQ - 10 marks ii. SAQ - 20 marks iii. Clinical case studies - 20 marks Instructions: 1. The quiz will be based on the clinical video case presentation. 2. The quiz will consist of multiple-choice questions, short-answer questions, and essay-type questions. 3. You will have 60 minutes to complete it. 4. You must answer all questions to the best of your ability. 5. You can ask for clarification on any question, but this will not stop the timer. Or Any practical in converted form can be taken for assessment (25 marks) and Any of the 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**	**3D Lecture/ Practical**	**3E Domain/ Sub**	**3F Level (Does/Sho**	**3G Teaching**

		Hours	Training/ Experiential Learning	Domain	ws how/ Knows how/Know)	Learning Methods

Module 7 : Therapeutic application of external medicine for Matha noikal (Psychological disorders), Rathanaala noikal, Ninaneer kola noikal ((Diseases of vascular system and lymphatic system), Muthiyor noikal (Geriatric diseases) and Kuzhanthaikal noikal (Pediatric diseases)

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

Describe the *Matha noikal* (Psychological disorders), *Rathanaala noikal, Ninaneer kola noikal* (Diseases of vascular system and lymphatic system), *Muthiyor noikal* (Geriatric diseases) and *Kuzhanthaikal noikal* (Pediatric diseases) in siddha aspects and also recent advances
Demonstrate the *mukkutra iyal* based diagnostic methods
Construct a treatment protocol on the basis of *thirithoda theory*

M 7 Unit 1 Matha noikal (Psychological disorders)

7.1.1 Kirigai, Brahmai (Hallucination), Unmatham (Insanity), Matha azhivu and Matha noi (Egomania disorder) 7.1.2 Valippu (Epilepsy), Moorchai (Syncope), Abasmaram (Panic attack disorder), Soothigavatham (Histeria), *Manakalakkam* (Anxiety disorders), Sleep disorders, Depression, Stress, Schizophrenia

References: 7,18,19,31,35,36,42,50,163,165

3A	3B	3C	3D	3E	3F	3G
CO1,CO2,CO3	Describe the definitions, causes and different types of Veri noigal in Siddha and psychological diseases in modern science	3	Lecture	CC	Knows-how	L&GD,L&PPT
CO1,CO2,CO4	Demonstrate the clinical assessment, diagnosis and treatment of psychological diseases with the application of mukkutra iyal	6	Practical Training 7.1	PSY-GUD	Shows-how	RP,SIM

CO1,CO2,CO4	Document the efficacy of mukkutra iyal based treatments of psychological diseases in patients.	8	Experiential-Learning 7.1	AFT-RES	Does	CBL,JC

M 7 Unit 2 Naala vibhatham, Kanda maalai, Yaanai kaal noi, Raththa nala noikal , ninaneer naala and ninaneer kola noikal (Diseases of vascular system and lymphatic system)

7.2.1 Deep vein thrombosis, Gangrene, Non healing ulcer, Varicose vein, Varicose ulcer, Chronic venous insufficiency 7.2.2 Atherosclerotic diseases, Vasculitis, Thrombophlebitis, Thromboangitis obliterens, Yaanai kaal noi (Elephantiasis)

References: 7,18,20,31,35

3A	3B	3C	3D	3E	3F	3G
CO1,CO2,CO4	Discuss the definitions, causes and different types of Naala vibhatham, Kanda maalai, Yaanai kaal noi, Raththa nala noigal , ninaneer naala and ninaneer kola noigal & diseases of vascular system and lymphatic system	3	Lecture	CC	Knows-how	L&PPT ,L&GD
CO1,CO2,CO4	Demonstrate the clinical assessment, diagnosis and treatment of diseases of vascular system and lymphatic system with the application of mukkutra iyal	6	Practical Training 7.2	PSY-GUD	Shows-how	PBL
CO1,CO2,CO4	Document the efficacy of mukkutra iyal based treatments for management of diseases of vascular system and lymphatic system in patients.	8	Experiential-Learning 7.2	AFT-RES	Does	CBL

M 7 Unit 3 Muthiyor noikal (Geriatric diseases)

7.3.1 Dementia, Alzheimer’s, Padukkai pun (Bedsores), Sevidu (Hearing loss) 7.3.2 Stroke, Epilepsy, Parkinsonism, Delirium, Peripheral Neuropathy, Obesity and *Kirigai* (Schizophrenia)

References: 7,18,20,31,35,51,57,60,162,163,164,165

3A	3B	3C	3D	3E	3F	3G
CO1,CO2,CO4	Describe the definitions, causes and different types of Muthiyor noigal in Siddha and geriatric diseases in modern science	2	Lecture	CC	Knows-how	L&PPT ,L&GD

CO1,CO2,CO4	Demonstrate the clinical assessment, diagnosis and treatment of geriatric diseases with the application of mukkutra iyal	4	Practical Training 7.3	PSY-GUD	Shows-how	CBL
CO1,CO2,CO4	Document the efficacy of mukkutra iyal based treatments for geriatric diseases in patients.	5	Experiential-Learning 7.3	AFT-REC	Does	DIS,CBL

M 7 Unit 4 Kuzhanthaikal noikal (Pediatric diseases)

7.4.1 Autism spectrum disorder (ASD), Cerebral Palsy, Muscular Dystrophy, Bone & joint diseases, Headache and Migraine

References: 7,18,20,32,33,34,35,46,59,148,149,150

3A	3B	3C	3D	3E	3F	3G
CO1,CO2,CO4	Describe the definitions, causes and different types of kuzhanthai noigal in Siddha and pediatric diseases in modern science	2	Lecture	CC	Knows-how	L&PPT ,L&GD
CO1,CO2,CO4	Demonstrate the clinical assessment, diagnosis and treatment of pediatric diseases with the application of mukkutra iyal	4	Practical Training 7.4	PSY-GUD	Shows-how	CBL
CO1,CO2,CO4	Document the efficacy of mukkutra iyal based treatments for pediatric diseases in patients.	5	Experiential-Learning 7.4	AFT-RES	Does	DIS,CBL

Practical Training Activity

Practical Training 7.1 : Clinical assessment, diagnosis and treatment of psychological diseases

Total learning hours (6 hours)
Simulation & Role play (6 hours)
Simulated Patient Interviews: Practice diagnosis using the mukkutra iyal
Therapeutic Conversations: Engage in role-play sessions where one person acts as a therapist and another as a patient
Feedback Loop: After role plays, provide constructive feedback on diagnostic and therapeutic approaches

Practical Training 7.2 : Clinical assessment, diagnosis and treatment of diseases of vascular system and lymphatic system

Total learning hours (6 hours)
Problem-Based Learning (PBL) - 6 hours
Introduction & Group Formation:
Faculty briefs students on PBL methodology and objectives.
Division of students into small groups.
Assignment of case scenarios to each group.
Case Review & Information Analysis:
Groups review patient history, physical exam findings, lab reports, and imaging data.
Identifying key clinical features relevant to the case.
Faculty supervision to guide students in data interpretation.
Differential Diagnosis Development:
Each group discusses possible differential diagnoses based on clinical features.
Faculty moderates discussions, ensuring logical reasoning and evidence-based thinking.
Management Plan Discussion:
Groups explore treatment options based on the differential diagnoses.
Justification of chosen management plans, including medications, procedures, or lifestyle changes.
Faculty provides feedback and refines students' understanding.
Presentation of Findings:
Each group presents their case findings, differential diagnosis, and management plan.
Faculty-led discussion on strengths, weaknesses, and alternative approaches.
Faculty Feedback & Final Discussion:
Faculty provides individual and group feedback on clinical reasoning and problem-solving skills.
Recap of key takeaways and Q&A session for deeper understanding.

Practical Training 7.3 : Clinical assessment of geriatric diseases

Total learning hours (4 hours)
Case Based Learning (4 hours)

Teacher explains the context of the practical task by use visual aids or examples and allow students to perform each step under supervision.
Phase 1: Case Selection & Preparation (15 minutes)
1.1 Selection of Case
Choose a Relevant Case: Select a case study that is relevant to the learning objectives. Gather Information: Collect all necessary data about the case, including patient history, symptoms, diagnostic reports, and treatment plans.
1.2 Preparation
Prepare the patient for the clinical examination
Phase 2: Initial Assessment (45 minutes)
2.1 Patient History: Start with a thorough review of the patient's history.
2.2 Symptom Analysis: Discuss the presenting symptoms and possible underlying causes.
Phase 3: Diagnosis (45 minutes)
3.1 Diagnostic Procedures: Perform the uyir thathukkal, udal thathukkal & envagai thervu examination.
3.2 Formulate Diagnosis: Based on the observed data, encourage students to make a diagnosis.
Phase 4: Treatment Plan (30 minutes)
4.1 Develop Treatment Options: Discuss possible treatment plans based on the diagnosis
4.2 Select Treatment: Choose the most appropriate treatment plan and justify the choice.
Phase 5: Implementation & Monitoring (30 minutes)
5.1 Apply Treatment: Describe how the treatment was implemented in the case.
5.2 Monitor Progress: Discuss the patient's progress during the treatment.
Phase 6: Outcome Evaluation (30 minutes)
Assess Outcomes: Evaluate the effectiveness of the treatment plan.
Phase 7: Assessment & Justification of Findings
7.1 Individual Assessment (45 minutes)
Practical assessment of patient history-taking, examination skills.
Diagnosing the case and formulating a treatment plan.
7.2 Group Discussion & Review
Justification of findings and evaluation of outcomes.
Feedback from faculty and improvements for future cases

Practical Training 7.4 : Clinical assessment, diagnosis and treatment of pediatric diseases

Total learning hours (4 hours)
Case Based Learning

Teacher explains the context of the practical task by use visual aids or examples and allow students to perform each step under supervision.
Case Selection & Preparation (15 minutes)
Selection of Case
Choose a Relevant Case: Select a case study that is relevant to the learning objectives. Gather Information: Collect all necessary data about the case, including patient history, symptoms, diagnostic reports, and treatment plans.
Preparation
Prepare the patient for the clinical examination
Initial Assessment (15 minutes)
Patient History: Start with a thorough review of the patient's history.
Symptom Analysis: Discuss the presenting symptoms and possible underlying causes.
Diagnosis (60 minutes)
Diagnostic Procedures: Perform the uyir thathukkal, udal thathukkal & envagai thervu examination.
Formulate Diagnosis: Based on the observed data, encourage students to make a diagnosis.
Treatment Plan (30 minutes)
Develop Treatment Options: Discuss possible treatment plans based on the diagnosis.
Select Treatment: Choose the most appropriate treatment plan and justify the choice.
Implementation & Monitoring (60 minutes)
Apply Treatment: Describe how the treatment was implemented in the case.
Monitor Progress: Discuss the patient's progress during the treatment.
Outcome Evaluation (30 minutes)
Assess Outcomes: Evaluate the effectiveness of the treatment plan.
Assessment & Justification of Findings (30 minutes)
Individual Assessment
Practical assessment of patient history-taking, examination skills.
Diagnosing the case and formulating a treatment plan.
Group Discussion & Review
Justification of findings and evaluation of outcomes.
Feedback from faculty and improvements for future case

Experiential learning Activity

Experiential-Learning 7.1 : *Mukkutra iyal* based treatments of psychological diseases

Total activity hours (8 hours)
Case based learning (4 hours)
Preparation – Conduct an extensive literature review on Mukkutra Iyal-based treatments, exploring existing research, methodologies, and findings to build a strong theoretical foundation.
Design the Study & Methodology – Define participant selection criteria, refine the study design, and finalize the methodology, ensuring clear objectives and ethical considerations.
Collect baseline health data from participants and administer the Mukkutra Iyal-based treatments while maintaining detailed records and ensuring accuracy.
Monitor Responses – Observe participants' pre- and post-treatment responses, record any immediate effects, and schedule follow-ups for ongoing assessment.
Data Collection – Gather both quantitative data (health assessments, lab results) and qualitative data (patient feedback, observations, and experiences)
Discussion (2 Hours)
Data Analysis & Discussion on qualitative responses, followed by discussions to interpret findings.
Interpretation – Draw well-supported conclusions based on the analyzed data, identifying the effectiveness, strengths, and limitations of the treatments.
Justification – Document all findings comprehensively and prepare detailed reports and research papers to support the study's credibility.
Reflection & Feedback – Facilitate group discussions for participants to share insights, engage in self-reflection, and evaluate their learning experiences.
Journal club (2 Hours)
Continuous Improvement – Review the entire research process, identify areas for enhancement, and propose directions for future studies.

Experiential-Learning 7.2 : *Mukkutra iyal* based treatments for management of diseases of vascular system and lymphatic system

Total activity hours (8 hours)
Case based learning
Preparation (1 hour) – Conduct an extensive literature review on Mukkutra Iyal-based treatments, exploring existing research, methodologies, and findings to build a strong theoretical foundation.
Design the Study & Methodology (1 hour) – Define participant selection criteria, refine the study design, and finalize the methodology, ensuring clear objectives and ethical considerations.
(1 hour) – Collect baseline health data from participants and administer the Mukkutra Iyal-based treatments while maintaining detailed records and ensuring accuracy.
Monitor Responses (1 hour) – Observe participants' pre- and post-treatment responses, record any immediate effects, and schedule follow-ups for ongoing assessment.
Data Collection (1 hour) – Gather both quantitative data (health assessments, lab results) and qualitative data (patient feedback, observations, and experiences).
Data Analysis & Discussion (1 hour) – Perform statistical analysis on quantitative data and thematic analysis on qualitative responses, followed by discussions to interpret findings.
Interpretation (30 minutes) – Draw well-supported conclusions based on the analyzed data, identifying the effectiveness, strengths, and limitations of the treatments.
Justification (30 minutes) – Document all findings comprehensively and prepare detailed reports and research papers to support the study's credibility.

Reflection & Feedback (30 minutes) – Facilitate group discussions for participants to share insights, engage in self-reflection, and evaluate their learning experiences.
Continuous Improvement (30 minutes) – Review the entire research process, identify areas for enhancement, and propose directions for future studies.

Experiential-Learning 7.3 : *Mukkutra iyal* based treatments for geriatric diseases

Total activity hours (5 hours)
Case based learning (3 Hours)
Preparation – Conduct a literature review on Mukkutra Iyal-based treatments to understand existing research and methodologies.
Design the Study & Methodology – Define participant selection criteria, finalize study objectives, and establish a clear research methodology.
Collect baseline health data from participants and administer the Mukkutra Iyal-based treatments, ensuring careful observation and documentation.
Monitor Responses – Observe and record participants' pre- and post-treatment responses, noting significant changes and scheduling necessary follow-ups.
Data Collection – Gather quantitative data (e.g., health assessments, lab results) and qualitative data (e.g., patient feedback, observations).
Discussion(2 Hours)
Data Analysis & Discussion – Conduct statistical analysis for quantitative data and thematic analysis for qualitative feedback, followed by discussions on findings.
Interpretation & Justification – Draw conclusions based on the analyzed data and justify findings with comprehensive documentation.
Reflection & Continuous Improvement – Facilitate group discussions, encourage self-reflection, and identify areas for improvement in the study process for future research.

Experiential-Learning 7.4 : *Mukkutra iyal* based treatments for pediatric diseases

Total activity hours (5 hours)
Case based learning (3 hours)
Preparation – Conduct a literature review on Mukkutra Iyal-based treatments to understand existing research and methodologies.
Design the Study & Methodology – Define participant selection criteria, finalize study objectives, and establish a clear research methodology.
Collect baseline health data from participants and administer the Mukkutra Iyal-based treatments, ensuring careful observation and documentation.
Monitor Responses – Observe and record participants' pre- and post-treatment responses, noting significant changes and scheduling necessary follow-ups.
Data Collection – Gather quantitative data (e.g., health assessments, lab results) and qualitative data (e.g., patient feedback, observations).
Discussion (2 Hours)
Data Analysis & Discussion – Conduct statistical analysis for quantitative data and thematic analysis for qualitative feedback, followed by discussions on findings.

Interpretation & Justification – Draw conclusions based on the analyzed data and justify findings with comprehensive documentation.
Reflection & Continuous Improvement – Facilitate group discussions, encourage self-reflection, and identify areas for improvement in the study process for future research.

Modular Assessment

Assessment method	**Hour**
Instructions: Conduct a structured modular assessment. Assessment will be 50 marks. Keep 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. Compilation of Treatment Reports (30 Marks) Each student is required to compile and submit a comprehensive report documenting the treatment processes they have undertaken or observed. The reports will be graded based on the following criteria: Completeness & Organization (10 Marks) Clarity & Accuracy (10 Marks Critical Analysis & Reflection (10 Marks) 2. Peer Review & Feedback (20 Marks) Students will exchange reports with their peers for review and provide constructive feedback based on the following criteria: • Comprehensiveness of Feedback (5 Marks) • Critical Analysis & Constructive Suggestions (5 Marks): • Engagement & Reflection (5 Marks) • Presentation & Professionalism (5 Marks) Or Any practical in converted form can be taken for assessment (25 marks) and Any of the 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/**	**3E Domain/ Sub Domain**	**3F Level (Does/Shows how/**	**3G Teaching Learnin**

			Experientia l Learning		Knows h ow/Kno w)	g Methods

Module 8 : Establishing and Managing Siddha external therapy hospital

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

Describe the foundational knowledge required for establishing and managing Siddha external therapy hospitals
Evaluate the set up of Siddha external therapy hospitals, including preparing hospital blueprints, applying for necessary licenses, managing accreditation procedures, implementing marketing strategies, securing funding, and efficiently managing hospital operations on a day-to-day basis
Identify the critical components required for setting up and running a Siddha external therapy hospitals, such as compliance with healthcare regulations, key financing sources, essential marketing channels, and the strategies for sustaining hospital operations and expansion in the healthcare sector

M 8 Unit 1 Hospital Planning and Infrastructure for Siddha external therapy hospital

8.1.1 Legal and Regulatory Compliance adherence with NCISM regulations 8.1.2 Infrastructure and Facilities Planning. 8.1.3 Human Resources and Staffing 8.1.4 Technology and Accessibility 8.1.5 Sustainability and Supply Management

References: 82,83,84,85

3A	3B	3C	3D	3E	3F	3G
CO7,CO8	Discuss the prerequisites and legal requirements for establishing a Siddha external therapy hospital, including licensing, accreditation, and recruitment processes; and analyze the key principles in hospital layout design with appropriate spatial allocation for clinical and non-clinical areas such as consultation rooms, diagnostic units, dispensary, inpatient wards, and pharmacy	2	Lecture	CE	Knows-how	L&PPT ,DIS

CO7,CO8	Describe the functional Siddha external therapy hospital by creating detailed layout plans with effective space allocation, operate hospital management systems including EMRs and telemedicine tools, and develop procurement strategies for managing medical and emergency care supplies	5	Practical Training 8.1	PSY-ADT	Shows-how	TBL,DIS
CO7,CO8	Conduct hospital visits to observe and analyze infrastructure and facilities, participate in internships to experience recruitment and staffing processes, and apply knowledge by working on projects that integrate hospital management technologies.	8	Experiential-Learning 8.1	AFT-SET	Does	PrBL,DIS,PER,FV

M 8 Unit 2 Accreditation and Licensing: QCI, NABH, and Government Norms

8.2.1 Accreditation Processes and Requirements 8.2.2 Application and Approval Process 8.2.3 Quality Control and Safety Protocols 8.2.4 Legal and Regulatory Compliance 8.2.5 Maintaining Accreditation and Continuous Improvement

References: 86,87,88,89

3A	3B	3C	3D	3E	3F	3G
CO7,CO8	Discuss the accreditation process for Siddha external therapy hospitals, including QCI and NABH standards, legal and safety requirements, preparation of justification documents, approval procedures, and analyze common challenges with strategies for maintaining continuous compliance and quality improvement	2	Lecture	CAN	Knows-how	DIS,PER
CO7,CO8	Conduct mock accreditation audits, simulate approval procedures, and initiate quality improvement projects to ensure readiness for QCI/NABH accreditation and maintain continuous compliance with accreditation standards.	5	Practical Training 8.2	PSY-ORG	Shows-how	DIS,TBL
CO7,CO8	Participate in real-world hospital accreditation processes, engage with QCI/NABH experts through interviews, observe on-site application and approval procedures, and maintain reflective journals to internalize insights and identify areas for personal and professional improvement..	6	Experiential-Learning 8.2	AFT-VAL	Does	FV,DIS,W

M 8 Unit 3 Marketing and Financing Strategies for Hospital Projects

8.3.1 Business and Financial Planning 8.3.2 Hospital Financing and Government Schemes 8.3.3 Marketing and Branding 8.3.4 Local Marketing and Patient Referral Networks 8.3.5 Pricing Strategies and Affordability

References: 90,91,92,93

3A	3B	3C	3D	3E	3F	3G
CO7,CO8	Develop a comprehensive business plan for Siddha external therapy hospitals encompassing budgeting, capital investment, and financial risk management; discuss government and private financing options; and analyze marketing strategies including branding, digital, and local efforts to build patient referral networks and enhance service visibility.	3	Lecture	CAP	Knows-how	L&PPT ,L&GD
CO7,CO8	Draft a comprehensive business plan with detailed budgets for a Siddha external therapy unit, develop financial risk management strategies, design and implement digital marketing and branding initiatives, and plan community outreach and local marketing campaigns to enhance patient engagement and service visibility	5	Practical Training 8.3	PSY-ADT	Shows-how	DIS,RP
CO7,CO8	Participate in real-world projects drafting business plans and budgets, observe healthcare financing strategies during facility visits, engage in workshops on branding and market positioning, and take part in community outreach events to promote hospital services	6	Experiential-Learning 8.3	PSY-GUD	Does	DIS,FV

M 8 Unit 4 Hospital Operations: Execution, Management, and Growth

8.4.1 Operational and Patient Care Management 8.4.2 Staff and Resource Management 8.4.3 Data-Driven Decision-Making 8.4.4 Partnerships and Service Expansion

References: 94,95,96,97

3A	3B	3C	3D	3E	3F	3G
CO7,CO8	Discuss the key components of day-to-day operational management in Siddha external therapy hospitals, including patient care pathways, staff management, clinical governance, and financial control; explain the role of healthcare data analytics in	3	Lecture	CC	Knows-how	L&PPT ,L&GD

	improving decision-making and patient care; and analyze strategies for long-term growth and sustainability of services.					
CO7,CO8	Illustrate and practice managing day-to-day operations including patient care pathways and scheduling, develop healthcare delivery systems, utilize data analytics to improve operational efficiency and patient care, set up patient feedback systems, and plan and implement new external therapies and specialties	5	Practical Training 8.4	PSY-GUD	Shows-how	DIS,TBL
CO7,CO8	Participate in networking events to establish partnerships with insurance companies and key stakeholders, and engage in workshops focused on developing long-term growth strategies and ensuring sustainability.	6	Experiential-Learning 8.4	AFT-VAL	Does	W

Practical Training Activity

Practical Training 8.1 : Hospital Planning and Infrastructure for Siddha external therapy hospital

Total learning hours (5 hours)
Team Based Learning (5 hours)
Introduction & Group Formation
Faculty introduces objectives and key components: hospital layout, compliance, HR planning, and equipment placement.
Divide students into small groups, assigning them specific tasks.
Overview of Justification, NABH, QCI, and regulatory compliance.
Hospital Layout Design
Collaborative Design: Groups create a Siddha external therapy hospital layout focusing on wards, diagnostic centers, emergency units, and play areas.
Functional Zoning: Ensure patient flow, safety, and accessibility.
Group Feedback Session: Discuss and refine designs.
Mock Licensing & Compliance
Regulatory Review: Study NABH, QCI, and local hospital licensing requirements.
Mock Submission: Groups prepare licensing applications and compliance documentation.
Recruitment Planning
HR Plan Development: Identify key staff roles (physicians, therapists, nurses, admin, technicians).
Mock Interviews: Students conduct and participate in recruitment role-play.
Equipment Placement Plan
Procurement Strategy: Selecting diagnostic and therapeutic equipment.

Hospital Space Planning: Allocating proper locations for equipment to optimize workflow.
Presentation & Faculty Feedback
Groups present their hospital design, HR plan, and equipment placement strategy
Faculty provides feedback and final insights.

Practical Training 8.2 : Accreditation and Licensing: QCI, NABH, and Government Norms

Total learning hours (5 hours)
Discussion (3 hours)
Introduction & Task Allocation
Faculty introduces NABH accreditation process and key quality standards.
Divide students into small groups and assign tasks (mock applications, inspections, training modules,compliance checklists).
Overview of Justification, quality control, and accreditation implementation
NABH Accreditation Application Preparation
Groups prepare required documents, policies, and SOPs.
Discuss why each standard is necessary.
Simulated Hospital Inspections
Students take on roles of auditors and hospital staff.
Groups analyze areas needing improvement for accreditation.
Quality Control & Staff Training Modules
Creating SOPs for infection control, patient safety, and documentation.
Designing training sessions on safety, compliance, and best practices
Team Based Learning (2 Hours)
Legal Compliance & Final Review
Covering licensing, labor laws, patient rights, and ethical guidelines
Evaluating mock applications, inspections, and training plans
Conclusion & Takeaways
Groups present key learning’s and strategies for accreditation success
Faculty provides final insights on NABH accreditation and quality implementation

Practical Training 8.3 : Marketing and Financing Strategies for Hospital Projects

Total learning hours (5 hours)

Discussion (3 hours)
Introduction & Group Formation
Faculty briefs students on objectives and key components of a business plan.
Divide students into small groups.
Assign tasks: Hospital establishment, funding, budgeting, marketing, partnerships.
Business Plan Development
Hospital Establishment Plan: Location, infrastructure, departments, staffing.
Funding & Budgeting: Estimating costs, identifying revenue sources, applying for government subsidies.
Faculty reviews progress and provides guidance.
Marketing & Branding Strategy
Digital Campaigns: Social media, SEO, content marketing, patient engagement.
Logo, tagline, hospital theme, patient outreach methods.
Faculty feedback on marketing approach.
Role-Play (2 hours)
Role-Playing Exercises
Each group presents their business plan to simulated investors.
Government Subsidy Application: Simulating the application process and justification.
Referral Network Establishment: Practicing negotiations with local healthcare providers.
Presentations & Final Discussion
Groups present their complete hospital business and marketing plan.
Faculty provides feedback and final discussion on real-world implementation.

Practical Training 8.4 : Hospital Operations: Execution, Management, and Growth

Total learning hours (5 hours)
Team Based Learning & Discussions (5 Hours)
Introduction & Group Formation
Faculty introduces objectives and key discussion topics.
Divide students into small groups with assigned focus areas.
Brief overview of hospital operations, service expansion, and insurance partnerships.
Hospital Operational Planning
Staff Scheduling & Performance Evaluation: Designing efficient work shifts, evaluating staff productivity.
Patient Safety Protocols: Developing policies for infection control, emergency preparedness, and quality assurance.

Faculty moderates discussions and refines students' operational strategies.
Revenue Management & Financial Planning
Understanding Revenue Streams: Hospital billing, insurance claims, government reimbursements.
Cost Management & Budgeting: Managing hospital expenses, optimizing resource allocation.
Data Analysis & Operational Efficiency
Simulated Healthcare Data Analysis: Identifying inefficiencies and improving patient flow.
Actionable Solutions: Discussing strategies for cost reduction and improving service delivery.
Service Expansion & Insurance Partnerships
Expansion Strategies: Identifying new service lines, opening satellite clinics.
Forming Insurance Partnerships: Negotiating contracts, ensuring seamless claim processing.
Conclusion & Faculty Feedback
Groups summarize key takeaways from discussions.
Faculty provides insights and final remarks.

Experiential learning Activity

Experiential-Learning 8.1 : Hospital management analyzes

Total activity hours (8 hours)
Field Visit (8 hours)
Visit Siddha external therapy hospital:
Field Visit & Hospital Infrastructure Observation
Staff Interviews on Management Challenges
Guest Lecture by a Hospital Architect
Telemedicine & EMR Simulation
Environmental Sustainability Project
Case Study on Hospital Supply Chain Management
Reflection & Presentation of Findings

Experiential-Learning 8.2 : Accreditation and Licensing: QCI, NABH, and Government Norms
Total activity hours (6 hours) Field Visit (4 hours) Field Visit to NABH-Accredited Hospital Observe hospital operations and quality assurance measures in different departments. Interaction with hospital staff on compliance protocols and best practices. Hands-on exposure to infection control measures and patient safety initiatives. Workshop (1 Hour) Workshop on Infection Control & Quality Standards Practical demonstrations on hygiene, sterilization, and hospital-acquired infection prevention. Understanding of hospital safety protocols, waste management, and staff training procedures. Case discussions on common challenges and solutions in infection control. Guest Lecture by NABH Accreditation Officers Insights into the hospital accreditation process, criteria, and assessment methods. Legal and ethical compliance requirements in healthcare institutions. Real-world challenges hospitals face in maintaining accreditation. Legal Compliance Fieldwork & Accreditation Simulation Hands-on exercises related to documentation, policy drafting, and audit preparation. Simulated hospital accreditation assessment, with students acting as auditors. Evaluation of compliance gaps and recommendations for improvement. Discussion (1 hour) Group discussions on key learnings from field visits and workshops. Students present insights on the importance of accreditation and compliance Q&A session with facilitators to clarify doubts and reinforce knowledge.
Experiential-Learning 8.3 : Marketing and Financing Strategies for Hospital Projects
Total activity hours (6 hours) Discussion & Field Visit (4 hours 45 minutes) Hospital Visit & Financial Strategy Analysis Observe hospital financial operations (billing, insurance processing, funding sources). Interact with hospital administrators to understand budgeting,cost control, and revenue generation.

Identify financial challenges and innovative solutions in healthcare institutions.
Marketing & Branding in Healthcare
Analyze hospital marketing strategies, patient engagement tactics, and digital presence.
Interview hospital marketing teams on promotional campaigns, partnerships, and outreach efforts.
Understand how branding impacts patient trust and hospital reputation.
Community Outreach & Collaboration (1 hour 15 minutes)
Participate in real-world community engagement activities.
Collaborate with hospitals on awareness campaigns, wellness programs, or health screenings.
Assess the impact of outreach on patient inflow and hospital branding.
Case Study Analysis & Discussion
Study real-life examples of successful hospital financial planning and branding strategies.
Group discussions on best practices and lessons learned.
Compare different approaches in public vs. private hospitals.
Reflection & Presentation
Students present their key findings and insights from the visit.
Discussion on challenges and opportunities in hospital financing and marketing.
Feedback session to reinforce experiential learning takeaways.

Experiential-Learning 8.4 : Hospital Operations: Execution, Management, and Growth

Total activity hours (6 hours)
Workshop (6 hours)
Observation of Daily Operations
Visit different departments (outpatient, inpatient, pharmacy, therapy units, administration).
Observe patient care procedures, staff coordination, and resource management.
Identify key operational challenges in hospital management.
Interviews with Hospital Administrators & Staff
Discuss patient care management, workflow, and hospital policies.
Understand financial challenges and strategies for cost efficiency.
Gain insights into government regulations and compliance in Siddha therapy hospitals.
Case Study Research & Group Discussion
Identify and analyze case studies on successful long-term growth strategies.
Discuss best practices in balancing quality patient care with cost management.

Compare traditional and modern management approaches in Siddha therapy hospitals.
Presentation Preparation
Organize findings into structured presentations.
Prepare key points on sustainability, operational efficiency, and patient care improvements.
Develop visual aids or slides to enhance presentations.
Student Presentations & Reflection
Each group presents their case study and key learnings.
Discussion on insights gained from the visit.
Reflection on how real-world hospital operations align with theoretical knowledge.

Modular Assessment

Assessment method	**Hour**
Instructions: Conduct a structured modular assessment. Assessment will be 50 marks for this module. Keep 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. Group Debate - 20 marks** Debate Format: 1. Introduction (1 minute) 2. Team Presentation (3-4 minutes) 3. Rebuttal and Counterarguments (2-3 minutes) 4. Conclusion (1 minute) Mark Distribution: • Content (8 marks) • Organization and Teamwork (4 marks) • Delivery and Presentation (4 marks) • Rebuttal and Counterarguments (4 marks) Instructions: 1. The debate will be conducted in a formal setting, with a moderator and an opposing team. 2. Each team will consist of 3-4 members. 3. The debate topic will be announced in advance, and teams will have 15 minutes to prepare.	4

4. Each team will have 10 minutes to present their arguments, followed by a rebuttal and counterarguments. 5. The debate will be evaluated based on the mark distribution mentioned above. 6. The team with the highest score will be declared the winner. 7. In case of a tie, the moderator will decide the winner based on the team's overall performance. **2. Make a chart / model - Siddha external therapy hospitals- 30 Marks** Mark Distribution: • Content (10 marks) • Design and Presentation (10 marks) • Overall Impression (10 marks) Or Any practical in converted form can be taken for assessment (25 marks) and Any of the experiential as portfolio/reflections/presentations can be taken as an assessment (25 marks)	

Paper No : 2 Preparation and Applications of Pura Marunthukal

Semester No : 3

Module 9 : Preparation of Pura Marunthukal

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

Describe the preparations of medicines used in pura maruthuvam
Apply the herbo-mineral formulations and organoleptic characters
Describe traditional healing practices centered on "*Kattu, Patru, Poochu, and Kalimbu* "
Incorporate the *Mukkutra Iyal*, principles, and therapeutic applications.
Identify the importance, contra -indications, and complications associated with each practice.

M 9 Unit 1 Overview of Pura Marunthukal

9.1.1 Introduction 9.1.2 Commonly used Pura Marunthugal 9.1.3 Topical drug delivery 9.1.4 kaayakalapam in puramaruthuvam

References: 168,169,195,196,197,198,199,200,201,202,203,204,205,206,207,208,209

3A	3B	3C	3D	3E	3F	3G
CO1,CO2,CO3,CO6,CO7,CO8	Discuss the Introduction of pura marunthugal	1	Lecture	CC	Knows-how	L&PPT
CO1,CO2,CO3,CO6,CO7,CO8	Demonstrate Commonly used preparations in puramarunthugal	4	Practical Training 9.1	PSY-GUD	Shows-how	DL,TBL

CO1,CO2,CO3,CO6,CO7,CO8	Conduct Topical drug delivery procedure	5	Experiential-Learning 9.1	AFT-CHR	Does	FV
CO1,CO3,CO5	Discuss about kaayakalpam(Rejuvenation) such as ennai muzhukku, bedhi,vaandhi, kalikkam, thokkanam in Puramaruthuvam	1	Lecture	CC	Knows-how	L_VC,L&PPT

M 9 Unit 2 Kattu (Bandage)

9.2.1 Introduction 9.2.2 *Mukkutra iyal* 9.2.3 Mechanism / principles 9.2.4 Materials and Equipment 9.2.5 Medicinal preparation 9.2.6 Therapeutic application 9.2.7 Procedure 9.2.8 Importance 9.2.9 Contraindication 9.2.10 Complications 9.2.11 Recent advances in *Kattu* / Bandaging techniques

References: 186,195,196,197,198,199,200,201,202,203,204,205,206,207,208,209

3A	3B	3C	3D	3E	3F	3G
CO1,CO2,CO3,CO6,CO7,CO8	Analyze the principles, methodology, and materials involved in the traditional Siddha therapeutic procedure *Kattu*, including the diagnostic application of Thirithoda, to evaluate its clinical relevance.	1	Lecture	CAN	Knows-how	L&GD,X-Ray
CO1,CO2,CO3,CO6,CO7,CO8	Demonstrate the Medicinal preparation used for *Kattu*	2	Practical Training 9.2	PSY-GUD	Shows-how	DL
CO1,CO2,CO3,CO6,CO7,CO8	Demonstrate the Therapeutic application of *Kattu*	2	Practical Training 9.3	PSY-ORG	Shows-how	D-BED,CBL
CO1,CO2,CO3,CO6,CO7,CO8	Conduct the medicinal preparation and therapeutic application of *kattu*	5	Experiential-Learning 9.2	PSY-GUD	Does	DIS,PBL,CBL
CO1,CO2,CO3,CO6,CO7,CO	Analyze the importance, contraindications, and complications of Kattu in Siddha medicine, along with recent advancements in its bandaging techniques.	1	Lecture	CAN	Knows-how	DIS,L&PPT ,L_VC

8						,SDL

M 9 Unit 3 Patru (Poultice)

9.3.1 Introduction 9.3.2 *Mukkutra iyal* 9.3.3 Mechanism /principles 9.3.4 Materials and Equipment 9.3.5 Medicinal preparation 9.3.6 Therapeutic application 9.3.7 Procedure 9.3.8 Importance 9.3.9 Contraindication 9.3.10 Complications 9.3.11 Recent advances / Plaster techniques

References: 9,10,18,19,120,125,196,197,198,199,200,201,202,203,204,205,206,207,208,209

3A	3B	3C	3D	3E	3F	3G
CO1,CO2,CO3,CO6,CO7,CO8	Describe the traditional Siddha therapy Patru by explaining its therapeutic principles, application based on Mukkutra Iyal, mechanism of action, and the materials and equipment involved in its preparation and use.	1	Lecture	CC	Knows-how	PER,SDL,L&PPT
CO1,CO2,CO3,CO6,CO7,CO8	Demonstrate the Medicinal preparation used for *Patru* and Therapeutic application of *Patru*	4	Practical Training 9.4	PSY-GUD	Shows-how	CBL,SIM
CO1,CO2,CO3,CO6,CO7,CO8	Conduct the preparation and application of *patru*	6	Experiential-Learning 9.3	PSY-GUD	Does	D-BED,PSM,DL,CBL
CO1,CO2,CO3,CO6,CO7,CO8	Evaluate the importance of Patru in Siddha medicine, including its therapeutic applications, contraindications, associated complications, and recent advancements in formulation and application techniques	1	Lecture	CE	Knows-how	BS,SDL,L&PPT

M 9 Unit 4 Poochu (Liquid application)

9.4.1 Introduction 9.4.2 *Mukkutra iyal* 9.4.3 Mechanism/principles 9.4.4 Materials and Equipment 9.4.5 Procedure 9.4.6 Importance 9.4.7 Therapeutic Application 9.4.8 Contraindication 9.4.9 Complications 9.4.10 Recent advances

References: 9,10,18,19,120,125,195,196,197,198,199,200,201,202,203,204,205,206,207,208,209

3A	3B	3C	3D	3E	3F	3G
CO1,CO2,CO3,CO6,CO7,CO8	Describe the traditional Siddha therapy Poochu by explaining its introduction, application based on Mukkutra Iyal, underlying mechanism/principles, and the materials and equipment used in its preparation and application.	1	Lecture	CC	Knows-how	ML,L_VC,L&PPT
CO1,CO2,CO3,CO6,CO7,CO8	Demonstrate the medicinal preparation used for *poochu* and therapeutic application of *poochu*	4	Practical Training 9.5	PSY-GUD	Shows-how	CBL,D-BED
CO1,CO2,CO3,CO6,CO7,CO8	Conduct the medicinal preparation used for *poochu* and therapeutic application of *poochu*	5	Experiential-Learning 9.4	AFT-RES	Does	CBL,D-BED
CO1,CO2,CO3,CO6,CO7,CO8	Analyse the therapeutic importance, contraindications, and complications of *Poochu,* along with recent advancements in its formulation and clinical application in Siddha medicine.	1	Lecture	CAN	Knows-how	PER,L&PPT ,SDL

M 9 Unit 5 Kalimbu (Oinment)

9.5.1 Introduction 9.5.2 *Mukkutra iyal* 9.5.3 Mechanism/principles 9.5.4 Materials and Equipment 9.5.5 Medicinal preparation 9.5.6 Therapeutic application 9.5.7 Procedure 9.5.8 Importance 9.5.9 Contraindication 9.5.10 Complications 9.5.11 Recent advances

References: 7,22,199,200,201,202,203,204,205,206,207,208

3A	3B	3C	3D	3E	3F	3G
CO1,CO2,CO3,CO6,CO7,CO8	Discuss the introduction, mukkutra-based application, underlying principles, and the materials and equipment used in the practice of Kalimbu in Siddha medicine.	1	Lecture	CC	Knows-how	L&GD,L&PPT
CO1,CO2,CO3,CO6,CO7,CO8	Demonstrate the medicinal preparation used in kalimbu and therapeutic application of *Kalimbu*	4	Practical Training 9.6	PSY-GUD	Shows-how	D-BED,SIM,CBL

CO1,CO2,CO3,CO6,CO7,CO8	Conduct the medicinal preparation and therapeutic application of *kalimbu*	5	Experiential-Learning 9.5	AFT-RES	Does	DIS,CBL,DL
CO1,CO2,CO3,CO6,CO7,CO8	Analyse the therapeutic importance, contraindications, complications, and recent advancements in the formulation and application of Kalimbu in Siddha medicine	1	Lecture	CAN	Knows-how	BS,L&PPT ,L&GD

Practical Training Activity

Practical Training 9.1 : Commonly used *puramarunthugal*

Total learning hours (4 Hours)
Demonstration Lab(3 hour)
Step 1 - The teacher will guide the student to identify the materials used as pura marundhu
Step 2 -The teacher will explain the phytochemical activity of the drugs used as pura marundhu
Step 3 - The teacher will guide the students to select ingredients for preparing simple preparation (paste, nasal drops, cream, and ointments)
Step 4 - The teacher will demonstrate the preparation (paste, nasal drops, cream, ointments)
Step 5 - The teacher will explain the labelling and storage procedure for the prepared medicine
Team based learning(1 hour)
Step 1 - The teacher will divide the students into groups and perform different preparations used as puramarundhu
Step 2 - The teacher will discuss the application of prepared medicine for various conditions
Step 3 - The teacher will observe the student's performance and document it

Practical Training 9.2 : Medicinal preparation used for *Kattu*

Total learning hours (2 Hours)
Demonstration Lab
Step 1-The teacher will Discuss the vaious ingredients used in Kattu
Step 2-The teacher will Demonstrate the different Preparations of medicine used for kattu
Step 3-The teacher will Explain the therapeutic usage of these preparations
Step 4 -The teacher will Discuss and evaluate the potential effects of these preparations on common ailments
Step 5 - Students will be divided into groups and perform different medicinal preparations used in kattu

Step 6- Reflection

Practical Training 9.3 : Therapeutic application of *Kattu*

Total learning hours (2 Hours)
Case Based Learning, Demonstration bed side(2 hour)
Step 1- The teacher will guide the student in preparing Materials Required for Kattu
Step 2 -The teacher will assess and explain the Case Scenario to the students
Step 3 - The teacher will demonstrate the pre-treatment procedure for patient
Step 4 - The teacher will demonstare the application of kattu
Step 5 - The teacher will demonstare the post-therapeutic care of patient
Step 6 - The teacher will dicuss the application of various Bandaging techniques
Step 7 - Students will be divided into groups and perform different Bandaging techniques
Step 8 - The teacher will observe the students perfomance and document it

Practical Training 9.4 : Medicinal preparation and therapeutic application of *Patru*

Total learning hours (4 hours)
Case based learning(3 hours)
Step 1-The teacher will guide the student in preparing materials required for patru
Step 2 -The teacher will assess and explain the case scenario to the students
Step 3 - The teacher will guide the students to select ingredients and prepare medicine for patru
Step 4 - The teacher will demonstrate the pre-treatment procedure for patient
Step 5 - The teacher will demonstrate the application of patru
Step 6 - The teacher will demonstrate the post-therapeutic care of patient
Step 7 - The teacher will discuss the application of patru for various conditions
Simulation(1hour)
Step 1 - Students will be divided into groups and perform different medicinal preparations used in patru
Step 2 - Students will be divided into groups and perform application of patru in mannequins
Step 3 - The teacher will observe the students performance and document it

Practical Training 9.5 : Medicinal preparation and therapeutic application of *poochu*

Total learning hours (4 Hours)

Case based learning and Demonstration bedside(3 hours)
Step 1-The teacher will guide the student in preparing materials required for poochu
Step 2 -The teacher will assess and explain the case scenario to the students
Step 3 - The teacher will guide the students to select ingredients and prepare medicine for poochu
Step 4 -The teacher will demonstrate the pre-treatment procedure for patient
Step 5 - The teacher will demonstrate the application of poochu
Step 6 - The teacher will demonstrate the post-therapeutic care of patient
Step 7 - The teacher will discuss the application of poochu for various conditions
Simulation(1 hour)
Step 1 - Students will be divided into groups and perform different medicinal preparations used in poochu
Step 2 - Students will be divided into groups and perform application of poochu in mannequins
Step 3 - The teacher will observe the students performance and document it

Practical Training 9.6 : Medicinal preparation and therapeutic application of *Kalimbu*

Total learning hours (4 Hours)
Case based learning and Demonstration bedside (2 hours)
Step 1 - The teacher will guide the student in preparing materials required for Kalimbu
Step 2 -The teacher will assess and explain the case scenario to the students
Step 3 - The teacher will guide the students to select ingredients and prepare medicine for Kalimbu
Step 4 - The teacher will demonstrate the pre-treatment procedure for the patient
Step 5 - The teacher will demonstrate the application of Kalimbu
Step 6 - The teacher will demonstrate the post-therapeutic care of the patient
Step 7 - The teacher will discuss the application of patru for various conditions
Simulation(2 hour)
Step 1 - Students will be divided into groups and perform different medicinal preparations used in Kalimbu
Step 2 - Students will be divided into groups and perform the application of Kalimbu in mannequins
Step 3 - The teacher will observe the student's performance and document it

Experiential learning Activity

Experiential-Learning 9.1 : Topical drug delivery procedure

Total activity hours (5 hours)
Field visit
The Students instruct to participate the field visit at any topical drug manufacturing unit (5 hours)
Step - 1 The students observe how the medication is prepared, stored, handled, and applied
Step - 2 Inspect the condition, labeling, and expiration dates of the topical drugs
Step - 3 Evaluate the application technique for accuracy, hygiene, and dosage compliance
Step - 4 Assess patient adherence by discussing the prescribed frequency and actual usage
Step - 5 Identify challenges such as skin irritation, difficulty in application, or concerns regarding medication efficacy
Step - 6 Educate the students on best practices, including proper hand hygiene, correct application methods, and avoiding contamination
Step - 7 The student will submit the report after the field visit

Experiential-Learning 9.2 : Therapeutic application of *kattu*

Total activity hours (5 hours)
Case-Based Learning (CBL) (2 hours)
The student will perform pre-procedure steps, including material selection, herb preparation, and patient assessment. They will execute the bandaging technique and discuss the therapeutic outcomes, making necessary adjustments based on the patient's response.
Problem-Based Learning (PBL) (2 hours)
The student will present a problem where the Kattu application is complicated by factors such as joint mobility or fragile skin. They will be encouraged to brainstorm solutions, including alternative materials, binding techniques, or precautions for sensitive areas. Their plans will be evaluated, and the clinical feasibility of their solutions will be discussed.
Group Discussion (GD) (1 hours)
Students will be divided into groups to discuss the Kattu procedure, proper application techniques, bandage tension, and post-procedure care. They will reflect on their experience, focusing on areas for improvement and patient feedback.

Experiential-Learning 9.3 : Therapeutic application of *patru*

Total activity hours (6 hours)
Case based learning(CBL) (2 hours)
Present a patient with symptoms requiring poultice therapy. Discuss the choice of herbs, the application technique, and the expected therapeutic benefits.
Problem solving method(PSM) (2 hours)
Provide a scenario where poultice therapy may need adjustments for specific patient conditions (e.g., skin sensitivity or allergies). Have students develop a modified treatment plan considering these challenges.

Demonstration Bed (1 hour)
Demonstrate the full process of poultice application, from preparation to post-procedure care, emphasizing proper placement and monitoring.
Demonstration Lab (1 hour)
Allow students to practice preparing and applying the poultice under supervision, providing feedback on their technique, consistency, and patient comfort during the procedure.

Experiential-Learning 9.4 : Therapeutic application of *poochu*

Total activity hour (5 hours)
Case-Based Learning (CBL) (3 hours)
Patient Assessment & Scenario Introduction
Introduce a scenario and guide students in evaluating the patient's condition to select the appropriate Poochu.
Poochu Selection & Preparation
Discuss how to choose and prepare the correct Poochu for the patient’s needs.
Poochu Administration & Safety
Demonstrate and guide students on applying Poochu, focusing on patient comfort and therapy duration.
Demonstration Bedside(2 Hours)
Application Technique
Demonstrate how to apply Poochu evenly using cotton, fabric, or sponge on a demonstration bed.

Experiential-Learning 9.5 : Therapeutic application of *kalimbu*

Total activity hour (5 hours)
Case-Based Learning(2 hours): Present a case where Kalimbu is indicated, highlighting patient symptoms and therapeutic needs. Select correct medicinal preparations and apply them, focusing on patient safety.
Demonstration lab(2 hour)
Preparation of kalimbu
Test effectiveness on cultures or prepared skin models to observe its effect on bacteria, healing, or inflammation.
Record observations and compare results with control treatments. Discuss data and conclude its efficacy.
Discussion(1 hour):
Post-Demo Reflection: After the lab and application demo, hold a group discussion about the experience.
Critical Thinking: Discuss scenarios where Kalimbu could be used, its advantages, and limitations. Encourage students to ask questions and propose modifications or

improvements.

Modular Assessment

Assessment method	**Hour**
Instructions: Conduct a structured modular assessment. Assessment will be 50 marks. Keep 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. SLAQ (Structured Long Answer Questions) – 30 Marks Three long answer questions will be constructed from the topics covered in the module, each carrying 10 marks. Criteria for Evaluation: Detailed Explanations: Providing clear and comprehensive explanations with relevant examples, where applicable. Content Quality: Demonstrating deep understanding of the topic with relevant details. Presentation: Organizing ideas logically, using proper grammar and formatting. Critical Analysis: Offering a critical perspective and evaluating different aspects of the subject matter. 2. Quiz Structure – 20 Marks Team-based Structure: Students will be divided into teams (maximum of 3 members per team). Time will be allocated for each question. Post-quiz Discussion: After completing the quiz, all unanswered or wrongly answered questions will be discussed as a group. Question Types: Multiple Choice Questions (MCQs): These will test students' ability to recall key concepts and assess their depth of knowledge. Definitions: These will help gauge the student's understanding of important terms and concepts. Or Any practical in converted form can be taken for assessment.(25 marks) and Any of the experiential as portfolios/reflections/presentations can be taken as an assessment.(25 marks)	4

Module 10 : Siddha topical application I

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

Describe traditional healing practices centered on " *seelai, varthi, pasai, kali, podi* and *neer*

Apply the *mukkutra iyal*, principles, and therapeutic applications.
Describe the preparation of medicine and application of techniques
Identify the importance, contraindications, and complications associated with each practice.

M 10 Unit 1 Seelai (Medicated gauze)

10.1.1 Introduction 10.1.2 *Mukkutra iyal* 10.1.3 Mechanism/principles 10.1.4 Materials and Equipment 10.1.5 Medicinal preparation 10.1.6 Therapeutic application 10.1.7 Procedure 10.1.8 Importance 10.1.9 Contraindication 10.1.10 Complications 10.1.11 Recent advances

References: 9,10,18,19,195,196,197,198,199,200,201,202,203,204,205,206,207,208,209

3A	3B	3C	3D	3E	3F	3G
CO1,CO2,CO3,CO6,CO7,CO8	Describe the Introduction,application of mukkutra iyal, Mechanism/principles,Materials and Equipment used for Seelai	1	Lecture	CC	Knows-how	L&PPT , D-M,L&GD
CO1,CO2,CO3,CO6,CO7,CO8	Demonstrate the Medicinal preparation and Therapeutic application of *Seelai*	4	Practical Training 10.1	PSY-GUD	Shows-how	DL,D-BED,TBL,SIM,CBL
CO1,CO2,CO3,CO6,CO7,CO8	Conduct the Medicinal preparation used for Seelai and Therapeutic application of Seelai	5	Experiential-Learning 10.1	AFT-RES	Does	CBL,PBL
CO1,CO2,CO3,CO6,CO7,CO8	Analyse the Importance, Contraindication,Complications and Recent advances in seelai	1	Lecture	CAN	Knows-how	BS,SDL

M 10 Unit 2 Kaaram & Varthi (Medicated wick & Chemical cautery)

10.2.1 Introduction 10.2.*2 Mukkutra iyal* 10.2.3 Mechanism/principles 10.2.4 Materials and Equipment 10.2.5 Medicinal preparation 10.2.6 Therapeutic application 10.2.7 Procedure 10.2.8 Importance 10.2.9 Contraindication 10.2.10 Complications 10.2.11 Recent advances

References: 9,10,18,19,196,197,198,199,200,201,202,203,204,205,206,207,208,209

3A	3B	3C	3D	3E	3F	3G
CO1,CO2,CO3,CO6,CO7,CO8	Discuss the Introduction,application of mukkutra iyal, Mechanism/ principles,Materials and Equipment used for Kaaram,Varthi	1	Lecture	CC	Knows-how	PL,L&GD,L&PPT
CO1,CO2,CO3,CO6,CO7,CO8	Demonstrate the Medicinal preparation and Therapeutic application of *Kaaram*	2	Practical Training 10.2	PSY-GUD	Shows-how	DL,SIM,CBL
CO1,CO2,CO3,CO6,CO7,CO8	Demonstrate the Medicinal preparation and therapeutic application of varthi	2	Practical Training 10.3	PSY-GUD	Shows-how	DL,SIM,D-BED,TBL
CO1,CO2,CO3,CO6,CO7,CO8	Conduct the Medicinal preparation and application of kaaram and varthi	5	Experiential-Learning 10.2	AFT-RES	Does	PBL,CBL
CO1,CO2,CO3,CO6,CO7,CO8	Analyse the Importance, Contraindication,Complications and Recent advances in *Kaaram,Varthi*	1	Lecture	CAN	Knows-how	BS,TBL,L&PPT

M 10 Unit 3 Pasai (Cream)

10.3.1 Introduction 10.3.2 *Mukkutra iyal* 10.3.3 Mechanism/principles 10.3.4 Materials and Equipment 10.3.5 Procedure 10.3.6 Importance 10.3.7 Therapeutic application 10.3.8 Contraindication 10.3.9 Complications 10.3.10 Recent advances

References: 9,10,18,19,196,197,198,199,200,201,202,203,204,205,206,207,208,209

3A	3B	3C	3D	3E	3F	3G
CO1,CO2,CO3,CO6,CO7,CO8	Discuss the Introduction,mukkutra iyal,Mechanism/principles and Materials and Equipment used for Pasai	1	Lecture	CC	Knows-how	L&PPT,L&GD
CO1,CO2,CO3,CO6,CO7,CO8	Demonstrate the Medicinal preparation and Therapeutic application of *Pasai*	4	Practical Training 10.4	PSY-GUD	Shows-how	DL,SIM,TBL,D-BED,CBL
CO1,CO2,CO3,CO6,CO7,CO8	Conduct the Medicinal preparation and Therapeutic application of Pasai	6	Experiential-Learning 10.3	AFT-RES	Does	D-BED,CBL
CO1,CO2,CO3,CO6,CO7,CO8	Describe the clinical relevance, contraindications, potential complications, and recent advancements in Pasai as practiced in siddha medicine.	1	Lecture	CC	Knows-how	L_VC,L&PPT

M 10 Unit 4 kali (Paste)

10.4.1 Introduction 10.4.2 *Mukkutra iyal* 10.4.3 Mechanism/principles 10.4.4 Materials and Equipment 10.4.5 Procedure 10.4.6 Importance 10.4.7 Therapeutic application 10.4.8 Contraindication 10.4.9 Complications 10.4.10 Recent advances

References: 9,10,18,19,196,197,198,199,200,201,202,203,204,205,206,207,208,209

3A	3B	3C	3D	3E	3F	3G
CO1,CO2,CO3,CO6,CO7,CO8	Describe the introduction, therapeutic applications based on Mukkutra Iyal, underlying principles, and the materials and equipment used in Kali therapy	1	Lecture	CC	Knows-how	PER,L&PPT
CO1,CO2,CO3,CO6,CO7,CO	Demonstrate the Medicinal preparation and Therapeutic application of *Kali*	4	Practical Training 10.5	PSY-GUD	Shows-how	SIM,CBL,D-

8						BED,DL
CO1,CO2,CO3,CO6,CO7,CO8	Conduct the Medicinal preparation and Therapeutic application of Kali	5	Experiential-Learning 10.4	AFT-RES	Does	CBL,D-BED,RLE
CO1,CO2,CO3,CO6,CO7,CO8	Analyse the Importance, Contraindication,Complications and Recent advances in Kali	1	Lecture	CAN	Knows-how	L&GD,SDL,L&PPT

M 10 Unit 5 Podi and Neer (Powder & Medicated liquid)

10.5.1 Introduction 10.5.2 *Mukkutra iyal* 10.5.3 Mechanism/principles 10.5.4 Materials and Equipment 10.5.5 Medicinal preparation 10.5.6 Therapeutic application 10.5.7 Procedure 10.5.8 Importance 10.5.9 Contraindication 10.5.10 Complications 10.5.11 Recent advances

References: 9,10,18,19,120,125,195,196,197,198,199,200,201,202,203,204,205,206,207,208,209

3A	3B	3C	3D	3E	3F	3G
CO1,CO2,CO3,CO6,CO7,CO8	Describe the introduction, therapeutic application based on Mukkutra Iyal, underlying principles, and the materials and equipment used in Podi and Neer therapies in Siddha medicine.	1	Lecture	CC	Knows-how	L&GD,L&PPT,L_VC
CO1,CO2,CO3,CO6,CO7,CO8	Demonstrate the Medicinal preparation and Therapeutic application of podi and Neer	4	Practical Training 10.6	PSY-GUD	Shows-how	CBL,D-BED,DL,SIM
CO1,CO2,CO3,CO6,CO7,CO8	Conduct the Medicinal preparation and Therapeutic application of *podi, Neer*	5	Experiential-Learning 10.5	AFT-RES	Does	D-BED,CBL
CO1,CO2,CO3,CO6,CO7,CO8	Analyse the Importance, Contraindication,Complications and recent advances in podi, Neer	1	Lecture	CAN	Knows-how	BS,L&PPT

Practical Training Activity
Practical Training 10.1 : Medicinal preparation and therapeutic application of *Seelai*
Total learning hours (4 Hours) Case based learning, Demonstration bed and Demonstration lab(3 hours) Step 1-The teacher will guide the student in preparing materials required for Seelai Step 2 -The teacher will assess and explain the case scenario to the students Step 3 - The teacher will guide the students to select ingredients and prepare medicine for Seelai Step 4 - The teacher will demonstrate the pre-treatment procedure for patient Step 5 - The teacher will demonstrate the application of Seelai Step 6 - The teacher will demonstrate the post-therapeutic care of patient Step 7 - The teacher will discuss the application of patru for various conditions Simulation and Team based learning(1 hour) Step 1 - Students will be divided into groups and perform different medicinal preparations used in Seelai Step 2 - Students will be divided into groups and perform application of Seelai in mannequins Step 3 - The teacher will observe the students performance and document it
Practical Training 10.2 : Medicinal preparation and therapeutic application of *Kaaram*
Total learning hours (2 Hours) Case based learning and Demonstration lab(1 hour) Step 1-The teacher will guide the student in preparing materials required for Kaaram Step 2 -The teacher will assess and explain the case scenario to the students Step 3 - The teacher will guide the students to select ingredients and prepare medicine for Kaaram Step 4 - The teacher will demonstrate the pre-treatment procedure for patient Step 5 - The teacher will demonstrate the application of Kaaram Step 6 - The teacher will demonstrate the post-therapeutic care of patient Step 7 - The teacher will discuss the application of Kaaram for various conditions Simulation(1 hour) Step 1 - Students will be divided into groups and perform different medicinal preparations used in Kaaram Step 2 - Students will be divided into groups and perform application of Kaaram in mannequins Step 3 - The teacher will observe the students performance and document it

Practical Training 10.3 : Medicinal preparation and therapeutic application of *Varthi*

Total learning hours (2 Hours)
Demonstration bed and Demonstration lab(1 hour)
Step 1-The teacher will guide the student in preparing materials required for Varthi
Step 2 -The teacher will assess and explain the case scenario to the students
Step 3 - The teacher will guide the students to select ingredients and prepare medicine for Varthi
Step 4 - The teacher will demonstrate the pre-treatment procedure for patient
Step 5 - The teacher will demonstrate the application of Varthi
Step 6 - The teacher will demonstrate the post-therapeutic care of patient
Step 7 - The teacher will discuss the application of Varthi for various conditions
Simulation and Team based learning(1 hour)
Step 1 - Students will be divided into groups and perform different medicinal preparations used in Varthi
Step 2 - Students will be divided into groups and perform application of Varthi in mannequins
Step 3 - The teacher will observe the students performance and document it

Practical Training 10.4 : Medicinal preparation and therapeutic application of *Pasai*

Total learning hours (4 Hours)
Case based learning, Demo bed, Demo lab (3 hours)
Step 1-The teacher will guide the student in preparing materials required for Pasai
Step 2 -The teacher will assess and explain the case scenario to the students
Step 3 - The teacher will guide the students to select ingredients and prepare medicine for Pasai
Step 4 - The teacher will demonstrate the pre-treatment procedure for patient
Step 5 - The teacher will demonstrate the application of Pasai
Step 6 - The teacher will demonstrate the post-therapeutic care of patient
Step 7 - The teacher will discuss the application of pasai for various conditions
Simulation and Team based learning(1 hour)
Step 1- Students will be divided into groups and perform different medicinal preparations used in Pasai
Step 2 - Students will be divided into groups and perform application of Pasai in mannequins
Step 3 - The teacher will observe the students performance and document it

Practical Training 10.5 : Medicinal preparation and therapeutic application of *Kali*

Total learning hours (4 hours)
Case based learning (3 hours)
Step 1-The teacher will guide the student in preparing materials required for Kali
Step 2 -The teacher will assess and explain the case scenario to the students
Step 3 - The teacher will guide the students to select ingredients and prepare medicine for Kali
Step 4 - The teacher will demonstrate the pre-treatment procedure for patient
Step 5 - The teacher will demonstrate the application of Kali
Step 6 - The teacher will demonstrate the post-therapeutic care of patient
Step 7 - The teacher will discuss the application of Kali for various conditions
Simulation (1 hour)
Step 1 - Students will be divided into groups and perform different medicinal preparations used in Kali
Step 2 - Students will be divided into groups and perform application of Kali in mannequins
Step 3 - The teacher will observe the students performance and document it

Practical Training 10.6 : Medicinal preparation and therapeutic application of podi and Neer

Total learning hours (4 hours)
Case based learning, demo bed, Demo lab (3 Hours)
Step 1-The teacher will guide the student in preparing materials required for podi and neer
Step 2 -The teacher will assess and explain the case scenario to the students
Step 3 - The teacher will guide the students to select ingredients and prepare medicine for podi and neer
Step 4 - The teacher will demonstrate the pre-treatment procedure for patient
Step 5 - The teacher will demonstrate the application of podi and neer
Step 6 - The teacher will demonstrate the post-therapeutic care of patient
Step 7 - The teacher will discuss the application of podi and neer for various conditions
Simulation (1 hour)
Step 1 - Students will be divided into groups and perform different medicinal preparations used in podi and neer
Step 2- Students will be divided into groups and perform application of podi and neer in mannequins
Step 3 - The teacher will observe the students performance and document it

Experiential learning Activity

Experiential-Learning 10.1 : Therapeutic application of *Seelai*
Total activity hours (5 hours) Case-Based Learning(CBL) (3 hours): Present a case where Seelai is indicated, highlighting patient symptoms and therapeutic needs. Select correct medicinal preparations and apply them, focusing on patient safety. Problem-Based Learning (PBL) (2 hours): Pose a problem where Seelai application is complicated by factors like joint mobility or fragile skin.Encourage students to brainstorm solutions, such as alternative materials, binding techniques, or precautions for sensitive areas.Evaluate their plans and discuss their clinical feasibility.
Experiential-Learning 10.2 : Therapeutic application of *varthi and kaaram*
Total activity hours (5 hours) Case-Based Learning(CBL) (3 hours) Present a case where Varthi, Kaaram is indicated, highlighting patient symptoms and therapeutic needs. Select correct medicinal preparations and apply them, focusing on patient safety. Problem-Based Learning (PBL) (2 hours): Pose a problem where Varthi, Kaaram application is complicated. Encourage students to brainstorm solutions, such as alternative materials, binding techniques, or precautions for sensitive areas. Evaluate their plans and discuss their clinical feasibility
Experiential-Learning 10.3 : Therapeutic application of *Pasai*
Total activity hours (6 hours) Case-Based Learning (CBL) (3 hours) Present a case where Pasai is indicated, highlighting patient symptoms and therapeutic needs. Select correct medicinal preparations and apply them, focusing on patient safety. Demo Bed (Demonstration on a Simulation Bed or Model)(3 hours): Create a simulated patient setup, such as a wound or muscle strain on a model or volunteer. Apply Pasai ointment on the wound or affected area properly. Ensure proper hygiene and techniques.
Experiential-Learning 10.4 : Therapeutic application of *Kali*

Total activity hours (5 hours)
Case-Based Learning(CBL)(2 hours)
Present a case where Pasai is indicated, highlighting patient symptoms and therapeutic needs. Select correct medicinal preparations and apply them, focusing on patient safety.
Demo Bed (Demonstration on a Simulation Bed or Model)(2 hours): Create a simulated patient setup, such as a wound or muscle strain on a model or volunteer. Apply Pasai ointment on the wound or affected area properly. Ensure proper hygiene and techniques.
Real-Life Experience (RLE)(1 hour):Have students perform the full Kali procedure.Emphasize correct application techniques and post-procedure care.Reflect on their experience, focusing on areas of improvement and patient feedback.

Experiential-Learning 10.5 : Therapeutic application of *Podi and Neer*

Total activity hours (5 hours)
Case-Based Learning(CBL)(3 hours)
Present a case where Podi,Neer is indicated, highlighting patient symptoms and therapeutic needs. Select correct medicinal preparations and apply them, focusing on patient safety.
Demonstration Bedside (Demonstration on a Simulation Bed or Model)(2 hours)
Create a simulated patient setup, such as a wound or muscle strain on a model or volunteer. Apply Podi, Neer on the wound or affected area properly. Ensure proper hygiene and techniques.

Modular Assessment

Assessment method	**Hour**
Instructions: Conduct a structured modular assessment. Assessment will be 50 marks. Keep structured marking pattern. Use different assessment methods in each module for the semester. Keep a record of the structured pattern used for assessment. Calculate the modular grade point as per table 6c. 1. Objective Structured Practical Examination (OSCE) - 50 Marks Overview: The OSCE consists of a set of practical stations where students perform tasks related to clinical skills. Each station is designed to assess different aspects of practical clinical practice. Components: Station 1: Patient History Taking – 10 Marks Station 2: Physical Examination – 10 Marks Station 3: Diagnostics and Interpretation – 10 Marks Station 4: Professional Behavior (Ethics, Communication) – 10 Marks	4

Station 5: Procedural Skill (e.g., setting up a medical device, conducting a clinical test) – 10 Marks
Or
Any practical in converted form can be taken for assessment.(25 marks)
and
Any of the experiential as portfolios/reflections/presentations can be taken as an assessment.(25 marks)

Semester No : 4

Module 11 : Nasal, Ophthalmic and Auricular application

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

Apply the techniques of *nasiyam, nasikabaranam, oothal, mai* and *kalikkam* for various conditions
Analyze the *Mukkutra Iyal* principles and therapeutic applications.
Develop the materials and equipment relevant to each practice.
Evaluate the importance, contraindications, and complications associated with each practice.

M 11 Unit 1 Nasiyam (Nasal drop)

11.1.1 Introduction 11.1.2 *Mukkutra iyal* 11.1.3 Mechanism/principles 11.1.4 Materials and Equipment 11.1.5 Medicinal preparation 11.1.6 Therapeutic application 11.1.7 Procedure 11.1.8 Importance 11.1.9 Contraindication 11.1.10 Complications 11.1.11 Recent advances in *Nasiyam*

References: 9,10,18,19,120,125,195,196,197,198,199,200,201,202,203,204,205,206,207,208,209

3A	3B	3C	3D	3E	3F	3G
CO1,CO2,CO3,CO6,CO7,CO8	Discuss the Introduction,application of mukkutra iyal, Mechanism/principles and Materials and Equipment used for Nasiyam	2	Lecture	CC	Knows-how	L_VC,L&PPT

CO1,CO2,CO3,CO6,CO7,CO8	Demonstrate the Medicinal preparation and Therapeutic application of *Nasiyam*	6	Practical Training 11.1	PSY-GUD	Shows-how	CBL,JC,D-BED,TBL,SIM
CO1,CO2,CO3,CO6,CO7,CO8	Conduct the Medicinal preparation and Therapeutic application of *Nasiyam*	8	Experiential-Learning 11.1	AFT-RES	Does	CBL,D-BED,PBL
CO1,CO2,CO3,CO6,CO7,CO8	Analyse the Importance,Contraindication,Complications and Recent advances in Nasiyam	1	Lecture	CAN	Knows-how	L&GD,BS,L&PPT

M 11 Unit 2 Nasikabaranam (Insufflation)

11.2.1 Introduction 11.2.2 *Mukkutra iyal* 11.2.3 Mechanism /principles 11.2.4 Materials and Equipment 11.2.5 Medicinal preparation 11.2.6 Therapeutic application 11.2.7 Procedure 11.2.8 Importance 11.2.9 Contraindication 11.2.10 Complications 11.2.11 Recent advances/ Insuflation technique

References: 9,10,18,19,120,125,195,196,197,198,199,200,201,202,203,204,205,206,207,208,209

3A	3B	3C	3D	3E	3F	3G
CO1,CO2,CO3,CO6,CO7,CO8	Describe Introduction,application of mukkutra iyal, Mechanism/principles, Materials and Equipment used for Nasigabaranam	2	Lecture	CC	Knows-how	PL,SDL,L&PPT
CO1,CO2,CO3,CO6,CO7,CO8	Demonstrate the Medicinal preparation and Therapeutic application of *Nasigabaranam*	6	Practical Training 11.2	PSY-GUD	Shows-how	CBL,D-BED,SIM,DL,TBL
CO1,CO2,CO3,CO6,CO7,CO8	Conduct the Medicinal preparation and Therapeutic application of *Nasigabaranam*	8	Experiential-Learning 11.2	AFT-RES	Does	D-BED,TUT,PBL,CBL
CO1,CO2,CO3	Analyse the Importance, Contraindication,Complications and Recent advances in	1	Lecture	CAN	Knows-	L&GD,L

,CO6,CO7,CO8	*Nasigabaranam*				how	&PPT

M 11 Unit 3 Oodhal (Blowing)

11.3.1 Introduction 11.3.2 *Mukkutra iyal* 11.3.3 Mechanism/principles 11.3.4 Materials and Equipment 11.3.5 Procedure 11.3.6 Importance 11.3.7 Therapeutic application 11.3.8 Contraindication 11.3.9 Complications 11.3.10 Recent advances/ Blowing techinique

References: 9,10,18,19,120,125,195,196,197,198,199,200,201,202,203,204,205,206,207,208,209

3A	3B	3C	3D	3E	3F	3G
CO1,CO2,CO3,CO6,CO7,CO8	Describe Introduction,application of mukkutra iyal, Mechanism/principle Materials and Equipment,Importance, Contraindication,Complications and Recent advances in Oodhal	1	Lecture	CC	Knows-how	L&GD,L&PPT,ML
CO1,CO2,CO3,CO6,CO7,CO8	Demonstrate the Medicinal preparation and Therapeutic application of *Oodhal*	2	Practical Training 11.3	PSY-GUD	Shows-how	DL,CBL
CO1,CO2,CO3,CO6,CO7,CO8	Conduct the Medicinal preparation and Therapeutic application of *Oodhal*	2	Experiential-Learning 11.3	AFT-RES	Does	CBL

M 11 Unit 4 Mai,Kalikkam (Collyrium & Eye drop)

11.4.1 Introduction 11.4.2 *Mukkutra iyal* 11.4.3 Mechanism/principles 11.4.4 Materials and Equipment 11.4.5 Medicinal preparation 11.4.6 Therapeutic application 11.4.7 Procedure 11.4.8 Importance 11.4.9 Contraindication 11.4.10 Complications 11.4.11 Recent advances

References: 9,10,18,19,120,125,195,196,197,198,199,200,201,202,203,204,205,206,207,208,209

3A	3B	3C	3D	3E	3F	3G
CO1,CO2,CO3	Describe the Introduction,application of mukkutra iyal and Mechanism/principles,	2	Lecture	CC	Knows-	L&GD,L

,CO6,CO7,CO8	Materials and Equipment				how	&PPT
CO1,CO2,CO3,CO6,CO7,CO8	Demonstrate the Medicinal preparation and Therapeutic application of *Mai,Kalikkam*	6	Practical Training 11.4	PSY-GUD	Shows-how	D-BED,CBL,SIM,DL
CO1,CO2,CO3,CO6,CO7,CO8	Conduct the Medicinal preparation and Therapeutic application of *Mai,Kalikkam*	8	Experiential-Learning 11.4	AFT-RES	Does	CBL,PBL,D-BED
CO1,CO2,CO3,CO6,CO7,CO8	Analyse the Importance, Contraindication, Complications and Recent advances in Mai,Kalikkam	1	Lecture	CAN	Knows-how	BS,L&GD,SDL

Practical Training Activity

Practical Training 11.1 : Medicinal preparation and Therapeutic application of *Nasiyam*

Total learning hours (6 Hours)
Case based learning, Demonstration bedside and Demonstration lab (3 hours)
Step 1-The teacher will guide the student in preparing materials required for Nasiyam
Step 2 -The teacher will assess and explain the case scenario to the students
Step 3 -The teacher will interpret the lab report
Step 4 - The teacher will guide the students to select ingredients and prepare medicine for Nasiyam
Step 5 - The teacher will demonstrate the pre-treatment procedure for patient
Step 6 - The teacher will demonstrate the application of Nasiyam
Step 7 - The teacher will demonstrate the post-therapeutic care of patient
Step 8 - The teacher will discuss the application of Nasiyam for various conditions
Team based learning and Simulation(2 hours)
Step 1 - Students will be divided into groups and perform different medicinal preparations used in Nasiyam
Step 2 - Students will be divided into groups and perform application of Nasiyam in patient
Step 3 - Students will be divided into groups and perform application of Nasiyam within groups
Step 4 - The teacher will observe the students performance and document it

Journal club (1 Hour)
The teacher will instruct the student to select the article, clinical study or book relevant to Nasiyam and summarise the choosen article.Then relate the findings to real world practise.Open the floor for question and clarify the doubts.

Practical Training 11.2 : Medicinal preparation and Therapeutic application of *Nasigabaranam*

Total learning hours (6 Hours)
Case based learning, Demonstration bedside and Demonstration lab(3 hours)
Step 1-The teacher will guide the student in preparing materials required for Nasigabaranam
Step 2 -The teacher will assess and explain the case scenario to the students
Step 3 -The teacher will interpret the lab report
Step 4 - The teacher will guide the students to select ingredients and prepare medicine for Nasigabaranam
Step 5 - The teacher will demonstrate the pre-treatment procedure for patient
Step 6 - The teacher will demonstrate the application of Nasigabaranam
Step 7 - The teacher will demonstrate the post-therapeutic care of patient
Step 8 - The teacher will discuss the application of Nasigabaranam for various conditions
Team based learning, Simulation(2 hours)
Step 1 - Students will be divided into groups and perform different medicinal preparations used in Nasigabaranam
Step 2 - Students will be divided into groups and perform application of Nasigabaranam in patient
Step 3 - Students will be divided into groups and perform application of Nasigabaranam within groups
Step 4 - The teacher will observe the students performance and document it
Journal club (1 Hour)
The teacher will instruct the student to select the article, clinical study or book relevant to Nasigabaranam and summarise the choosen article.Then relate the findings to real world practise.Open the floor for question and clarify the doubts.

Practical Training 11.3 : Medicinal preparation and Therapeutic application of *Oodhal*

Total learning hours (2 Hours)
Case based learning, Demonstration lab(1 hour 30 minutes)
Step 1-The teacher will guide the student in preparing materials required for Oodhal
Step 2 -The teacher will assess and explain the case scenario to the students
Step 3 - The teacher will guide the students to select ingredients and prepare medicine for Oodhal
Step 4 - The teacher will demonstrate the pre-treatment procedure for patient

Step 5 - The teacher will demonstrate the application of Oodhal
Step 6 - The teacher will demonstrate the post-therapeutic care of patient
Step 7 - The teacher will discuss the application of Oodhal for various conditions
team based learning (30 minutes)
Step 1 - Students will be divided into groups and perform different medicinal preparations used in Oodhal
Step 2 -The teacher will observe the students performance and document it

Practical Training 11.4 : Demonstrate the Medicinal preparation and Therapeutic application of *Mai,Kalikkam*

Total learning hours (6 Hours)
Case based learnig, Demonstration bedside and Demonstration lab(4 Hours)
Step 1-The teacher will guide the student in preparing materials required for Mai,Kalikkam
Step 2 -The teacher will assess and explain the case scenario to the students
Step 3 - The teacher will guide the students to select ingredients and prepare medicine for Mai,Kalikkam
Step 4 - The teacher will demonstrate the pre-treatment procedure for patient
Step 5 - The teacher will demonstrate the application of Mai,Kalikkam
Step 6 - The teacher will demonstrate the post-therapeutic care of patient
Step 7 - The teacher will discuss the application of Mai,Kalikkam for various conditions
Simulation(2 hours)
Step 1 - Students will be divided into groups and perform different medicinal preparations used in Mai,Kalikkam
Step 2 - Students will be divided into groups and perform application of Mai,Kalikkam in mannequins
Step 3 - The teacher will observe the students performance and document it

Experiential learning Activity

Experiential-Learning 11.1 : Therapeutic application of *Nasiyam*

Total activity hour (8 hours)
Case-Based Learning(CBL) (3 hours)
Present a case where Nasiyam is indicated, highlighting patient symptoms and therapeutic needs. Select correct medicinal preparations and apply them, focusing on patient safety.
Demo Bed (Demonstration on a Simulation Bed or Model)(3 hours)
Create a simulated patient setup, such as a model or volunteer. Apply Nasiyam at affected area properly. Ensure proper hygiene and techniques.

Problem-Based Learning (PBL) (2 hours)
Pose a problem where Nasiyam application is complicated by factors.Encourage students to brainstorm solutions, such as alternative materials or precautions for sensitive areas.Evaluate their plans and discuss their clinical feasibility.

Experiential-Learning 11.2 : Therapeutic application of *Nasigabaranam*

Total activity hours (8 hours)
Case-Based Learning (CBL) (3 hours)
Present a case where Nasigabaranam is indicated, highlighting patient symptoms and therapeutic needs. Guide students in selecting the correct medicinal preparations and applying them, with an emphasis on patient safety.
Demo Bed (Demonstration on a Simulation Bed or Model) – 2 hours
Set up a simulated patient scenario using a model or volunteer. Demonstrate the proper application of Nasigabaranam on the affected area, ensuring hygiene and correct techniques are followed throughout the procedure.
Problem-Based Learning (PBL) – 2 hours
Present a scenario where the application of Nasigabaranam is complicated by various factors. Encourage students to brainstorm solutions, such as using alternative materials or taking precautions for sensitive areas. Evaluate their proposed plans and discuss the clinical feasibility of each.
Tutorial – 1 hour
Introduce the therapeutic application of Nasigabaranam, including its benefits, preparation, and administration. Discuss patient safety, potential side effects, and monitoring. Provide a brief practice session where students can engage in applying Nasigabaranam with guidance and feedback.

Experiential-Learning 11.3 : Therapeutic application of *Oodhal*

Total activity hours (2 hours)
Case-Based Learning(CBL)
Present a case where Oodhal is indicated, highlighting patient symptoms and therapeutic needs. Select correct medicinal preparations and apply them, focusing on patient safety.

Experiential-Learning 11.4 : Therapeutic application of *Mai,Kalikkam*

Total activity hours (8 hours)
Case-Based Learning(CBL)(3 hours)
Present a case where Mai,Kalikkam is indicated, highlighting patient symptoms and therapeutic needs. Select correct medicinal preparations and apply them, focusing on patient safety.

Demo Bed (Demonstration on a Simulation Bed or Model)(3 hours):
Create a simulated patient setup, such as a model or volunteer. Apply Mai,Kalikkam ointment on the wound or affected area properly. Ensure proper hygiene and techniques.
Problem-Based Learning (PBL)(2 hours)
Pose a problem where Mai,Kalikkam application is complicated by factors.Encourage students to brainstorm solutions, such as alternative materials or precautions for sensitive areas.Evaluate their plans and discuss their clinical feasibility.

Modular Assessment

Assessment method	**Hour**
Instructions: Conduct a structured modular assessment. Assessment will be 50 marks. Keep 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. Multiple-choice question (MCQ) - 20 Marks Topic 1 (e.g., Basics) - 5 questions x 1 mark each = 5 marks Topic 2 (e.g., Intermediate) - 8 questions x 1 mark each = 8 marks Topic 3 (e.g., Advanced) - 7 questions x 1 mark each = 7 marks 2. Clinical Work Sampling: 5 Marks Clinical Documentation: 3 Marks Clinical Competence and Professionalism: 2 Marks 3. Class Presentation: 5 Marks Content and Structure: 3 Marks Delivery and Engagement: 2 Marks 4. Interaction: 5 Marks Communication and Collaboration: 3 Marks Professionalism: 2 Marks 5. Online Quiz: 5 Marks Knowledge and Accuracy: 5 Marks 6. Practical Role Play: 5 Marks Role Play Execution: 3 Marks Professionalism and Ethical Conduct: 2 Marks 7. Puzzles: 5 Marks Problem-Solving and Application: 5 Marks	4

Or
Any practical in converted form can be taken for assessment.(25 marks)
And
Any of the experiential as portfolios/reflections/presentations can be taken as an assessment.(25 marks)

Module 12 : Bloodletting and bone setting techniques

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

Describe in-depth Knowledge focusing on *kuruthivaangal, murichal, attaividal* (leech therapy), *urinjal* and *kombukattal.*
Evaluate the application of mukkutra iyal in traditional therapeutic practices, highlighting their principles and mechanisms.
Demonstrate the therapeutic applications and procedural techniques relevant to each topic.
Analyze the importance, contraindications, complications, and recent advances in each therapeutic area.

M 12 Unit 1 Kuruthivaangal &Urinchal (Venesuction & Sucction)

12.1.1 Introduction 12.1.2 *Mukkutra iyal* 12.1.3 Mechanism/principles 12.1.4 Materials and Equipment 12.1.5 Therapeutic application 12.1.6 Procedure 12.1.7 Importance 12.1.8 Contraindication 12.1.9 Complications 12.1.10 Recent advances

References: 10,18,19,125,196,197,198,199,200,201,202,203,204,205,206,207,208,209

3A	3B	3C	3D	3E	3F	3G
CO1,CO2,CO3 ,CO6,CO7	Discuss the Introduction, application of mukkutra iyal, Mechanism/principles and Materials and Equipment used for kuruthivaangal, urinchal	1	Lecture	CC	Knows-how	ML,L&P PT ,L_VC
CO1,CO2,CO3 ,CO6,CO7,CO	Demonstrate the therapeutic application of *kuruthivaangal, urinchal*	2	Practical Training 12.1	PSY-GUD	Shows-how	SIM,CBL

8						
CO1,CO2,CO3,CO6,CO7,CO8	Conduct the therapeutic application of *kuruthivaangal, urinchal*	3	Experiential-Learning 12.1	AFT-RES	Does	PBL,D-BED,CBL
CO1,CO2,CO3,CO6,CO7,CO8	Analyse the Importance, Contraindication,Complications and recent advances in kuruthivaangal, urinchal	1	Lecture	CAN	Knows-how	L&GD,L_VC,SDL

M 12 Unit 2 Attaividal (Leech application)

12.2.1 Introduction 12.2.2 *Mukkutra iyal* 12.2.3 List 12.2.4 Medicinal leech 12.2.5 Mechanism/principles 12.2.6 Materials and Equipment 12.2.7 Therapeutic application 12.2.8 Procedure 12.2.9 Farming 12.2.10 Nutrition 12.2.11 Room set up 12.2.12 Storage 12.2.13 Transport 12.2.14 Importance 12.2.15 Contraindication 12.2.16 Complications 12.2.17 Recent advances

References: 10,18,19,125,196,197,198,199,200,201,202,203,204,205,206,207,208,209

3A	3B	3C	3D	3E	3F	3G
CO1,CO2,CO3,CO6,CO7,CO8	Describe the leech therapy and application of Mukkutra iyal, List of leeches, identify the Medicinal leech, Mechanism of action/principles, Suitable time and person for leech therapy, Material and equipments used for leech therapy	1	Lecture	CC	Knows-how	L&PPT,L&GD
CO1,CO2,CO3,CO6,CO7,CO8	Demonstrate the Therapeutic application and Procedure-pre procedure, main procedure and post procedure, technique for leech biting, disposal of leech	4	Practical Training 12.2	PSY-GUD	Shows-how	CBL,TBL
CO1,CO2,CO3,CO6,CO7,CO8	Conduct the Procedure of attai vidal	5	Experiential-Learning 12.2	AFT-RES	Does	CBL,D-BED
CO1,CO2,CO3,CO6,CO7,CO	Analyse the Importance of Attaividal, Precaution and Contraindication, Complication of leech therapy and Symptoms of excessive blood sucking	1	Lecture	CAN	Knows-how	L&PPT,BS

8						
CO1,CO2,CO3,CO6,CO7,CO8	Describe the Leech farming, nutrition breeding, technique for leech separation, leech therapy room setup, leech handling, transport and storage of leech in hospital set ups	1	Lecture	CC	Knows-how	L&GD
CO1,CO2,CO3,CO6,CO7,CO8	Demonstrate the breeding, nutrition and technique for leech separation	2	Practical Training 12.3	PSY-SET	Shows-how	FV
CO1,CO2,CO3,CO6,CO7,CO8	Conduct the storage of leech in hospital setup	3	Experiential-Learning 12.3	PSY-SET	Does	FV

M 12 Unit 3 Murichal (Bone restructuring)

12.3.1 Introduction 12.3.2 *Mukkutra iyal* 12.3.3 Mechanism/principles 12.3.4 Materials and Equipment 12.3.5 Procedure 12.3.6 Importance 12.3.7 Therapeutic Application 12.3.8 Contraindication 12.3.9 Complications 12.3.10 Recent advances

References: 18,19,120,195,196,197,198,199,200,201,202,203,204,205,206,207,208,209

3A	3B	3C	3D	3E	3F	3G
CO1,CO2,CO3,CO6,CO7,CO8	Discuss the Introduction,application of mukkutra iyal, mechanism/principles,materials and equipment used for *murichal*	1	Lecture	CC	Knows-how	X-Ray,L&PPT,L&GD
CO1,CO2,CO3,CO6,CO7,CO8	Demonstrate the therapeutic application of *Murichal*	5	Practical Training 12.4	PSY-GUD	Shows-how	SIM,CBL,X-Ray
CO1,CO2,CO3,CO6,CO7,CO8	Conduct the therapeutic application of *Murichal*	6	Experiential-Learning 12.4	AFT-RES	Does	X-Ray,CBL,SIM

CO1,CO2,CO3,CO6,CO7,CO8	Analyse the Importance, Contraindication, Complications and Recent advances in Murichal	1	Lecture	CAN	Knows-how	BS,SDL, CBL

M 12 Unit 4 Kombukattal (Fracture splinting)

12.4.1 Introduction 12.4.2 Types 12.4.3 *Mukkutra iyal* 12.4.4 Mechanism/principles 12.4.5 Materials and Equipment 12.4.6 Procedure 12.4.7 Importance 12.4.8 Therapeutic application 12.4.9 Contraindication 12.4.10 Complications 12.4.11 Recent advances

References: 10,18,19,120,195,196,197,198,199,200,201,202,203,204,205,206,207,208,209

3A	3B	3C	3D	3E	3F	3G
CO1,CO2,CO3,CO6,CO7,CO8	Describe Introduction,application of thirithoda theory, Mechanism/principles and Materials and Equipment used for Kombukattal	2	Lecture	CC	Knows-how	X-Ray,L&GD,L&PPT
CO1,CO2,CO3,CO6,CO7,CO8	Demonstrate the Therapeutic application of *Kombukattal*	7	Practical Training 12.5	PSY-GUD	Shows-how	CBL,D-M,SIM
CO1,CO2,CO3,CO6,CO7,CO8	Conduct the Therapeutic application of *Kombukattal*	9	Experiential-Learning 12.5	AFT-RES	Does	SIM,RLE, X-Ray
CO1,CO2,CO3,CO6,CO7,CO8	Analyse the Importance, Contraindication,Complications and recent advances in Kombukattal	1	Lecture	CAN	Knows-how	CBL,L&PPT ,L&GD

Practical Training Activity

Practical Training 12.1 : Therapeutic application of *kuruthivaangal,urinchal*

Total learning hours (2 hours)

Case based learning,Simulation (2 hours)
Students will engage in supervised practice on mannequins or peers for venesuction techniques, emphasizing safety, hygiene, and handling of materials. Students will participate in clinical case scenarios where venesuction is applied.

Practical Training 12.2 : Identification and Therapeutic application of Attai vidal

Total learning hours (4 Hours)
Case based learning(3 hours)
Step 1-The teacher will explain the student about identification of leech and Students will practice handling leeches
Step 2 -The teacher will assess and explain the case scenario to the students
Step 3 - The teacher will demonstrate the pre-treatment procedure for patient
Step 4 - The teacher will demonstrate the application of Attai vidal
Step 5 - The teacher will demonstrate the post-therapeutic care of patient
Step 6 - The teacher will discuss the application of Attai vidal for various conditions
Team based learning(1 hour)
Step 1- Students will be divided into groups and perform application of Attai vidal in a simulated environment on mannequins or peers
Step 2 - The teacher will observe the students performance and document it

Practical Training 12.3 : Breeding, nutrition and technique for leech separation

Total learning hours (2 Hours)
Leech Farm Visit: students will observe a leech farm to learn about breeding and nutrition,Technique for leech separation,Leech therapy room setup,storage and transport,Storage of leech in hospital set ups

Practical Training 12.4 : Therapeutic application of *Murichal*

Total Learning hours(5 hours)
Simulation(1 huor)
Using mannequins or X-ray guided models, students will practice bone restructuring techniques, covering the pre- and post-procedure steps.
Case based learning (2 hours)
Step 1: Introduction and Pre-Procedure Setup
Step 2 - Demonstrate proper sterilization techniques for tools and workspace.
Step 3 -Discuss the importance of infection control and patient safety
Step 4 -Ensure all tools, materials (e.g., bone grafts, syringes, sutures), and imaging systems are ready for use.

Step 5 - Bone Structure Assessment and Imaging
Step 6 - Bone Restructuring Procedure
Step 7 - Post-Procedure Care and Monitoring
X ray Identification(2 hour)
Students will analyze case studies using X-rays and explore complications that arise during Murichal treatment. Review recent advancements in the field and the role of technology in bone restructuring.

Practical Training 12.5 : Demonstrate the Therapeutic application of *Kombukattal*

Total learning hours (7 hours)
Case based learning,Demonstration on model and Simulation(7 hours)
Step 1 -Check for fracture signs (pain, swelling, deformity) and ensure circulation.
Step 2 -Choose a splint long enough to immobilize the joints above and below the fracture pad it for comfort.
Step 3 -Stabilize the limb in its current position without trying to realign it.
Step 4 -Place the splint, immobilize the joints, and secure it with bandages snugly, checking circulation after.
Step 5 -Ensure blood flow is not restricted by checking pulse, warmth, and color.
Step 6 -Elevate the limb if possible and seek medical attention.
Step 7 -Record the splinting procedure and communicate with the patient.

Experiential learning Activity

Experiential-Learning 12.1 : Therapeutic application of *kuruthivaangal, urinchal*

Total activity hours (3 hours)
Hands-on Practice in Venesuction(2 hours)
Students will engage in direct practical learning using venesuction techniques on clinical models of simulation tools.
Case based learning(1 hour)
Small group discussions will focus on clinical cases where venesuction was used, analyzing contraindications and complications through case-based learning (CBL) and hot seat sessions (HOT).

Experiential-Learning 12.2 : Procedure of attai vidal

Total activity hours(5 hours)
Case-Based Learning (CBL)(3 hours)

Introduce a scenario requiring Leech therapy. Examine the patient's condition and select the most suitable Leech. Explore the preparation and administration of the Leech, including the method of application and duration, emphasising patient comfort and safety.
Demonstration Bed (2 hours)
Showcase the Leech procedure using a demonstration bed. Ensure students observe the correct method for Leech application . Offer immediate feedback on students' techniques and the importance of patient comfort during the application process.

Experiential-Learning 12.3 : Storage of leech in hospital setup

Total activity hours (3 hours)
Field visit (3 hours)
Leech Farm Setup Observation: Students will explore and analyze artificial breeding setups for leeches, understanding their nutritional needs and handling.
Field Experience or Simulated Learning: Experiential learning includes setting up a leech therapy room and practicing storage and transport techniques as per hospital protocols.

Experiential-Learning 12.4 : Therapeutic application of *Murichal*

Total activity hours (6 hours)
Case-Based Learning (CBL) (3 hours)
Students will work on case studies as Murichal techniques were applied, analyzing outcomes and procedural variations.
Simulation (2 hours)
Students will conduct hands-on bone restructuring on anatomical models or mannequins, simulating real-world scenarios.
X-ray Identification (1 hour)
Students will practice interpreting X-rays and applying the correct restructuring technique.

Experiential-Learning 12.5 : Therapeutic application of *Kombukattal*

Total activity hours (9 hours)
Simulation (3 hours)
Students will practice fracture splinting techniques on simulated fractures, learning to apply various types of splints.
X-ray Identification(3 hours)
Students will be tasked with identifying fractures on X-rays and determining appropriate splinting methods.
Real life experience(3 hours)
Real-life clinical scenarios will be simulated to help students understand how to handle fractures in emergency situations

Modular Assessment

Assessment method	**Hour**
Instructions: Conduct a structured modular assessment. Assessment will be 50 marks. Keep 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.DOAP (Direct Observation of Clinical Practice) - 50 Marks Overview: In this assessment, the student is observed while performing clinical tasks or during patient interactions. A structured observation checklist is used to evaluate their clinical skills, decision-making ability, and professional behavior in a real-world context. Components: Clinical Skills (e.g., history taking, physical examination) – 25 Marks Decision-Making and Critical Thinking – 15 Marks Professionalism (e.g., communication, ethics, teamwork) – 10 Mark Or Any practical in converted form can be taken for assessment.(25 marks) And Any of the experiential as portfolios/reflections/presentations can be taken as an assessment (25 marks)	4

Semester No : 5

Module 13 : Physical therapy and Heat therapy I

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

Develop the *mukkutra iyal* and instruments used for physical and heat therapy
Demonstrate the techniques and application of *podithimirthal, vedhu, pottanam* and *suttigai*
Analyze the importance, contraindications, complications, and recent advances in each therapeutic area.

M 13 Unit 1 Podithimirthal (Powder manipulation)

13.1.1 Introduction 13.1.2 *Mukkutra iyal* 13.1.3 Mechanism/principles 13.1.4 Materials and Equipment 13.1.5 Procedure 13.1.6 Importance 13.1.7 Therapeutic Application 13.1.8 Contraindication 13.1.9 Complications 13.1.10 Recent advances

References: 9,10,11,14,18,19,120,195,196,197,198,199,200,201,202,203,204,205,206,207,208,209

3A	3B	3C	3D	3E	3F	3G
CO1,CO2,CO3,CO6,CO7,CO8	Describe the introduction, materials and equipment used for *podithimirthal*	1	Lecture	CAP	Knows-how	L&GD,L&PPT,SDL
CO1,CO2,CO3,CO6,CO7,CO8	Demonstrate the Medicinal preparation and therapeutic application of *Podithimirthal*	6	Practical Training 13.1	PSY-GUD	Shows-how	JC,CBL,D-M,DL
CO1,CO2,CO3,CO6,CO7,CO8	Conduct the Medicinal preparation and therapeutic application of *Podithimirthal*	8	Experiential-Learning 13.1	AFT-RES	Does	PBL,CBL
CO1,CO2,CO3,CO6,CO7,CO8	Analyse the Importance, Contraindication,Complications and Recent advances of *Podithimirthal*	1	Lecture	CAN	Knows-how	L&PPT,BS,L_VC
CO1,CO2,CO3,CO6,CO7,CO8	Describe application of *Mukkutra iyal* and Mechanism/principles of *Podithimirthal*	1	Lecture	CC	Know	L&GD,L

M 13 Unit 2 Vedhu (Steam therapy)

13.2.1 Introduction 13.2.2 *Mukkutra iyal* 13.2.3 Mechanism/principles 13.2.4 Materials and Equipment 13.2.5 Procedure 13.2.6 Importance 13.2.7 Therapeutic Application 13.2.8 Contraindication 13.2.9 Complications 13.2.10 Recent advances

References: 9,10,18,19,196,197,198,199,200,201,202,203,204,205,206,207,208,209

3A	3B	3C	3D	3E	3F	3G
CO1,CO2,CO3,CO6,CO7,CO8	Analyze the introduction, application of Mukkutra Iyal, the mechanism/principles, and the materials and equipment used in Vedhu.	1	Lecture	CAN	Knows-how	L&PPT,L_VC,ML
CO1,CO2,CO3,CO6,CO7,CO8	Demonstrate the Medicinal preparation and therapeutic application of vedhu	4	Practical Training 13.2	PSY-GUD	Shows-how	DL,TBL,D-BED
CO1,CO2,CO3,CO6,CO7,CO8	Conduct the Medicinal preparation and therapeutic application of vedhu	5	Experiential-Learning 13.2	AFT-RES	Does	PBL,PSM,CBL
CO1,CO2,CO3,CO6,CO7,CO8	Analyse the Importance, Contraindication,Complications and Recent advances in vedhu	1	Lecture	CAN	Knows-how	L_VC,BS,L&PPT

M 13 Unit 3 Pottanam (medicated pouch)

13.3.1 Introduction 13.3.2 *Mukkutra iyal* 13.3.3 Mechanism/principles 13.3.4 Materials and Equipment 13.3.5 Medicinal preparation 13.3.6 Therapeutic application 13.3.7 Procedure 13.3.8 Importance 13.3.9 Contraindication 13.3.10 Complications 13.3.11 Recent advances

References: 9,10,18,19,195,196,197,198,199,200,201,202,203,204,205,206,207,208,209

3A	3B	3C	3D	3E	3F	3G
CO1,CO2,CO3,CO6,CO7,CO8	Describe the Introduction,application of *thirithoda* methodology and Mechanism/ principles, Materials and Equipment used for *pottanam*	1	Lecture	CAN	Knows-how	L&PPT,SDL,L&GD
CO1,CO2,CO3,CO6,CO7,CO	Demonstrate the Medicinal preparation and Therapeutic application of *pottanam*	4	Practical Training 13.3	PSY-GUD	Shows-how	DL,D-BED

8						
CO1,CO2,CO3,CO6,CO7,CO8	Conduct the Medicinal preparation and Therapeutic application of *pottanam*	5	Experiential-Learning 13.3	AFT-RES	Does	PBL,DL,CBL
CO1,CO2,CO3,CO6,CO7,CO8	Analyse the Importance, Contraindication,Complications and recent advances in *pottanam*	1	Lecture	CAN	Knows-how	SDL,BS,L&PPT,L&GD

M 13 Unit 4 Suttigai (Cautery)

13.4.1 Introduction 13.4.2 *Mukkutra iyal* 13.4.3 Mechanism/principles 13.4.4 Materials and Equipment 13.4.5 Procedure 13.4.6 Importance 13.4.7 Therapeutic Application 13.4.8 Contraindication 13.4.9 Complications 13.4.10 Recent advances

References: 10,18,19,196,197,198,199,200,201,202,203,204,205,206,207,208,209

3A	3B	3C	3D	3E	3F	3G
CO1,CO2,CO3,CO6,CO7,CO8	Discuss the Introduction, materials and equipment used for *Suttigai*	1	Lecture	CC	Knows-how	L&PPT ,D-M,L_VC
CO1,CO2,CO3,CO6,CO7,CO8	Demonstrate the medicinal preparation and Therapeutic application of *Suttigai*	6	Practical Training 13.4	PSY-GUD	Shows-how	CBL,TBL,DL
CO1,CO2,CO3,CO6,CO7,CO8	Conduct the medicinal preparation and Therapeutic application of *Suttigai*	8	Experiential-Learning 13.4	AFT-RES	Does	CBL,PL,PSM
CO1,CO2,CO3,CO6,CO7,CO8	Analyse the Importance, Contraindication,Complications and recent advances in *Suttigai*	1	Lecture	CAN	Knows-how	BS,L&GD

CO1,CO2,CO3,CO6,CO7,CO8	Describe application of *mukkutra iyal* and Mechanism/principles of *Suttigai*	1	Lecture	CC	Know	BS,D-M

Practical Training Activity

Practical Training 13.1 : Medicinal preparation and therapeutic application of *Podithimirthal*

Total learning hours (6 Hours)
Practical(1 hour)
Step 1-The teacher will guide the student in preparing materials required for Podithimirthal
Step 2 -The teacher will assess and explain the case scenario to the students
Demonstration Lab(1 hour)
Step 1-The teacher will guide the students to select ingredients and prepare medicine for Podithimirthal
Step 2 - Students will be divided into groups and perform different medicinal preparations used in Podithimirthal
Case based learning(2 hour)
Step 1 - The teacher will demonstrate the pre-treatment procedure for patient
Step 2 - The teacher will demonstrate the application of Podithimirthal
Step 3 - The teacher will demonstrate the post-therapeutic care of patient
Step 4 - The teacher will discuss the application of Podithimirthal for various conditions
Demonstration in model(1 hour)
Step 1 - Students will be divided into groups and perform Massage Technique of Podithimirthal in mannequins
Step 2 - The teacher will observe the students performance and document it
Journal club (1 Hour)
The teacher will instruct the student to select the article, clinical study or book relevant to Podithimirthal and summarise the choosen article.Then relate the findings to real world practise.Open the floor for question and clarify the doubts.

Practical Training 13.2 : Medicinal preparation and therapeutic application of *Vedhu*

Total learning hours (4 Hours)
Demonstration Lab and Demonstration bedside(3 hours)
Step 1-The teacher will guide the student in preparing materials required for Vedhu
Step 2 -The teacher will assess and explain the case scenario to the students

Step 3 - The teacher will guide the students to select ingredients and prepare medicine for Vedhu
Step 4 - The teacher will demonstrate the pre-treatment procedure for patient
Step 5 - The teacher will demonstrate the application of Vedhu
Step 6 - The teacher will demonstrate the post-therapeutic care of patient
Step 7 - The teacher will discuss the application of Vedhu for various conditions
Team based learning(1 hour)
Step 1 - Students will be divided into groups and perform different medicinal preparations used in Vedhu
Step 2 - The teacher will observe the students performance and document it

Practical Training 13.3 : Medicinal preparation and Therapeutic application of *Pottanam*

Total learning hours (4 Hours)
Case based learning(1 hour)
Step 1-The teacher will guide the student in preparing materials required for Pottanam
Step 2 -The teacher will assess and explain the case scenario to the students
Step 3 - The teacher will guide the students to select ingredients and prepare medicine for Pottanam
Step 4 - The teacher will demonstrate the pre-treatment procedure for patient
Demonstration Beside(1 hour)
Step 1 - The teacher will demonstrate the application of Pottanam
Step 2 - The teacher will demonstrate the post-therapeutic care of patient
Step 3 - The teacher will discuss the application of Pottanam for various conditions
Demonstration Lab and Simulation(2 hours)
Step 1 - Students will be divided into groups and perform different medicinal preparations used in Pottanam
Step 2 - Students will be divided into groups and perform technique of Pottanam in mannequins
Step 3 - The teacher will observe the students performance and document it

Practical Training 13.4 : Medicinal preparation and Therapeutic application of *Suttigai*

Total learning hours (6 Hours)
Case based learning(3 hours)
Step 1-The teacher will guide the student in preparing materials required for Suttigai
Step 2 -The teacher will assess and explain the case scenario to the students
Step 3 - The teacher will guide the students to select ingredients and prepare medicine for Suttigai

Step 4 - The teacher will demonstrate the pre-treatment procedure for patient
Step 5 - The teacher will demonstrate the application of Suttigai
Step 6 - The teacher will demonstrate the post-therapeutic care of patient
Step 7 - The teacher will discuss the application of Suttigai for various conditions
Team based learning(2 hours)
Step 1 - Students will be divided into groups and perform different medicinal preparations used in Suttigai
Step 2 - Students will be divided into groups and perform Cautery Technique in peer
Step 3 - The teacher will observe the students performance and document it
Demonstration lab (1 Hour)
The teacher will display the instruments used for suttigai and demonstrate the handling of suttigai karuvigal

Experiential learning Activity

Experiential-Learning 13.1 : Therapeutic application of *Podithimirthal*

Total activity hours (8 hours)
Case based learning(CBL) (3 hours)
Assessment and Preparation,Applying the External Therapy, Monitor the Response, Post-Therapy Care, Evaluation and Follow-up
Problem based learning(PBL)(3 hours)
Define the Clinical Scenario, Analyze the Problem, Develop a Therapy Plan, Implement and Monitor Therapy, Reflect and Re-Evaluate
Project based learning(PrBL)(2 hours)
Develop a condition-specific Podi Thimirthal protocol, perform a mock demo, and refine with peer/instructor feedback.

Experiential-Learning 13.2 : Therapeutic application of *vedhu*

Total activity hours(5 hours)
Case-Based Learning (CBL)(2 hours)
Analyze a patient requiring Vedhu therapy, identify symptoms, and select specific herbs and techniques suited to their condition, focusing on therapeutic needs and safety.
Problem-Based Learning (PBL)(2 hours)
Work through scenarios with patient sensitivities (e.g., respiratory or skin concerns) and propose ingredient, duration, or temperature adjustments to optimize the vedhu therapy's effectiveness.
Problem-Solving method (1 hour)
Engage in simulations where real-time adjustments are needed, practicing safe, patient-focused Vedhu applications and receiving feedback on technique and problem-resolution.

Experiential-Learning 13.3 : Therapeutic application of *pottanam*

Total activity hours(5 hours)
Case based learning(CBL)(2 hours)
Provide a case scenario for Pottanam therapy. analyze the condition, choose ingredients, prepare pottanam and perform the procedure while discussing outcomes.
Problem based learning(PBL) (2 hours)
Present patient-specific challenges like allergies or limited resources. Students propose safe and effective modifications.
Demonstration Lab (1 hour)
Demonstrate Pottanam preparation and application. Allow students to practice and refine techniques of pottanam.

Experiential-Learning 13.4 : Therapeutic application of *Suttigai*

Total activity hours (8 hours)
Case-Based Learning(CBL)(3 hours)
Present a case where cautery is indicated (e.g., for chronic skin conditions). Guide students through the selection of appropriate cautery tools, therapeutic herbs, and step-by-step application, emphasizing patient safety, preparation, and monitoring.
Peer Learning(2 hours)
Have students demonstrate cautery techniques on each other or in groups, offering peer feedback on precision, comfort, and effectiveness. Facilitate discussions on how different patient responses may require adjustments to technique.
Problem-Solving Method(PSM)(3 hours)
In a problem-based learning scenario, students address complications such as excessive pain or burns during cautery. They discuss adjustments like precise heat control and alternative therapeutic herbs. Afterward, students perform the procedure, applying solutions to the problems identified and refining their skills through guided practice and feedback.

Modular Assessment

Assessment method	**Hour**
Instructions: Conduct a structured modular assessment. Assessment will be 50 marks. Keep structured marking pattern. Use different assessment methods in each module for the semester. Keep a record of the structured pattern used for assessment. Calculate the modular grade point as per table 6c. 1. Mini-CEX (10 Marks) Clinical Encounter: 6 Marks Professionalism and Communication: 2 Marks Reflection and Improvement Plan: 2 Marks	4

2. Logbook (10 Marks)
Clinical Case Documentation: 5 Marks
Reflection and Self-Assessment: 3 Marks
Mentor Feedback: 2 Marks
3. Debate- 10 Marks
Argument Development: 4 Marks
Engagement in Debate: 3 Marks
Communication and Professionalism: 3 Marks
4. Clinical Video Cases- 10 Marks
Case Presentation Quality: 4 Marks
Analysis and Clinical Reasoning: 4 Marks
Reflection and Professionalism: 2 Marks
5. Creativity writing- 10 marks
Overall Creativity & Originality: 5 marks
Clarity & Structure: 3 marks
Grammar & Language Use: 2 marks
Or
Any practical in converted form can be taken for assessment.(25 marks)
and
Any of the experiential as portfolios/reflections/presentations can be taken as an assessment.(25 marks)

Module 14 : Heat therapy II and Surgical medicines

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

Demonstrate proficiency in heat therapy and surgical procedures.
Analyze the mukkutra iyal principles and therapeutic applications.
Construct the materials and equipment relevant to each practice.
Evaluate the importance, contraindications, and complications associated with each practice and recent advancements

M 14 Unit 1 Otradam (Fomentation)

14.1.1 Introduction 14.1.2 *Mukkutra iyal* 14.1.3 Mechanism/principles 14.1.4 Materials and Equipment 14.1.5 Medicinal preparation 14.1.6 Therapeutic application 14.1.7 Procedure 14.1.8 Importance 14.1.9 Contraindication 14.1.10 Complications 14.1.11 Recent advances

References: 9,10,18,19,196,197,198,199,200,201,202,203,204,205,206,207,208,209

3A	3B	3C	3D	3E	3F	3G
CO1,CO2,CO3,CO6,CO7,CO8	Describe the introduction, application of *mukkutra iyal* and mechanism/principles, materials and equipment	2	Lecture	CC	Knows-how	L&GD,L&PPT
CO1,CO2,CO3,CO6,CO7,CO8	Demonstrate the Medicinal preparation and Therapeutic application of *Otradam*	6	Practical Training 14.1	PSY-GUD	Shows-how	TBL,PL,DL,CBL
CO1,CO2,CO3,CO6,CO7,CO8	Conduct the Medicinal preparation and Therapeutic application of *Otradam*	8	Experiential-Learning 14.1	AFT-RES	Does	CBL,PBL,JC
CO1,CO2,CO3,CO6,CO7,CO8	Analyse the Importance, Contraindication, Complications , Recent advances	1	Lecture	CAN	Knows-how	DIS,L&PPT ,L_VC

M 14 Unit 2 Pugai (Fumigation)

14.2.1 Introduction 14.2.2 *Mukkutra iyal* 14.2.3 Mechanism/principles 14.2.4 Materials and Equipment 14.2.5 Medicinal preparation 14.2.6 Procedure 14.2.7 Therapeutic application 14.2.8 Importance 14.2.9 Contraindication 14.2.10 Complications 14.2.11 Recent advances

References: 9,10,18,19,196,197,198,199,200,201,202,203,204,205,206,207,208,209

3A	3B	3C	3D	3E	3F	3G
CO1,CO2,CO3,CO6,CO7,CO8	Describe Introduction, application of mukkutra iyal and Mechanism/principles, materials and Equipment used for *pugai*	1	Lecture	CE	Knows-how	BS,L&PPT
CO1,CO2,CO3,CO6,CO7,CO8	Demonstrate the medicinal preparation and Therapeutic application of *pugai*	4	Practical Training 14.2	PSY-GUD	Shows-how	DL,CBL,TBL
CO1,CO2,CO3,CO6,CO7,CO8	Conduct the medicinal preparation and Therapeutic application of *pugai*	5	Experiential-Learning 14.2	AFT-RES	Does	SDL,CBL
CO1,CO2,CO3,CO6,CO7,CO8	Analyse the Importance, Contraindication, Complications and recent advances in *pugai*	1	Lecture	CAN	Knows-how	L&PPT,BS

M 14 Unit 3 Aruvai, keeral, salaagai (Excition, Incision & Probe)

14.3.1 Introduction 14.3.2 Mukkutra iyal 14.3.3 Mechanism/principles 14.3.4 Materials and Equipment 14.3.5 Therapeutic application 14.3.6 Procedure 14.3.7 Importance 14.3.8 Contraindication 14.3.9 Complications 14.3.10 Recent advances

References: 9,10,18,19,125,197,198,199,200,201,202,203,204,205,206,207,208,209

3A	3B	3C	3D	3E	3F	3G
CO1,CO2,CO3,CO6,CO7,CO8	Discuss Introduction, *mukkutra iyal* and Mechanism/principles of *Aruvai, keeral, salaagai*	1	Lecture	CC	Knows-how	L&GD,L&PPT,ML
CO1,CO2,CO3,CO6,CO7,CO8	Demonstrate the Materials and Equipment used for *Aruvai, keeral, salaagai* parigaaram (Sathiraayudha karuvigal)	4	Practical Training 14.3	PSY-GUD	Shows-how	DL,SIM,D-M

CO1,CO2,CO3,CO6,CO7,CO8	Conduct the Therapeutic application of *Aruvai, keeral, salaagai*	5	Experiential-Learning 14.3	AFT-RES	Does	SIM,CBL,PBL
CO1,CO2,CO3,CO6,CO7,CO8	Analyse the Importance, Contraindication, Complications and recent advances in *Aruvai, keeral, salaagai*	1	Lecture	CAN	Knows-how	BS,DIS,L&PPT

M 14 Unit 4 Peechu (Douche)

14.4.1 Introduction 14.4.2 *Mukkutra iyal* 14.4.3 Mechanism/principles 14.4.4 Materials and Equipment 14.4.5 Procedure 14.4.6 Importance 14.4.7 Therapeutic application 14.4.8 Contraindication 14.4.9 Complications 14.4.10 Recent advances

References: 18,19,207

3A	3B	3C	3D	3E	3F	3G
CO1,CO2,CO3,CO6,CO7,CO8	Describe the Introduction, application of *thirithoda* methodology, Mechanism/principles and materials and equipment used for *Peechu*	2	Lecture	CC	Knows-how	L&GD,L&PPT,BS
CO1,CO2,CO3,CO6,CO7,CO8	Demonstrate the Medicinal preparation and Therapeutic application of *Peechu*	6	Practical Training 14.4	PSY-GUD	Shows-how	DL,TBL,CBL
CO1,CO2,CO3,CO6,CO7,CO8	Conduct the Medicinal preparation and Therapeutic application of *Peechu*	8	Experiential-Learning 14.4	AFT-RES	Does	PBL,CBL
CO1,CO2,CO3,CO6,CO7,CO8	Analyse the Importance, Contraindication, Complications and Recent advances of *Peechu*	1	Lecture	CAN	Knows-how	L&GD,L&PPT,SDL

Practical Training Activity

Practical Training 14.1 : Medicinal preparation and Therapeutic application of *Otradam*

Total learning hours (6 Hours)
Case based learning, Demonstration lab (3 hours)
Step 1-The teacher will guide the student in preparing materials required for Otradam
Step 2 -The teacher will assess and explain the case scenario to the students
Step 3 - The teacher will guide the students to select ingredients and prepare medicine for Otradam
Step 4 - The teacher will demonstrate the pre-treatment procedure for patient
Step 5 - The teacher will demonstrate the application of Otradam
Step 6 - The teacher will demonstrate the post-therapeutic care of patient
Step 7 - The teacher will discuss the application of Otradam for various conditions
Team based learning(1 hour)
Students will be divided into groups and perform different medicinal preparations used in Otradam
Peer learning(1 hour)
Step 1 - Students will be divided into groups and perform Otradam in peers
Step 2 - The teacher will observe the students performance and document it
Brain storming (1 Hour)
Students will be divided into groups and discuss their Brainstorm ideas for improving training on otradam, such as virtual reality (VR) or simulation-based learning.

Practical Training 14.2 : Medicinal preparation and Therapeutic application of *Pugai*

Total learning hours (4 Hours)
Case based learning, Demonstration lab(3 hours)
Step 1-The teacher will guide the student in preparing materials required for Pugai
Step 2 -The teacher will assess and explain the case scenario to the students
Step 3 - The teacher will guide the students to select ingredients and prepare medicine for Pugai
Step 4 - The teacher will demonstrate the pre-treatment procedure for patient
Step 5 - The teacher will demonstrate the application of Pugai
Step 6 - The teacher will demonstrate the post-therapeutic care of patient
Step 7 - The teacher will discuss the application of Pugai for various conditions
Team based learning(1 hour)
Step 1 - Students will be divided into groups and perform different medicinal preparations used in Pugai
Step 2 - Students will be divided into groups and perform Pugai in peers

Step 3 - The teacher will observe the students performance and document it

Practical Training 14.3 : *Aruvai, keeral* parigaaram (Sathiraayudha karuvigal) Materials and Equipments

Total learning hours (4 Hours)
Demonstration lab (2 hours)
Step 1 -The teacher will Display the Materials and Equipment
Step 2 - The teacher will Demonstrate the Handling Techniques
Step 3 - The teacher will allow students to handle the instruments under supervision, ensuring familiarity with grip and control
Simulation(2 hours)
Step 1 - The teacher will allow students to Simulate a simple procedure (e.g., incision or probing) using a model or practice material.
Step 2 - The teacher will emphasize safety protocols, including the prevention of cross-contamination and proper disposal of single-use items.Teach cleaning, sterilization, and maintenance practices for the instruments.
Step 3 - The teacher will evaluate students on proper identification, handling, and description of instruments.
Step 4 - The teacher will Conclude with a discussion on challenges faced in instrument handling and their solutions.

Practical Training 14.4 : Medicinal preparation and Therapeutic application of *Peechu*

Total learning hours (6 Hours)
Case based learning, Demonstration lab(4 hours)
Step 1-The teacher will guide the student in preparing materials required for Peechu
Step 2 -The teacher will assess and explain the case scenario to the students
Step 3 - The teacher will guide the students to select ingredients and prepare medicine for Peechu
Step 4 - The teacher will demonstrate the pre-treatment procedure for patient
Step 5 - The teacher will demonstrate the application of Peechu
Step 6 - The teacher will demonstrate the post-therapeutic care of patient
Step 7 - The teacher will discuss the application of Peechu for various conditions
Team based learning(2 hours)
Step 1 - Students will be divided into groups and perform medicinal preparations used in Peechu
Step 2 - Students will be divided into groups and perform Peechu in peers or simulation models or manniquins
Step 3 - The teacher will observe the students performance and document it

Experiential learning Activity

Experiential-Learning 14.1 : Therapeutic application of *Otradam*

Total activity hours (8 hours)
Case-Based Learning (CBL) (3 hours)
Present a case where Otradam is indicated, highlighting the patient's symptoms and therapeutic needs.Guide students in selecting the correct medicinal preparations and applying them during the procedure, focusing on patient safety.
Problem-Based Learning (PBL)(3 hours)
Present a scenario involving challenges such as patient sensitivity to heat and discuss how to adjust the procedure accordingly.Encourage students to propose solutions (e.g., temperature control or duration adjustments) and evaluate their effectiveness in the given scenario.
Journal Club(2 hours)
Students review and analyze journal articles on the effectiveness of Otradam in treating specific conditions.Facilitate discussion on the latest research findings and how they can influence clinical practice in using Otradam therapy.

Experiential-Learning 14.2 : Therapeutic application of *pugai*

Total activity hours (5 hours)
Case-Based Learning (CBL)(3 hours)
Present a clinical scenario where fumigation therapy is required, detailing symptoms and treatment goals.analyze the case, select appropriate medicinal ingredients, and outline the fumigation procedure tailored to the patient's needs.
Self-Directed Learning (SDL)(2 hours)
Assign students to research medicinal herbs and techniques used in fumigation therapy.Let them prepare a detailed procedure, including equipment setup and patient care, and present their findings for group critique and refinement.

Experiential-Learning 14.3 : Therapeutic application of *Aruvai, keeral, salaagai*

Total activity hours (5 hours)
Case-Based Learning (CBL)(2 hours)
Present a case scenario involving a condition requiring Aruvai, Keeral, or Salaagai procedures, such as an abscess requiring incision or foreign body removal,selecting the appropriate technique, and planning the procedure based on patient history and condition,perform the procedure.Discussion on contraindications, complications, and post-procedure care.
Problem-Based Learning (PBL)(2 hours)
Provide a scenario with a clinical challenge, such as managing an infected wound with difficult access.Assign small groups to propose solutions, including tool selection,

procedural modifications, and safety measures.Facilitate group presentations to evaluate problem-solving approaches and ensure alignment with therapeutic goals.
Simulation (1 hour)
Set up a simulation lab with models replicating conditions like abscesses or nasal blockages requiring Keeral or Salaagai intervention.Allow students to perform procedures, emphasizing precision, aseptic techniques, and patient positioning.Provide real-time feedback and encourage reflective discussion on their performance and areas for improvement.

Experiential-Learning 14.4 : Therapeutic application of *Peechu*

Total activity hours (8 hours)
Case-Based Learning (CBL) (4 hours)
Analyze the patient's condition, select appropriate medicinal solutions, and Demonstrate the steps of Peechu therapy, ensuring correct positioning, temperature control, and hygiene during the procedure.
Problem-Based Learning (PBL)(4 hours)
Introduce a scenario with complications like solution intolerance or procedural challenges.Assign students to small groups to develop a modified plan addressing safety, solution composition, or alternative administration techniques.Facilitate a discussion to evaluate their solutions, emphasizing patient safety and therapeutic effectiveness.

Modular Assessment

Assessment method	**Hour**
Instructions: Conduct a structured modular assessment. Assessment will be 50 marks. Keep 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. Peer Assessment (10 Marks) Feedback Quality: 5 marks Objective Evaluation: 3 marks Engagement & Interaction: 2 marks 2. Conducting an Interview (10 Marks) Questioning Technique: 4 marks Communication Skills: 3 marks Listening & Responding: 2 marks Professionalism: 1 mark 3. Checklist (10 Marks) Completeness: 5 marks Clarity & Organization: 3 marks	4

Accuracy: 2 marks
4. Open Book Test (10 Marks)
Correctness: 5 marks
Application of Concepts: 3 marks
Clarity & Organization: 2 marks
5. Word Puzzles (10 Marks)
Correctness: 5 marks
Completion Time: 2 marks
Problem-Solving Approach: 2 marks
Neatness: 1 mark
Or
Any practical in converted form can be taken for assessment.(25 marks)
And
Any of the experiential as portfolios/reflections/presentations can be taken as an assessment.(25 marks)

Semester No : 6

Module 15 : Topical application II

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

Apply the therapeutic techniques in thaarai,puravalaiyam, thappalam, dhuvaalai and ennai muzhukku.
Apply mukkutra iyal effectively in the therapeutic practices discussed in the module.
Apply practical skills in medicinal preparation, procedural manipulation, and application of therapeutic techniques while adhering to safety and procedural guidelines.
Evaluate the importance, contraindications, complications, and recent advancements in each therapeutic practice.

M 15 Unit 1 Thaarai, Puravalaiyam

15.1.1 Introduction 15.1.2 Types 15.1.3 *Mukkutra iyal* 15.1.4 Mechanism/principles 15.1.5 Materials and Equipment 15.1.6 Procedure 15.1.7 Importance 15.1.8 Therapeutic application 15.1.9 Contraindication 15.1.10 Complications 15.1.11 Recent advances

References: 18,19,125,199,200,201,202,203,204,205,206,207,208,209

3A	3B	3C	3D	3E	3F	3G
CO1,CO2,CO3,CO6,CO7,CO8	Analyse the role of *Thaarai,Puravalaiyam* and its application based on mukkutra iyal, mechanism/principles, materials and equipment	2	Lecture	CAN	Knows-how	L&PPT,L
CO1,CO2,CO3,CO6,CO7,CO8	Demonstrate the medicinal preparation and Therapeutic application of *Thaarai , Puravalaiyam*	6	Practical Training 15.1	PSY-GUD	Shows-how	DL,D-BED,SIM
CO1,CO2,CO3,CO6,CO7,CO8	Conduct the Therapeutic application of *Thaarai,Puravalaiyam*	8	Experiential-Learning 15.1	AFT-RES	Does	CBL,D-BED,RLE
CO1,CO2,CO3,CO6,CO7,CO8	Analyse the Importance, Contraindication, Complications and Recent advances of *Thaarai , Puravalaiyam*	1	Lecture	CAN	Knows-how	SDL,L&PPT

M 15 Unit 2 Thappalam

15.2.1 Introduction 15.2.2 *Mukkutra iyal* 15.2.3 Mechanism/principles 15.2.4 Materials and Equipment 15.2.5 Procedure 15.2.6 Importance 15.2.7 Therapeutic application 15.2.8 Contraindication 15.2.9 Complications 15.2.10 Recent advances

References: 7,9,18,19,195,196,197,198,199,200,201,202,203,204,205,206,207,208,209

3A	3B	3C	3D	3E	3F	3G
CO1,CO2,CO3,CO6,CO7,CO	Discuss the Introduction, application of *mukkutra iyal*, mechanism/principles, materials and equipment used for *Thappalam*	1	Lecture	CC	Knows-how	DIS,L&PPT

8						
CO1,CO2,CO3,CO6,CO7,CO8	Demonstrate the Medicinal preparation and Therapeutic application of *Thappalam*	4	Practical Training 15.2	PSY-GUD	Shows-how	D-BED,TBL,DL
CO1,CO2,CO3,CO6,CO7,CO8	Conduct the Medicinal preparation and Therapeutic application of *Thappalam*	5	Experiential-Learning 15.2	AFT-RES	Does	D-BED,CBL,DL
CO1,CO2,CO3,CO6,CO7,CO8	Analyse the Importance, Contraindication, Complications, recent advances in *Thappalam*	1	Lecture	CAN	Knows-how	BS

M 15 Unit 3 Dhuvalai (Embrocation)

15.3.1 Introduction 15.3.2 *Mukkutra iyal* 15.3.3 Mechanism/principles 15.3.4 Materials and Equipment 15.3.5 Medicinal preparation 15.3.6 Therapeutic application 15.3.7 Procedure 15.3.8 Importance 15.3.9 Contraindication 15.3.10 Complications 15.3.11 Recent advances

References: 7,18,19,196,197,198,199,200,201,202,203,204,205,206,208,209

3A	3B	3C	3D	3E	3F	3G
CO1,CO2,CO3,CO6,CO7,CO8	Discuss the Introduction,*thirithoda* methodology and Mechanism/principles, Materials and Equipment used for *Dhuvalai*	1	Lecture	CC	Knows-how	SDL,L&PPT ,BS
CO1,CO2,CO3,CO6,CO7,CO8	Demonstrate the Medicinal preparation and Therapeutic application of *Dhuvalai*	4	Practical Training 15.3	PSY-GUD	Shows-how	DL,CBL,TBL
CO1,CO2,CO3,CO6,CO7,CO8	Conduct the Medicinal preparation and Therapeutic application of *Dhuvalai*	5	Experiential-Learning 15.3	AFT-RES	Does	CBL,JC

CO1,CO2,CO3,CO6,CO7,CO8	Analyse the Importance, Contraindication, Complications of *Dhuvalai*	1	Lecture	CAN	Knows-how	DL,CBL

M 15 Unit 4 Ennai Muzhukku, Ennai thekkam

15.4.1 Introduction 15.4.2 *Mukkutra iyal* 15.4.3 Mechanism/principles 15.4.4 Materials and Equipment 15.4.5 Medicinal preparation 15.4.6 Therapeutic application 15.4.7 Procedure 15.4.8 Importance 15.4.9 Contraindication 15.4.10 Complications 15.4.11 Recent advances

References: 7,18,19,196,197,198,199,200,201,202,203,204,205,206,207,208,209

3A	3B	3C	3D	3E	3F	3G
CO1,CO2,CO3,CO6,CO7,CO8	Describe the Introduction,application of mukkutra iyal, mechanism/principles, materials and equipment used for *Ennai muzhukku, ennai theakkam*	2	Lecture	CC	Knows-how	L&PPT,LS
CO1,CO2,CO3,CO6,CO7,CO8	Demonstrate the medicinal preparation and Therapeutic application of *Ennai Muzhukku, ennai thaekkam*	6	Practical Training 15.4	PSY-GUD	Shows-how	CBL,DL,SIM
CO1,CO2,CO3,CO6,CO7,CO8	Conduct the medicinal preparation and Therapeutic application of *Ennai Muzhukku,ennai thaekkam*	8	Experiential-Learning 15.4	AFT-CHR	Does	CBL,D-BED,SIM
CO1,CO2,CO3,CO6,CO7,CO8	Analyse the Importance, Contraindication, Complications and recent advances in *Ennai Muzhukku*	1	Lecture	CAN	Knows-how	BS

Practical Training Activity

Practical Training 15.1 : Medicinal preparation and Therapeutic application of *Thaarai, Puravalaiyam*

Total learning hours (6 Hours)

Demonstration bedside, Demonstration lab(4 hours)
Step 1-The teacher will guide the student in preparing materials required for Thaarai, Puravalaiyam
Step 2 -The teacher will assess and explain the case scenario to the students
Step 3 - The teacher will guide the students to select ingredients and prepare medicine for Thaarai, Puravalaiyam
Step 4 - The teacher will demonstrate the pre-treatment procedure for patient
Step 5 - The teacher will demonstrate the application of Thaarai, Puravalaiyam
Step 6 - The teacher will demonstrate the post-therapeutic care of patient
Step 7 - The teacher will discuss the application of Thaarai, Puravalaiyam for various conditions
Practical,Simulation(2 hours)
Step 8 - Students will be divided into groups and perform medicinal preparations used in Thaarai, Puravalaiyam
Step 9 - Students will be divided into groups and perform Thaarai, Puravalaiyam in peers or simulation models or manniquins
Step 10 - The teacher will observe the students performance and document it

Practical Training 15.2 : Medicinal preparation and Therapeutic application of *Thappalam*

Total learning hours (4 Hours)
Demonstration bedside, Demonstration lab(3 hours)
Step 1-The teacher will guide the student in preparing materials required for Thappalam
Step 2 -The teacher will assess and explain the case scenario to the students
Step 3 - The teacher will guide the students to select ingredients and prepare medicine for Thappalam
Step 4 - The teacher will demonstrate the pre-treatment procedure for patient
Step 5 - The teacher will demonstrate the application of Thappalam
Step 6 - The teacher will demonstrate the post-therapeutic care of patient
Step 7 - The teacher will discuss the application of Thappalam for various conditions
Team based learning(1 hour)
Step 1 - Students will be divided into groups and perform different medicinal preparations used in Thappalam
Step 2 - Students will be divided into groups and perform Thappalam in peers
Step 3 - The teacher will observe the students performance and document it

Practical Training 15.3 : Medicinal preparation and Therapeutic application of *Dhuvalai*

Total learning hours (4 Hours)
Case based learning, Demonstration lab(3 hours)

Step 1-The teacher will guide the student in preparing materials required for Dhuvalai
Step 2 -The teacher will assess and explain the case scenario to the students
Step 3 - The teacher will guide the students to select ingredients and prepare medicine for Dhuvalai
Step 4 - The teacher will demonstrate the pre-treatment procedure for patient
Step 5 - The teacher will demonstrate the application of Dhuvalai
Step 6 - The teacher will demonstrate the post-therapeutic care of patient
Step 7 - The teacher will discuss the application of Dhuvalai for various conditions
Simulation(1 hour)
Step 1 - Students will be divided into groups and perform different medicinal preparations used in Dhuvalai
Step 2 - Students will be divided into groups and perform Dhuvalai in peers
Step 3 - The teacher will observe the students performance and document it

Practical Training 15.4 : Medicinal preparation and Therapeutic application of *Ennai Muzhukku, ennai thaekkam*

Total learning hours (6 Hours)
Demonstration lab (1 hour)
Step 1-The teacher will guide the student in preparing materials required for Ennai Muzhukku, ennai thaekkam
Step 2 - Students will be divided into groups and perform medicinal preparations used in Ennai Muzhukku, ennai thaekkam
Case based learning, Practical (3 hours)
Step 1 -The teacher will assess and explain the case scenario to the students
Step 2 - The teacher will guide the students to select ingredients and prepare medicine for Ennai Muzhukku, ennai thaekkam
Step 3 - The teacher will demonstrate the pre-treatment procedure for patient
Step 4 - The teacher will demonstrate the application of Ennai Muzhukku, ennai thaekkam
Step 5 - The teacher will demonstrate the post-therapeutic care of patient
Step 6 - The teacher will discuss the application of Ennai Muzhukku, ennai thaekkam for various conditions
Simulation (2 hours)
Step 1 - Students will be divided into groups and perform Ennai Muzhukku, ennai thaekkam in peers or simulation models or manniquins
Step 2 - The teacher will observe the students performance and document it

Experiential learning Activity

Experiential-Learning 15.1 : Therapeutic application of *Thaarai,Puravalaiyam*

Total activity hours (8 hours)

Case-Based Learning (CBL)(4 hours)
Present a clinical case, analyzing the condition and selecting the appropriate oil and technique. Students will plan the procedure, addressing patient positioning and safety, and propose modifications based on challenges.
Demonstration Bedside(2 hours)
Demonstrate the full oil pouring process, including preparation and patient positioning. Students observe and practice on the demo bed, focusing on technique and safety measures under supervision.
Real-Life Experience(2 hours)
Students assist in a real oil pouring session, observing patient responses and adjusting the procedure as needed. Post-session, discuss challenges and solutions.

Experiential-Learning 15.2 : Therapeutic application of *Thappalam*

Total activity hours(5 hours)
Case-Based Learning (CBL)(2 Hours)
Present a clinical case where Thappalam therapy is indicated,Facilitate discussions on selecting herbs and preparation methods tailored to the patient's condition, followed by analyzing therapeutic outcomes.
Demonstration Bedside(2 Hours)
Demonstrate the step-by-step preparation and application of the poultice, emphasizing consistency and temperature.Perfom the technique on dummies or peers, ensuring correct positioning and application methods.
Demonstration Lab(1 Hour)
Provide hands-on practice for preparing the herbal paste or poultice in a controlled environment.perform the complete procedure and application, review safety protocols.

Experiential-Learning 15.3 : Therapeutic application of *Dhuvalai*

Total activity hours (5 hours)
Case-Based Learning(CBL) Method(3 Hours)
Present a case where Dhuvalai is indicated. select the appropriate ingredients and apply the technique, emphasizing patient safety, preparation, and monitoring.
Journal Club(2 Hours)
Students review and analyze journal articles on the effectiveness of Dhuvalai in treating specific conditions.Facilitate discussion on the latest research findings and how they can influence clinical practice in using Dhuvalai therapy.

Experiential-Learning 15.4 : Therapeutic application of *Ennai Muzhukku,ennai thaekkam*

Total activity hours (8 hours)

Case-Based Learning(CBL) Method(4 Hours)
Analyze the patient’s condition,Identify suitable oil,plan and perform the pre-therapy preparation and step-by-step application techniques for both therapies.discuss the rationale for oil selection, techniques used, patient safety, and expected therapeutic outcomes.
Demonstration Bedside/Simulation(4 Hours)
Demonstrate the step-by-step preparation and application of the Ennai Muzhukku,ennai thaekkam, emphasizing consistency and temperature.Perfom the technique on dummies or peers, ensuring correct positioning and application methods.

Modular Assessment

Assessment method	**Hour**
Instructions: Conduct a structured modular assessment. Assessment will be 50 marks. Keep 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. Making Charts (15 Marks) Creativity & Originality: 5 marks Content Accuracy & Relevance: 5 marks Clarity & Presentation: 3 marks Use of Materials & Tools: 2 marks 2. Making Models (15 Marks) Creativity & Originality: 5 marks Accuracy & Detail: 5 marks Construction & Craftsmanship: 3 marks Presentation & Visual Appeal: 2 marks 3. Making Posters (15 Marks) Creativity & Originality: 5 marks Relevance & Messaging: 5 marks Design & Layout: 3 marks Use of Visuals & Graphics: 2 marks 4. Record Keeping (5 Marks) Organization & Clarity: 2 marks Accuracy & Completeness: 2 marks Timeliness & Consistency: 1 mark Or	4

Any practical in converted form can be taken for assessment.(25 marks)
And
Any of the experiential as portfolios/reflections/presentations can be taken as an assessment.(25 marks)

Module 16 : Innovation and Opportunities in Siddha external therapy Entrepreneurship

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

Describe the pharmaceutical development process and regulatory & compliance requirements
Identify new product opportunities and pharmaceutical equipment
Develop siddha external therapy based wellness centers
Develop mobile apps for siddha health tracking

M 16 Unit 1 Pharmaceutical Development, equipment development and New Product Opportunities

16.1.1 Siddha external medicine Pharmaceutical Units 16.1.2 Siddha external therapy equipments developing units 16.1.3 Market Gaps and Product Development 16.1.4 Formulation and Product Design 16.1.5 Regulatory and Compliance 16.1.6 Product Launch and Distribution

References: 210,211,212,213

3A	3B	3C	3D	3E	3F	3G
CO6,CO7,CO8	Describe Siddha external medicine Pharmaceutical Unit,Regulatory and Compliance and Identifying Market Gaps and Product Development	3	Lecture	CC	Knows-how	L&GD,L &PPT
CO7,CO8	Describe siddha external therapy equipment developing units	4	Practical Training 16.1	PSY-GUD	Shows-how	PrBL,PER
CO7,CO8	Conduct Product Launch and Distribution, Formulation and Product Design	8	Experiential-	PSY-	Shows-	FV

			Learning 16. 1	ORG	how	

M 16 Unit 2 Government Subsidies and Product Approval for Pharmaceuticals

16.2.1 Programs for Siddha Products 16.2.2 Eligibility and Application for Financial Support 16.2.3 Navigating Regulatory Bodies for Approvals 16.2.4 Product Approval and Compliance 16.2.5 Tax Incentives and Government Contracts

References: 214,215,216,217

3A	3B	3C	3D	3E	3F	3G
CO7,CO8	Describe the government subsidy programs for siddha products and eligibility & application for financial support and navigating regulatory bodies for approvals	2	Lecture	CC	Know	L&GD,L &PPT
CO7,CO8	Discuss about Approval and Compliance of the siddha products	6	Practical Training 16.2	PSY-SET	Knows-how	FV
CO7,CO8	Construct a plan for Tax Incentives and Government Contracts	5	Experiential-Learning 16. 2	AFT-VAL	Knows-how	TPW

M 16 Unit 3 Export Opportunities and Global Market for Siddha external medicine

16.3.1 Global Demand for Siddha External Medicine 16.3.2 International Market Exploration 16.3.3 Building an Export Strategy 16.3.4 Export Incentives and Marketing

References: 218,219,220,221

3A	3B	3C	3D	3E	3F	3G
CO7,CO8	Discuss global demand for siddha external medicine and international market exploration	2	Lecture	CC	Knows-how	L&GD,L &PPT

CO7,CO8	Construct the Export Strategy	4	Practical Training 16.3	PSY-MEC	Shows-how	ML,TPW
CO7,CO8	Develop skill in Export Incentives and Marketing	5	Experiential-Learning 16.3	AFT-VAL	Does	TPW

M 16 Unit 4 Innovative Ventures in Siddha external therapy hospital

16.4.1Telemedicine service 16.4.2 Wellness centers 16.4.3 Mobile apps 16.4.4 Wellness programs for various public sectors Launching a Siddha external theray Telemedicine Service

References: 222,223,224,225

3A	3B	3C	3D	3E	3F	3G
CO7,CO8	Discuss about Launching a Siddha external therapy Telemedicine Service	3	Lecture	CC	Knows-how	L&GD,L&PPT
CO7,CO8	Apply siddha external therapy based Wellness Centers	6	Practical Training 16.4	PSY-ORG	Shows-how	FV
CO7,CO8	Develop Mobile Apps for Siddha Health Tracking and Creating Siddha external therapy Wellness Programs for various public sectors	8	Experiential-Learning 16.4	CS	Shows-how	ML,FV

Practical Training Activity

Practical Training 16.1 : Siddha external therapy equipment development

Total learning hours (4 Hours)
Practical (2 Hours)
The teacher will Instruct the students to work in teams to research and design a basic Siddha external medicine pharmaceutical unit and create a proposal for developing an external therapy equipment unit. They will explore regulatory standards and propose product designs.

Problem based learning (1 Hour)
The teacher will Instruct the students to conduct market research to identify gaps in the Siddha external medicine market and present a product design aimed at addressing a specific market need.
Presentation (1 Hour)
The teacher will Instruct the students to draft a step-by-step guide on navigating the regulatory process for a Siddha product and simulate a product launch strategy in a case-study format.

Practical Training 16.2 : Siddha external therapy product approval and compliance

Total learning hours (6 Hours)
Flipped class room (2 Hours)
The teacher will Instruct the students to prepare an application for financial support from government subsidy programs, identifying eligibility criteria and required documentation.
Field visit (4 Hours)
The teacher will Instruct the students to simulate the process of gaining product approval by presenting their submissions for regulatory compliance, demonstrating an understanding of product approval processes for Siddha medicines.

Practical Training 16.3 : Export Strategy for Siddha External Medicine

Total learning hours (4 hours)
Mobile learning & Team project work
The teacher will Instruct the students to create a comprehensive export strategy for Siddha external medicine, including market analysis, export incentives, and marketing tactics for an international audience.

Practical Training 16.4 : Siddha external therapy based Wellness Centers

Total learning hours (6 Hours)
Field visit (4 hours)
The teacher will Instruct the students to create a mock telemedicine service platform, including service offerings, a target audience, and the integration of Siddha external therapies. They will simulate client interactions and assess challenges in telemedicine deployment. Students will develop a business plan for a Siddha external therapy wellness center, including facility layout,
Flipped classroom (2 hours)
The teacher will explain about services offered, staff roles, and marketing strategies. Students will also simulate the opening and operation of this wellness center.

Experiential learning Activity
Experiential-Learning 16.1 : Product Design, formulation, launch and Distribution
Total activity hours: 8 hours Field Visit – 8 Hours Students will visit a facility or manufacturing unit specializing in Siddha external medicine production. During the visit, they will observe the entire process, from market research to formulation and packaging, ensuring regulatory compliance. Students will engage with experts and understand the practical application of designing, formulating, and launching a Siddha external medicine product. The visit will conclude with a group presentation where each group will discuss their observations, insights, and proposed product ideas based on the field experience.
Experiential-Learning 16.2 : Tax Incentives and Government Contracts
Total activity hours (5 hours) Team project based learning Students will be devided into group tasked with preparing an application for financial support from government subsidy programs, identifying eligibility criteria and required documentation.(3 hours) Students will simulate the process of gaining product approval by presenting their submissions for regulatory compliance, demonstrating an understanding of product approval processes for Siddha medicines.(2 hours)
Experiential-Learning 16.3 : Export Incentives and Marketing
Total activity hours (5 hours) Team work project (5 hours) Students will develop a strategy to export Siddha external medicine products, exploring international markets. They will present a case study where they create a detailed export plan, identify suitable export incentives, and design a marketing campaign aimed at international audiences.
Experiential-Learning 16.4 : Mobile Apps for Siddha Health Tracking
Total activity hours (8 hours) Mobile Learning (4 hours) Students will engage in a mobile learning activity where they conceptualize and design a mobile app for Siddha health tracking. The focus will be on user experience, key health metrics, and integration with external therapies. They will create a prototype of the app, emphasizing how it can benefit patients and the public. At the end of the session, students will present their prototype to a panel of peers for feedback.

Field Visit (4 hours)
Students will visit a facility or organization where they can observe wellness programs tailored to specific public sectors, such as corporate, education, or healthcare sectors. They will learn how wellness program content is developed, delivery methods are chosen (online/offline), and Siddha external therapies are integrated into these programs. Each group will design and launch a pilot version of their wellness program, gaining experiential insights into wellness management during the visit.

Modular Assessment

Assessment method	**Hour**
Instructions: Conduct a structured modular assessment. Assessment will be 50 marks. Keep 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. 360-Degree Evaluation (25 Marks) Feedback from Peers: 7 marks Self-Assessment: 6 marks Supervisor Feedback: 6 marks Behavioral Attributes: 4 marks Application of Feedback: 2 marks 2. Portfolios (25 Marks) Content & Relevance: 8 marks Organization & Structure: 6 marks Creativity & Presentation: 5 marks Reflective Elements: 4 marks Accuracy & Completeness: 2 marks Or Any practical in converted form can be taken for assessment.(25 marks) And Any of the experiential as portfolios/reflections/presentations can be taken as an assessment.(25 marks)	4

Paper No : 3 Thokkanam, Biomechanics and Physical Medicine

Semester No : 3

Module 17 : Essentials of stability, mobility, Therapeutic exercise and Traction

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

Describe the forces acting upon the body, planes and axes of our body, therapeutic exercise and traction.
Demonstrate the gait cycle & its types , the normal and abnormal postures, therapeutic exercise and traction and Identify the biomechanical importance, and the potential areas of vulnerability.
Perform therapeutic exercise and traction

M 17 Unit 1 Basic concepts of Bio mechanics

17.1.1 Kinetics 17.1.2 Kinematics 17.1.3 Center of gravity 17.1.4 Line of gravity 17.1.5 Base of support 17.1.6 Anatomical planes of our body 17.1.7 Axes of our body

References: 69,80,191,194

3A	3B	3C	3D	3E	3F	3G
CO1,CO2	Define the forces, planes, axes of our body and biomechanical components	1	Lecture	CC	Knows-how	L&GD,L &PPT
CO1,CO2	Demonstrate the center of gravity, line of gravity and the base of support	1	Practical Training 17.1	PSY-GUD	Shows-how	D
CO1,CO2	Conduct the importance of biomechanics in musculo skeletal system and Develop a patient education program and lifestyle changes for musculo skeletal system wellness	3	Experiential-Learning 17.	AFT-SET	Does	PBL,CBL

	based on biomechanics		1			

M 17 Unit 2 Principles of posture

17.2.1 Overview of vaayu bootha koorukal 17.2.2 Ideal alignment of body segments 17.2.3 Spinal curvatures 17.2.4 Posture types

References: 19,42,68,190,194

3A	3B	3C	3D	3E	3F	3G
CO1,CO2	Describe the vayu botha koorukal (anatomical posture & types)and spinal curvatures	1	Lecture	CC	Knows-how	L&GD,L &PPT
CO1,CO2	Demonstrate the vayu bootha koorukal (Anatomical postures and types) and ideal alignment of body segments	1	Practical Training 17.2	PSY-GUD	Shows-how	D
CO1,CO2	Identify the ergonomic problems in working places and an effective treatment plan for the prevention of work related repetitive stress injuries.	3	Experiential-Learning 17. 2	AFT-SET	Does	FV,CBL

M 17 Unit 3 Basics of human movement

17.3.1 Movement and its types 17.3.2 Anatomical movements 17.3.3 Muscles for movement

References: 19,42,61,68,69,71,194

3A	3B	3C	3D	3E	3F	3G
CO1,CO2	Describe the anatomical movements and List down the muscles for movement (Region wise)	2	Lecture	CC	Knows-how	L&GD,L &PPT
CO1,CO2	Demonstrate the anatomical movements and its range of motion.(Flexion , extension, abduction , adduction , internal rotation , external rotation , pronation , supination ,	4	Practical Training 17.3	PSY-GUD	Shows-how	SIM,D

	inversion , eversion , protraction ,retraction , elevation , depression).Demonstrate the muscles for movement.					
CO1,CO2	Demonstrate proficiency in identification of muscles for movement, normal and abnormal range of motions.	3	Experiential-Learning 17.3	AFT-CHR	Does	CBL,SIM

M 17 Unit 4 Essentials of Locomotion

17.4.1Types of locomotion 17.4.2 Gait cycle 17.4.3 Muscles for gait 17.4.4 Nervous control for gait

References: 19,42,193,194

3A	3B	3C	3D	3E	3F	3G
CO1,CO2	Describe the different types of locomotion, gait cycle	1	Lecture	CC	Knows-how	L&PPT ,L&GD
CO1,CO2	Demonstrate different types of gait and muscles for gait	4	Practical Training 17.4	PSY-GUD	Shows-how	D,SIM
CO1,CO2	Discuss the nervous control on gait and identify the affected muscle and nerve	4	Experiential-Learning 17.4	AFT-SET	Does	CBL,PER

M 17 Unit 5 Overview of Therapeutic exercise

17.5.1 Balance and coordination exercise 17.5.2 Strengthening exercise 17.5.3 Mobilisation exercise 17.5.4 Stretching exercise

References: 1,6,226,227

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

CO2,CO4	Asses the muscle power with grading methods(MRC),MMT, Joint Rangewith Gooniometry, Limb length with various methods (apparent, true lengthening etc) Muscle girth and types of excercises active, passive, assisted ,resisted, Balance, coordination, strengthening, mobilization excercises	2	Lecture	CAP	Knows-how	L&PPT ,L&GD
CO2,CO4	Demonstrate the assessment methods of limb length and girth exercise patterns	4	Practical Training 17.5	PSY-GUD	Shows-how	D-BED,D
CO2,CO4	Demonstrate the exercises and its methods with examples	6	Experiential-Learning 17.5	PSY-GUD	Shows-how	CBL,D-BED

M 17 Unit 6 Overview of traction

17.6.1 Methods of traction 17.6.2 Traction at different levels 17.6.3 Indications and contra indications 17.6.4 Massage and manipulation methods

References: 1,6,226

3A	3B	3C	3D	3E	3F	3G
CO2,CO4	Interpret the traction methods, indications, contra indication, effects , uses and Clinical Conditions in which traction is applied	3	Lecture	CAP	Knows-how	L&GD,L &PPT
CO2,CO4	Demonstrate the Traction kit, traction cot, methods, manual and mecanical ,intermittet and static,durationand number of sittings	6	Practical Training 17.6	PSY-GUD	Shows-how	D,D-BED
CO2,CO4	Conduct the traction techniques	7	Experiential-Learning 17.6	AFT-CHR	Does	PBL,CBL

Practical Training Activity

Practical Training 17.1 : Center of gravity (COG), Base of support (BOS).

Total learning hours (1 hour)
Demonstration, Practical
Step 1-The teacher will show the plumb line assessment video and ensure the plumb line is long enough to reach the top of the head to the heels.
Step 2 -The teacher should demonstrate how to align the plumb line .
Step 3 -The teacher should show the normal alignment of head , shoulder ,hip , knee and ankle .
Step 4 -The teacher should instruct the student to observe the patient's alignment in relation to plumb line.
Step 5 -The teacher should instruct the students to document the patient's alignment and inform treatment plans or further assessments.
Step 6 -The faculty will show the stance length assessment video and ensure the measuring tape is long enough to measure the distance between the heels.
Step 7 -The faculty should demonstrate the starting position and measurement procedures.
Step 8 -The teacher should demonstrate how to measure the stance length and stance time.
Step 9 -The faculty should instruct the student to measure and document the stance length and stance time.

Practical Training 17.2 : Assessment of body alignments

Total learning hours (1 hour)
Demonstration
Step 1 -The faculty should sensitize the student to various anatomical postures through visual aids
Step 2- The faculty should display the pictures about normal spinal curvatures and alignment of body segments.
Step 3 -The teacher should demonstrate the ideal alignment of body segments like position of head , shoulder alignment through bed side clinics.
Step 4 -The faculty should demonstrate how to differentiate the normal and abnormal curvatures in spine and foot.
Step 5- The faculty should demonstrate the normal alignment of pelvic girdle.
Step 6 -The teacher should instruct the students to practice the alignment practicals and record the findings.
Step 7 -The teacher should display the standardized assessment methods.

Practical Training 17.3 : Range of motion assessment.

Total learning hours(4 hours)
Demonstration
Step 1 -The teacher should demonstrate the anatomical movements of upper and lower trunk through visual aids.
Step 2 -The teacher should display the muscles of upper and lower trunk.
Step 3 - Display the videos about goniometer.
Step 4 - The faculty should demonstrate how to use the goniometer -Universal or specific.
Step 5 -The faculty should demonstrate the areas for goniometer placement.

Step 6 -The faculty should demonstrate the range of motion (ROM) assessment chart.
Step 7 -The teacher should differentiate the active range of motion , passive range of motion and resistive range of motion.
Step 8 -The faculty should demonstrate the muscles responsible for a particular movement.
Step 9 -The teacher should instruct the students to perform the assessment procedures and record the findings.

Practical Training 17.4 : Assessment of gait and its abnormalities.

Total learning hours (4 hours)
Simulation (2 hours)
Step 1 -Ensure the suitable environment (Flat , smooth and non slippery surface).
Step 2-The faculty should display the visual aids about gait cycle.
Step 3 -The teacher should display the pictures of muscles involved in gait cycle.
Step 4 -The teacher should sensitize the students to measurement tool like video analysis software or manual observation.
Demonstration (2 hour)
The teacher should ,
Step 1-Demonstrate the muscles and nerves involved in gait cycle.
Step 2-Demonstrate how the foot strikes the ground (Heel first -toe next).
Step 3-Instruct the students to observe how weights shift from one leg to another.
Step 4-Instruct the students to observe the walking patterns from multiple angles (visual gait analysis).
Step 5-The faculty should demonstrate common gait abnormalities
Step 6-The should demonstrate the impaired biomechanics.
Step 7-Discuss the impairments and how to target the affected muscles.

Practical Training 17.5 : Assessment of Limb Length, and Girth

Total learning hours (4 hours)
Practical, Demonstartion, Demonstration bed side
Step 1 -Material preparation
Step 2 -Introduction to Assessment Techniques:
Briefly review anatomy related to joint range, limb length, and limb girth and discuss the importance of each measurement in clinical practice.Demonstrate proper techniques for measuring joint ROM, limb length discrepancies, and limb girth with the use of a goniometer and tape measure.
Step 3 -Limb Length Measurement

Measurement Technique: Measure from fixed anatomical landmarks (e.g., anterior superior iliac spine to the medial malleolus for lower limb length) to identify any limb discrepancies.Compare measurements between limbs to detect discrepancies and document findings.
Step 4 -Limb Girth Measurement
Measuring Girth: Use a tape measure to measure limb girth at specific points (e.g., mid-thigh, mid-calf, or biceps), noting any atrophy or swelling.Record and compare girth measurements of affected and unaffected limbs to assess for muscle wasting or swelling.
Step 5 -Post Acctivity Discussion
Step 6 -Assessment and feedback

Practical Training 17.6 : Demonstration of Traction Kits, Methods, and Techniques

Total learning hours (6 hours)
Demonstration (3 hours)
Step 1 - Material preparation (30 Minutes)
Step 2 -Introduction to Traction Kits and Equipment (1 Hour)
Review the purpose of traction therapy, including common conditions it treats (e.g., spinal decompression, fractures, joint immobilization).Introduce each component of the traction kit and traction cot, explaining the function of weights, pulleys, and other accessories.
Step 3 - Setting Up Traction on a Traction Cot (1 hour 30 minutes)
Demonstrate how to set up a basic traction system using the cot. Show how to attach weights and align ropes and pulleys correctly.Explain the importance of ensuring patient comfort and alignment during setup to prevent injury.
Demonstartion Bed side (3 hours)
Step 1 -Demonstration of Traction Types (2 Hours)
Manual Traction: Demonstrate manual traction techniques by applying controlled, hands-on pressure to specific areas, such as the neck or lower back.
Mechanical Traction: Demonstrate how to use mechanical devices for traction, such as a cervical traction unit or lumbar traction device.
Step 2 -Assessment and feedbacks (1 hour)

Experiential learning Activity

Experiential-Learning 17.1 : Applied biomechanics

Total activity hour (3 hours)
Case based Learning, Simulation (2 hours)
Step 1- Familiarize with the assessment equipments.
Step 2 -Recognize the anatomical variations.
Step 3-Ask the patient to stand with their feet shoulder -width apart.

Step 4 -Ensure the patient's weight is evenly distributed on both feet.
Step 5 -Instruct the patient to relax their shoulders and maintain a neutral spine.
Step 8 -Perform the plumb line and stance length assessment
Step 9 -Demonstrate proficiency in measuring center of gravity(COG)
Step 10 -Plumb line method
Observe the patient's alignment in relation to the plumb line.Note deviations or asymmetries.Document the patient's alignment and deviations from the plumb line.
Problem based Learning (1 Hour)
Stance length method :Place the measuring tape on the floor parallel to the patient's feet.Measure the distance between the heels of the both feet.Record the measurement in centimeters or inches. Familiarize with digital plumb line and multiple plumb lines assessment methods Familiarize with 3D foot print analysis Familiarize with AI tools for assessment Discuss others about the findings and develop a education program for musculo skeletal health.

Experiential-Learning 17.2 : Assessment of ergonomics

Total activity hours (3 hours)
Case based learning (2 hour)
Step 1 -Familiarize with postural types, normal and abnormal curvatures in spine, pelvic tilts.
Step 2 -Instruct the patient about the procedures.
Step 3 -Stand behind the patient to assess their posterior alignment.Observe the patient's anterior and lateral side alignments.
Step 4 -Perform the assessments-Assess the ear , shoulder ,hip , knee and ankle alignments.Observe the lordosis and kyphosis. Note any deviations from normal posture.
Step 5 -Record the findings.
Step 6 -Demonstrate proficiency in postural alignment techniques.
Field visit (1 HOUR)
Identify the postural issues in work places.discuss the findings and develop a treatment plan.Develop patient education program for ergonomics issues.

Experiential-Learning 17.3 : Examination of Range of motion

Total activity hours (3 hours)
Case based learning (2 hours)
Step 1- Familiarize with the movements, muscles of upper and lower trunk,goniometer handling, normal range of motion values.
Step 2 -Review patient's medical history and health condition.
Step 3 - Inform the patient about the procedures.
Step 4 -Choose a quiet well -light room
Step 5 -Perform joint examinations.

Step 6 -Record range of motion (ROM) measurements using degrees.
Step 7 - Record the limitations and compare to normal values.
Step 8 -Identify where to improve.
Step 9 -Maintain patient comfort and safety.
Simulation(1 hour)
Step 1 -Demonstrate proficiency in range of motion examinations.
Step 2 -Teach others about the range of motion assessment.
Step 3 -Demonstrate proficiency in muscle memory.

Experiential-Learning 17.4 : Gait analysis

Total activity hours (4 hours)
case based learning(3 hours)
Step 1 -Familiarize with gait cycle
Step 2 -Familiarize with the muscles which are participated in gait cycle.Familiarize with the methods of gait analysis through practicals and videos.
Step 3 - Inform the procedure to the patient.
Step 4 -Observe overall postures.
Step 5 -Perform gait analysis.
Step 6 -Note how the foot strikes.
Step 7 -Observe the individual gait from multiple angles.
Step 8 -Measure the step length and width.
Step 9 -Measure time taken to walk a set distance.
Step 10 -Calculate the gait speed.
Step 11 -Record the findings.
Step 12 -Compare the findings to normal values.
Step 13 -Observe the impairments.
Presentation(1 hour)
Teach others about the muscles role on gait and treatment plan for gait impairments.

Experiential-Learning 17.5 : Case-Based Assessment and Exercise Program Development for Muscle and Joint Rehabilitation

Total activity hours (6 hours)
Case-Based Learning(3 hours)

Step 1 -Introduction to the Patient Case
Each student receives a simulated patient case with mobility or muscle function challenges (e.g., post-injury knee ROM limitation, muscle atrophy post-surgery).Review the patient’s history, specific impairments, and goals for therapy
Step 2 - Material preparation
Step 3 - Conducting Limb Length, and Girth Measurements
Measure limb length and girth to assess for discrepancies or muscle wasting, documenting each measurement.Analyze findings to identify specific areas requiring focus in the exercise program.
Demonstration bedside (3 Hour)
Step 1 -Exercise Program Development:
Based on the assessment findings, students design a personalized exercise program targeting the patient’s needs (e.g., flexibility for limited ROM, strengthening exercises for muscle atrophy).Include specific exercises, sets, repetitions, and progression plans to support recovery and improvement
Step 2 -Demonstration and Patient Education:
Demonstrate each exercise in the program, ensuring the student knows how to perform each exercise safely and effectively.Provide guidance on exercise frequency, form, and adjustments based on the simulated patient’s progress or limitations.
Step 3 -Post Activity Wrap Up

Experiential-Learning 17.6 : Case-Based Traction Application and Patient Treatment Planning

Total activity hours (7 hours)
Case-Based learning, Problem based learning
Step 1 -Material preparation (30 minutes)
Step 2 -Introduction to the Patient Case: (2 hour)
Assign each student a case scenario (e.g., patient with lumbar disc herniation, patient with cervical muscle spasm) detailing symptoms, condition severity, and contraindications.Review the patient’s history and discuss the most suitable traction type for each case
Step 3 -Selection of Traction Type and Setup: (4 hours)
Traction Type Selection: Based on the patient's case, each student chooses between manual or mechanical traction and decides on intermittent or static mode.Traction Setup: Set up the traction cot or device, adjusting weights, ropes, and angles as needed for the patient’s specific needs.Safety Checks: Ensure all equipment is secure, and explain how you will monitor the patient during traction.
Step 4 -Post Activity Wrap Up (30 minutes)

Modular Assessment

Assessment method	Hour
Instructions: Conduct a structured modular assessment. Assessment will be 50 marks. Keep 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.Quiz (25 marks) 25 questions (each question 1 mark) Topic : Biomechanics Comprehension : 5 questions Application : 10 questions (LOG ,COG , BOS, posture , gait ,traction,balance and coordination) Analysis : 10 questions (Types of movements , muscle and nervous control on movement , strengthening and stretching exercises) 2. Oral examinations (25 marks) Examiners need to conduct the oral examinations.Test the content and conceptual understanding of biomechanics 1.Knowledge and understanding : 5 marks 2.Clarity – Test the technical language : 5 marks 3.Clinical application : 5 marks 4.Responses (Attitude) : 5 marks (Answers questions confidently , accurately and timely) Or 3.Class presentation (25 marks) 1.Content : 5 marks 1.1 Depth of subject 1.2 Current research inclusion 1.3 Clinical correlation 1.4 bibliography 2.Presentation skills (10 marks) 2.1 Clarity of Speech 2.2 Time management 2.3 Use of visual aids 2.4 Audience engagement 3.Discussions (10 marks) 3.1 Handling questions 3.2 Critical thinking 3.3 Scientific reasoning	4

3.4 Knowledge application
Or
Any practical in converted form can be taken for assessment (25 Marks)
and
Any of the experiential as portfolio / reflections / presentations can be taken as an assessment (25 Marks)

Module 18 : Thasai Enbu Mandala Kayangal (Common Musculo skeletal system injuries), Electrotherapy, Cryotherapy, Heat therapy

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

Describe the types of muscle fatigue,sprains , spasms and spasticity, tendinitis, tendinosis, disc pathologies and identify the potential areas of vulnerability.
Demonstrate the nerve compressions and impingements.
Collaborate with other departments and do research in the field of pain managements.

M 18 Unit 1 Muscle & tendon injuries

18.1.1 Muscle injuries 18.1.1.1 Muscle fatigue 18.1.1.2 Accumulation of metabolites 18.1.1.3 Neuronal fatigue 18.1.1.4 Muscle spasm 18.1.1.5 Cramps 18.1.1.6 Spasticity 18.1.1.7 Strain 18.1.1.8 Contusion 18.1.1.9 Disuse atrophy 18.1.1.10 Denervation 18.1.2.Effects of immobility in extra cellular matrix 18.1.3. Stages of inflammation. 18.1.4.Tendon injuries 18.1.4.1.Tendinitis. 18.1.4.2.Tendinosis 18.1.4.3.Tenosynovitis.

References: 19,42,66,73,77,78,190,193,194

3A	3B	3C	3D	3E	3F	3G
CO1,CO2	Describe muscle fatigue mechanism, muscle spasm, spasticity and stiffness, protective spasm	1	Lecture	CC	Knows-how	L&GD,L &PPT
CO1,CO2	Demonstrate the disuse atrophy and denervation, muscle twitch and clonus, tendinitis & tendinosis and electromyography (EMG)	3	Practical Training 18.1	PSY-GUD	Shows-how	D-BED,L RI,X-

						Ray,D
CO1,CO2	Demonstrate the protective spasm from other muscle pathologies and choose an effective thokkanam procedure, inflammatory stages and patient education program for prevention of repetitive stress injuries in tendons and its sheath.	3	Experiential-Learning 18.1	PSY-GUD	Does	CBL,PBL

M 18 Unit 2 Ligament & fascia injuries

18.2.1 Pathologies of ligament 18.2.1.1 Grading system of ligament injury 18.2.2 Pathologies of fascia 18.2.2.1 Adhesion 18.2.2.2 Trigger points

References: 72,77,78,193,194

3A	3B	3C	3D	3E	3F	3G
CO1,CO2	Describe the microanatomy of ligaments, classification of fascia and its functions	1	Lecture	CC	Knows-how	L&PPT ,L&GD
CO1,CO2	Demonstrate the grading system of ligamental injury, importance of ligaments on stability, the trigger points (TRP) and adhesion.	2	Practical Training 18.2	PSY-GUD	Shows-how	D,D-BED
CO1,CO2	Demonstarte proficiency in special tests to rule out ligamental injury, the effects of immobility and repetitive stress impacts on ligaments and develop a treatment protocol to do research in force transmission and the sensory functions of the fascia	3	Experiential-Learning 18.2	PSY-ADT	Does	PBL,CBL ,DIS

M 18 Unit 3 Narambu & Inter vertebral discs (IVD) pathippukal

18.3.1 Intervertebral disc diseases 18.3.1.1 Disc bulge 18.3.1.2 Protrusion 18.3.1.3 Extrusion 18.3.1.4 Sequestration 18.3.1.5 Annular tear 18.3.1.6 Herniated disc 18.3.1.7 Stenosis 18.3.2 Nerve diseases 18.3.2.1 Axonotmesis 18.3.2.2 Neurotmesis 18.3.2.3 Neuropraxia 18.3.3 Compression pathology (external & internal) 18.3.4 Internal tension pathology 18.3.5 Impingements

References: 77,78,193,194

3A	3B	3C	3D	3E	3F	3G
CO1,CO2	Describe the disc dehydration & stenosis, the annular tear & herniated disc and the	2	Lecture	CC	Knows-	L&PPT

	nerve injuries				how	,L&GD
CO1,CO2	Demonstrate the disc bulge, protrusion , extrusion and sequestration, the external compression nerve injuries, the internal compression injuries, internal tension nerve injuries and the nerve impingements.	3	Practical Training 18.3	PSY-GUD	Shows-how	D-BED,D
CO1,CO2	Evaluate the forces acting upon the inter vertebral discs (IVD) and demonstrate proficiency in assessment of disc pathologies, Identify the nerve compression mechanism and the internal compression mechanism and develop the safe and effective manipulative protocol.	4	Experiential-Learning 18.3	PSY-ADT	Does	D,CBL

M 18 Unit 4 Concepts of Pain

18.4.1 Neurobiology of pain 18.4.2 Pain conduction pathway 18.4.3 Theories of pain 18.4.4 Modulating factors of pain.

References: 68,81,190,194

3A	3B	3C	3D	3E	3F	3G
CO1,CO2	Discuss the neurobiology of pain and theories of pain	1	Lecture	CC	Knows-how	L&GD,L&PPT
CO1,CO2	Demonstrate the pain modulating factors and assessment methods.	2	Practical Training 18.4	PSY-GUD	Shows-how	DIS,D-BED
CO1,CO2	Interpretate with other departments and do research in the field of pain management and evaluate the asta raagangal role in fibromyalgia	3	Experiential-Learning 18.4	PSY-ADT	Does	D,DIS

M 18 Unit 5 Electrical Stimulation

18.5.1 Galvanic current 18.5.2 Faradic current 18.5.3 Choice of current 18.5.4 Indications and contra indications and intensity of stimulation 18.5.5 Preparation,application and selection of electrodes 18.5.6 Inter Ferential Therapy (IFT) 18.5.7 Transcutaneous Electrical Nerve Stimulation (TENS)

References: 1,6,226,227

3A	3B	3C	3D	3E	3F	3G
CO2,CO4	Describe the principles Electrical stimulation galvanic and faradic current electrodes types,eletrode care	1	Lecture	CC	Knows-how	L&PPT ,L_VC
CO2,CO4	Demonstrate the Equipments, selection of electrodes,placement of electrodes, intensity and timings, explain the feel of the modality when they started.	2	Practical Training 18.5	PSY-GUD	Shows-how	DL,D
CO2,CO4	Discuss the therapeutic effects,of the electricals modalities and its effects with others	4	Experiential-Learning 18.5	AFT-CHR	Does	CBL,PBL

M 18 Unit 6 Cryo Therapy, Hydrotherapy, Photo Dynamic Therapy, Micro Needling

18.6.1 Cryotherapy 18.6.2 Hydrotherapy 18.6.3 Photo dynamic therapy 18.6.4 Micro needling

References: 1,6,226,227,228

3A	3B	3C	3D	3E	3F	3G
CO2,CO4	Discuss the mechanism of action, Indication & Contraindication of Cryo therapy, Hydrotherapy, Photo dynamic therapy, micro needling	1	Lecture	CAN	Knows-how	L&GD,L &PPT
CO2,CO4	Demonstrate the Ice pack, Ice massage ,cold pack , cold whirlpool, cryocuff,cold spray,cry strech ,cryo kinematics.	3	Practical Training 18.6	PSY-GUD	Shows-how	D-BED
CO2,CO4	Apply the Icepack, Ice massage ,cold pack ,cold whirl pool, cryo cuff and cryo stretch	5	Experiential-Learning 18.6	AFT-CHR	Does	CBL,PBL

M 18 Unit 7 Heat Therapy

18.7.1 Superficial heat therapy 18.7.1.1 Hydro collateral pack 18.7.1.2 Paraffin wax bath 18.7.1.3 Suana 18.7.1.4 IRR (Infra Red Radiation Therapy) 18.7.1.5

Fluido therapy 18.7.2 Deep heat therapy 18.7.2.1 Ultra sound therapy 18.7.2.2 Short wave diathermy 18.7.2.3 Infra red radiation 18.7.2.4 Laser 18.7.2.5 Microwave diathermy

References: 1,6,226,227

3A	3B	3C	3D	3E	3F	3G
CO2,CO4	Define and describe the principles,methods,physiological, therapeutical effects, indication,contra indications, dangers, spacing, tuning of electrical modalities	3	Lecture	CC	Knows-how	L&PPT ,L&GD
CO2,CO4	Demonstrate the equipments TENS,IFT,Ultrasound, LASER , Wax bath , IRR lamp Micro wave Diathermy, procedure of placing,spacing,safety measures while using the electrical equipments	5	Practical Training 18.7	PSY-GUD	Shows-how	DL,D
CO2,CO4	Practice the equipments with all the instruction given for TENS, IFT,Ultrasound, LASER, Wax bath, IRR lamp, Micro wave Diathermy and its effects	4	Experiential-Learning 18.7	AFT-CHR	Does	CBL

Practical Training Activity

Practical Training 18.1 : Electromyography

Total learning hours (3 hours)
Demonstration (1 Hour)
The teacher should display the videos about electromyography mechanism.
Instruct the patient to remove all ornaments and ask them for having any other electrical medical device like pacemaker.
Instruct not to take sedatives and stimulants before testing.
Demonstration Bed side (1 Hour)
The teacher should demonstrate the pattern recognition such as rhythmic discharges or isolated discharges.
The teacher should demonstrate the amplitude analysis such as high or low amplitude.
The teacher should demonstrate the frequency analysis such as rhythmic or random discharge.
The faculty should demonstrate the normal electromyography (EMG) findings such as no electrical activity is present on rest, normal electrical activity is present during contractions and no abnormal electrical activity is present, indicating no nerve damage.
Lab report interpretation (1 Hour)

The faculty should demonstrate the muscle atrophy findings such as reduced muscle activity and amplitude.
The faculty should demonstrate the muscle hypertrophy findings such as increased muscle activity and amplitude.
The faculty should demonstrate the abnormal muscle activity (muscular dystrophy) and abnormal fatigue i.e decremental response to repetitive stimulation (myasthenia gravis).
The teacher should demonstrate muscle cramps findings such as high amplitude and repetitive discharges.
The teacher should demonstrate the muscle fasiculations findings such as brief and isolated discharges.
The teacher should demonstrate the axonal damage findings such as fibrillations and sharp waves.
The teacher should demonstrate the neuropathy findings such as reduced amplitude and conduction velocity.
The faculty should discuss the limitations and pitfalls of elctromyography such as false negatives , false positives and technical limitations.

Practical Training 18.2 : Ligamental injury grading system.

Total learning hour(2 hour)
Demonstration, Demonstration bedside.
The faculty should display the visual aids about the anatomy of ligaments and it's injury mechanism.
The faculty should display the ligament grading system.
Practical demonstration :
The teacher should demonstrate the ligaments present in each and every joint.
The teacher should demonstrate the special tests to assess the ligament injuries like lacmann test , anterior drawer and apprehension test .
The teacher should demonstrate the valgus and varus stress test.
The teacher should demonstrate the spurling and cervical distraction test.
The teacher should demonstrate the imaging techniques to rule out ligament injury.
The teacher should demonstrate the ligament injury grading system.
The teacher should differentiate the fascial adhesion ,trigger point and muscle tauts.
Student instruction:
The students should observe the procedures and record the findings for further assessments.

Practical Training 18.3 : Intervertbral disc and nerve injuries assessment.

Total learning hours(3 hours)
Demonstration, Demonstration bedside
The teacher should sensitize the students to imaging techniques.
The teacher should sensitize to which imaging technique is best for disc pathologies.

The teacher should show the visual aids about the special tests to rule out nerve injuries.
Disc pathology assessment :
The teacher should demonstrate the disc herniation imaging findings such as disc bulge , disc material protrusion and extrusion.
The teacher should demonstrate the imaging findings of degenerative disc disease such as disc space narrowing and presence of osteophytes.
The teacher should demonstrate the imaging findings of discitis such as increased signal intensity on magnetic resonance imaging.
The teacher should demonstrate the imaging findings of spondylolisthesis such as forward displacement of one vertebra over another.
The teacher should demonstrate the imaging findings of spinal stenosis such as narrowing of spinal canal.
Student's instruction:
The student should observe the findings and record it for further evaluation.
Nerve injury assessment : One hour.
The teacher should demonstrate the diagnostic tests for nerve pathologies like tinel’s sign , phalen’s test ,straight leg raise test and spurling test.
The teacher should demonstrate the various type of external nerve compression inuries (like carpal tunnel, radial tunnel and cubittal tunnel) and it's assessment techniques.
The faculty will demonstrate internal compression injuries (like cervical radiculopathy , lumbar radiculopathy and piriformis syndrome) and it's assessment.
The teacher should demonstrate the correct traction method (To prevent internal tension injuries) .
The teacher should instruct the students to observe the test procedures and record the findings.

Practical Training 18.4 : Assessment of pain

Total learning hours (2 hours)
Demonstration bed side (1 hour 30 minutes)
The faculty should display the visual aids about various pain assessment scales and questionnaire.
The faculty should instruct the students to perform general examinations before the pain assessment (Vital signs and mental status examinations).
The faculty should demonstrate the specific examinations such as pain location , intensity ,quality , duration and pain aggravating /relieving factors .
The faculty should demonstrate the musculoskeltal examinations (Range of motions ,tenderness).
The teacher should demonstrate neurological examinations for pain assessment (Sensory and motor examinations).
The faculty should demonstrate the visual pain analogue scale (VAS).
The teacher should demonstrate the McGill pain questionnaire to assess the pain quality and intensity.
Discussion (30 minutes)
The teacher should explain about observational methods to assess the pain like facial expression , body language , appetite and sleep.
The teacher should instruct the student to observe the findings.
The teacher should instruct the student to record the pain intensity by the patient's own words.

Practical Training 18.5 : Demonstration of Electrotherapy Equipment, Electrode Selection, Placement, Intensity, and Timing

Total learning hours(2 hours)
Demonstration, Demonstration lab
Step 1 -Material preparation
Step 2- Introduction to Electrotherapy Equipment:Provide a brief overview of electrotherapy devices such as TENS and IFT, highlighting their applications, benefits, and safety considerations.Discuss the different types of electrodes available, including self-adhesive pads, rubber electrodes with gel, and carbon electrodes, and explain how each type is suited to different treatment areas.
Step 3 -Selection and Placement of Electrodes:Electrode Selection: Demonstrate how to select electrodes based on the treatment area and patient needs (e.g., large pads for the back, small pads for the wrist).Placement: Show how to position electrodes around the treatment site, either in a single-channel (one area) or dual-channel (two areas) setup, depending on the treatment plan.Spacing: Explain ideal spacing between electrodes to avoid “hot spots” and ensure even distribution of current, typically maintaining at least a 1-inch gap.
Step 4 -Adjusting Intensity and Duration:Intensity: Begin with a low-intensity setting and gradually increase while observing the patient’s response. Explain how to find a comfortable level that allows effective treatment without causing discomfort.Timing: Set the treatment duration based on the treatment goals and device guidelines, typically ranging from 15 to 30 minutes.Demonstrate how to adjust intensity gradually and monitor the patient’s feedback, ensuring they are comfortable.
Step 5 -Explaining the Sensation:Describe the expected sensation to the patient, such as tingling, a gentle pulsing, or a warm feeling, and ask them to report if it becomes uncomfortable.Emphasize that sensations should remain mild and not cause discomfort or pain, adjusting settings if necessary.

Practical Training 18.6 : Demonstration of Cold Therapy Techniques

Total activity hours (3 hours)
Demonstration bed side (3 Hours)
Step 1 -Introduction to Cold Therapy and its Effects:Briefly review the purpose and physiological effects of cold therapy, including pain reduction, inflammation control, and muscle spasm relief.Discuss indications and contraindications for cold therapy and explain when each technique is best used.
Step 2 - Application of Each Technique:
Ice Pack: Demonstrate how to apply a basic ice pack, ensuring even placement over the affected area. Discuss the ideal duration (typically 15-20 minutes) and precautions.
Ice Massage: Show how to use a small ice cube or frozen cup to perform a circular massage on a specific area, such as a tendon or muscle. Emphasize keeping the massage moving to prevent frostbite.
Cold Pack: Apply a commercial cold pack to an injury, explaining how to secure it in place and the recommended time for application.
Cold Whirlpool: Demonstrate the use of a cold whirlpool (if available) for limb immersion, typically at 50-60°F (10-15°C). Discuss safety precautions and contraindications for patients with circulation issues.
Cryocuff: Show how to apply a cryocuff to the knee or shoulder, explaining the combination of cold and compression. Review indications, precautions, and recommended duration.
Cold Spray: Demonstrate cold spray application over a muscle or tendon. Instruct students to hold the spray 12-18 inches away and spray briefly while stretching the muscle.

Cryostretch: Combine cold application with a gentle stretch using a band or strap, emphasizing safety in maintaining muscle length without causing strain.
Cryokinetics: Demonstrate cryokinetics by applying cold to a sprain or injury site, followed by gentle, pain-free movements to improve range of motion.

Practical Training 18.7 : Electrotherapy and Thermal Therapy Equipment demonstration

Total learning hours(5 hours)
Demonstration(2 hours)
Introduction to Each Device and Its Clinical Applications:
Briefly review the purpose and benefits of each device:
TENS: Pain relief through electrical stimulation.
IFT: Pain management and muscle relaxation using medium-frequency currents.
Ultrasound: Deep tissue healing and inflammation reduction.
LASER Therapy: Tissue repair and pain relief using low-level laser light.
Wax Bath: Heat therapy for joint stiffness and muscle relaxation.
IRR (Infrared Radiation) Lamp: Superficial heating for pain and circulation improvement.
Microwave Diathermy: Deep heating for muscle relaxation and pain relief.
Demonstration lab : (3 Hours)
TENS:Show how to apply electrode pads on appropriate areas, ensuring proper spacing and secure attachment.Discuss safety measures, such as avoiding electrode placement over broken skin or near the heart, and instruct on proper intensity adjustments.
IFT:Demonstrate placement of four electrodes around the target area to create an interferential field.Explain spacing considerations and safety, especially for contraindications like metal implants.
Ultrasound:Apply gel to the treatment area and demonstrate continuous movement of the ultrasound head to avoid burns.Discuss appropriate intensity, duration, and contraindications (e.g., avoiding bone areas, acute injuries).
LASER Therapy:Demonstrate proper LASER probe placement on the target area.Instruct on safety protocols, such as using protective eyewear and avoiding exposure to eyes.
Wax Bath:Show how to dip a hand or foot into the wax bath, ensuring the wax is at a safe temperature.Emphasize safety precautions like layering wax to prevent burns and wrapping treated areas for optimal heat retention.
IRR Lamp:Position the lamp at a safe distance from the skin, typically 18-24 inches.Discuss safety measures, such as avoiding prolonged exposure to prevent burns and monitoring for skin redness.
Microwave Diathermy:Demonstrate how to position the device on the targeted area, maintaining appropriate distance for safety.Explain contraindications (e.g., metal implants) and the importance of monitoring patient comfort.

Experiential learning Activity
Experiential-Learning 18.1 : Muscle and nerve assessments
Total learning hours (3 hours) Case based learning (1 hour) The student should familiarize with the electromyography mechanism. The student should familiarize with the patient instructions like do not wear any ornaments before testing and do not having any other electrical medical device like pacemaker. The student should enquire the drug history of the patient. Execution of muscle and nerve testing (1 hour) The student should familiarize with the pattern recognition such as rhythmic discharges or isolated discharges. The student should familiarize with the amplitude analysis such as high or low amplitude. The student should familiarize with the frequency analysis such as rhythmic or random discharge. The student should familiarize with the normal electromyography (EMG) findings such as no electrical activity is present on rest, normal electrical activity is present during contractions and no abnormal electrical activity is present, indicating no nerve damage. Perform the muscle testing procedures. Observe the changes. Record the findings. Problem based learning(1 hour) The student should identify the muscle atrophy findings such as reduced muscle activity and amplitude. The student should identify the muscle hypertrophy findings such as increased muscle activity and amplitude. The student should identify the abnormal muscle activity (muscular dystrophy) and abnormal fatigue i.e decremental response to repetitive stimulation (myasthenia gravis). The student should identify the muscle cramps findings such as high amplitude and repetitive discharges. The student should identify the muscle fasiculations findings such as brief and isolated discharges. The student should identify the axonal damage findings such as fibrillations and sharp waves. The student should identify the neuropathy findings such as reduced amplitude and conduction velocity. The student should know the limitations and pitfalls of elctromyography such as false negatives , false positives and technical limitations.
Experiential-Learning 18.2 : Proficiency demonstration - ligamental injury diagnosis.
Total activity hours(3 hours) Case based learning, Problem baed learning(2 hours)

Familiarize with the ligaments of all joints,anatomy of fascia,ligamental injury grading system,imaging techniques to rule out ligamental injury.
Instruct the patient about the procedures.
Perform the tests:Before the assessment student should take the patient history and come to an conclusion to what kind of special tests are needed.
Perform the special tests.
Observe the findings.
Compare with other side.
Match the findings with ligament grading system.
Record the findings for further evaluation.
The student should demonstrate proficiency in special tests (region wise).
Discussion : 1 hour .
Discuss the importance of ligaments on stability.
Discuss the immobility and repetitive stress injury impacts on fascia.
The student should differentiate the trigger points and fascial adhesion.
Discuss the fascial continuity of upper and lower trunk muscles.
Discuss the force transmission by the fascia during various movements.
Teach the grading system of ligamental injury to others.
Teach others about the importance of fascial force transmission during locomotion.

Experiential-Learning 18.3 : Imaging techniques and nerve compression assessments

Total learning hours (4 hours)
Demonstration (2 Hour 30 minutes)
Familiarize with disc pathologies.Xray imaging techniques.diagnostic tests for nerve compression,computed tomography(CT) and magnetic resonance imaging (MRI).
The student should identify the disc bulge , disc material protrusion and extrusion to rule out disc herniation.
The student should identify disc space narrowing and presence of osteophytes to rule out degenerative disc disease.
The student should identify the increased signal intensity on magnetic resonance imaging to rule out discitis.
The student should identify the forward displacement of one vertebra over another to rule out spondylolisthesis.
Record the findings and develop a treatment plan.
Case based learning (1 hour 30 minutes)
Nerve injury assessment
The student should perform the diagnostic tests for nerve pathologies like tinel’s sign , phalen’s test ,straight leg raise test and spurling test.
The student should perform the assessment tests to rule out various type of external nerve compression injuries (like carpal tunnel, radial tunnel and cubittal tunnel).

The student should perform the assessment tests to rule out internal compression injuries (like cervical radiculopathy , lumbar radiculopathy and piriformis syndrome).
The student should demonstrate proficiency in traction methods (To prevent internal tension injuries)

Experiential-Learning 18.4 : Evaluation of pain

Total learning hours(3 hours)
Demonstration(2 hours 30 minutes)
Familiarize with verbal rating and numeric pain scales,visual analogue pain scale, critical care pain observation tool (CPOT)
The student should perform the general examinations before the pain assessment (Vital signs and mental status examinations).
The student should perform the specific examinations such as pain location , intensity ,quality ,duration and pain aggravating /relieving factors .
The student should perform the musculoskeltal examinations (Range of motions , tenderness).
The student should perform the neurological examinations for pain assessment (Sensory and motor examinations).
The student should demonstrate proficiency in visual pain analogue scale (VAS).
The student should explore the McGill pain questionnaire to assess the pain quality and intensity.
The student should perform observational methods to assess the pain like facial expression , body language , appetite and sleep.
The student should record the pain intensity by the patient's own words.
The student should demonstrate proficiency in pain assessment.
Discussions: (30 minutes)
Discuss the relationship between the asta rangangal and stress.
Discuss the relationship between cortisol and fibromyalgia.
Teach others about the pain assessment scales.

Experiential-Learning 18.5 : Electrotherapy Application and Patient Comfort Evaluation

Total activity hours (4 hours)
Case-Based learning
Step 1 -Material preparation
Step 2 -Introduction to Patient Case Scenarios:Assign each student a simulated patient case (e.g., chronic back pain, post-injury shoulder discomfort, lower leg muscle spasms) with details on symptoms, sensitivity levels, and treatment needs.Review the patient’s condition and discuss potential electrode placements and therapy settings for effective treatment.
Step 3 -Selection of Electrodes and Placement:Based on the case, each student selects the appropriate electrode type (e.g., larger pads for the back, small circular electrodes for joints).Placement: Position the electrodes accurately on the targeted area, using diagrams if needed for precise placement and spacing.Safety Check: Ensure electrodes are secure and spaced to provide even current distribution.

Step 4 -Adjusting Intensity and Explaining Sensations:Intensity and Timing: Start with a low intensity, gradually increasing it while observing the simulated patient's response and setting the duration per case guidelines (e.g., 20 minutes for chronic pain).Explaining Sensations: Describe the expected sensations, such as tingling or mild pulsing, and instruct the patient to inform you of any discomfort.
Step 5 -Post Activity Wrap Up

Experiential-Learning 18.6 : Application of Cold Therapy Techniques

Total activity hours(5 hours)
Case-Based learning (3 hours)
Introduction to the Patient Case: Assign each student a case scenario (e.g., acute ankle sprain, shoulder tendonitis, muscle strain) with detailed symptoms, injury type, and pain levels.Review each patient's history and discuss potential cold therapy techniques for their condition.
Selection of Cold Therapy Technique: Based on the case details, each student selects the most appropriate cold therapy technique (e.g., ice massage for tendonitis, cold whirlpool for sprained ankle).Explain the rationale for choosing that technique, discussing expected benefits and any specific precautions.
Problem based Learning (2 Hours)
Cold Therapy Application and Monitoring:Set up and apply the chosen technique on a partner or simulated patient, ensuring proper duration, positioning, and safety checks.Monitor for patient feedback and observe for signs of adverse reactions, such as skin irritation or discomfort.

Experiential-Learning 18.7 : Equipment Application and Treatment Planning

Total activity hours(4 hours)
Case-Based learning
Step 1- Introduction to Patient Case Scenarios:Assign each student a simulated patient case, with information on symptoms, area of treatment, pain level, and any contraindications (e.g., post-surgery, metal implants).Discuss each patient's history and potential equipment choices for optimal treatment.
Step 2 -Selection of Equipment and Application:Based on the case, each student selects the appropriate device (e.g., TENS for lower back pain, Wax Bath for hand arthritis).Equipment Setup: Set up the device according to the patient's needs, ensuring proper placement, spacing, and safety measures.Application: Apply the equipment to a simulated patient, demonstrating how to monitor patient feedback and adjust settings for comfort and effectiveness.

Modular Assessment

Assessment method	**Hour**
Instructions: Conduct a structured modular assessment. Assessment will be 50 marks. Keep structured marking pattern. Use different assessment methods in each module for the semester. Keep a record of the structured pattern used for assessment. Calculate the modular grade point as per table 6c. 1.Objective Structured Clinical Exam - 5 stations (10 marks for one station)	4

Station topics :
Muscle pathology, Ligament injury,Intervertebral disc pathology, Nerve injuries, Osteoporosis
Mark distribution :
History taking : 2 marks
Examinations : 2 marks
Diagnosis : 2 marks
Investigations : 2 marks
Differential diagnosis : 2 marks
Or
2.Objective Structured Practical Exam : Set up 5 stations
10 marks for one station
Station topics :
1.Electromyography 2.Nerve conduction study 3.Pain assessment 4.Electrotheraphy 5.Cold therapy
Mark distribution for one station :
Knowledge application : 4 marks
Practical skill and accuracy : 4 marks
Ethical principles: 2 marks
Or
Any practical in converted form can be taken for assessment (25 Marks)
and
Any of the experiential as portfolio / reflections / presentations can be taken as an assessment (25 Marks)

Semester No : 4

Module 19 : Surface anatomy related to Thokkanam – Upper body & Lower body

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

Describe the palpable areas of head and neck , shoulder, elbow, wrist, knee, ankle and lumbo sacral area.
Demonstrate the palpatory procedures.
Perform the palpation of head & neck , shoulder , elbow, wrist, knee, ankle and lumbo sacral area.

M 19 Unit 1 Palpatory procedures of Head & Neck

19.1.1 Starting position for head & neck palpation 19.1.2 Palpable structures of posterior side 19.1.3 Palpable structures of lateral side 19.1.4 Palpable structures of anterior side

References: 68,69,70,77,190

3A	3B	3C	3D	3E	3F	3G
CO1,CO2	Describe the palpable structures of Head & Neck and starting position for easy and effective palpation	2	Lecture	CC	Knows-how	L&GD,L &PPT
CO1,CO2	Demonstrate the palpable structures on posterior side, lateral side, anterior side of the head & neck.	4	Practical Training 19.1	PSY-GUD	Shows-how	D-BED,D
CO1,CO2	Identify the palpable structures on posterior side, lateral side. anterior side of the head& neck and perform the palpatory procedures.	5	Experiential-Learning 19. 1	AFT-CHR	Does	CBL,PBL

M 19 Unit 2 Palpatory procedures of Shoulder

19.2.1 Starting position for shoulder palpation 19.2.2 Palpable structures of posterior side 19.2.3 Palpable structures of anterior side 19.2.4.Palpable structures of antero lateral side

References: 68,69,70,77,190

3A	3B	3C	3D	3E	3F	3G
CO1,CO2	Describe the palpable structures of shoulder	2	Lecture	CC	Knows-how	L&PPT ,L&GD

CO1,CO2	Demonstrate the palpable structures on posterior side of the shoulder, anterior side of the shoulder and antero lateral side of the shoulder	4	Practical Training 19.2	PSY-GUD	Shows-how	D-BED,D,SIM
CO1,CO2	Identify the palpable structures on posterior, anterior and anterolateral side of the shoulder and effectuate the palpation	4	Experiential-Learning 19.2	AFT-CHR	Does	D,D-BED

M 19 Unit 3 Palpatory procedures of Elbow & Wrist

19.3.1 Starting position for elbow &Wrist palpation 19.3.2 Palpable structures of anterior side 19.3.3 Palpable structures of lateral side 19.3.4 Palpable structures of medial side

References: 68,69,70,77,190

3A	3B	3C	3D	3E	3F	3G
CO1,CO2	Describe the palpable structures of elbow, starting position for easy and effective palpation.	1	Lecture	CC	Knows-how	L&GD,L&PPT
CO1,CO2	Demonstrate the palpable structures on anterior side, medial side and lateral side of the elbow.	2	Practical Training 19.3	PSY-GUD	Shows-how	D,D-BED
CO1,CO2	Identify the palpable structures on anterior,medial and lateral side of the elbow and perform the palpatory procedures.	4	Experiential-Learning 19.3	AFT-CHR	Does	CBL,D-BED

M 19 Unit 4 Palpatory procedures of lumbosacral area

19.4.1.Starting position for Lumbosacral palpation 19.4.2.Palpable structures of lumbosacral area

References: 68,69,70,77,190

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

CO1,CO2	Describe the palpable structures of lumbar, sacral area and starting position for easy and effective palpation	2	Lecture	CC	Knows-how	BL,L
CO1,CO2	Demonstrate the palpable structures of lumbar and sacral area	4	Practical Training 19.4	PSY-GUD	Shows-how	D-BED,DIS,SIM
CO1,CO2	Identify the palpable structures, palpatory procedures of lumbar and sacral area	5	Experiential-Learning 19.4	AFT-CHR	Does	D-BED,DIS,PBL,PL

M 19 Unit 5 Palpatory procedures of knee

19.5.1 Starting position for knee palpation 19.5.2 Palpable structures of anterior side 19.5.3 Palpable structures of medial side 19.5.4 Palpable structures of lateral side

References: 68,69,70,77,190

3A	3B	3C	3D	3E	3F	3G
CO1,CO2	Describe the palpable structures of knee, starting position for easy and effective palpation	2	Lecture	CC	Knows-how	BL,L&GD,L&PPT
CO1,CO2	Demonstrate the palpable structures on anterior side, medial side and lateral side of the knee	4	Practical Training 19.5	PSY-GUD	Shows-how	SIM,D-BED
CO1,CO2	Identify the palpable structures, palpatory procedures on anterior side, medial side and lateralside of the knee	4	Experiential-Learning 19.5	AFT-SET	Does	DIS,CBL

M 19 Unit 6 Palpatory procedures of Ankle

19.6.1.Starting position for ankle palpation 19.6.2.Palpable structures of anterior side 19.6.3.Palpable structures of medial side 19.6.4.Palpable structures of lateral side 19.6.5.Palpable structures of posterior side

References: 68,69,70,77,190

3A	3B	3C	3D	3E	3F	3G
CO1,CO2	Describe the palpable structures of ankle,starting position for easy and effective palpation	1	Lecture	CC	Knows-how	L&GD,L &PPT
CO1,CO2	Demonstrate the palpable structures on anterior side, medial side, lateral side and posterior side of the ankle	2	Practical Training 19.6	PSY-GUD	Knows-how	D,D-BED
CO1,CO2	Identify the palpable structures, palpatory procedures on anterior, medial, lateral and posterior side of the ankle	4	Experiential-Learning 19.6	AFT-CHR	Does	DIS,CBL

Practical Training Activity

Practical Training 19.1 : Head & neck palpation

Total learning hours(4 hours)
Demonstration bed side (30 minutes)
The faculty should display the visual aids about anatomy of head and neck.
The faculty should display the pictures about triangles of neck.
The teacher should explain the vulnerable areas in neck.
Demonstration (One hour and 30 minutes)
The teacher should demonstrate the starting position for head &neck palpation.
The teacher should demonstrate the anterior and posterior triangles.
The teacher should demonstrate the major muscles in head and neck.
The teacher should demonstrate the superficial and deep fascial layers.
The teacher should demonstrate bones and its edges.
The teacher should demonstrate the nerve pathways.
The teacher should demonstrate the vascular pathway.
The teacher should instruct the students to observe the findings.
Demonstration of palpatory procedures : 1 hour and 30 minutes.

The teacher should demonstrate the palpatory procedures of posterior side of the head and neck.
The teacher should demonstrate the palpatory procedures of lateral side.
The Teacher should demonstrate the palpatory procedures of anterior side of the neck.
The teacher should demonstrate trigger points and tauts in muscles.
The teacher should demonstrate the structures present in anterior and posterior triangles and demonstrate how to perform safe palpation.
Practice by students : 30 minutes.
Under the guidance of faculty, the student should perform the palpation on mannequin.

Practical Training 19.2 : Shoulder palpation

Total learning hours (4 hours)
Discussion (30 minutes)
The faculty should display the visual aids about the anatomy of shoulder.
The faculty should display the pictures about bursae of shoulder.
The teacher should explain the vulnerable structure in shoulder.
Demonstration (2 hours)
The teacher should demonstrate the starting position for shoulder palpation.
The teacher should demonstrate the anterior and posterior axilllary fold.
The teacher should demonstrate the major muscles of shoulder.
The teacher should demonstrate the superficial and deep fascial layers.
The teacher should demonstrate bones and its edges.
The teacher should demonstrate the nerve pathways.
The teacher should demonstrate the vascular pathway.
The teacher should instruct the students to observe the findings.
Demonstration bed side (1 Hour 30 Minutes)
palpatory procedures
The teacher should demonstrate the palpatory procedures of posterior side of the shoulder.
The teacher should demonstrate the palpatory procedures of anterior side.
The Teacher should demonstrate the palpatory procedures of antero lateral side of the shoulder.
The teacher should demonstrate trigger points and tauts in muscles.
The teacher should demonstrate the structures present in axillary area and demonstrate how to perform safe palpation.
Under the guidance of faculty, the student should perform the palpation on mannequin.

Practical Training 19.3 : Elbow palpation

Total learning hours (2 hours)
Demonstration(1 hour)
The faculty should display the visual aids about anatomy of elbow.
The faculty should display the pictures about cubittal fossa of elbow.
The teacher should explain the vulnerable structure of elbow.
Demonstration on bed side (1 hour)
The teacher should demonstrate the major muscles with their origins and insertions.
The teacher should demonstrate the cubital fossa.
The teacher should demonstrate the radial and cubital tunnel.
The teacher should demonstrate the bony edges and condyles.
The teacher should demonstrate the nerve pathway.
The faculty should demonstrate the vascular pathway.
The faculty should discuss the nerve entrapment mechanism in between the double headed muscles which are present in elbow.
The faculty should demonstrate the elbow palpation.
The faculty should instruct the student to observe the findings.
Under the guidance of faculty the student should perform the palpation on mannequin.

Practical Training 19.4 : Lumbo sacral palpation

Total learning hours(4 hours)
Discussion (30 minutes)
The faculty should display the visual aids about the anatomy of lumbo sacral area.
The faculty should display the pictures of thoraco lumbar fascia.
The teacher should explain the vulnerable structure in lumbo sacral area.
Demonstration bedside (1 hour 30 minutes)
The faculty should demonstrate the major muscles in the lumbo sacral area with their origins and insertions.
The faculty should demonstrate the superior and inferior iliac spine.
The teacher should demonstrate the bones and its edges.

The faculty should demonstrate the nerve pathways.
The faculty should demonstrate the vascular pathway.
The faculty should demonstrate the relationship between the lumbosacral structures.
The faculty should instruct the student to observe the findings.
Simulation (2 hours)
The faculty should demonstrate the palpatory procedures of lumbar area
The faculty should demonstrate the palpation of sacral area.
The faculty should demonstrate the adhesion in muscles.
Should explain the force transmission mechanism between the lower and upper trunk .
Should discuss about the fascial connection between the muscles in lumbosacral area.
Under the guidance of faculty the students should perform the palpation on mannequin.

Practical Training 19.5 : Knee palpation

Total learning hours (4 hours)
Demonstration bedside (3 hour)
Faculty instructions :
The faculty should display the visual aids about anatomy of knee.
The faculty should display the pictures about popliteal fossa and adductor canal.
The teacher should explain the vulnerable structure in knee.
Structure demonstration:
The teacher should demonstrate major muscles of knee with their origins and insertions.
The teacher should demonstrate the bones and its edges.
The teacher should demonstrate the nerve pathways.
The teacher should demonstrate the vascular pathway.
The teacher should demonstrate the ligaments of knee.
The teacher should demonstrate the quadriceps and patella ligament.
The teacher demonstrate the femoral triangle.
The teacher should demonstrate the adductor canal.
The teacher should demonstrate the popliteal fossa and it's contents.
The teacher should instruct the student to observe the procedures.
Simulation(1 hour)
The teacher should demonstrate the palpatory procedures of knee.

Under the guidance of faculty the student perform the palpatory procedures on mannequin.

Practical Training 19.6 : Ankle palpation

Total learning hours (2 hours)
Demonstration & Demonstration Bedside(2 hours)
The faculty should display the visual aids about anatomy of ankle.
The faculty should display the pictures about arches of ankle.
The teacher should demonstrate the major muscles with their origins and insertions.
The teacher should demonstrate the superior and inferior retinaculum.
The teacher should demonstrate the flexor and peroneal retinaculum.
The teacher should demonstrate the medial and lateral malleolus.
The teacher should demonstrate the bony protrusions like sustentaculum tali and trochlea.
The teacher should demonstrate the tarsal tunnel.
The teacher should demonstrate the vascular pathway.
The teacher should demonstrate the first and fourth metatarsal web spaces.
The teacher should demonstrate the ligaments of foot.
The teacher should instruct to observe the findings.
The teacher should demonstrate the palpation of ankle.
Under the guidance of faculty the student should practice the palpation on mannequin.

Experiential learning Activity

Experiential-Learning 19.1 : Proficiency in palpation

Total activity hours (5 hours)
Case based learning(2 hours)
Choose a well lit room.
Should instruct the procedures to the patient .
Familiarize with the anatomy of head and neck.
Familiarize with the palpatory procedures of posterior , lateral , and anterior side of the neck.
Identification of structures :
The student should familiarize with the starting position for head &neck palpation.
The student should identify the anterior and posterior triangles.

The student should identify the major muscles in head and neck.
The student should identify the superficial and deep fascial layers.
The student should identify the bones and its edges.
The student should identify the nerve pathways.
The student should identify the vascular pathway.
Problem based learning (3 Hours)
The student should perform the palpation.
The student should demonstrate proficiency in palpable structures of posterior side –Occipital protuberance, Superior nuchal line,Inferior nuchal line,C7 prominence,Rounded prominence for Obliquus capitis superior insertion point,Sub occipital fossa,Ligamentum nuchae,Trapezius,Levator scapulae,Splenius capitis.
Demonstrate proficiency in the palpable structures of lateral side.C 2 Transverse process , Angle of the mandible.Sternocleido mastoid muscle belly, Scalenus muscle, Posterior triangle of the neck.
Demonstrate proficiency in the palpable structures of anterior side.
Clavicular and sternal head of sternocleido mastoid(SCM), Thyroid cartilage
Sternal notch.

Experiential-Learning 19.2 : Shoulder palpation demonstration

Total activity hours (4 hour)
Discussion (30 Minutes)
Choose a well light room
Should instruct the procedures to the patient .
Familiarize with the anatomy of shoulder.
Familiarize with the palpatory procedures of posterior , antero lateral , and anterior side of the shoulder.
Demonstration bedside (2 Hours)
The student should familiarize with the starting position for shoulder palpation.
The student should identify the anterior and posterior axillary folds.
The student should identify the major muscles in shoulder.
The student should identify the superficial and deep fascial layers.
The student should identify the bones and its edges.
The student should identify the nerve pathways.
The student should identify the vascular pathway.
Problem based Learning (1 Hour 30 minutes)
The student should perform the palpation.

Demonstrate proficiency in palpatory procedures on posterior side :Inferior angle of the scapula-Superior angle of the scapula-Medial border of the scapula-Spine of the scapula-inferior edge of the spine -superior edge of the spine -Acromial angle-Acromion-Supraspinatus muscle belly-Lateral border of the scapula-Infraspinatus tendon and insertion.
Demonstrate proficiency in palpatory procedures on anterior side :Medial end of the clavicle, sternoclavicular joint space, infraclavicular fossa, supra clavicular fossa and coracoid process.
Demonstrate proficiency in palpatory procedures on antero lateral side :Deltoid -Subscapularis tendon-Lesser tubercle of the humerus-Intertubercular sulcus and the greater tubercle of the humerus -Supraspinatus insertion.

Experiential-Learning 19.3 : Proficiency demonstration - Elbow palpation

Total activity hours(4 hours)
Case based learning, Demonstration beside
Choose a well lit room.
Should instruct the procedures to the patient .
Familiarize with the anatomy of elbow.
Familiarize with the palpatory procedures of anterior , medial and lateral side of the elbow.
Identification of structures :
The student should familiarize with the starting position for elbow palpation.
The student should identify the cubital fossa.
The student should identify the medial and lateral compartment muscles.
The student should identify the superficial and deep fascial layers.
The student should identify the bones and its edges.
The student should identify the nerve pathways
The student should identify the vascular pathway.
Palpation :
Perform the palpation on anterior side , lateral side and medial side of the elbow.
Demonstrate proficiency in palpaion on anterior side:
Boundaries of cubittal fossa -Biceps tendon -Pronator teres tendon-Brachio radialis muscle-Flexor group of muscles – flexor carpi radialis (FCR), flexor carpi ulnaris (FCU), flexor digidorum longus (FDL) , Palmaris longus.
Demonstrate profociency in palpation on lateral side:
Lateral condylar ridge-Lateral condyle -Radio humoral joint space -Extensor carpi radiali longus-Extensor carpiradialis brevis -Extensor digitorum.
Demonstrate proficiency in palpation on medial side:
Medial condyle of humerus -Common flexor tendon head -Ulnar nerve.

Experiential-Learning 19.4 : Lumbo sacral palpation demonstration

Total activity hours (5 hours)
Discussion (1 Hour)
Choose a well lit room.
Should instruct the procedures to the patient .
Familiarize with the anatomy of lumbosacral area.
Familiarize with the palpatory procedures of the lumbosacral area.
The student should familiarize with the starting position for lumbosacral area palpation.
The student should identify the major muscles of lumbosacral area .
The student should identify the superior and inferior iliac spines.
The student should identify the ilio lumbar ligaments and posterior sacro iliac ligament.
The student should identify the bones and its edges.
The student should identify the nerve pathways.
The student should identify the vascular pathway.
Demonstration bed side (2 Hours)
The student should perform the palpation.
Demonstrate proficiency in palpation on the Ridges of floating rib,Iliac crest, Quadratus, lumborum muscle, Erector spinae, L 4 & L5 spinous process , Long posterior sacroiliac ligament, Inferior angle of the sacrum,Coccyx, Greater trochanter,Ischial tuberosity,Gluteus maximus, Gluteus medius,Piriformis ,Sacrotuberous ligament.
Peer Learning (2 Hour) Teach the palpatory procedures of lumbo sacral area to others.

Experiential-Learning 19.5 : Knee palpation demonstration

Total activity hours (4 hours)
Case based learning (3 hours)
Familiarize with the anatomy of knee,palpatory procedures of knee.
Instruction are given to the patient about the procedure.
Identification of structures :
The student should identify the anterior , posterior ,medial and lateral compartment muscles.
The student should identify the femoral triangle , adductor canal and popliteal fossa.
The student should identify the bones and edges.
The student identify the neurovascular bundles of knee.
Perform the palpation:

Perform the palpation on anterior side :
Base of the patella , apex of the patella , medial and lateral ridges of patella, patella tendon , quadriceps tendon , base of the patella , apex of the patella , medial and lateral edges of patella.
Perform the palpation on medial side :
Medial collateral ligament , medial joint line space ,pes anserine tendon , adductor tubercle and medial condyle of femur.
Perform the palpation on lateral side :
Lateral collateral ligament ,ilio tibial band , gerdy tubercle ,lateral joint line space and lateral condyle of femur.
Discussion(1 hour)
Discuss why should be more cautious on the posterior side of knee during thokkanam.
Discuss the contents of adductor canal .
Discuss the femoral triangle contents and it's importance.

Experiential-Learning 19.6 : Ankle palpation demonstration

Total activity hours(4 hours)
Case based learning(3 hour)
Familiarize with the anatomy of ankle, palpation of ankle.
Instruct the patient about the procedure.
Identification of structures :
The student should identify the palpable structures on anterior side of the ankle.
The student should identify the palpable structures on medial side of the ankle.
The student identify the palpable structures on lateral side of the ankle.
The student should identify the palpable structures on posterior side of the ankle.
Discussion(1 hours)
Familiarize with the starting position for ankle palpation.
Perform the palpation on anterior side :Joint spaces, superficial peroneal nerve,tibial artery,dorsalis pedis,tendon of tibialis anterior,tndon of extensor hallucis longus, first web space and fourth web space.
Perform the palpation on medial side of the ankle : Sustentaculum tali, posterior process of the talus,head of the talus,medial malleolus,navicular tuberosity, tendon of tibialis posterior and tendon of flexor hallucis longus.
Perform the palpation on lateral side of the ankle: Lateral malleolus , base of the fifth metatarsal head and peroneal trochlea.
Perform the palpation on posterior side of the ankle : Achilles tendon and insertion site of Achilles tendon.
Discuss the role of intrinsic muscle tendons on bipedal locomotion.
Discuss the dasanadikal pathway in ankle.

Modular Assessment

Assessment method	Hour
Instructions: Conduct a structured modular assessment. Assessment will be 50 marks. Keep 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. Direct Observation of Procedural Skills (DOPS) (25 Marks) • Knowledge about the procedure : 5 marks • Pre procedure preparation : 5 marks • Communication – Informed consent is obtained from the patient or their legal aids : 5 marks • Execution –Performing the procedure : 5 marks • Time : 5 marks 2. Making of Posters (25 Marks) 1. Pictures : 5 marks • Palpable area pictures are easily viewed and identified from 6 feet away • All palpable areas should clearly labeled 2. Content accuracy : 5 marks At least five accurate palpable areas are displayed on the posters 3.Attractiveness : 5 marks The posters is exceptionally attractive in terms of design , layout and neatness 4.Title : 5 marks Title can be read from 6 feet away 5. Grammar : 5 marks There are no grammatical mistakes on the poster Or Any practical in converted form can be taken for assessment (25 Marks)	4

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

Module 20 : Elements of clinical reasoning, principles of movement & Procedures of Thokkanam

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

Describe the spinal curvatures and postures, the consistency of skin, dasanadikal importance in stability and mobility, tensegrity, line of muscle pull, working posture and the height of the table, hygienic procedures and patient education.
Perform the inspection, palpation & percussion, dasanadikalin varmangal, muscle force transmission and Identify the vibration sense, pain tolerance.
Choose the correct thokkanam techniques based on inspection,palpation , percussion and perform safe and effective thokkanam.
Evaluate the effects of tensegrity structures.

M 20 Unit 1 Inspection related to musculo skeletal system's pathologies

20.1.1 Colour changes in skin 20.1.2 Localised swelling 20.1.3 Postural changes 20.1.3.1 Spinal curvatures 20.1.3.2 Congenital and acquired deformities 20.1.3.2.1 Shoulder 20.1.3.2.2 Neck 20.1.3.2.3 Elbow 20.1.3.2.4 Wrist 20.1.3.2.5 Hip 20.1.3.2.6 Knee 20.1.3.2.7 Ankle

References: 61,64,68,70,73,77,78

3A	3B	3C	3D	3E	3F	3G
CO1,CO2	Enlist and describe the structures for inspection.	1	Lecture	CC	Knows-how	L&GD,L &PPT
CO1,CO2	Demonstrate the localised colour changes in skin and detect the swelling,the postural changes of knee,elbow,pelvis,neck,ankle & foot,the abnormal spinal curvatures and structural deformities of hand & foot.	2	Practical Training 20.1	PSY-GUD	Shows-how	D

CO1,CO2	Develop the inspection skills and create detail reports of inspection findings and the assessment skills.	4	Experiential-Learning 20.1	AFT-CHR	Does	DIS,CBL,D

M 20 Unit 2 Palpation related to musculo skeletal system's pathologies

20.2.1 Nature of the skin 20.2.2 Quality of the skin 20.2.2.1 Elasticity 20.2.2.2 Hydration 20.2.3 Skin consistency tests 20.2.3.1 Displacement test 20.2.3.2 Skin lifting test 20.2.3.3 Skin rolling test 20.2.4 Temperature measurement 20.2.5 Sensation of the skin

References: 70,73,77,78

3A	3B	3C	3D	3E	3F	3G
CO1,CO2	Describe the nature of the skin and the quality of the skin	1	Lecture	CC	Knows-how	L&PPT,L&GD
CO1,CO2	Measure the temperature of the skin, the sensation and the skin consistency tests.	2	Practical Training 20.2	PSY-GUD	Shows-how	SIM,D,DIS
CO1,CO2	Demonstrate the skin consistency tests,the fascial adhesion, trigger points, tauts, inflammations and palpation techniques for specific needs	3	Experiential-Learning 20.2	PSY-ADT	Does	D-BED

M 20 Unit 3 Percussion related to musculo skeletal system's pathologies

20.3.1 Vibration sense tests 20.3.2 Pallesthesia 20.3.3 Palhypesthesia 20.3.4 Tactile allodynia 20.3.5 Vibration perception threshold test

References: 77,78,194

3A	3B	3C	3D	3E	3F	3G
CO1,CO2	Describe the vibration and its types, central and peripheral neuropathy and tactile allodynia	1	Lecture	CC	Knows-how	L&PPT,L&GD

CO1,CO2	Demonstrate the vibration tests (Manual taping & Tuning fork), vibration perception threshold, Pallesthesia, and palhypesthesia.	2	Practical Training 20.3	PSY-GUD	Shows-how	D-BED,DIS
CO1,CO2	Discuss about low magnitude high frequency vibration, low frequency & large magnitude vibration, the percussion force for specific patient needs	2	Experiential-Learning 20.3	AFT-CHR	Does	DIS,CBL

M 20 Unit 4 Test for the range of motion to rule out the functional imbalances of the joints

20.4.1 Head & neck joint 20.4.2 Shoulder joint 20.4.3 Elbow & wrist joint 20.4.4 Lumbosacral joint 20.4.5 Knee joint 20.4.6 Ankle joint

References: 61,68,69,189,190

3A	3B	3C	3D	3E	3F	3G
CO1,CO2	Describe the normal range of motion of all joints and the muscles for joint movements (Region wise)	1	Lecture	CC	Knows-how	L,L&PPT,L&GD
CO1,CO2	Demonstrate the muscle function tests and the range of motion	2	Practical Training 20.4	PSY-GUD	Shows-how	SIM,DIS,CBL
CO1,CO2	Conduct the muscle function tests and the joint stability	2	Experiential-Learning 20.4	AFT-CHR	Does	PSM,PBL,CBL

M 20 Unit 5 Other special tests to rule out disorders of joints and its components

20.5.1 Head & neck joint disorders 20.5.2 Shoulder joint disorders 20.5.3 Elbow & wrist joint disorders 20.5.4 Sacroiliac joint disorders 20.5.5 Knee joint disorders 20.5.6 Ankle joint disorders

References: 61,64,77,189

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

CO1,CO2	Enlist the special tests for musculo skeletal system pathologies (Region wise)	1	Lecture	CC	Knows-how	L&GD,L &PPT
CO1,CO2	Demonstrate the special tests to assess the joint stability	2	Practical Training 20.5	PSY-GUD	Shows-how	D
CO1,CO2	Demonstrate proficiency in various special tests and special test for further management.	2	Experiential-Learning 20. 5	AFT-CHR	Does	PrBL,IBL ,CBL

M 20 Unit 6 Dasanadikal - Functional principles of movement

20.6.1 Dasanadikal and its varmangal 20.6.1.1 Idakalai nadi and its varmangal 20.6.1.2 Pinkalai nadi and its varmangal 20.6.1.3 Suzhumunai nadi and its varmangal 20.6.1.4 Siguvai nadi and its varmangal 20.6.1.5 Atthi nadi and its varmangal 20.6.1.6 Alampudai nadi and its varmangal 20.6.1.7 Kanthari nadi and its varmangal 20.6.1.8 Purudan nadi and its varmangal 20.6.1.9 Sangini nadi and its varmangal 20.6.1.10 Kugu nadi and its varmangal

References: 11,19,195

3A	3B	3C	3D	3E	3F	3G
CO1,CO2	Describe the dasa nadikal pathway	2	Lecture	CC	Knows-how	BL
CO1,CO2	Demonstrate the varmangal on the pathway of dasanadikal	3	Practical Training 20.6	PSY-GUD	Shows-how	DIS,ML
CO1,CO2	Evaluate the importance of dasanadikal on movement and posture and treatment protocol for musculo skeletal diseases (MSD) based on dasanadikal	4	Experiential-Learning 20. 6	CE	Does	D,SIM,L RI

M 20 Unit 7 Line of muscle pull and tensegrity

20.7.1.Tensegrity 20.7.1.1.Definition of tensegrity 20.7.1.2.The balance between compression and tension 20.7.1.3.Advantages and disadvantages of a tensegrity structure 20.7.1.4.Macro and micro tensegrity structures of our body 20.7.2.Line of muscle pull and its function in movement and posture 20.7.2.1 Superficial back

lines 20.7.2.2 Superficial front lines 20.7.2.3 Lateral lines 20.7.2.4 Spiral lines 20.7.2.5 Arm lines 20.7.2.6 Functional lines 20.7.2.7 Deep front line

References: 72,74,192,194

3A	3B	3C	3D	3E	3F	3G
CO1,CO2	Describe bio tensegrity and the line of muscle pulls	1	Lecture	CC	Knows-how	BL
CO1,CO2	Demonstrate the macro and micro tensegrity structures of our body, advantages and disadvantages of tensegrity structure and the line of muscle pull role in human movement and locomotion	3	Practical Training 20.7	PSY-GUD	Shows-how	D,SIM
CO1,CO2	Appraise dasanadikal structure with tensegrity and the role of line of muscle in human movement and stability	5	Experiential-Learning 20.7	AFT-CHR	Does	DIS,CBL

M 20 Unit 8 Ethics, principles and practice of thokkanam

20.8.1 History taking 20.8.2 Lab investigations 20.8.3 Patient education 20.8.4 Safety procedures (Hygiene – hand and table) 20.8.5 Working posture of the therapist and height of the table 20.8.6 Unit of hand pressure

References: 66,70,73,77,194

3A	3B	3C	3D	3E	3F	3G
CO1,CO2	Describe history taking and the investigations needed to diagnose the musculo skeletal disease (MSD)	1	Lecture	CC	Knows-how	L&GD,L &PPT ,L
CO1,CO2	Demonstrate the working posture of the therapist, the height of the table and the unit of hand pressure	2	Practical Training 20.8	PSY-GUD	Shows-how	DIS,D-BED
CO1,CO2	Develop patient education and rules and regulations for thokkanam	2	Experiential-Learning 20.	AFT-CHR	Does	DIS

			8			

M 20 Unit 9 Contra indications of thokkanam

20.9.1 List of conditions to do thokkanam cautiously 20.9.1.1 Back pain in children with the age below 12 20.9.1.2 Pain due to massive trauma 20.9.1.3 Constant or progressive pain at night 20.9.1.4 Cancer patients (specific conditions) 20.9.1.5 Patient under systemic steroid treatment 20.9.1.6 Difficulty in urinating 20.9.1.7 Deep vein thrombosis 20.9.1.8 Fractures 20.9.1.9 Limitation of spinal movement 20.9.1.10 Skin infections 20.9.1.11 Open injury 20.9.1.12 Hemophilia 20.9.2. Mallaga sambirathayam

References: 73,78,194

3A	3B	3C	3D	3E	3F	3G
CO1,CO2	Describe mallaga sambirathayam, common complications while on thokkanam. (Injury to muscle ,nerve damage or compression , hematoma, allergic reactions to aroma oils , dizziness , Emotional distress)	1	Lecture	CC	Knows-how	L&PPT , L_VC,L&GD
CO1,CO2	Demonstrate the vulnerable areas while applying pressure, conditions that not to do thokkanam.	2	Practical Training 20.9	PSY-GUD	Shows-how	D-BED
CO1,CO2	Develop a comprehensive first aid management guide for thokkanam complications.	2	Experiential-Learning 20.9	AFT-CHR	Does	CBL,DIS

Practical Training Activity

Practical Training 20.1 : Inspection of structural deformities.

Total learning hours (2 hours)
Demonstration (2 hours)
The faculty should display the visual aids about posture, gait , postural disturbance and pelvic tilts.
The teacher should explain how to detect obvious swelling and colour changes.
The faculty should demonstrate how to detect the muscle mass and symmetry.

The faculty should demonstrate shoulder and scapular alignment.
The faculty should demonstrate the normal elbow alignment.
The faculty should demonstrate the neutral wrist position.
The faculty should demonstrate the pelvic tilts.
The faculty should demonstrate the curvatures of spine.
The faculty should demonstrate the normal knee alignment.
The faculty should demonstrate the arches of foot.
The teacher should instruct the student to observe the procedures.

Practical Training 20.2 : Skin consistency tests.

Total learning hours (2 hours)
Discussion (30 minutes)
The faculty should explain about the skin temperature , elasticity and hydration.
The faculty should explain hypo and hyperesthesia.
The teacher should display the videos of skin displacement test, skin lifting and skin rolling test.
Demonstration (1 hour 30 minutes)
The faculty should demonstrate how to place the hand to measure the skin temperature.
The faculty should brief how to measure the knee swelling.
The faculty should demonstrate skin displacement test.
The faculty should demonstrate the skin lifting test.
The faculty should demonstrate the skin rolling test.
The faculty should explain how to differentiate the tenderness , stiffness and tauts in muscles.
The faculty should demonstrate the hand position to palpate bony edges.
The faculty should demonstrate how to assess the sensation of the skin.
The faculty should instruct the student to observe the procedures.

Practical Training 20.3 : Vibration test

Total learning hours (2 hours)
Discussion (30 minutes)
The faculty should display the visual aids about the mechanism of biothesiometer.
The faculty should sensitize the students to different types of tuning forks.

Demonstration Bedside (1 hour 30 minutes)
The teacher should, demonstrate the areas for tuning fork placement.
Demonstrate the vibration sensitivity test to rule out diabetes ,nerve damage to alcoholism and inflammation of nerves.
Demonstrate the vibration test to rule out head of femur fracture(128Hz) and stress fracture (256 Hz)
Demonstrate the vibration test to rule out compartment syndrome.
Demonstrate how to use the biothesiometer to measure the vibration perception threshold.
Instruct the students to observe the procedure and record findings.
Instruct the students where should be cautious.

Practical Training 20.4 : Muscle function test

Total learning hours (2 hours)
Discussion (30 minutes)
The faculty should explain the patient positioning (In comfortable and relaxed position).
The faculty should demonstrate how to eliminate the effects of gravity (by supporting the limb or using a gravity eliminated position)
Case based learning (1 hour 30 minutes)
The teacher should demonstrate the isometric test (contract the muscle without moving the joint).
Demonstrate the isotonic test (contract the muscle by moving the joint).
Demonstrate the resisted test.
Demonstrate the common manual muscle tests like shoulder abduction, elbow flexion, wrist extension , knee flexion and ankle plantar flexion.
Instruct the student to observe the movements .
Demonstrate the range of motion of an individual joint.
Instruct the student to observe the range of motion.
Demonstrate the oxford scale for muscle strength.

Practical Training 20.5 : Special tests for joint stability

Total activity hour (2 hour)
Demonstration (2 hour)
The teacher should demonstrate some special examination tests of upper limb and spine
Upper limb:
Neer’s test- shoulder impingement.
Apprehension test – shoulder instability.

Finkelstein test – Dequervain's tenosynovitis.
Tinel's sign – Carpal tunnel syndrom
Spine :
Straight leg raising test - Sciatica.
Faber test - Sacro iliac joint issues.
Spurling test.
Lower limb:
The teacher should demonstrate some special examination tests of lower limb.
Knee:
Lacman test – anterior cruciate ligament injury
Anterior drawer test – anterior cruciate ligament injury
Posterior drawer test – posterior cruciate ligament injury
McMurray test – Meniscal injury
Ankle:
Anterior drawer test - assess the anterior talofibular ligament integrity
Talar tilt test - assess the calcaneofibular ligament integrity.

Practical Training 20.6 : Dasa nadi paathaiyin varmangal

Total learning hours (3 hours)
Mobile Learning (2 hours)
The faculty should display the following videos,
Anatomy videos about fascia.
Animation videos about interconnection of muscles.
Animation videos about varmangal.
Animation videos about force transmission.
The teacher should sensitize the student to interlinks of fascia.
Nadi structure demonstration:
The teacher should demonstrate the pathway of dasanadikal.
Demonstrate the fascial connections.
Demonstrate the force transmission between the muscles.
Varma pullikal demonstration and discussion:
The teacher should demonstrate the varma spicules in the dasanadikal pathway

Discussion (1 hour)

Discuss and interpret about dasanadikal importance on movement and locomotion

Practical Training 20.7 : Advantages and disadvantages of tensegrity structure.

Total learning hours(3 hours)
Demonstration, Simulation(3 hours)
Preparation : 30 minutes.
The faculty should display the following videos,
Animation videos about line of muscle pull.
Animation videos about tensegrity structure.
Animation videos about cytoskeleton structure.
Tensegirity model.
Demonstration of line of pull : One hour.
The faculty should demonstrate the muscles participate in each line of muscle pull.
The teacher should demonstrate the force transmission in one line of muscle pull.
The teacher should demonstrate the line of muscle pulls participate in various movements and locomotion.
The teacher should instruct the patient to observe the procedures.
Tensegrity structure demonstration: One hour and 30 minutes.
The teacher should,
Demonstrate the tensile and compression components of a tensegrirty structure.
Demonstrate the tensegrity structure's stability.
Explain advantages and disadvantages of tensegrity structure.
Demonstrate the tension and compression components of a line of muscle pull.
Instruct the student to identify the tension and compression components of a given tensegrity model.

Practical Training 20.8 : Ethical principles

Total learning hours (2 hours)
Discussion (1 hour)

The faculty should give instructions to maintain good ambience and maintain the hygiene.
Instructions to maintain the patient confidentiality and dignity.
Instructions to maintain the work timing ,work rules and attitude.
Instruction to maintain the personal hygiene, wash hand and feet, nails should be clean and trimmed.
Instructions to remove the ornaments,watch.
Instructions to take the essentials like towel ,soap ,sanitizer , tissue papers , bowel and electric stove if needed.

Demonstration bed side (1 hour)
The faculty should demonstrate the red flag conditions for thokkanam.
Instruct to rule out the red flags before thokkanam.
Demonstrate the correct working posture during thokkanam.
Demonstrate the unit of pressure and how to change the pressure according to the conditions.
Demonstrate the height of the table.
Instruct the student to adjust the height of the table at his/her waist level.
Instruct to stop the procedure if the patient feel pain , dizziness, palpitation or breathing difficulties.
Faculty should observe the student during the whole procedures and intervene if needed.

Practical Training 20.9 : Dos and don'ts of thokkanam

Total learning hours (2 hours)
Demonstration bedside (2 hours)
Demonstrate the vulnerable areas while applying pressure.
Demonstrate the unit of pressure during thokkanam in a vulnerable area.
Demonstrate the conditions which are best to treat by thokkanam.
Demonstrate the pathological conditions not to do thokkanam or should be cautious.
Demonstrate the possible post thokkanam complications.

Experiential learning Activity

Experiential-Learning 20.1 : Inspection assessment.

Total activity hours (4 hours)
Discussion (30 minutes)
Choose a well lit room.

Familiarize with normal and abnormal posture ,gait and body alignments.
Instruct the patient about the assessment .
Case based Learning (2 Hours 30 Minutes)
The student should observe patient's posture ,gait and movement.
Observe any obvious swelling and colour changes.
Observe the muscle mass and symmetry.
Observe shoulder slope ,scapular alignment.
Observe elbow alignment.
Observe wrist position.
Observe pelvic tilts.
Observe curvatures of spine.
Observe normal knee alignment.
Observe the arches of foot.
Demonstration (1 hour)
The student shouldPerform the inspection in day today practice.
Document the inspection findings for further adjustments.
Receive feedback on assessment skills.
Refine skills based on feedback.
Demonstrate proficiency in inspection on various musculo skeletal conditions.
Present case study.
Share his/her experiences.

Experiential-Learning 20.2 : Palpation techniques

Total activity hours (3 hours)
Demonstartion bed side (3 hours)
The student should measure the skin temperature.
The studnet should measure the swelling.
The student should palpate the diseased area to rule out tenderness.
The student should perform the skin lifting test ,skin rolling test to assess the consistency of the skin.
The student should identify the fascial adhesion and stiffness ,trigger points and tauts.
The student should modify the palpation techniques according to the different areas.
Receive feedback on assessment skills.

Refine palpation skills based on feedback.
Share experiences and best practices.
Present a case study.
Develop a treatment plan based on palpation.

Experiential-Learning 20.3 : Vibration tests demonstration

Total activity hours (2 hours)
Case based learning (1 hour 30 minutes)
The student should familiarize with the equipments..
Minimize ambient noise.
Select a site with minimal soft tissue.
Strike the tuning fork and place it on the testing site.
Ask the patient to inform the vibrations .
Record the time.
Compare the vibration sensation between both side of the body.
Do thattal and measure the vibration level .
Compare the thattal vibration sense with tuning fork vibration.
Modify the force of thattal for specific needs.
Demonstrate proficiency in biosthesiometer.
Discussion (30 minutes)
The student should discuss the adverse impacts of automobile vibration.
Differentiate the automobile vibration and thattal vibration.
Design a treatment protocol for diabetic neuropathy based o thattal.
Visit industrial areas and assess the vibration exposure.
Discuss the adverse impacts of industrial vibration to others.
Develop a treatment plan for the patients who are facing the industrial vibration.

Experiential-Learning 20.4 : Muscle function test demonstration

Total activity hours (2 Hours)
Discussion (30 minutes)
Familiarize with the manual muscle testing methods.

Familiarize with the oxford scale for muscle strength measuring.
Read the patient information clearly.
Demonstration (1 hour 30 minutes)
The student should instruct the patient to sit in a relaxed and comfortable position.
Support the patient's limb to eliminate gravity.
Perform isometric and isotonic tests.
Measure the muscle strength.
Understand normal and abnormal findings.
Discuss muscle strength role in joint stability.
Assess the range of motion of a joint.
Record the findings and receive feed backs.
Demonstrate proficiency in common manual muscle function tests.

Experiential-Learning 20.5 : Special tests demonstration

Total activity hours (2 hours)
Demonstration (2 hours)
The student should perform special tests.
Document the findings for future corrections.
Demonstrate proficiency in special tests.
Teach others about the techniques of special tests.

Experiential-Learning 20.6 : Dasanadikal role on movement

Total activity hours(4 hours)
Simulation (2 Hours)
The student should familiarize with fascial connections.
Familiarize with the force transmission in between the muscles.
Familiarize with the varmangal on each nadi pathway.
Familiarize with movement patterns.
Demonstration (1 hour 30 minutes)
The student should identify the varma spicules on dasanadikal.
Demonstrate proficiency in identification varma pullikal.

Identification of nadikal pathway
The student should familiarize with literatures about dasanadikal pathway.
Evaluate the dasanadikal pathway with the help of varma spicules.
Discuss about the dasanadikal pathway.
Observation of movement
The student should observe how the body moves during various activities and exercises.
Compare the movement pattern with dasa nadikal pathway.
Identify the pattern of each nadi.
Lab Report Interpretation (30 minutes)
The student should demonstrate proficiency in identification of movement deficits.
Develop a treatment protocol for altered movement pattern based on dasanadikal pathway.
Teach the dasanadikal importance on movement.
Document the literature collections about dasanadikal and write an article.

Experiential-Learning 20.7 : Structure of dasanadikal

Total activity hours (5 hours)
Case based learning (3 hours 30 minutes)
Preparation
Familiairize with tensegrity structures.
Familiarize with muscles which are involved in a particular line of muscle pull.
Familiarize with dasanadikal pathway.
Familiarize with the movement pattern.
Identification
The student should identify the muscles of all line of muscle pulls.
Identify the line of muscle pulls involved in various movements.
Identify the compression and tension components of our body.
Identify the compression and tension components of dasanadikal.
Discussion (1 hour and 30 minutes)

The student should discuss the cytoskeleton structure.
Discuss the role of line of muscle pull and tensegrity in human movement and stability.
Discuss advantages and disadvantages of a tensegrity structure.
Design a new treatment protocol based on line of muscle pull and tensegrity.
Recognize various available tensegrity structures around the world.

Experiential-Learning 20.8 : Rules and regulations for thokkanam

Total activity hours (2 hours):
Discussion (2 hours)
Instructions before thokkanam:
The student should instruct the patient to shower if he is unclean.
Instruct the patient to remove the ornaments.
Instruct the patient about the procedures and the potential threats.
Instruct the patient about the approximate time needed for the procedure.
Familiarize with working posture
Familiarize with unit of pressure.
Adjust the table height to his waist level.
Instructions during thokkanam :
The student should,
Cover the patient with towel.
Assess the red flags before thokkanam.
Take oil in a small bowel and do not pour the oil directly on patient’s body parts.
Ask the patient to sit in an appropriate starting position.
Ask the patient to inform if they feel any discomfort during thokkanam.
Understand the ethical rights.
Recognize patient's rights.
Instructions after thokkanam:
The student should clean the hands after thokkanam.

Instruct the patient to get up slowly from the table.
Instruct the patient to shower after getting some relaxation.
Discuss and develop rules and regulations about thokkanam.
Develop patient education guidelines.

Experiential-Learning 20.9 : Execution of dos and don'ts

Total activity hours (2 hours)
Case based learning (1 hour 30 minutes)
Familiarize with vulnerable areas.
Familiarize with the red flag conditions for thokkanam.
Familiarize with the unit of pressure.
Identify the complications.
Identify the ways to prevent complications.
Provide an emergency management if any allergic reactions to oils and other things.
Discussions and documentation (30 minutes)
Discuss the complication of thokkanam faced in their practice.
Document the complications and report to the concern departments
Discuss the reporting dilemmas.
Analyse the ethical dilemmas like confidentiality vs mandatory reporting
Document the ethical dilemmas.
Teach others to prevent complication while practicing and first aid managements.
Develop a first aid management protocol.

Modular Assessment

Assessment method	**Hour**
Instructions: Conduct a structured modular assessment. Assessment will be 50 marks. Keep structured marking pattern. Use different assessment methods in each module for the semester. Keep a record of the structured pattern used for assessment. Calculate the modular grade point as per table 6c. 1.Objective Structured Clinical Exam - 5 stations (10 marks for one station) Station topics : Inspection Palpation	4

Percussion
Joint examinations
Special tests
Ethics and principles of thokkanam
Dos and don’ts of thokkanam
Mark distribution :
History taking : 2 marks
Knowledge in assessment : 2 marks
Assessment skill : 2 marks
Diagnosis : 2 marks
Differential diagnosis : 2 marks
2.Interactions (25 Marks)
Topics : Dasanadikal , Tensegrity and Line of muscle pull
Marks distribution :
Peer teaching : 10 marks

- Clear explanation of concepts
- Use of appropriate terminology
- Clinical integration
- Clarity of speech
- Attitude (communication , body language and voice modulation)

Group discussions : 15 marks

- Relevant contribution
- Concepts clarity
- Scientific accuracy
- Critical thinking
- Knowledge application

Or
Any practical in converted form can be taken for assessment (25 Marks)
and
Any of the experiential as portfolio / reflections / presentations can be taken as an assessment (25 Marks)

Semester No : 5

Module 21 : Thokkanam types and it’s applications

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

Describe the types, therapeutic benefits and mechanism of thokkanam
Demonstrate all types of thokkanam
Perform all types of thokkanam

M 21 Unit 1 Mechanism of thattal

21.1.1 Description of thattal 21.1.2 Types of thattal 21.1.3 Benefits of thattal

References: 7,19,194

3A	3B	3C	3D	3E	3F	3G
CO4,CO5	Discuss the mechanism of thattal murai thokkanam	1	Lecture	CC	Knows-how	L&GD,BL
CO4,CO5	Demonstrate the techniques of thattal murai thokkanam	3	Practical Training 21.1	PSY-GUD	Shows-how	DIS,D,D-M,D-BED
CO4,CO5	Conduct thattal techniques	3	Experiential-Learning 21.	AFT-CHR	Does	CBL,D-BED,D-

			1			M,PER

M 21 Unit 2 Mechanism of irukkal

21.2.1 Description of irukkal 21.2.2.Types of irukkal 21.2.3 Benefits of Irukkal.

References: 7,19,194

3A	3B	3C	3D	3E	3F	3G
CO4,CO5	Describe the irukkal murai thokkanam	1	Lecture	CC	Knows-how	BL,L&GD,L&PPT
CO4,CO5	Demonstrate the techniques of irukkal	2	Practical Training 21.2	PSY-GUD	Shows-how	D,SIM
CO4,CO5	Conduct irukkal technique,benefits of irukkal thokkanam on delayed onset of muscle soreness (DOMS), effects of irukkal on blood circulation (Reactive hyperaemia)	3	Experiential-Learning 21.2	AFT-CHR	Does	DIS,CBL,D-BED

M 21 Unit 3 Mechanism of piditthal

21.3.1 Description of piditthal 21.3.2 Types of piditthal 21.3.3 Benefits of piditthal

References: 7,19,194

3A	3B	3C	3D	3E	3F	3G
CO4,CO5	Describe the method of piditthal thokkanam	1	Lecture	CC	Knows-how	L&PPT,L&GD
CO4,CO5	Demonstrate the techniques of piditthal	2	Practical Training 21.3	PSY-GUD	Shows-how	DIS,D-BED,D

CO4,CO5	Conduct piditthal techniques,benefits of piditthal thokkanam on phasic muscles health, effects of piditthal on cellular exchange and tissue adhesion.	3	Experiential-Learning 21.3	PSY-ORG	Does	SIM,CBL,DIS

M 21 Unit 4 Mechanism of murukkal

21.4.1 Description of murukkal 21.4.2 Types of murukkal 21.4.3 Benefits of murukkal

References: 7,19,194

3A	3B	3C	3D	3E	3F	3G
CO4,CO5	Discuss the murukkal murai thokkanam	2	Lecture	CC	Knows-how	L_VC,L&PPT
CO4,CO5	Demonstrate the techniques of murukkal and red flag conditions for murukkal	3	Practical Training 21.4	PSY-GUD	Shows-how	D-BED,DIS,SIM
CO4,CO5	Demonstrate murukkal techniques,benefits of murukkal thokkanam on phasic muscles health	4	Experiential-Learning 21.4	PSY-GUD	Does	DIS,PBL,CBL

M 21 Unit 5 Mechanism of kaikattal

21.5.1 Description of kaikattal 21.5.2 Types of kaikattal 21.5.3 Benefits of kaikattal

References: 7,19,194

3A	3B	3C	3D	3E	3F	3G
CO4,CO5	Discuss the kaikattal murai thokkanam	1	Lecture	CC	Knows-how	BL,DIS
CO4,CO5	Demonstrate the types of kaikattal	2	Practical	PSY-	Shows-	SIM,D-M

			Training 21.5	GUD	how	
CO4,CO5	Demonstrate the kaikattal techniques, benefits of kaikattal thokkanam on dizziness and fainting, effects of kaikattal on respiration and effects of kaikattal on sympathetic nervous system.	3	Experiential-Learning 21.5	PSY-GUD	Does	D,DIS,PBL,CBL

M 21 Unit 6 Mechanism of azhutthal

21.6.1 Description of azhutthal 21.6.2 Types of azhutthal 21.6.3 Benefits of azhutthal

References: 7,19,194

3A	3B	3C	3D	3E	3F	3G
CO4,CO5	Describe the azhutthal thokkanam	1	Lecture	CC	Knows-how	BS,L&GD
CO4,CO5	Demonstrate the varma spicules in our body and techniques of azhutthal	2	Practical Training 21.6	PSY-GUD	Shows-how	D-BED,SIM
CO4,CO5	Demonstrate proficiency in azhutthal,evaluate the benefits of azhutthal in varma kaayangal and discuss the effects of azhutthal on postural muscles health	2	Experiential-Learning 21.6	AFT-CHR	Does	D,CBL

M 21 Unit 7 Mechanism of izhutthal

21.7.1 Description of izhutthal 21.7.2 Types of izhutthal 21.7.3 Benefits of izhutthal

References: 7,19,194

3A	3B	3C	3D	3E	3F	3G
CO4,CO5	Describe the izhutthal murai thokkanam	1	Lecture	CC	Knows-how	BL

CO4,CO5	Demonstrate the techniques of *izhutthal* and discuss the benefits of izhutthal	2	Practical Training 21.7	PSY-GUD	Shows-how	D-BED,DIS,D
CO4,CO5	Demonstrate the *izhutthal* techniques and discuss the benefits of izhutthal thokkanam on postural muscles health	2	Experiential-Learning 21.7	AFT-CHR	Does	D-BED

M 21 Unit 8 Mechanism of mallatthuthal

21.8.1 Description of mallatthuthal 21.8.2 Types of mallatthuthal 21.8.3 Benefits of mallatthuthal

References: 7,19,194

3A	3B	3C	3D	3E	3F	3G
CO4,CO5	Describe the mallatthuthal murai thokkanam	1	Lecture	CC	Knows-how	L&PPT
CO4,CO5	Demonstrate the techniques of mallatthuthal	2	Practical Training 21.8	PSY-GUD	Shows-how	D,SIM
CO4,CO5	Demonstrate the mallatthuthal techniques and discuss the benefits of mallatthuthal thokkanam	3	Experiential-Learning 21.8	AFT-CHR	Does	DIS,CBL

M 21 Unit 9 Mechanism of asaitthal

21.9.1 Description of asaitthal 21.9.2 Types of asaitthal 21.9.3 Benefits of asaitthal

References: 7,19,194

3A	3B	3C	3D	3E	3F	3G
CO4,CO5	Describe the asaitthal murai thokkanam	1	Lecture	CC	Knows-	BL,L&G

					how	D
CO4,CO5	Demonstrate the techniques of *asaitthal*	2	Practical Training 21.9	PSY-GUD	Shows-how	D,DIS
CO4,CO5	Demonstrate the *asaitthal* techniques,benefits of *asaitthal* on tendon and ligament ijnury	3	Experiential-Learning 21.9	AFT-CHR	Does	DIS,PBL,D

Practical Training Activity

Practical Training 21.1 : Thattal

Total learning hours (3 hours)
Demonstration on model (1 Hour 30 minutes)
The teacher should demonstrate the hand position.
The faculty should demonstrate the unit of pressure.
The faculty should demonstrate the rate and rhythm of thattal.
The faculty should sensitize to dos and don'ts.
Demonstration (1 hour)
The teacher should demonstrate the types of thattal.
The faculty should instruct the students to observe the procedures.
Under the guidance of faculty the student should perform the thattal on mannequin.
Discussion (30 Minutes)
The faculty should discuss the benefits of thattal.
The teacher should discuss where should be careful and where should ease out pressure.
The teacher should explain the difference between the character of vibration during thattal and industrial vibrations.

Practical Training 21.2 : Method of Irukkal

Total learning hours (2 hours)

Simulation (30 minutes)
The teacher should demonstrate the hand position.
The faculty should demonstrate the unit of pressure.
The faculty should sensitize to dos and don’ts.
Assess the clinical condition before irukkal.
Demonstration (1 hour 30 minutes)
The teacher should Rule out the red flags like osteoporosis and other co morbidities.
Ask the drug history of the patient especially steroids and blood thinners.
Demonstrate the hand position and techniques of irukkal.
Demonstrate the unit of pressure according to the part to be used for irukkal.
Demonstrate the safe areas for irukkal.
Instruct the student to observe the techniques.
Instruct the student not to compress the bony edges and on vertebra.
Instruct the student to give single press instead of pumping during irukkal.
Instruct the student to practice the irukkal on mannequin.

Practical Training 21.3 : Piditthal

Total learning hours (2 hours)
Demonstration (30 minutes)
The teacher should demonstrate the hand position.
The faculty should demonstrate the unit of pressure.
The faculty should demonstrate the lifting and squeezing of piditthal.
The faculty should sensitize to dos and don’ts.
Demonstration bed side (1 hour)
The teacher should demonstrate the types of piditthal.
The faculty should instruct the students to observe the procedures.
The faculty should instruct the student to lift the muscle from that area and squeeze it during piditthal.
Under the guidance of faculty the student should perform the piditthal on mannequin.
Discussion (30 minutes)
Discuss the benefits of pidditthal.
Discuss cellular exchange and fascial adhesion.

Practical Training 21.4 : Method of Murukkal

Total learning hours (3 hour)
Simulation (1 hour)
The teacher should demonstrate the hand position.
The faculty should demonstrate the unit of pressure.
The faculty should demonstrate the technique of murukkal.
The faculty should sensitize to dos and don’ts.
Assess the clinical condition.
Demonstration Bed Side (1 hour30 minutes)
The teacher should demonstrate the types of murukkal.
The faculty should instruct the students to observe the procedures.
The faculty should instruct the student to compress the muscle on that area and squeeze it during murukkal.
Under the guidance of faculty the student should perform the murukkal on mannequin.
Discussion (30 minutes)
The faculty should demonstrate the benefits of murukkal.
Discuss the red flag conditions like haemophilias, recent fractures,drug history especially steroids and blood thinners.

Practical Training 21.5 : Kaikattal

Total learning hours (2 hours)
Demonstration on model (1 hour)
The faculty should demonstrate the hand position.
The faculty should demonstrate the unit of traction force.
The faculty should demonstrate the techniques of kaikattal.
The faculty should demonstrate the various kaikattal manoeuvres.
The faculty should instruct the students to observe the procedures.
Under the guidance of faculty the student should perform kaikattal on mannequin.
Simulation (1 hour)
The faculty should demonstrate the benefits of kaikattal.
The teacher should demonstrate where should be careful and where should ease out the traction force.
Discuss the role of diaphragm on respiration.

Practical Training 21.6 : Demonstration of Azutthal

Total learning hours (2 hours)
Demonstration bed side (1 hour 30 minutes)
The faculty should assess the clinical condition.
The faculty should demonstrate the hand position.
The faculty should demonstrate the unit of pressure according to the part to be used.
The teacher should demonstrate the techniques of azhutthal.
The faculty should instruct the students to observe the procedures.
Under the guidance of faculty the student should perform the azhutthal on mannequin.
simulation (30 minutes)
The faculty should instruct the student not to press hard on bony edges and vertebra.
The faculty should instruct the student to give single press instead of pumping.
Discuss the benefits of azhutthal.

Practical Training 21.7 : *Izhutthal*

Total learning hours(2 hours)
Demonstration bed side (30 minutes)
Preparation :
The teacher should demonstrate the hand position.
The faculty should demonstrate the unit of pressure. .
The faculty should sensitize to dos and don’ts.
Demonstration (1 hour)
The teacher should demonstrate the types of izhutthal.
The faculty should instruct the students to observe the procedures.
The faculty should instruct the student to strip with firm pressure and not to strip superficially.
Under the guidance of faculty the student should perform the izhutthal on mannequin.
Discussion (30 minutes)
Discuss the benefits of izhutthal.
Discuss the effects of izhutthal on postural muscles.
Discuss the remodeling stage of inflammation.

Practical Training 21.8 : Mallatthuthal

Total learning hours (2 hours)
Demonstration (1 hour and 30 minutes)
The faculty should demonstrate the hand position and techniques of mallatthuthal.
The faculty should demonstrate the unit of force for traction.
The faculty should instruct the students to observe the procedure.
The faculty should instruct the student not to stretch too much.
Under the guidance of faculty the student should perform the mallatthuthal on mannequin.
Simulation (30 minutes)
The faculty should demonstrate the benefits of mallatthuthal.
The faculty should instruct the student to assess the clinical condition before the procedure.
The faculty should instruct the student to rule out the red flags like fracture, muscle strain , ligament sprain and tendon injury.

Practical Training 21.9 : *Asaitthal*

Total learning hours (2 hours)
Demonstration (1 hour 30 minutes)
The faculty should Demonstrate the unit of pressure.
Demonstrate the hand position and techniques of finger asaitthal.
Demonstrate the whole limb asaitthal technique.
Instruct the student to observe the procedures.
Under the guidance of faculty the student should practice the asaithal on mannequin.
Discussion (30 minutes)
Discuss the benefits of asaithal.
Discuss the effects of asaitthal on fascial adhesion.
Discuss the effects of whole limb asaitthal on joint health.

Experiential learning Activity

Experiential-Learning 21.1 : Thattal technique

Total activity hours (3 hours)
Case based learning (30 minutes)

Assume the starting position instructed by the doctor.
Expose the affected area.
Inform if any discomfort.
Provide feedback on thattal intensity.
Follow the instructions given by the doctor.
Demonstration Bed Side (1 hour 30 minutes)
Inform the patient about the procedures and time/ perform in mannequin..
Communicate effectively with the patient.
Follow the faculty's instructions.
Perform the procedure with correct hand position and apply optimum pressure.
Perform slowly and increase the pressure afterwards.
Should be vigil about how the patient is reacting to pressure.
Notice the colour changes in skin through inspection.
Verify skin texture and muscle tone through palpation and record the findings.
Demonstrate the proficiency in thattal thokkanam.
Presentation (1 hour)
Document the treatment provided for future corrections
Evaluate the effects of thattal thokkanam in osteoporosis.
Design a treatment protocol based on thattal for neuropathies.
Design a thattal based diagnostic tool for neurological disorders.
Teach the mechanism of thattal to others.
Maintain confidentiality and dignity of the patient.

Experiential-Learning 21.2 : Irukkal Technique

Total activity hours(3 hours)
Demonstration Bed Side (30 minutes)
Assume the starting position instructed by the doctor.
Expose the affected area.
Inform if any discomfort.
Provide feedback on pressure intensity
Case Based Learning (1 Hour)
Inform the patient about the procedures and time / perform in mannequin.

Follow the faculty’s instructions.
Communicate effectively with the patient.
Familiarize with irukkal technique.
Perform irukkal.
Place the hand firmly on that particular area and give a firm downward pressure.
Notice the colour changes on the irukkal area.
Should be vigil about how the patient is reacting to pressure.
Demonstrate proficiency in irukkal thokkanam.
Discussions (1 hour 30 minutes)
Discuss the types of hyperaemias and compare the irukkal with reactive hyperaemias.
Discuss the hypoxia induced angio-adaptation and teach the effects of irukkal.
Document the treatment provided and write an article about irukkal effects.
Assess the patient condition and develop a personalized treatment plan based on irukkal.

Experiential-Learning 21.3 : Piditthal technique

Total activity hours (3 hours)
Simulation (30 minutes)
Assume the starting position instructed by the doctor .
Expose the affected area.
Inform if any discomfort.
Provide feedback on pressure intensity.
Case based Learning (1 hour 30 minutes)
Inform the patient about the procedures and time /Perform in mannequin.
Follow the faculty’s instructions.
Communicate effectively with the patient.
Familiarize with piditthal.
Perform the procedure with correct hand position and apply optimum pressure.
Lift and squeeze the affected area as per the instructions given by the faculty.
Notice the colour changes on piditthal area.
Demonstrate proficiency in piditthal thokkanam.
Discussions (1 Hour)
Discuss the cellular exchange.

Discuss the inflammatory remodeling stage and evaluate the piditthal effects on prevention of tissue adhesion.
Discuss the delayed onset of muscle soreness(DOMS) in sports players and create a new treatment protocol for muscle soreness (DOMS) based on piditthal thokkanam.

Experiential-Learning 21.4 : Murukkal technique

Total activity hours (4 hours)
Problem based learning (30 minutes)
Assume the starting position instructed by the doctor.
Expose the affected area.
Inform any discomfort.
Provide feedback on pressure intensity.
Case based learning (2 hours)
Inform the patient about the procedures and time / perform in mannequin.
Follow the faculty's instructions.
Communicate effectively with the patient.
Familiarize with murukkal.
Perform the murukkal with correct hand position and apply optimum pressure.
Compress and squeeze the muscle as per the instructions given by the faculty.
Notice the changes in muscles and fascia during murukkal.
Record the findings.
Should be vigil about how the patient is reacting to pressure.
Demonstrate proficiency in murukkal thokkanam.
Discussions (1 hour and 30 minutes)
Discuss phasic muscle fatigue mechanism and evaluate the effects of murukkal on phasic muscle health.
Discuss the inflammatory remodeling stage and evaluate the murukkal effects on prevention of tissue adhesion.
Discuss the importance of endurance in sports players and create a new treatment protocol to enhance their performance based on murukkal thokkanam.

Experiential-Learning 21.5 : Kaikattal technique

Total activity hours(3 hours)
Demonstration (30 Minutes)
Assume the starting position instructed by the doctor.
Expose the affected area.

Inform any discomfort.
Provide feedback on traction force intensity.
Case based learning (1 hour 30 minutes)
Inform the patient about the procedures and time/ perform on mannequin.
Follow the faculty's instructions.
Communicate effectively with the patient.
Measure the blood pressure before kaikattal and rule out redflags like fractures in ribcage , history of anxiety and syncope.
Perform the procedure with correct hand position and apply optimum traction force.
Perform slowly and rhythmically.
Should be vigil about how the patient is reacting to traction force.
Document the treatment provided for future corrections.
Demonstrate proficiency in kaikattal on various conditions.
Discussion (One hour)
Evaluate kaikattal effects on sympathetic nerves system and write an article.
Explain the benefits of kaikattal in emergency situation to other department people and record the results.
Design a treatment protocol for respiratory distress based on kaikattal.
Teach the mechanism of kaikattal to others.

Experiential-Learning 21.6 : Demonstration of Azutthal

Total activity hours (2 hours)
Demonstration (30 minutes)
Assume the starting position instructed by the doctor.
Expose the affected area.
Inform any discomfort.
Provide feedback on pressure intensity.
Case based learning (1 hour 30 minutes)
Student instruction:
Inform the patient about the procedures and time / perform with mannequin.
Follow the faculty's instructions.
Familiarize with varma pullikal.
Perform the procedure with correct hand position and apply optimum pressure.
Place the hand firmly on that particular area and give firm downward or upward pressure and internal or external rotation.

Notice the colour changes and measure the temperature variations on the azhutthal area.
Should be vigil about how the patient is reacting to pressure.
Document the findings for further corrections.
Demonstrate proficiency in azhutthal.
Discuss the postural muscle function and it's mechanism of injury.
Evaluate the azhutthal effects on postural muscle health.
Develop a personalized treatment plan based on azhutthal.

Experiential-Learning 21.7 : Demonstration of *Izhutthal*

Total activity hours (2 hours)
Demonstration Bed Side(2 hours)
Patient instructions : 30 minutes.
Assume the starting position instructed by the doctor.
Expose the affected area.
Inform any discomfort.
Provide feedback on pressure intensity.
Demonstration (1 hour and 30 minutes)
Student instructions :
Inform the patient about the procedures and time.
Follow the faculty’s instructions.
Familiarize with the types of izhutthal.
Perform the procedure with correct hand position and apply optimum pressure.
Perform the izhutthal as per the instructions given by the faculty.
Demonstrate proficiency in unit of pressure.
Demonstrate proficiency in izhutthal to different type of musculo skeletal disease conditions.
Document the treatment provided.
Discuss the postural muscle function and it's mechanism of injury
Evaluate the effects of izhutthal on postural muscle health.

Experiential-Learning 21.8 : Demonstration Mallatthuthal

Total learning hours (3 hours)
Case Based Learning (2 hours)
Patient instructions:
Assume the starting position instructed by the doctor.
Expose the affected area.
Inform any discomfort.
Provide feedback on stretch intensity.
Proficiency demonstration:
Student instructions:
Inform the patient about the procedure and time.
Follow the faculty's instructions.
Familiarize with mallatthuthal.
Perform the procedure with correct hand position and apply optimum traction force.
Perform the stretch as per the instructions given by the faculty.
Practice the procedure repeatedly.
Demonstrate proficiency in mallatthuthal.
Discussion: (1 hour)
Perform mallatthuthal procedure to obese patients , infertility and evaluate the effects of mallatthuthal.
Discuss proprioception and evaluate the effects of mallatthuthal on proprioception.
Compare mallatthuthal with the proprioceptive neuromuscular facilitation (PNF).
Write an article about the effects of mallatthuthal on infertility.

Experiential-Learning 21.9 : Demonstration of *Asaitthal*

Total activity hours (3 hours)
Problem based learning (30 minutes)
Patient instructions :
Assume the starting position instructed by the doctor.
Expose the affected area.
Inform any discomfort.
Provide feedback on asaitthal intensity

Demonstration (1 hour 30 minutes)
Student instructions:
Inform the patient about the procedures and time.
Follow the faculty’s instructions.
Communicate effectively with the patient.
Familiarize with the types of asaitthal like vatta vadivilana asaitthal (Circular friction) and munnum pinnum asaitthal (to and fro) and whole limb asaitthal (shaking).
Perform the procedure with correct finger position and apply optimum circular force.
Perform the asaitthal as per the instructions given by the faculty.
Demonstrate proficiency in unit of pressure.
Demonstrate proficiency in asaitthal.
Discussion (One hour)
Perform asaitthal on tendon injuries and evaluate the effects.
Discuss the inflammatory stages and the function of myofibroblast during wound healing process.
Evaluate the effects of asaitthal on fibroblast regeneration.
Evaluate the effects of asaitthal on joint stiffness.

Modular Assessment

Assessment method	**Hour**
Instructions: Conduct a structured modular assessment. Assessment will be 50 marks. Keep structured marking pattern. Use different assessment methods in each module for the semester. Keep a record of the structured pattern used for assessment. Calculate the modular grade point as per table 6c 1.Objective structured practical examinations : Set up 5 stations (10 marks for one station) Station topics : • Thattal • Piditthal • Irukkal • Murukkal • Kaikattal • Azhutthal • Izhutthal • Mallatthuthal • Asaitthal	4

Mark distribution for one station :
Knowledge application : 4 marks
Practical skill and accuracy : 4 marks
Ethical principles: 2 marks
Or
2. Demonstration Observation Assistance and Performance (DOAP) (25 Marks)
Marks distribution :

- Knowledge about the procedure : 5 marks
- Pre procedure preparation : 5 marks
- Execution –Performing the procedure : 5 marks
- Assistance : 5 marks
- Time : 5 marks

Or
Any practical in converted form can be taken for assessment (25 Marks)
and
Any of the experiential as portfolio / reflections / presentations can be taken as an assessment (25 Marks)

Module 22 : Udal seyaliyal matrangal (Physiological response) of thokkanam and sports rehabilitation

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

Describe the mechanical response, relaxation response and stress response of thokkanam and sports rehabilitation.
Demonstrate the effects of thokkanam on neuroendocrine system and rehabilitation procedures.
Critically evaluate the relation between the Hypothalamus Pituitary Adrenal axis (HPA) and thokkanam, design a patient education program for stress management.

M 22 Unit 1 Mechanical responses of thokkanam

22.1.1 Definition of Mechanobiology 22.1.2 Fluid mechanics 22.1.3 Cellular exchange 22.1.4 Changes in muscle mass 22.1.5 Changes in extracellular matrix 22.1.6 Changes in bone

References: 66,67,194

3A	3B	3C	3D	3E	3F	3G
CO6,CO7	Discuss the effects of thokkanam on ratham, thol ,oon ,mei and mechanobiology & cellular excahnge	2	Lecture	CC	Knows-how	L&GD,L &PPT
CO6,CO7	Demonstrate the effects of thokkanam on ratham (cellular exchange), the changes in oon by thokkanam and the effects of thokkanam on narambukal.	4	Practical Training 22.1	PSY-GUD	Shows-how	DIS,D-M
CO6	Measure the physiological changes, record it and the effects of mechanical stimulation on biological systems	5	Experiential-Learning 22. 1	AFT-CHR	Does	CBL,DIS, D

M 22 Unit 2 Relaxation responses of thokkanam

22.2.1 Neuroendocrine system 22.2.2 Hypothalamus Pituitary Gonadal axis (HPG axis) 22.2.3 Serotonin 22.2.4 Dopamine 22.2.5 Oxytocin.

References: 66,194

3A	3B	3C	3D	3E	3F	3G
CO6,CO7	Discuss the effects of thokkanam on urakkam, the hypothalamus pituitary gonadal axis and the neurotransmitters	2	Lecture	CC	Knows-how	BL,L&G D,DIS
CO6,CO7	Demonstrate the effects of thokkanam on serotonin, dopamine and oxytocin, the neurotransmitters role on musculo skeletal system health and the parasympathetic nervous system activity	4	Practical Training 22.2	PSY-GUD	Shows-how	CBL
CO6,CO7	Evaluate the effects of thokkanam on nervous system and the effects of thokkanam on immunity	5	Experiential-Learning 22. 2	CE	Does	D,DIS

M 22 Unit 3 Stress response and thokkanam

22.3.1 Cortisol function 22.3.2 Hypothalamus -Pituitary - Adrenal axis (HPA axis)

References: 66,194

3A	3B	3C	3D	3E	3F	3G
CO6,CO7	Describe cortisol functions	1	Lecture	CC	Knows-how	L&GD,BL
CO6,CO7	Demonstrate the relation between cortisol and pain, cortisol level before and after thokkanam and the effects of thokkanam on stress	2	Practical Training 22.3	PSY-GUD	Shows-how	D
CO6,CO7	Evaluate the effects of thokkanam on ula noilkal and the effects of thokkanam on hypothalamus pituitary adrenal (HPA)axis	3	Experiential-Learning 22.3	CS	Does	PBL,DIS

M 22 Unit 4 Orthosis for spine and extremities

22.4.1 Spinal assessment 22.4.1.1 Thoraco lumbar orthosis 22.4.1.2 Low back orthosis 22.4.1.3 Spinal postural correction orthosis 22.4.2 Milwalky brace 22.4.3 Spinal braces

References: 6,226,227,228

3A	3B	3C	3D	3E	3F	3G
CO4	Define the orthosis for various disorders of spine and extremities	1	Lecture	CC	Knows-how	L&PPT,L&GD
CO4	Demonstrate of various orthosis for various disorders of spine and extremities.	2	Practical Training 22.4	PSY-GUD	Shows-how	D

CO2,CO4	Apply and adjust orthoses based on case scenarios for different spine and extremity conditions, ensuring customized fitting for patient needs	3	Experiential-Learning 22.4	CAP	Does	CBL,PBL

M 22 Unit 5 Mobility Aids

22.5.1 Crutch 22.5.2 Cane 22.5.3 Walker 22.5.4 Sticks(dipod, tripod, tetrapod) 22.5.5 Wheelchair 22.5.6 Tricycle 22.5.7 Modification 22.5.8 Prothestics

References: 4,6,226,227,228

3A	3B	3C	3D	3E	3F	3G
CO2,CO4	Descibe the mobility aids like Crutch, cane, walker, sticks (dipod, tripod, tetrapod) wheelchair, tricycle, modification, prothestics	1	Lecture	CC	Knows-how	L&PPT ,L&GD
CO2,CO4	Demonstration of Assistive Devices , Crutches, Canes, Walkers, Sticks (Dipod, Tripod, Tetrapod), Wheelchairs, Tricycles, Modifications, and Prosthetics	2	Practical Training 22.5	PSY-GUD	Knows-how	D
CO2,CO4	Develop skills in patient education and monitoring to ensure patients understand correct usage and maintenance for each device. Apply knowledge in selecting and adjusting assistive devices based on patient case scenarios, ensuring individualized fitting and safe usage.	3	Experiential-Learning 22.5	CS	Does	CBL

M 22 Unit 6 Orthosis in neurological disorders

22.6.1 Neurological Assesssment 22.6.2 Assisitve instruments 22.6.3 Splints 22.6.3.1 Aeroplane splint 22.6.3.2 Dynamic splint 22.6.3.3 Wrist drop splint 22.6.3.4 Foot drop splint 22.6.3.5 Cockup splint 22.6.4 Hip, Knne, Foot, Ankle Orthosis(HKFAO) 22.6.5 Knne, Foot, Ankle Orthosis (KAFO), 22.6.6 Ankle Foot Orthosis (AFO) 22.6.7 Footware modifications

References: 1

3A	3B	3C	3D	3E	3F	3G
CO2,CO4	Discuss the Orthosis in neurological disorders	1	Lecture	CC	Knows-	L&GD,L

					how	&PPT
CO2,CO4	Demonstrate the key components of a neurological assessment, including sensory, motor, reflex, and cranial nerve evaluation and the use of assistive instruments (e.g., reflex hammer, tuning fork, monofilament, pinwheel) to accurately assess neurological function	2	Practical Training 22.6	PSY-GUD	Shows-how	
CO2,CO4	Apply neurological assessment techniques using assistive instruments based on patient case scenarios, accurately identifying sensory, motor, and reflex abnormalities	3	Experiential-Learning 22.6	CAP	Does	CBL

M 22 Unit 7 Overview of sports medicine

22.7.1 Scopes of sports medicine 22.7.2 Treatment of sports injuries 22.7.3 Prevention of sports injuries 22.7.4 Diagnosis and rehabilitation of sports injuries 22.7.5 Training 22.7.6 Cognitive skill 22.7.7 Resting heart rate 22.7.8 Running speed etc 22.7.9 Exercise to improve the muscle power 22.7.10 Strengthening and endurance

References: 4,6,226,227,228

3A	3B	3C	3D	3E	3F	3G
CO2,CO4	Describe the scopes of sports medicine , treatment of sports injuries , prevention , diagnosis and rehabilitation of sports injuries, Training, cognitive skill, resting heart rate, running speed, Exercise to improve the muscle power, strengthening and endurance	1	Lecture	CC	Knows-how	L&PPT
CO2,CO4	Demonstrate common treatment techniques for managing sports injuries, focusing on acute care, pain management, and rehabilitation exercises and appropriate therapeutic modalities for different types of sports injuries, such as sprains, strains, contusions, and overuse injuries, using the RICE method, taping, and other modalities.	2	Practical Training 22.7	PSY-GUD	Shows-how	
CO2,CO4	Develop a tailored rehabilitation plan for sports injuries, considering injury type, patient goals, and safe return-to-sport protocols and apply treatment techniques and therapeutic modalities based on patient case scenarios of sports injuries, accurately addressing acute, subacute, and chronic stages of injury	2	Experiential-Learning 22.7	CS	Does	CBL

M 22 Unit 8 Overview of rehabilitation in sport injury

22.8.1 Stress fractures 22.8.1.1 Causes 22.8.1.2 Sites 22.8.1.3 Symptoms 22.8.1.4 Risk factors 22.8.1.5 Complication 22.8.1.6 Preventions 22.8.2 Management and rehabilitaion 22.8.3 First aid management 22.8.4 Rehabilitation of sports injury

References: 5,6,226,227,228

3A	3B	3C	3D	3E	3F	3G
CO2,CO4	Describe the sport injury and rehabilitation	1	Lecture	CC	Knows-how	L&PPT
CO2,CO4	Demonstrate effective first aid and initial management techniques for sports injuries and apply rehabilitation strategies that facilitate recovery, including pain management, range of motion exercises, and strength conditioning.	2	Practical Training 22.8	PSY-GUD	Shows-how	
CO2,CO4	Develop a personalized rehabilitation plan to address specific injuries, restore function, and promote safe return to sport and apply first aid and initial management techniques based on case scenarios of sports injuries, ensuring safe and effective immediate care.	2	Experiential-Learning 22.8	CS	Does	CBL

Practical Training Activity

Practical Training 22.1 : Measurement of physiological changes

Total learning hours (4 hours)
Demonstartion Model (1 hour 30 minutes)
Ratham changes
The faculty should perform thokkanam. Measures oxygen saturation and heart rate through pulse oximeter. Measure the blood pressure. Measures skin temperature changes. Demonstrate doppler ultra sound to measure the blood flow velocity and direction. Demonstrate laser doppler flowmetry to measure the micro vascular blood flow. Demonstrate near infrared spectroscopy to measure the tissue oxygen and blood flow.
Discuss the cellular exchange. Instruct the student to observe the findings. Clear student's doubts.
Case based learning (1 Hour 30 minutes)

Oon changes
The faculty should demonstrate the nerve conduction study. Demonstrate the changes in muscles. Demonstrate the piezoelectric effect. Demonstrate ultra sonogram (USG) to visualize tissue movement.
Kinesthetic learning (1 Hour)
Changes in narambukal
The faculty should demonstrate heart rate variability analysis to measure autonomic nervous system responses. Demonstrate galvanic skin response to measure the sympathetic nervous system activity. Demonstrate nerve conduction studies to measure nerve function and conduction.

Practical Training 22.2 : Neurotransmitters estimation

Total learning hours (4 hours)
Case based learning (4 hours)
The faculty will sensitize the students to the effects of neurotransmitters through visual aids.
Serotonin estimation
The faculty should demonstrate the blood and urine test to measure serotonin.
Oxytocin estimation
The faculty should demonstrate the estimation through saliva ,plasma and urine (peripheral concentration Demonstrate the estimation through cerebro spinal fluid (central concentration) Sensitize to other estimation assays like enzyme linked immunosorbent assays(ELIZA) , radio immuno assay (RIA) and liquid chromatography -mass spectrometry.
Dopamine estimation
The faculty should demonstrate blood and urine test to measure the dopamine level.Sensitize to single photon emission computed tomography (SPECT) and positron emission tomography (PET).
Autonomic nervous system activity
The faculty should demonstrate heart rate variability through electrocardiogram. Electroencephalography (EEG) : Measures brainwave activity. Sensitize the students to functional magnetic resonance imaging (fMRI).

Practical Training 22.3 : Cortisol measurement

Total activity hours (2 hours)
Demonstration (2 hours)
The faculty should demonstrate the salivary cortisol estimation method.
Demonstrate the visual analoge pain assessment .
Demonstrate the profile of mood states (POMS) questionnaire to assess mood and emotional state.

Demonstrate the state trait anxiety inventory (STAI) questionnaire to assess the anxiety level
Discuss the functions of hypo thalamus pituitary gonadal axis through active learning.

Practical Training 22.4 : Various Orthoses for Spine and Extremity Disorders

Total learning hours (2 hours)
Demonstration (2 hours)
Introduction and Demonstration of Orthoses for Spine and Extremities:
Overview of Common Orthoses and Their Functions
Provide a brief overview of common spine and extremity disorders that require orthotic support (e.g., scoliosis, spinal fractures, knee instability, drop foot).
Discuss the purpose of orthoses, such as immobilization, alignment correction, pain relief, and functional support.
Demonstration of Each Orthosis
Spinal Orthoses:Cervical Collar: Show how to fit a cervical collar to support the neck and prevent motion following neck injuries or surgeries.
Thoracolumbar Brace: Demonstrate how to apply a thoracolumbar support brace, explaining the correct placement to stabilize the spine in conditions like scoliosis or osteoporosis.
Lumbar Brace: Fit a lumbar brace around the lower back to provide support in cases of lumbar instability or pain from disc issues.
Extremity Orthoses:
Knee Brace: Show the correct application of a knee brace for support in ligament injuries or post-surgery, ensuring correct alignment.
Ankle-Foot Orthosis (AFO): Demonstrate the application of an AFO to support patients with foot drop, explaining how it assists in dorsiflexion during gait.
Wrist Splint: Apply a wrist splint for carpal tunnel syndrome, explaining how it maintains wrist alignment to relieve pressure on the median nerve.
Elbow Brace: Demonstrate how to fit an elbow brace to immobilize the elbow post-injury or surgery, adjusting for comfort and stability.
Post Activity Wrap Up

Practical Training 22.5 : Assistive Devices

Total learning hours (2 hours)
Demonstration (2 hours)
Introduction to Assistive Devices and Their Applications:
Provide an overview of different assistive devices, explaining the conditions each device typically supports (e.g., crutches for non-weight-bearing post-injury, canes for mild instability, prosthetics for limb loss).
Discuss the importance of proper fitting, weight distribution, and patient safety while using each device.
Device-Specific Demonstrations:
Crutches:Demonstrate the correct measurement for crutch height, ensuring proper positioning under the arms without pressure on the axilla.

Show three-point, two-point, and four-point gait patterns for crutch use, explaining which conditions benefit from each.
Canes:Demonstrate fitting and use of single-tip, dipod, tripod, and tetrapod canes, explaining their differences in stability.
Show the correct hand placement and gait, instructing on cane placement opposite to the injured or weaker side.
Walkers:Demonstrate proper height adjustment for walkers and show the sequence for stepping with the walker, ensuring patient balance and safety.
Discuss modifications like wheels or seat attachments, and explain their applications for different patient needs.
Wheelchairs:
Demonstrate adjustments for seat height, footrest, and armrest positions to ensure comfort and posture.
Show wheelchair propulsion techniques, safe transfers in and out, and maneuvering in tight spaces.
Tricycle (Adaptive Cycle):
Explain how adaptive tricycles improve mobility for patients with limited balance or motor control.
Demonstrate how to adjust the seat, handlebars, and pedals, showing safe mounting, dismounting, and cycling.
Prosthetics:
Demonstrate fitting of basic prosthetics (e.g., below-knee, above-knee, upper limb prosthetics) and discuss adjustment based on residual limb condition.
Show basic functional movements with the prosthetic limb and discuss importance of alignment and skin checks.

Practical Training 22.6 : Neurological Assessment and Use of Assistive Instruments

Total learning hours(2 hours)
Practical (2 hours)
Introduction to Neurological Assessment Components:
Review the key components of a neurological assessment: mental status, cranial nerves, motor function, sensory function, reflexes, and coordination.
Discuss the specific areas assessed, such as muscle strength, response to sensory stimuli, reflex response, and eye movement.
Demonstration of Assessments Using Assistive Instruments:
Mental Status Evaluation:
Start with simple cognitive tests (e.g., orientation, memory recall) to assess mental status.
Cranial Nerve Examination:
Cranial Nerve II (Optic): Use a penlight to check the pupillary light reflex and visual acuity.
Cranial Nerves III, IV, VI (Oculomotor, Trochlear, Abducens): Check eye movements and alignment using finger or pen tracking.
Cranial Nerve V (Trigeminal): Use a cotton ball for light touch on the face and test jaw strength.
Cranial Nerve VII (Facial): Ask the patient to perform facial expressions to evaluate facial muscle strength.
Continue with each cranial nerve using appropriate tools as needed.
Motor Function:
Assess muscle tone, strength, and coordination in major muscle groups (e.g., shoulder, elbow, hip, knee).

Gait Observation: Have the patient walk to observe gait stability and coordination.
Sensory Function:
Monofilament Test: Use a monofilament to assess light touch on hands and feet, checking for peripheral neuropathy.
Pinwheel Test: Roll the pinwheel over specific areas to assess pain response (sharp vs. dull sensation).
Vibration Sense: Use a tuning fork on bony prominences (e.g., ankles, wrists) to test vibration sensitivity.
Reflex Testing:
Reflex Hammer: Use the hammer to test deep tendon reflexes (e.g., patellar, Achilles), noting strength and symmetry of response.
Babinski Test: Stroke the sole of the foot to check for abnormal plantar reflexes, indicative of neurological disorders.

Practical Training 22.7 : Treatment Techniques for Common Sports Injuries

Total learning hours (2 hours)
Practical (2 hours)
Overview of Common Sports Injuries and Their Management:
Review common sports injuries, such as ankle sprains, muscle strains, knee injuries, shoulder dislocations, and overuse injuries like tendinitis.
Discuss the principles of the RICE method (Rest, Ice, Compression, Elevation) for acute injury management and emphasize the importance of timely application.
Application of the RICE Method:
Rest: Demonstrate techniques for immobilizing an injured limb, using splints or slings to limit movement in the early stages.
Ice: Apply an ice pack to reduce swelling and pain, explaining appropriate duration (e.g., 15-20 minutes on, 1-2 hours off) and precautions.
Compression: Show how to wrap a compression bandage securely but comfortably, maintaining proper circulation while minimizing swelling.
Elevation: Position the injured limb above heart level, explaining how it helps reduce swelling by promoting fluid return.
Taping Techniques:
Ankle Taping: Demonstrate ankle taping for support after a sprain, ensuring correct placement for stability without restricting movement.
Knee Taping: Apply a knee taping method for patellar alignment or ligament support, discussing how it aids in knee stability during movement.
Wrist and Shoulder Taping: Show wrist and shoulder taping techniques for stabilizing joints after minor strains, explaining how taping reduces re-injury risk.
Therapeutic Modalities and Exercises:
Stretching: Demonstrate safe stretching techniques, focusing on areas commonly injured in sports, such as hamstrings, quadriceps, and calves.
Strengthening Exercises: Use resistance bands to demonstrate strengthening exercises for recovery, targeting weak or injured muscle groups (e.g., ankle inversions for sprains, rotator cuff exercises for shoulder injuries).
Heat Therapy and Electrical Stimulation: Explain when and how to use heat therapy or electrical stimulation (if available) for pain relief and muscle relaxation in subacute or chronic stages of recovery.

Practical Training 22.8 : First Aid, Management, and Rehabilitation of Sports Injuries

Total learning hours (2 hours)
Practical
First Aid and Initial Management for Sports Injuries
Material preparation (15 Minutes)
Materials Needed: First aid kit, ice packs, compression wraps, elastic bandages, splints, antiseptic wipes, gauze, tape, checklists for injury assessment, and gloves.
Procedure:
Introduction to First Aid Principles for Sports Injuries:(30 Minutes)
Review common sports injuries such as sprains, strains, fractures, contusions, and open wounds.
Discuss the importance of the RICE (Rest, Ice, Compression, Elevation) method as the first line of care and go over additional first aid steps for open wounds or fractures.
Demonstration of First Aid Techniques: (1 Hour 15 Minutes)
RICE Method:
Rest: Explain the importance of immobilizing the injured area to prevent further damage.
Ice: Demonstrate the proper application of an ice pack for 15-20 minutes, ensuring appropriate intervals to avoid frostbite.
Compression: Show how to apply a compression wrap, ensuring firm but not overly tight application to reduce swelling.
Elevation: Explain positioning to reduce swelling by elevating the injured limb above heart level.
Wound Care: For open wounds, demonstrate cleaning with antiseptic wipes, applying gauze, and securing with tape or bandages.
Splinting: Demonstrate immobilization techniques for fractures using splints, ensuring correct positioning and stability.

Experiential learning Activity

Experiential-Learning 22.1 : Mechanical effects of thokkanam

Total activity hours (5 hours)
Demonstration (3 hours)
The student should familiarize with the equipment. Develop proficiency in handling of equipment. Inform the patient about the procedures. Review the patient's medical history and symptoms Perform a brief thokkanam. Monitor and record the changes. Adjust thokkanam techniques according to the changes.
Changes in ratham
student instructions: Measures oxygen saturation and heart rate through pulse oximeter.
Measure blood pressure Measure skin temperature changes. Measure the blood flow velocity and direction. Measure the micro vascular blood flow. Measure the tissue oxygen and blood flow. Maintain consistency throughout the demonstration.
Case based learning (1 Hour)
Changes in muscle
Perform nerve conduction study. Measure changes in muscles. Changes in narambukal Measure autonomic nervous system responses. Measure the sympathetic nervous

system activity.
Discussion (1 Hours)
Document the findings for further adjustments Write a research article about the mechanical effects of thokkanam

Experiential-Learning 22.2 : Neurotransmitter level

Total activity hours (5 hours)
Demonstration (3 hours)
The stuent Familiarize with the equipments. Familiarize with the neurotransmitters measurement tests. Review the patient's medical history and symptoms. Develop proficiency in handling the equipments. Develop proficiency in estimation of neurotransmitters level.
Measurement
Monitor and record the changes.Measure the serotonin , dopamine and oxytocin levels. Adjust thokkanam techniques according to the changes. Document the findings for further adjustments.
Discussion (2 hour)
Discuss neurotransmitters role on immunity. Write a research article about the relaxation response of thokkanam. Develop a treatment protocol for immune enhancement.

Experiential-Learning 22.3 : Thokkanam effects on ulanoikal

Total activity hours (3 hours)
Problem Based Learning: (2 hours)
Familiarize with the salivary cortisol estimation method.
Familiarize with the visual analogue pain scale .
Familiarize with the the profile of mood states (POMS) questionnaire.
Familiarize with the state trait anxiety inventory (STAI) questionnaire.
Review the patient's medical history and symptoms.
Develop proficiency in handling the equipments.
Perform a brief thokkanam.
Monitor and record the changes.
Measure cortisol levels and mood states with questionnaire.
Adjust thokkanam techniques according to the changes.
Document the findings for further adjustments.
Discussions: (1 hour)
Evaluate the effects of stress induced damages on musculo skeletal system components.

Write a research article about the effects of thokkanam on anxiety disorders.
Teach the hypothalamus pituitary adrenal axis (HPA) functions to others and evaluate the effects of thokkanam on hypothalamus pituitary adrenal (HPA) axis.

Experiential-Learning 22.4 : Orthoses for Spine and Extremity Disorders

Total activity hours (3 hours)
Case Based Learning (3 hours)
Introduction to Patient Case Scenarios:
Assign each student a simulated patient case (e.g., cervical spine injury, lower back pain, knee ligament instability, foot drop, carpal tunnel syndrome).
Review each patient's history, specific limitations, and goals for orthotic support, emphasizing how an orthosis can aid in recovery and functionality.
Selection and Fitting of Orthosis Based on Condition:
Based on the case, each student selects the appropriate orthosis and fits it to the patient (or simulated patient)
Spine Disorders: For cervical or thoracolumbar conditions, students fit collars or braces, ensuring alignment and stability without restricting breathing.
Extremity Disorders: For conditions like knee instability or foot drop, students fit the appropriate brace, adjusting for optimal movement support and protection.
Post Activity Wrap Up

Experiential-Learning 22.5 : Adjustment of Assistive Devices

Total activity hours (3 hours)
Case based learning (3 hours)
Case-Based Selection and Application of Assistive Devices:
Materials Needed: Various assistive devices (crutches, canes, walkers, wheelchairs, tricycles, prosthetics), simulated patient scenarios, and adjustment tools.
Procedure:
Introduction to Patient Case Scenarios:
Assign each student a simulated patient scenario (e.g., a post-surgical knee injury requiring crutches, a stroke patient with hemiparesis needing a cane, an amputee fitted with a prosthetic).
Review the patient's history, specific limitations, and functional goals, focusing on how an assistive device can support recovery and independence.
Selection and Adjustment of the Device:
Crutches and Canes: For cases needing crutches or canes, students assess height, adjust for comfort, and explain proper gait patterns.
Walkers: For patients needing more support, students fit and adjust walkers, explaining modifications like wheels or seats as needed.
Wheelchairs and Tricycles: For wheelchair or tricycle use, students adjust seat height, footrests, and handle positions for optimal comfort and maneuverability.
Prosthetics: For limb loss cases, students check prosthetic fit, alignment, and skin contact, explaining basic functions and patient care.

Experiential-Learning 22.6 : Neurological Assessment and Interpretation of Findings

Total activity hours (3 hours)
Case based learning (3 hours)
Introduction to Patient Case Scenarios:
Assign each student a simulated patient scenario presenting neurological symptoms (e.g., weakness in one limb, numbness in extremities, facial drooping).
Review the patient's history and key symptoms, emphasizing the need for a targeted neurological assessment to identify underlying issues.
Targeted Neurological Assessment and Instrument Use:
Mental Status and Cranial Nerve Testing: Perform tests based on the case scenario, such as light reflexes, eye tracking, and facial movement.
Motor and Sensory Assessment: Use the monofilament, tuning fork, and pinwheel to check sensation and pain response in areas relevant to the patient's symptoms.
Reflex Testing: Use the reflex hammer to assess specific reflexes based on the suspected neurological condition (e.g., deep tendon reflexes for suspected spinal involvement).

Experiential-Learning 22.7 : Treatment Planning and Execution for Sports Injuries

Total activity hours (2 hours)
Case based learning (2 hours)
Introduction to Sports Injury Case Scenarios
Assign each student a simulated patient case, such as an ankle sprain from running, a shoulder strain from tennis, or knee pain from overuse.
Review the patient's symptoms, history, and immediate needs, emphasizing how to approach the case based on the injury type and stage of recovery.
Application of Initial Treatment Techniques
Acute Care with RICE: Apply the RICE method for cases of acute injuries, using ice, compression, and elevation to reduce swelling and pain.
Taping and Support: For patients transitioning from acute to subacute stages, apply taping techniques to stabilize joints and support healing while beginning gentle movement.

Experiential-Learning 22.8 : Case-Based First Aid, Management, and Rehabilitation Planning for Sports Injuries

Total activity hours (2 hours)
Case based learning
Procedure:
Introduction to Sports Injury Case Scenarios:
Assign each student a simulated patient case, such as a sprained ankle from a basketball game, a knee contusion from soccer, or a wrist fracture from a fall.
Review the patient's symptoms, circumstances of injury, and urgency of care needed for each case.
First Aid and Management Based on Case Needs:
RICE for Acute Injuries: Apply the RICE method where appropriate, explaining the importance of each component for reducing swelling and pain.

Wound Care and Splinting: For open wounds or suspected fractures, apply cleaning, dressing, and immobilization techniques to stabilize the injury.
Referral Criteria: Identify signs that warrant referral to a physician, such as significant swelling, deformity, or inability to bear weight.

Modular Assessment

Assessment method	**Hour**
Instructions: Conduct a structured modular assessment. Assessment will be 50 marks. Keep structured marking pattern. Use different assessment methods in each module for the semester. Keep a record of the structured pattern used for assessment. Calculate the modular grade point as per table 6c. 1.Objective structured practical examinations (25 marks) Station topics : • Electromyography • Electro encephalography • Galvanic skin responses • Salivary cortisol assessment • Orthoses • Assistive devices 2.Practical viva (25 Marks) Marks distribution : Identification of the equipment (physio) or purpose of the procedure : 5 marks Explanation of the procedure : 5 marks Practical skill : 5 marks Integration and application : 10 marks Or Any practical in converted form can be taken for assessment (25 Marks) and Any of the experiential as portfolio / reflections / presentations can be taken as an assessment (25 Marks)	4

Semester No : 6

Module 23 : Postural disturbance, lymphatic, peripheral vascular disease and Rehabilitation of neuromuscular disease

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

Discuss the postural disorders
Demonstrate the biomechanical imbalance of a particular postural disorder and its thokkanam
Develop a personalized thokkanam treatment plan and ergonomics for postural disorders

M 23 Unit 1 Postural disorders of head & neck and its management

23.1.1 Forward head posture 23.1.2 Acquired torticollis 23.1.3 Semispinalis capitis syndrome 23.1.4 Splenius capitis syndrome 23.1.5 Levator scapulae syndrome 23.1.6 Cerviogenic head ache 23.1.7 Muscular tension headaches 23.1.8 Trapezitis

References: 64,66,68,71,73,78,79,191

3A	3B	3C	3D	3E	3F	3G
CO5,CO8	Discuss the postural disorders of head and neck	2	Lecture	CC	Knows-how	L&GD,L&PPT,DIS,BL
CO2,CO5,CO8	Demonstrate the biomechanical imbalances of head & neck postural disorders and its thokkanam	4	Practical Training 23.1	PSY-GUD	Shows-how	D,CBL,DIS
CO5,CO8	Develop a specific thokkanam plan by matching the biomechanical imbalances with thokkanam types for head & neck postural disorders	5	Experiential-Learning 23.1	PSY-ORG	Does	DIS,SIM,CBL,D-BED

M 23 Unit 2 Postural disorders of elbow & lumbosacral and its management

23.2.1 Hyper lordosis 23.2.2 Excessive kyphosis 23.2.3 Scoliosis 23.2.4 Lateral pelvic tilt 23.2.5 Anterior pelvic tilt 23.2.6 Posterior pelvic tilt. 23.2.7 Cubital

tunnel syndrome 23.2.8 Cubitus valgus 23.2.9 Cubitus varus

References: 64,66,68,71,73,77,78,79,191

3A	3B	3C	3D	3E	3F	3G
CO2,CO5	Discuss the postural disorders of elbow and lumbosacral region.	2	Lecture	CC	Knows-how	L&PPT
CO5,CO8	Demonstrate the biomechanical imbalances and thokkanam for elbow and lumbosacral postural disorders	4	Practical Training 23.2	PSY-GUD	Shows-how	CBL,D-BED
CO5,CO8	Develop a treatment plan for elbow and lumbosacral postural disorders	5	Experiential-Learning 23.2	CS	Does	PBL,D-BED,PL,CBL

M 23 Unit 3 Postural disorders of knee & ankle and its management

23.3.1 Genu valgum 23.3.2 Genu varum 23.3.3 Genu recurvatum. 23.3.4 Calcaneal valgus 23.3.5 Calcaneal varus 23.3.6 Pes planus 23.3.6 Pes cavus 23.3.7 Hallux valgus 23.3.8 Morton toe

References: 64,66,68,71,73,78,79,191

3A	3B	3C	3D	3E	3F	3G
CO5,CO8	Demonstrate the biomechanical imbalances of knee and ankle postural disorders, treatment plan after the assessment and demonstrate the thokkanam as per the plan	4	Practical Training 23.3	PSY-GUD	Shows-how	DIS,D-BED,SIM,CBL
CO2,CO5	Explain postural disorders of knee and ankle	2	Lecture	CC	Knows-how	L_VC,L&PPT
CO5,CO8	Develop a specific thokkanam plan by matching the biomechanical imbalances with thokkanam types, specific thokkanam, proficiency in a specific treatment plan, personalised thokkanam treatment plan and ergonomics for knee and ankle postural	5	Experiential-Learning 23.3	CS	Does	CBL,D-BED,PL

	disorders					

M 23 Unit 4 Postural disorders of shoulder & pakkavatham and its management

23.4.1 Costcoclavicular syndrome 23.4.2 Pectoralis minor syndrome 23.4.3 Pakkavatham

References: 64,66,68,71,73,78,79,191

3A	3B	3C	3D	3E	3F	3G
CO5,CO8	Describe the postural disorders of shoulder, pakkavatham and its impacts on the quality of life.	2	Lecture	CC	Knows-how	L&GD,L_VC,L&PPT
CO5,CO8	Demonstrate the biomechanical imbalances of shoulder postural disorders, postural imbalances in pakkavatham, treatment plan after the assessment and demonstrate the thokkanam as per the plan	4	Practical Training 23.4	PSY-GUD	Shows-how	CBL,D-BED
CO5,CO8	Develop a specific thokkanam plan by matching the biomechanical imbalances with thokkanam types,Perform thokkanam,developing the treatment plan and pakkavatham management.	5	Experiential-Learning 23.4	CS	Does	RP,D-BED,CBL

M 23 Unit 5 Overview of lymphatic and peripheral vascular disease

23.5.1 Arterial diseases 23.5.2 Venous disease 23.5.3 Lymphatic disease

References: 6,226,227,228

3A	3B	3C	3D	3E	3F	3G
CO2,CO4	Describe arterial diseases, venous disease, lymphatic disease	1	Lecture	CC	Knows-how	L&GD,L&PPT
CO2,CO4	Demonstrate the clinical examination of the Arterial diseases, venous disease, lymphatic disease	2	Practical Training 23.5	PSY-GUD	Shows-how	CBL,D-BED

CO2,CO4	Proficient the examination of Arterial diseases, venous disease, lymphatic disease	3	Experiential-Learning 23.5	AFT-CHR	Does	CBL

M 23 Unit 6 Rehabilitation of neuromuscular disease

23.6.1 Brain and spinal cord injuries 23.6.2 Peripheral nerve injury 23.6.3 Muscular disease 23.6.4 Cancer 23.6.5 Geriatric rehabilitation 23.6.6 Neurological disease rehabilitation

References: 4,5,6,226,227,228

3A	3B	3C	3D	3E	3F	3G
CO2,CO4	Describe the brain and spinal cord injuries, peripheral nerve injury, muscular disease, cancer, geriatric rehabilitation, neurological disease rehabilitation	1	Lecture	CAN	Knows-how	L&PPT ,L&GD
CO2,CO4	Demonstrate the clinical examination of brain and spinal cord injuries , peripheral nerve injury, muscular disease, cancer, geriatric rehabilitation, neurological disease rehabilitation	2	Practical Training 23.6	PSY-GUD	Shows-how	PBL
CO2,CO4	Proficient in the clinical examination of brain and spinal cord injuries,peripheral nerve injury, muscular disease ,cancer, geriatric rehabilitation and neurological disease rehabilitation	3	Experiential-Learning 23.6	AFT-CHR	Does	CBL,PBL

Practical Training Activity

Practical Training 23.1 : Thokkanam on Head & neck postural disorders

Total learning hours (4 hours)
Discussion (30 minute)
The faculty should display the videos about biomechanics of head and neck.The faculty should explore the biomechanical imbalances of head and neck disorders .
Case based learning (1 hour 30 minutes)
The faculty should demonstrate the biomechanical imbalances of head and neck disorders. Demonstrate the assessment procedures. Demonstrate special tests to differentiate the conditions. Instruct the students to observe the findings.

Demonstartion (2 hours)
The faculty should, demonstrate how to match the disease conditions with particular thokkanam technique.Demonstrate the targeted areas, muscles and ligaments.Demonstrate the thokkanam plan. Demonstrate the hand position and unit of pressure according to the condition.Demonstrate thokkanam as per the plan.Instruct the students to monitor adverse impacts.Demonstrate the re assessments and how to modify the treatment plan according to the re assessment findings. Instruct the students to practice thokkanam on mannequin.

Practical Training 23.2 : Thokkanam for Elbow and lumbosacral postural disorders

Total learning hours (4 hours)
Demonstration bed side (2 hours)
The faculty should display the videos about biomechanics of elbow and lumbosacral area.The faculty should explore the biomechanical imbalances of elbow and lumbosacral area. Demonstrate the biomechanical imbalances of lumbosacral area .Demonstrate the biomechanical imbalances of elbow.Demonstrate the assessment procedures. Demonstrate special tests to differentiate the conditions. Instruct the students to observe the findings.
Case Based Learning (2 hours)
The faculty should,demonstrate how to match the disease conditions with particular thokkanam technique.Demonstrate the targeted areas , muscles and ligaments.Demonstrate the thokkanam plan. Demonstrate the hand position and unit of pressure according to the condition.Demonstrate thokkanam as per the plan.Instruct the students to monitor adverse impacts. Demonstrate the re assessments and how to modify the treatment plan according to the re assessment findings. Instruct the students to practice thokkanam on mannequin

Practical Training 23.3 : Thokkanam demonstration of Knee and ankle postural disorders

Total learning hours (4 hours)
Demonstration (30 minutes)
The faculty should display the videos about biomechanics of knee and ankle.The faculty should explore the biomechanical imbalances of knee and ankle disorders.
Case Based Learning (1 hour 30 minutes)
The faculty should demonstrate the biomechanical imbalances of knee and ankle disorders.
Demonstrate the assessment procedures. Demonstrate special tests to differentiate the conditions. Instruct the students to observe the findings.
Demonstartion Bed Side (2 hours)
The faculty should demonstrate how to match the disease conditions with particular thokkanam technique. Demonstrate the targeted areas, muscles and ligaments.
Demonstrate the thokkanam plan. Demonstrate the hand position and unit of pressure according to the condition.Demonstrate thokkanam as per the plan.Instruct the students to monitor adverse impacts. Demonstrate the re assessments and how to modify the treatment plan according to the re assessment findings. Instruct the students to practice thokkanam on mannequin.

Practical Training 23.4 : Thokkanam for Shoulder postural disorders and pakkavatham

Total learning hours (4 hours)
Demonstration bedside (2 hours)
The faculty should display the videos about biomechanics of shoulder.
The faculty should explore the biomechanical imbalances of shoulder disorders.
The faculty should explore the activities of daily living
The faculty should demonstrate the assessment procedures for shoulder issues.
Demonstrate special tests to differentiate the conditions.
Demonstrate how to match the disease conditions with particular thokkanam technique.
Demonstrate the activities of daily living.
Demonstrate the functional imbalances in pakkavatham.
Demonstrate the target areas , affected muscles and ligaments in pakkavatham.
Instruct the student to observe the findings.
Case based Learning (2 hour)
Demonstrate the thokkanam plan.
Demonstrate the hand position and unit of pressure according to the condition.
Demonstrate thokkanam as per the plan.
Instruct the students to monitor adverse impacts.
Demonstrate the re assessments and how to modify the treatment plan according to the re assessment findings.
Instruct the students to practice thokkanam on mannequin.

Practical Training 23.5 : Clinical Examination of Arterial, Venous, and Lymphatic Diseases

Total learning hours (2 hours)
Demonstration bedside (2 hours)
Procedure: (The teacher will demonstrate the follwing steps)
1. Introduction to Arterial, Venous, and Lymphatic Diseases: (20 Minutes)
Provide a brief overview of common arterial diseases (e.g., peripheral artery disease), venous diseases (e.g., varicose veins, chronic venous insufficiency), and lymphatic diseases (e.g., lymphedema).Discuss the importance of physical examination in identifying vascular and lymphatic abnormalities and differentiating between them.

2. Arterial Disease Examination:(30 Minutes)
Inspection: Observe the skin for color changes, ulcers, and hair loss on the extremities, commonly seen in peripheral artery disease.
Palpation: Check pulses at various sites (e.g., radial, femoral, dorsalis pedis, posterior tibial) and note strength, symmetry, and any pulsation abnormalities.
Capillary Refill Test: Assess capillary refill by pressing on a nail bed and noting the time taken for color to return (normal is under 2 seconds).
Auscultation for Bruits: Use a stethoscope to listen over large arteries (e.g., carotid, femoral) for bruits, which indicate turbulent blood flow due to narrowing.
3. Venous Disease Examination: (30 Minutes)
Inspection: Look for signs such as varicose veins, edema, skin discoloration (hyperpigmentation), and venous ulcers, especially around the ankle area.
Palpation: Palpate for tenderness along the veins, especially in cases of suspected thrombophlebitis.
Pitting Edema Test: Press on the skin over the bony areas of the lower extremities to check for pitting edema, which indicates venous insufficiency.
Trendelenburg Test (optional if available): Demonstrate the test to assess venous valve competence.
4. Lymphatic Disease Examination: (30 Minutes)
Inspection: Look for unilateral swelling, especially in the arms or legs, skin thickening, and signs of lymph fluid accumulation.
Palpation: Palpate lymph nodes (e.g., inguinal, axillary) for swelling, tenderness, and consistency, indicating possible lymphatic involvement.
Measurement of Limb Circumference: Use a tape measure to compare limb circumference at multiple points, documenting any differences indicating lymphedema.

Practical Training 23.6 : Clinical Examination in Geriatric Rehabilitation

Toatal learning hours (2 hours)
Problem based learning (2 hours)
1. Introduction to Geriatric Assessment
Discuss the unique needs of geriatric patients, including common age-related issues like decreased muscle strength, joint stiffness, cognitive decline, and increased fall risk.
Explain the importance of a holistic approach that evaluates physical, cognitive, and emotional well-being.
2. Mobility and Gait Assessment
Timed Up and Go Test (TUG): Demonstrate how to perform this test by timing the patient as they stand from a seated position, walk a short distance, turn, and return to the chair. Note gait speed and stability.
Gait Analysis: Observe the patient’s gait, noting stride length, speed, balance, and any asymmetry or shuffling.
3. Strength and Range of Motion (ROM) Assessment
Grip Strength Test: Use a dynamometer to measure hand grip strength as an indicator of overall strength, commonly diminished in older adults.
Joint ROM Measurement: Using a goniometer, assess major joints (shoulders, knees, hips) for range limitations that may affect functional mobility.
4. Balance and Postural Stability Testing
Single-Leg Stand Test: Instruct the patient to stand on one leg (with support nearby) and time their balance. Note stability and use of compensatory movements.
Functional Reach Test: Measure how far the patient can reach forward while standing without taking a step, indicating postural stability.
5. Cognitive Screening

Mini-Mental State Examination (MMSE): Administer a brief cognitive screening test to assess memory, orientation, and problem-solving.
Clock Drawing Test: Ask the patient to draw a clock with a specific time, assessing spatial awareness and executive function.

Experiential learning Activity

Experiential-Learning 23.1 : Treatment plan for head & neck postural disorders

Total activity hours (5 hours)
Simulation (30 minutes)
1.Assume the starting position instructed by the doctor.
2.Expose the affected area.
3.Inform any discomfort.
4.Provide feedback about unit of pressure.
5.Follow the instructions given by the doctor.
Case based learning (1 hour 30 minutes)
1.Familiarize with the biomechanics of head & neck.
2.Familiarize with the biomechanical disorders of head & neck.
3.Read the complaints of the patient.
4.Communicate effectively with the patient.
5.Maintain confidentiality and dignity of the patient.
6.Assess the patient to rule out biomechanical imbalances.
7.Perform the special tests for correct diagnosis.
8.Identify the key areas of problem.
9.Rule out red flags.
Demonstration bed side (2 hours)
1.The student should, Match the disease conditions with thokkanam types.
2.Design a treatment plan.
3.Cover the patient with towels.
4.Take oil in a small bowel and do not pour the oil directly on patient’s body parts.
5.Perform thokkanam as per the plan.
6.Notice the skin colour changes through inspection.
7.Verify the skin texture and muscle tone through palpation and record the findings.
8.Demonstrate proficiency in a specific treatment plan.

9.Document the treatment provided.
Discussion (1 hour)
1.The student teach others how to create a treatment plan.
2.Develop a personalized thokkanam protocol for head and neck disorders.
3.Teach the ergonomics and strengthening exercises to the patients for head and neck issues.

Experiential-Learning 23.2 : Thokkanam for elbow and lumbosacral postural disorders

Total activity hours (5 hours)
Demonstration bed side (2 hour)
Assume the starting position instructed by the doctor. Expose the affected area. Inform any discomfort. Provide feedback about unit of pressure. Follow the instructions given by the doctor.Familiarize with the biomechanics of elbow and lumbosacral area. Familiarize with the biomechanical disorders of elbow and lumbosacral area. Read the complaints of the patient.
Communicate effectively with the patient.Maintain confidentiality and dignity of the patient.
Case Based Learning (2 hours)
The student should, Match the disease conditions with thokkanam types. Design a treatment plan. Cover the patient with towels. Take oil in a small bowel and do not pour the oil directly on patient's body parts. Perform thokkanam as per the plan.Notice the skin colour changes through inspection.Verify the skin texture and muscle tone through palpation and record the findings. Demonstrate proficiency in a specific treatment plan.Document the treatment provided.
Peer Learning (1 hour)
Student should Teach others how to create a treatment plan. Develop a personalized thokkanam protocol for elbow and lumbosacral postural disorders. Teach the ergonomics and strengthening exercises to the patients for elbow and low back issues.

Experiential-Learning 23.3 : Treatment plan for knee and ankle postural disorders

Total activity hours (5 hours)
Demonstration bedside (2 Hours)
Assume the starting position instructed by the doctor.
Expose the affected area.
Inform any discomfort.
Provide feedback about unit of pressure.
Follow the instructions given by the doctor.
Student should familiarize with the biomechanics of knee and ankle.
Familiarize with the biomechanical disorders of knee and ankle.

Read the complaints of the patient.
Communicate effectively with the patient.
Maintain confidentiality and dignity of the patient.
The student should assess the patient to rule out biomechanical imbalances.
Perform the special tests for correct diagnosis.
Identify the key areas of problem.
Rule out red flags.
Case Based Learning (2 Hours)
The student should match the disease conditions with thokkanam types.
Design a treatment plan.
Cover the patient with towels.
Take oil in a small bowel and do not pour the oil directly on patient's body parts.
Perform thokkanam as per the plan.
Notice the skin colour changes through inspection.
Verify the skin texture and muscle tone through palpation and record the findings.
Demonstrate proficiency in a specific treatment plan.
Document the treatment provided.
Peer Learning (1 hour)
Student should teach others how to create a treatment plan
Develop a personalized thokkanam protocol for knee and ankle disorders.
Teach the ergonomics and strengthening exercises to the patients for knee and ankle issues.

Experiential-Learning 23.4 : Thokkanam and treatment plan for pakkavatham

Total activity hours (5 hours)
Demonstration bedside (2 Hours)
Assume the starting position instructed by the doctor. Expose the affected area. Inform any discomfort. Provide feedback about unit of pressure. Follow the instructions given by the doctor. The students should Familiarize with the biomechanics of shoulder. Familiarize with the biomechanical disorders of shoulder. Familiarize with the activities of daily living. Read the complaints of the patient. Communicate effectively with the patient. Maintain confidentiality and dignity of the patient.

Problem based learning (2 Hour)
The student should, assess the patient to rule out biomechanical imbalances. Perform the special tests for correct diagnosis. Identify the key areas of problem. Rule out red flags.
The student should match the disease conditions with thokkanam types. Design a treatment plan. Cover the patient with towels. Take oil in a small bowel and do not pour the oil directly on patient's body parts. Perform thokkanam as per the plan. Notice the skin colour changes through inspection. Verify the skin texture and muscle tone through palpation and record the findings.Demonstrate proficiency in a specific treatment plan.
Document the treatment provided.
Peer Learning (1 Hour)
Student should teach others how to create a treatment plan. Develop a personalized thokkanam protocol for pakkavatham. Teach the ergonomics and strengthening exercises to the patients for shoulder disorders.

Experiential-Learning 23.5 : Examination and Diagnosis of Arterial, Venous, and Lymphatic Diseases

Total activity hours (3 hours)
Case based learning (3 hours)
1. Introduction to Patient Case Scenarios
Assign each student a case with a simulated patient presenting symptoms such as leg pain, swelling, discoloration, or ulcers.
Review the case details, including the patient's history and relevant symptoms, to set the stage for targeted examination.
2. Focused Clinical Examination
Arterial Disease Case: For cases of suspected arterial disease, students will assess pulses, capillary refill, and conduct auscultation to detect any abnormalities.
Venous Disease Case: For suspected venous disease, students will inspect for varicose veins, edema, skin discoloration, and perform a pitting edema test if applicable.
Lymphatic Disease Case: For suspected lymphatic disease, students will measure limb circumference and palpate lymph nodes to detect swelling or other signs of lymphedema.
Document findings based on the simulated patient's condition, correlating physical signs with the case history.
3. Analysis and Diagnosis
Based on examination findings, each student formulates a preliminary diagnosis and outlines key characteristics supporting their assessment.
Discuss potential diagnostic tests or imaging studies that may confirm the diagnosis, such as Doppler ultrasound for vascular assessment.

Experiential-Learning 23.6 : Assessment and planning for geriatric rehabilitation

Total activity hours (3 hours)
Case-Based Learning (3 hours)
1.Introduction to Geriatric Patient Case Scenarios

Assign each student a simulated patient scenario with details on the patient's medical history, physical limitations, and daily living challenges (e.g., limited mobility post-hip surgery, mild cognitive decline, fear of falling).
Review each patient’s unique needs and potential limitations that may affect their rehabilitation goals.
2.Conducting Targeted Geriatric Examination:
Mobility and Gait Assessment: Perform the Timed Up and Go (TUG) test and gait observation based on the patient’s scenario, recording observations relevant to their mobility limitations.
Strength and ROM Assessment: Measure grip strength and joint ROM in key areas affecting daily activities (e.g., hands for gripping, hips for walking stability).
Balance and Cognitive Testing: Administer balance tests and brief cognitive screenings as appropriate for each case, noting any safety concerns or cognitive limitations.
Post Activity Discussion:
Summarize the significance of a Rehabilitative plan for the geriatric condition.
Discuss the challenges and limitations

Modular Assessment

Assessment method	**Hour**
Instructions: Conduct a structured modular assessment. Assessment will be 50 marks. Keep 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.Problem based assessment (25 Marks) • Identification of the problem : 5marks • Potential solutions : 5 marks • Evaluate the options: 5 marks • Selection of best option : 5 marks • Implementation : 5 marks 2. Case based assessment (25 Marks) • History taking : 5 marks • Assessment : 5 marks • Treatment plan : 5 marks • Application : 5 marks • Patient education : 5 marks Or	4

Any practical in converted form can be taken for assessment (25 Marks)
and
Any of the experiential as portfolio / reflections / presentations can be taken as an assessment (25 Marks)

Module 24 : Diseases treated with thokkanam -Cumulative trauma disorder (CTD) & Others

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

Describe the cumulative trauma disorders
Demonstrate the pathophysiology of a particular cumulative trauma disorder
Demonstrate the thokkanam for cumulative trauma disorder

M 24 Unit 1 Cumulative trauma disorders of ankle & knee and its management

24.1.1 Ankle Sprains (Lateral & medial) 24.1.2 Plantar fasciitis 24.1.3 Tarsal tunnel syndrome 24.1.4 Sinus tarsi syndrome 24.1.5 Morton's neuroma 24.1.6 Achilles tendinosis. 24.1.7 Knee : 24.1.7.1 Anterior cruciate ligament injury 24.1.7.2 Posterior cruciate ligament injury 24.1.7.3 Medial collateral ligament injury 24.1.7.4 Lateral collateral ligament injury 24.1.7.5 Medial and lateral meniscus injury 24.1.7.6 Patella femoral pain syndrome (PFPS) 24.1.7.7 Chondromalacia patellae 24.1.7.8 Patella tendinosis 24.1.7.9 Patella alta 24.1.7.10 Patella baja 24.1.7.11 Osgood schlatter's 24.1.7.12 Sinding larsen johansson syndrome 24.1.7.13 Ileo Tibial Band (ITB) friction syndrome 24.1.7.14 Hamstring strain 24.1.7.15 Adductor strain

References: 64,66,68,71,73,77,78,190,191

3A	3B	3C	3D	3E	3F	3G
CO5,CO8	Discuss the cumulative trauma disorders of knee and ankle.	2	Lecture	CC	Knows-how	L&PPT ,L&GD
CO5,CO8	Demonstrate the pathophysiology of knee and ankle cumulative trauma disorders, treatment plan after the assessment and demonstrate the thokkanam as per the	4	Practical Training 24.1	PSY-GUD	Shows-how	DIS,D,CBL

	plan.					
CO5,CO8	Develop a specific thokkanam plan by matching the pathophysiology with the thokkanam types, specific thokkanam, specific treatment plan, personalized thokkanam treatment plan and patient education program for knee and ankle disorders.	5	Experiential-Learning 24.1	CS	Does	CBL,LRI

M 24 Unit 2 Cumulative trauma disorders of lumbosacral & cervical and its management

24.2.1 Lumbosacral area 24.2.1.1 Piriformis syndrome 24.2.1.2 Sacroiliac joint dysfunction 24.2.1.3 Lumbago 24.2.1.4 Lumbar spondylosis 24.2.1.5 Facet joint arthritis 24.2.1.6 Spondylolisthesis. 24.2.2 Cervical 24.2.2.1 Whiplash injury 24.2.2.2 Cervical spondylosis

References: 64,66,68,71,73,77,78,190,191

3A	3B	3C	3D	3E	3F	3G
CO5,CO8	Describe the cumulative trauma disorders of lumbosacral and cervical region.	2	Lecture	CC	Knows-how	L&GD,L&PPT
CO5,CO8	Demonstrate the pathophysiology of lumbosacral and cervical cumulative trauma disorders, treatment plan after the assessment and demonstrate thokkanam as per the plan.	4	Practical Training 24.2	PSY-GUD	Shows-how	SIM,LRI,CBL,IBL,D
CO5,CO8	Develop specific thokkanam plan by matching the pathophysiology with the thokkanam types, specific thokkanam, proficiency in that specific treatment plan, personalized thokkanam treatment plan and patient education program for lumbosacral and cervical cumulative trauma disorders.	5	Experiential-Learning 24.2	CS	Does	RLE,PBL,CBL,D

M 24 Unit 3 Cumulative trauma disorders of elbow, wrist and shoulder and its management

24.3.1 Elbow 24.3.1.1 Lateral epicondylitis 24.3.1.2 Medial epicondylitis 24.3.1.3 Pronator teres syndrome 24.3.1.4 Radial tunnel syndrome 24.3.2 Wrist 24.3.2.1 Carpal tunnel syndrome 24.3.2.2 Inter section syndrome 24.3.2.3 De quervain's syndrome. 24.3.3 Shoulder 24.3.3.1 Adhesive capsulitis 24.3.3.2 Supra spinatus tendinosis 24.3.3.3 Rotator cuff tear 24.3.3.4 Superior labral from anterior to posterior (SLAP) tear 24.3.3.5 Biceps tendinosis

References: 64,66,68,71,73,77,78,190,191

3A	3B	3C	3D	3E	3F	3G
CO5,CO8	Discuss the cumulative trauma disorders of elbow,wrist and shoulder	2	Lecture	CC	Knows-how	L&GD,L &PPT
CO5,CO8	Demonstrate the pathophysiology of elbow,wrist and shoulder cumulative trauma disorders, treatment plan after the assessment and demonstrate thokkanam as per the plan.	4	Practical Training 24.3	PSY-GUD	Shows-how	IBL,D-BED,CBL, SIM,DIS
CO5,CO8	Develop specific thokkanam plan by matching the pathophysiology with the thokkanam types, specific thokkanam, proficiency in developing specific treatment plan, personalized thokkanam treatment plan and patient education program for elbow, wrist and shoulder cumulative trauma (CT) disorders.	5	Experiential-Learning 24.3	CS	Does	RLE,CBL

M 24 Unit 4 Systemic , metabolic disorders and other diseases treated with thookkanam

24.4.1 Spinal cord injury 24.4.2 Osteoporosis 24.4.3 Chronic obstructive pulmonary disease (COPD) 24.4.4 Diabetes – Foot care 24.4.5 Cerebral palsy 24.4.6 Fibromyalgia 24.4.7 Stress management.

References: 73

3A	3B	3C	3D	3E	3F	3G
CO5,CO8	Discuss the spinal cord injury ,cerebral palsy, fibromyalgia, impacts of osteoporosis and diabetes on musculo skeletal system, impacts of chronic obstructive pulmonary disease on musculo skeletal health	2	Lecture	CC	Knows-how	L&PPT ,L&GD
CO5,CO8	Demonstrate the pathophysiology of spinal cord injury ,cerebral palsy, chronic obstructive pulmonary disease (COPD), fibromyalgia , osteoporosis and diabetes, treatment plan after the assessment and demonstrate thokkanam as per the plan.	4	Practical Training 24.4	PSY-GUD	Shows-how	SIM,D-BED
CO5,CO8	Develop a specific thokkanam plan by matching the pathophysiology with thokkanam types, specific thokkanam, proficiency in a specific treatment plan, op a personalized	5	Experiential-Learning 24.	CS	Does	D-BED,CB

	thokkanam treatment plan and rehabilitation program for respiratory disorders and diabetic neuropathies.		4			L

M 24 Unit 5 Management of orthopedic condition

24.5.1 Congential conditions 24.5.2 Trauamatic conditions 24.5.3 Degenerative conditions 24.5.4 Inflamative joint and bone conditions 24.5.5 Soft tissue injury

References: 4,5,6,226,227,228

3A	3B	3C	3D	3E	3F	3G
CO2,CO4	Describe the rehabilitaion of congential, trauamatic, denegerative , inflamative joint and bone conditions and soft tissue injury	1	Lecture	CC	Knows-how	L&GD,L &PPT
CO2,CO4	Demonstate the rehabilitative methods of congential, trauamatic, denegerative, inflamative joint and bone conditions ,soft tissue injury	2	Practical Training 24.5	PSY-GUD	Shows-how	D
CO2,CO4	Conduct Rehabilitative Planning and Execution for Joint and Bone Conditions	3	Experiential-Learning 24.5	AFT-CHR	Does	CBL

M 24 Unit 6 Management of Rheumatological conditions

24.6.1 Rheumatoid arthriits 24.6.2 Collagen disease 24.6.3 Systemic Lupus Erythematosis 24.6.4 Metabolic bone and joint disease.

References: 6,226,227,228

3A	3B	3C	3D	3E	3F	3G
CO2,CO4	Discuss the rehabilitative methods of Rheumatoid arthriits, collagen disease, SLE, Metabolic bone and joint disease	1	Lecture	CC	Knows-how	L&GD,L &PPT
CO2,CO4	Demonstrate the rehabilative methods of rheumatological conditions,Rheumatoid arthriits, collagen disease,SLE, Metabolic bone and joint disease	2	Practical Training 24.6	PSY-GUD	Shows-how	CBL,PBL

CO2,CO4	Execute for Rheumatological rehabilitation	3	Experiential-Learning 24.6	AFT-CHR	Does	CBL,PBL

Practical Training Activity

Practical Training 24.1 : Thokkanam demonstration on cumulative trauma disorders of knee & ankle

Total learning hours (4 hours)
Discussion (30 minutes)
The faculty should display the videos about ergonomics of knee and ankle injury mechanism.
The faculty should explore the cumulative trauma disorders of knee and ankle.
Case based Learning (1 hour 30 minutes)
The faculty should demonstrate the common injury mechanisms of knee and ankle.
Explore the cumulative trauma disorders of knee and ankle.
Demonstrate the assessment procedures.
Demonstrate special tests to differentiate the conditions.
Instruct the students to observe the findings.
Demonstration (2 hours)
Demonstrate how to match the disease conditions with particular thokkanam technique.
Demonstrate the targeted areas, muscles and ligaments.
Demonstrate the thokkanam plan.
Demonstrate the hand position and unit of pressure according to the condition.
Demonstrate thokkanam as per the plan.
Instruct the students to monitor adverse impacts.
Demonstrate the re assessments and how to modify the treatment plan according to the re assessment findings.
Instruct the students to practice thokkanam on mannequin.

Practical Training 24.2 : Thokkanam demonstration of Lumbosacral and cervical disorders.

Total learning hours(4 hours)
Case based learning(2 hours)
Needed:
Thokkanam table.
Patient / Mannequin.
Oil.
Preparation:
The faculty should display the videos about ergonomics of lumbosacral and cervical injury mechanism.
The faculty should explore the cumulative trauma disorders of lumbosacral and cervical area.
Assessment:
Faculty instructions:
The faculty should,
Demonstrate the common injury mechanisms of lumbosacral and cervical area.
Explore the cumulative trauma disorders of lumbosacral and cervical area.
Demonstrate the assessment procedures.
Demonstrate special tests to differentiate the conditions.
Instruct the students to observe the findings.
Demonstration(2 hours)
The faculty should,
Demonstrate how to match the disease conditions with particular thokkanam technique.
Demonstrate the targeted areas, muscles and ligaments.
Demonstrate the thokkanam plan.
Demonstrate the hand position and unit of pressure according to the condition.
Demonstrate thokkanam as per the plan.
Instruct the students to monitor adverse impacts.
Demonstrate the re assessments and how to modify the treatment plan according to the re assessment findings.
Instruct the students to practice thokkanam on mannequin.

Practical Training 24.3 : Thokkanam for elbow ,wrist and shoulder cumulative trauma disorder

Total learning hours (4 hours)
Simulation (30 minutes)
The faculty should display the videos about ergonomics of wrist ,elbow and shoulder injury mechanism.
The faculty should explore the cumulative trauma disorders of elbow,wrist and shoulder.
Case based Learning (1 hour 30 minutes)
The faculty should demonstrate the common injury mechanisms of wrist ,elbow and shoulder.
Explore the cumulative trauma disorders of elbow,wrist and shoulder.
Demonstrate the assessment procedures.
Demonstrate special tests to differentiate the conditions.
Instruct the students to observe the findings.
Demonstration bed side (2 hours)
The faculty should demonstrate how to match the disease conditions with particular thokkanam technique.
Demonstrate the targeted areas, muscles and ligaments.
Demonstrate the thokkanam plan.
Demonstrate the hand position and unit of pressure according to the condition.
Demonstrate thokkanam as per the plan.
Instruct the students to monitor adverse impacts.
Demonstrate the re assessments and how to modify the treatment plan according to the re assessment findings.
Instruct the students to practice thokkanam on mannequin.

Practical Training 24.4 : Demonstration - Thokkanam

Total learning hours(4 hours)
Demonstration bedside
Needed:
Thokkanam table.
Patient / Mannequin.

Oil.
Preparation: 30 minutes.
The faculty should display the videos about pathophysiology of spinal cord injury, cerebral palsy, chronic obstructive pulmonary disease (COPD), fibromyalgia , osteoporosis and diabetes.
Assessment: 1 hour and 30 minutes.
Faculty instructions:
The faculty should,
Demonstrate the pathophysiology of an individual disease.
Demonstrate the assessment procedures.
Demonstrate special tests to differentiate the conditions.
Instruct the students to observe the findings.
Treatment plan: 2 hours.
The faculty should,
Demonstrate how to match the disease conditions with particular thokkanam technique.
Demonstrate the targeted areas, muscles and ligaments.
Demonstrate the thokkanam plan.
Demonstrate the hand position and unit of pressure according to the condition.
Demonstrate thokkanam as per the plan.
Instruct the students to monitor adverse impacts.
Demonstrate the re assessments and how to modify the treatment plan according to the re assessment findings.
Instruct the students to practice thokkanam on mannequin.

Practical Training 24.5 : Rehabilitative Methods for Joint and Bone Conditions

Total learning hours (2 hours)
Demonstration
1. Rehabilitative Methods for Different Conditions
material preparation (10 minutes)
Materials Needed: Resistance bands, stability balls, exercise mats, weights, heat and cold packs, soft braces, range of motion (ROM) and strength measurement tools, and

checklists for rehabilitation techniques.
Procedure:
1. Introduction to Rehabilitative Techniques Based on Condition Type: (10 Minutes)
Provide an overview of congenital (e.g., clubfoot), traumatic (e.g., fractures), degenerative (e.g., osteoarthritis), and inflammatory (e.g., rheumatoid arthritis) joint and bone conditions, as well as common soft tissue injuries (e.g., sprains, strains).
Discuss the goals of rehabilitation for each type of condition, such as reducing inflammation, restoring range of motion, enhancing strength, and managing pain.
2. Rehabilitation Techniques by Condition:
Congenital Conditions:(20 Minutes)
Demonstrate gentle stretching and passive range of motion exercises to prevent contractures and improve joint alignment.
Show how to use support aids (e.g., splints or braces) to maintain joint position.
Traumatic Conditions:(20 Minutes)
Explain early-phase rehab (e.g., after fractures), focusing on immobilization, gentle stretching, and controlled strengthening exercises.
Demonstrate weight-bearing progression exercises for post-fracture recovery and exercises to regain strength and stability gradually.
Degenerative Conditions: (20 Minutes)
Demonstrate low-impact strengthening and flexibility exercises (e.g., seated leg lifts, arm raises) to maintain joint function.
Show joint-protection techniques, including the use of assistive devices and exercises to strengthen surrounding muscles without overloading the joint.
Inflammatory Conditions:(20 Minutes)
Demonstrate range of motion exercises that help reduce stiffness and improve circulation, such as gentle stretching and controlled movements.
Explain pacing and rest strategies to manage fatigue and inflammation.
Soft Tissue Injuries: (20 Minutes)
Show appropriate use of cold and heat therapy for pain and swelling control.
Demonstrate exercises for restoring strength and flexibility post-injury, such as resistance band exercises for ankle or knee sprains.

Practical Training 24.6 : Rehabilative methods of rheumatological conditions

Total learning hours (2 hours)
Case based learning (2 hour)
Discuss the goals of rehabilitation for each type of condition, such as reducing inflammation, restoring range of motion, enhancing strength, and managing pain.

Experiential learning Activity

Experiential-Learning 24.1 : Proficiency demonstration- Thokkanam and treatment plan.

Total activity hours(5 hours)
Case based learning, Lab report interpretation
Patient instructions: 30 minutes.
Assume the starting position instructed by the doctor.
Expose the affected area.
Inform any discomfort.
Provide feedback about unit of pressure.
Follow the instructions given by the doctor.
Preparation: 30 minutes.
Students instructions.
Familiarize with the ergonomics of knee and ankle.
Familiarize with the cumulative trauma disorders of knee and ankle.
Read the complaints of the patient.
Communicate effectively with the patient.
Maintain confidentiality and dignity of the patient.
Assessment : One hour.
The student should,
Assess the patient to rule out injury mechanism.
Enquire the occupational history for correct diagnosis.
Identify the key areas of problem.
Rule out red flags.
Treatment plan : 3 hours
The student should,
Match the disease conditions with thokkanam types.
Design a treatment plan.
Cover the patient with towels.
Take oil in a small bowel and do not pour the oil directly on patient’s body parts.
Perform thokkanam as per the plan.
Notice the skin colour changes through inspection.
Verify the skin texture and muscle tone through palpation and record the findings.
Demonstrate proficiency in a specific treatment plan.
Document the treatment provided.

Student should,
Teach others how to create a treatment plan.
Develop a personalized thokkanam protocol for knee and ankle disorders.
Teach the ergonomics and strengthening exercises to the patients for knee and ankle issues.

Experiential-Learning 24.2 : Demonstration of thokkanam & treatment plan.

Total activity hours(5 hours)
Case based learning, Demonstration
Patient instructions: 30 minutes.
Assume the starting position instructed by the doctor.
Expose the affected area.
Inform any discomfort.
Provide feedback about unit of pressure.
Follow the instructions given by the doctor.
Preparation: 30 minutes.
Students instructions.
Familiarize with the ergonomics of lumbosacral and cervical areas.
Familiarize with the cumulative trauma disorders of lumbosacral and cervical areas.
Read the complaints of the patient.
Communicate effectively with the patient.
Maintain confidentiality and dignity of the patient.
Assessment : One hour.
The student should,
Assess the patient to rule out injury mechanism.
Enquire the occupational history for correct diagnosis.
Identify the key areas of problem.
Rule out red flags.
Treatment plan : Two hours.

The student should,
Match the disease conditions with thokkanam types.
Design a treatment plan.
Cover the patient with towels.
Take oil in a small bowel and do not pour the oil directly on patient’s body parts.
Perform thokkanam as per the plan.
Notice the skin colour changes through inspection.
Verify the skin texture and muscle tone through palpation and record the findings.
Demonstrate proficiency in a specific treatment plan.
Document the treatment provided.
Others : One hour.
Student should,
Teach others how to create a treatment plan.
Develop a personalized thokkanam protocol for lumbosacral and cervical disorders.
Teach the ergonomics and strengthening exercises to the patients for lumbosacral and cervical issues.

Experiential-Learning 24.3 : Proiciency demonstration - Thokkanam and treatment plan.

Total activity hours(5 hours)
Case based learning
Patient instructions: 30 minutes.
Assume the starting position instructed by the doctor.
Expose the affected area.
Inform any discomfort.
Provide feedback about unit of pressure.
Follow the instructions given by the doctor.
Preparation: 30 minutes.
Students instructions.
Familiarize with the ergonomics of elbow , wrist and shoulder.

Familiarize with the cumulative trauma disorders of elbow ,wrist and shoulder.
Read the complaints of the patient.
Communicate effectively with the patient.
Maintain confidentiality and dignity of the patient.
Assessment : 1 hour.
The student should,
Assess the patient to rule out injury mechanism.
Enquire the occupational history for correct diagnosis.
Identify the key areas of problem.
Rule out red flags.
Treatment plan : 2 hours.
The student should,
Match the disease conditions with thokkanam types.
Design a treatment plan.
Cover the patient with towels.
Take oil in a small bowel and do not pour the oil directly on patient’s body parts.
Perform thokkanam as per the plan.
Notice the skin colour changes through inspection.
Verify the skin texture and muscle tone through palpation and record the findings.
Demonstrate proficiency in a specific treatment plan.
Document the treatment provided.
Others : 1 hour.
Student should,
Teach others how to create a treatment plan.
Develop a personalized thokkanam protocol for elbow , wrist and shoulder disorders.
Teach the ergonomics and strengthening exercises to the patients for elbow , wrist and shoulder issues.

Experiential-Learning 24.4 : Proficiency demonstration - Thokkanam & treatment plan.

Total activity hours (5 hours)
Case based learning, Demonstration bedside
Patient instructions: 30 minutes.
Assume the starting position instructed by the doctor.
Expose the affected area.
Inform any discomfort.
Provide feedback about unit of pressure.
Follow the instructions given by the doctor.
Preparation: 30 minutes.
Students instructions.
Familiarize with the pathophysiology of chronic obstructive pulmonary disease (COPD) , spinal cord injury , cerebral palsy and diabetic neuropathies.
Read the complaints of the patient.
Communicate effectively with the patient.
Maintain confidentiality and dignity of the patient.
Assessment : 1 hour.
The student should,
Assess the patient to rule out injury mechanism.
Enquire patient medical history for correct diagnosis.
Identify the key areas of problem.
Rule out red flags.
Treatment plan : 2 hours.
The student should,
Match the disease conditions with thokkanam types.
Design a treatment plan.
Cover the patient with towels.
Take oil in a small bowel and do not pour the oil directly on patient’s body parts.
Perform thokkanam as per the plan.
Notice the skin colour changes through inspection.
Verify the skin texture and muscle tone through palpation and record the findings.
Demonstrate proficiency in a specific treatment plan.
Document the treatment provided.
Others : 1 hour.

Student should,
Teach others how to create a treatment plan.
Develop a personalized thokkanam protocol for chronic obstructive pulmonary disease (COPD) , spinal cord injury , cerebral palsy and diabetic neuropathies.

Experiential-Learning 24.5 : Rehabilitative Planning and Execution for Joint and Bone Conditions

Total activity hours(3 hours)
1. Case-Based Learning
Material preparation (30 minutes)
Materials Needed: Case scenarios, resistance bands, stability balls, heat and cold packs, exercise mats, and sample therapy schedules.
Procedure:
1. Introduction to Patient Case Scenarios: (2 hours)
Assign each student a simulated patient scenario based on one of the condition types (e.g., traumatic fracture, degenerative arthritis, inflammatory joint condition, soft tissue injury).
Review the patient's history, limitations, and specific rehabilitation goals, such as increasing mobility, managing pain, or strengthening weak muscles.
Post Activity Discussion (30 miutes)

Experiential-Learning 24.6 : Rehabilitative Planning and Execution for Rheumatological rehabilitation

Total activity hours (3 hours)
Case-Based Learning
Material Preparation - (30 minutes)
Materials Needed: Case scenarios, resistance bands, stability balls, heat and cold packs, exercise mats, and sample therapy schedules.
Procedure:
1. Introduction to Patient Case Scenarios: (2 Hours)
Assign each student a simulated patient scenario based on Rheumatological conditions
Review the patient's history, limitations, and specific rehabilitation goals, such as increasing mobility, managing pain, or strengthening weak muscles.
Problem based learning
Apply the rehabilitation plan with a partner acting as the patient, demonstrating each exercise and explaining its purpose.

Monitor for any discomfort, adjust intensity as needed, and provide encouragement and feedback during exercises
Post Activity Wrap Up (30 minutes)
Summarize the significance of a Rehabilitative plan for the rheumatological condition
Discuss the challenges and limitations

Modular Assessment

Assessment method	**Hour**
Instructions: Conduct a structured modular assessment. Assessment will be 50 marks. Keep 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.Problem based assessment (25 Marks) • Identification of the problem : 5marks • Potential solutions : 5 marks • Evaluate the options: 5 marks • Selection of best option : 5 marks • Implementation : 5 marks **2. Case based assessment** (25 Marks) • History taking : 5 marks • Assessment : 5 marks • Treatment plan : 5 marks • Application : 5 marks • Patient education : 5 marks Or Any practical in converted form can be taken for assessment (25 Marks) and Any of the experiential as portfolio / reflections / presentations can be taken as an assessment (25 Marks)	4

Paper No : 4 Essentials of Orthopaedics and Traumatology

Semester No : 3

Module 25 : General orthopaedics and congenital deformities

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

Identify the anatomy, physiology, biomechanics of musculo skeletal system
Identify and describe various orthopaedic conditions,injuries,and diseases
Analyse the signs and symptoms of orthopaedic disorders

M 25 Unit 1 General orthopaedics

25.1.1 History of orthopedics in india 25.1.2 Emblem 25.1.3 Deformities 25.1.4 Acquired deformities 25.1.5 Principles and management gait 25.1.6 Identify abnormal gait 25.1.7 Antalgic gait 25.1.8 Unstable hip 25.1.9 Gluteus maximus gait 25.1.10 Quadriceps gait 25.1.11 High stepping gait 25.1.12 Short leg scissoring gait 25.1.13 Stiff knee gait

References: 2,3,4,5,6

3A	3B	3C	3D	3E	3F	3G
CO2,CO6	Describe the historical evolution of orthopedics as a medical specialty, including key milestones and contributions, significance and symbolic meaning of the orthopedic emblem in professional practice,development of orthopedic practices from traditional to modern approaches,Interpret how historical knowledge contributes to current orthopedic techniques and philosophies	3	Lecture	CC	Know	L,L&PPT
CO2,CO4	Demonstrate the ability to visually identify and name various acquired deformities (e.g.,	6	Practical	PSY-	Shows-	X-Ray,C

	scoliosis, kyphosis, flat foot, knock knee), fundamental principles behind deformity management including corrective postures, support devices, and therapeutic approaches.		Training 25.1	GUD	how	BL,PER, DIS
CO2,CO6	Demonstrate different types of abnormal gait patterns including antalgic gait, unstable hip gait, gluteus maximus gait, quadriceps gait, high stepping gait, short leg gait, scissoring gait, and stiff knee gait	10	Experiential-Learning 25.1	PSY-SET	Shows-how	CD,D-BED,CBL

M 25 Unit 2 Congenital deformities of lower limb

25.2.1 Classification, causes, risk factors, diagnosis, treatment and complications 25.2.2 Osteogenesis imperfecta 25.2.3 Achondroplasia 25.2.4 Congenital pes cavus 25.2.5 Congenital pes planus 25.2.6 Toe deformities 25.2.7 Congenital talipes equinovarus 25.2.8 Developmental dysplasia of the hip 25.2.9 Congenital coxa vara 25.2.10 Congenital coxa valga 25.2.11 Congenital genu recurvatum

References: 2,3,4,5,6

3A	3B	3C	3D	3E	3F	3G
CO2,CO4	Discuss the aetiology, classification, causes,risk factors, diagnosis, treatment and complications of congenital deformities of lower limb	3	Lecture	CC	Knows-how	L_VC,L&PPT
CO2,CO4,CO6	Identify and discuss Osteogenesis imperfecta, Achondroplasia, Congenital pes cavus, Congenital pes planus, Toe deformities	8	Practical Training 25.2	PSY-SET	Knows-how	CBL
CO2,CO4,CO6	Identify the congenital talipes equinovarus,developmental dysplasia of the hip Congenital coxa vara, congenital coxa valga and congenital genu recurvatum	8	Experiential-Learning 25.2	PSY-SET	Shows-how	PER,PrBL

M 25 Unit 3 Congential deformities of upper limb

25.3.1 Classification,causes, risk factors,diagnosis,treatment and complications 25.3.2 Upper limb 25.3.2.1 Sprengel’s shoulder 25.3.2.2 Radio-ulnar synostosis 25.3.3 Madelung’s deformity 25.3.4 Syndactylism 25.3.5 Polydactylism 25.3.6 Congenital skeletal Limb deficiencies 25.3.7 Congenital absence of the radius 25.3.8 Congenital absence of fibula 25.3.9 Neck and spine 25.3.10 Congenital torticollis 25.3.11 Spine bifida 25.3.12 congenital scoliosis

References: 2,3,4,5,6

3A	3B	3C	3D	3E	3F	3G
CO2,CO4	Discuss the etiology,classification, causes,risk factors,complications,diagnosis and treatment of congenital deformities of upper limb	4	Lecture	CC	Knows-how	L&PPT ,L_VC
CO2,CO4	Discuss Upper limb,Sprengel's shoulder,Radio-ulnar synostosis,Madelung's deformity,Sndactylism,Polydactylism	6	Practical Training 25.3	PSY-SET	Knows-how	PBL
CO2,CO4	Identify the Congenital Skeletal Limb Deficiencies,congenital absence of the radius, congenital absence of fibula, Neck and Spine,congenital torticollis,spina bifida, congenital scoliosis	8	Experiential-Learning 25.3	PSY-GUD	Shows-how	DIS

Practical Training Activity

Practical Training 25.1 : Identification and Management Principles of Acquired Deformities

Total learning hours (6 hours)
Case-Based Learning (2 hours)
Present students with real or simulated case scenarios involving various acquired deformities.
Ask learners to identify the deformity based on case history and visual/postural cues.
Group Discussion (2 hours)
Discuss the principles of management for each identified condition—both non-surgical and rehabilitative approaches (e.g., exercises, orthotic supports).
Encourage students to share opinions and justify management choices based on Siddha and modern integrative care.
Kinesthetic Activity (2 hours)
Learners perform a structured physical examination on peers or mannequins to detect deformities.
Practice postural correction methods and simulate the application of braces or therapeutic devices.

Practical Training 25.2 : Conducting case based learning

Total learning hours (8 hours)
The faculty instruct the students to prepare the patients for CBL
To Assess for congenital deformities (2 hours)
To Check for level of deformities (1 hour)
To Evaluate for signs of deformities (1 hour)

To Perform thorough clinical exam (2 hours)
To Order imaging studies as needed (2 hours)
Are assessed by the faculty, or if students can assess on the observation of faculty

Practical Training 25.3 : Assessment for the upper limb deformities

Total learning Hours (6 hours)
Case based learning (6 hours)
The faculty member instructs the students to prepare the Case for case based learning, Faculty teaches to
Understand the anatomy and stability upper limb
Diagnose and manage varies type of deformities
Develop problem-solving skills

Experiential learning Activity

Experiential-Learning 25.1 : Abnormal Gait Patterns

Total activity hours (10 hours)
Demonstration (3 hours)
Provide each group with a short patient case describing symptoms and underlying conditions related to a specific gait abnormality.
Ask students to analyze and predict the gait pattern from the diagnosis.
Show short video clips of real or simulated gait types.
Pause after each gait type for a short discussion.
Kinesthetic Simulation (3 hours)
Students work in pairs: one enacts the gait (using props if needed), and the other evaluates using the gait checklis

Guided Peer Review (2 hours)
Peers provide structured feedback based on posture, symmetry, rhythm, and compensatory mechanisms.
Instructor facilitates and corrects where needed.
Discussion (2 hours)
Groups present the link between gait and underlying anatomical/neuromuscular defects.

Experiential-Learning 25.2 : Presentation and Practical Model for congenital deformities

Total activity hours (8 Hours)
Presentation, Project based learning (8 hours)
The student able to give projects in certain topics
Instructions:
Research in assigned topic.
Create a comprehensive project:
Mechanism of Deformities
Classification systems
Diagnostic approaches
Management options
Complications and rehabilitation
Participate in peer evaluation and feedback.

Experiential-Learning 25.3 : Clinical examination of congenital deformities

Total activity hours (8 hours)
Case based learning (4 hours)
1. Classification and mechanism of cogenital deformities.
2. Diagnostic skills for congenital deformities.
3. Manage congenital deformities through case-based learning
Reflection & Discussion (4 hours)
Each student presents findings (SOAP format or equivalent).
Group discussion facilitated by faculty.
Emphasis on differential diagnosis and management in Siddha/modern systems

Modular Assessment

Assessment method	**Hour**
Instructions: Conduct a structured modular assessment. Assessment will be 50 marks. Keep structured marking pattern. Use different assessment methods in each module for the semester. Keep a record of the structured pattern used for assessment. Calculate the modular grade point as per table 6c. 1. Clinical video case presentation -25 marks	4

1. The clinical video case presentation should be 10-15 minutes long. 2. The presentation should include a clear and concise case presentation, a video recording of the patient, and a clinical analysis and discussion. 3. The presenter should provide accurate and complete case details. 4. The video recording should be of good quality, with clear audio and visual aids. 5. The presenter should demonstrate confidence and clarity, and engage with the audience. 6. The presentation should adhere to the time limit and patient confidentiality and consent. 7. The presenter should be prepared to answer questions from the other students. Mark distribution : Case Presentation (10 marks) Video Recording (5 marks) Clinical Analysis and Discussion (5 marks) Presentation Skills (3 marks) Overall Impression (2 marks) 2. Each students making posters based on the compilation of treatment reports - 25 marks 1. The poster should be compiled on the theme of treatment reports. 2. The poster should be visually appealing and easy to read. 3. The content should be accurate, complete, and well-organized. 4. The poster should include images, diagrams, and charts to support the written content. 5. The compilation and analysis of treatment reports should be clear and concise. 6. The poster should be able to draw meaningful conclusions from the data. 7. The poster should adhere to the given theme and guidelines. 8. The poster should be submitted on the due date and time. Mark distribution : Content (10 marks) Visual Presentation (8 marks) Compilation and Analysis (4 marks) Overall Impression (3 marks) Or Any practical in converted form can be taken for assessment (25 marks) and Any of the experiential as portfolio/reflevtions/presentations can be taken as an assessment (25 marks)	

Module 26 : Common metabolic and endocrine disease of bone

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

Identify the anatomy, physiology, biomechanics of musculo skeletal system
Identify and describe various orthopaedic conditions,injuries,and diseases
Analyse the signs and symptoms of orthopaedic disorders

M 26 Unit 1 Infectious diseases

26.1.1 Classification, causes, risk factors, diagnosis, treatment and complications 26.1.2 Osteomyelitis 26.1.3 Tuberculosis 26.1.4 Suppurative arthritis 26.1.5 Gout & Pseudo gout 26.1.6 Gonococcal arthritis 26.1.7 Complication of infectious diseases like fixed flexion deformity,triple deformity and other deformities

References: 2,3,4,5,6

3A	3B	3C	3D	3E	3F	3G
CO2,CO4	Discuss the bone diseases like infectious diseases and explain the classification causes and risk factors diagnosis treatment and complications	4	Lecture	CC	Knows-how	L&PPT ,L_VC
CO2,CO4	Demonstrate the Osteomyelitis. Tuberculosis, suppurative arthritis, gout, pseudo gout, gonococcal arthritis	6	Practical Training 26.1	PSY-SET	Shows-how	LRI
CO2,CO4,CO6	Asess the complication of infectious diseases like fixed flexion deformity triple deformity and other deformities	8	Experiential-Learning 26. 1	CAN	Shows-how	PER,PSM

M 26 Unit 2 Metabolic diseases of bone

26.2.1 Metabolic bone diseases and endocrine bone diseases 26.2.2 Classification, causes and risk factors, diagnosis, treatment and complications 26.2.3 Rickets 26.2.4 Osteoporosis 26.2.5 Scurvy 26.2.6 Endocrine disorders 26.2.7 Parathyroid 26.2.8 Osteodystrophy 26.2.9 Secondary hyper parathyroids

References: 2,3,4,5,6

3A	3B	3C	3D	3E	3F	3G
CO2,CO4	Describe the bone diseases like Metabolic diseases endocrine diseases and explain the classification causes and risk factors diagnosis treatment and complications	3	Lecture	CC	Knows-how	X-Ray,PBL
CO2,CO4,CO8	Identify and characteristic of Rickets, Osteoporosis and Scurvy	7	Practical Training 26.2	PSY-GUD	Shows-how	X-Ray,PBL
CO2,CO6,CO8	Analyze the Endocrine Disorders- parathyroid osteodystrophy- secondary hyper parathyroids	8	Experiential-Learning 26. 2	CAN	Does	CD,LRI

M 26 Unit 3 Miscellanous disease of bone

26.3.1 Disease of the reticulo endothelial system 26.3.2 Eosinophilic granuloma of bone 26.3.3 Hand schuller christian disease 26.3.4 Diseases of the haemopoietic system 26.3.5 Miscellaneous 26.3.6 Paget’s disease- 26.3.7 Fluorosis 26.3.8 Hypervitaminosis A 26.3.9 Hypervitaminosis D 26.3.10 Infantile cortical hyperostosis

References: 2,3,4,5,6

3A	3B	3C	3D	3E	3F	3G
CO2,CO4,CO6	Compare the Disease of The Reticulo Endothelial System-eosinopil granuloma of bone	3	Lecture	CC	Knows-how	L&PPT ,L_VC
CO2,CO4,CO6	Describe the Hand Schuler Christian Disease and Diseases of The Haemopoietic System	7	Practical Training 26.3	PSY-SET	Knows-how	DIS
CO2,CO4,CO6	Evaluate the Miscellaneous- Paget’s disease- fluorosis- hypervitaminosis A- hypervitaminosis D- infantile cortical hyperostosis	10	Experiential-Learning 26.	AFT-SET	Knows-how	PBL,CBL

			3			

Practical Training Activity

Practical Training 26.1 : Lab report interpretation of varies infective diseases

Total learning hours (6 hours)
Students able to deliver and identify the varies infectious diseases with lab report interpretation
1.The pathophysiology and clinical features of Osteomyelitis - 60 minuts
2.The pathophysiology and clinical features of Tuberculosis -60 minuts
3.The pathophysiology and clinical features of Suppurative arthritis, gout, pseudo gout,-60 minuts
4. The pathophysiology and clinical features of Gonococcal arthritis -60 minuts
5. Diagnostic skills for these conditions-60 minuts
6. Rehabilitate patients effectively through case-based learning-60 minuts

Practical Training 26.2 : Evaluate the clinical evaluation diagnosis metobolic bone diseases

Total learning hours (7 hours)
Problem based learning
The faculty instruct the students to prepare the patients for PBL on Metabolic diseases Clinical Evaluation:
1. Patient history (pathology, symptoms)- 60 minutes
2. Physical examination (inspect, palpate, move)-45 minutes
3. Assess elbow flexion, supination strength-30 minutes
4. Perform Hook test, Cubitus test-30 minutes
Practical Tips:
1. Check for ecchymosis, swelling-45 minutes
2. Palpate for defect- 30minutes
3. Test for weakness in movements-60 minutes
4. Order imaging (X-ray, MRI) to confirm diagnosis-2 hours
Are assessed by the faculty, or if students can assess on the observation of faculty

Practical Training 26.3 : Clinical examination for miscellaneous bone diseases

Total learning hours (7 hours)

The faculty member instructs the students to prepare the certain given topic and after the preparation case discussion and group activities where done
Discussion
Pre-Class (Self-Directed Learning)
1. Watch video lectures 2 hours
2. Read assigned articles/chapters. 1 hour
3. Complete online quizzes 1 hour
In-Class (Interactive Session) 1 hour
1. Case discussions 30 minutes
2. Group activities -30 minutes
3. Expert panel discussion 1 hour

Experiential learning Activity

Experiential-Learning 26.1 : Clinical examination for infective dieases

Total activity hours (8 hours)
The faculty instruct the students to prepare the patients for Problem-Based Learning (PBL) and discussion
1. Identify clinical features of infectiuos diseases
2. Develop diagnostic skills.
3. Understand management options.
4. Enhance critical thinking and problem-solving.
PBL Instructions:
1. Divide students into small groups.
2. Assign each group a case scenario.
3. Provide relevant patient information (history, physical exam, labs, imaging).
4. Ask groups to:
   - Identify key clinical features.
   - Develop a differential diagnosis.
   - Discuss management options.
   - Present findings.

Everything to be done under the observation of faculty

Experiential-Learning 26.2 : Evaluation of clinical and lab report diagnosis for endocrine disorders

Total activity hours (8 hours)
Case diagnosis & lab report interpretation
Students able do lab report interpretation through X-ray,investigations
1. Endocrine disorders like parathyroid osteodystrophy- secondary hyper parathyroids
2. Diagnosis and management parathyroid osteodystrophy- secondary hyper parathyroids
3. Critical thinking and problem-solving skills.

Experiential-Learning 26.3 : Miscellaneous bone diseases assessment

Total activity hours (10 hours)
Case based learning (5 hours)
Discuss diagnosis, management, and potential complications.
Relate X-ray images to the clinical scenario
Problem based learning (5 hours)
1. History taking
2. Physical examination
3. Imaging interpretation (X-rays)
4. Management planning

Modular Assessment

Assessment method	**Hour**
Instructions: Conduct a structured modular assessment. Assessment will be 50 marks. Keep structured marking pattern. Use different assessment methods in each module for the semester. Keep a record of the structured pattern used for assessment. Calculate the modular grade point as per table 6c. 1.Clinical Case Demonstration – 25 Marks Instructions: 1. The clinical case demonstration should be conducted in person and last 10–15 minutes. 2. The student must present a real patient case they have worked on, including clinical findings and examination. 3. Hands-on examination techniques should be appropriate, respectful, and accurate. 4. The student must maintain patient privacy, comfort, and consent throughout the demonstration. 5. Use of any supportive materials (charts, tools, etc.) is allowed but should be minimal and purposeful. 1. Case History and Summary - 5 marks	4

2. Physical Examination Skills - 8 marks
3. Interpretation of Findings -5 marks
4. Clinical Reasoning & Diagnosis - 3 marks
5. Presentation Skills - 2 marks
6. Response to Questions – 2 marks
2. Each student making posters based on the compilation of treatment reports - 25 marks
Instructions:
1. The poster should be compiled on the theme of treatment reports.
2. The poster should be visually appealing and easy to read.
3. The content should be accurate, complete, and well-organized.
4. The poster should include images, diagrams, and charts to support the written content.
5. The compilation and analysis of treatment reports should be clear and concise.
6. The poster should be able to draw meaningful conclusions from the data.
7. The poster should adhere to the given theme and guidelines.
8. The poster should be submitted on the due date and time.
Mark distribution:
Content (10 marks)
Visual Presentation (8 marks)
Compilation and Analysis (4 marks)
Overall Impression (3 marks)
Or
Any practical in converted form can be taken for assessment (25 marks)
and
Any of the experiential as portfolio/reflevtions/presentations can be taken as an assessment (25 marks)

Semester No : 4

Module 27 : Diseases of joints and cervical spine

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

Identify the anatomy, physiology. biomechanics of musculo skeletal system
Identify and describe various orthopaedic conditions, injuries, and Diseases
Apply the signs and symptoms of orthopaedic disorders

M 27 Unit 1 Diseases of joint

27.1.1 Introduction of arthritis 27.1.2 Classification of arthritis 27.1.3 Rheumatoid arthritis 27.1.4 Juvenile arthritis 27.1.5 Rheumatoid arthritis 27.1.6 Sero negative spondyloarthropathy 27.1.7 Ankylosing spondylitis 27.1.8 Reiter's disease 27.1.9 Psoriatic arthritis 27.1.10 Enteropathy arthritis 27.1.11 Degenerative arthritis 27.1.12 Oteoarthrosis knee 27.1.13 Osteoarthritis of hip joint 27.1.14 Neuropathic joints 27.1.15 Crystal synovitis 27.1.16 Gout pseudo gout 27.1.17 Alkaptonuria arthritis 27.1.18 Hemophilic arthritis 27.1.19 Reactive arthritis 27.1.20 Appraise the miscellaneous conditions 27.1.21 Villonodular synovitis 27.1.22 Synovial chrondromatosis 27.1.23 Pulmonary hypertrophic osteo arthropathy hysterical joint

References: 2,3,4,5,6

3A	3B	3C	3D	3E	3F	3G
CO2,CO4,CO6	Discuss the Introduction of orthopedics describe the varies type of arthritis Describe the Classification of Rheumatoid arthritis juvenile rheumatoid arthritis Sero negative spondyloarthropathy	4	Lecture	CC	Know	L&PPT ,L_VC
CO2,CO4	Describe Ankylosing spondylitis, Reiter's disease, Psoriatic arthritis,Enteropathy arthritis, Degenerative arthritis-Oteoarthrosis knee Osteoarthritis of hip joint	6	Practical Training 27.1	PSY-SET	Shows-how	CBL,DIS
CO2,CO4,CO6	Apply Neuropathic joints Crystal synovitis gout Pseudo gout Alkaptonuria arthritis, Hemophilic arthritis Reactive arthritis Appraise the Miscellaneous conditions Villonodular synovitis Synovial, chrondromatosis Pulmonary hypertrophic osteo arthropathy Hysterical joint	8	Experiential-Learning 27. 1	CS	Shows-how	LRI,PER, CBL

M 27 Unit 2 Avascular necrosis of bone and epiphyseal osteochondritis

27.2.1 Definition,pathogenesis,pathology,Classification,treatment 27.2.2 Clinical features radiological staging 27.2.3 Other imaging techniques 27.2.4 Functional exploration of bone 27.2.5 Fracture neck of femur 27.2.6 Osteo necrosis 27.2.7 Caisson's disease 27.2.8 Drug induced osteo necrosis 27.2.9 Sickle cell anemia 27.2.10 Epiphyseal osteochondritis 27.2.11 Perthes's disease 27.2.12 Osgood- Schlatter's disease 27.2.13 Osteo chondritis dissecans

References: 2,3,4,5,6

3A	3B	3C	3D	3E	3F	3G
CO2,CO4	Discuss the Definition,Pathogenesis,Classification,Treatment for specific types of avascular necrosis	4	Lecture	CC	Know	L_VC,L&PPT
CO2,CO4,CO6,CO8	Describe the clinical features radiological staging Other imaging techniques Functional exploration of bone	7	Practical Training 27.2	PSY-GUD	Knows-how	CBL,DIS
CO2,CO4,CO6,CO8	Charactrestic Fracture neck of femur with osteo necrosis,caisson's disease, drug induced osteo necrosis, Compare and illustrate the sickle cell anemia, Epiphyseal osteochondritis ,Perthes's disease, Osgood- Schlatter's disease ,Osteo chondritis dissecans	10	Experiential-Learning 27.2	CAN	Shows-how	JC,CBL,X-Ray,TUT
CO2,CO4,CO6,CO8	Analyse Brachial neuralgia Intervertebral disc prolapsed Torticollis	7	Practical Training 27.3	PSY-SET	Shows-how	PER

M 27 Unit 3 Regional conditions of neck

27.3.1 Cervical spondylosis 27.3.2 Cervical rib 27.3.3 Brachial neuralgia Intervertebral disc prolapsed 27.3.4 Torticollis 27.3.5 Shoulder Supraspinatus tendinitis calcification 27.3.6 Rupture of rotator cuff periarthritis shoulder 27.3.7 Deltoid fibrosis

References: 2,3,4,5,6

3A	3B	3C	3D	3E	3F	3G
CO2,CO4,CO6,CO8	Describe and enumerate Cervical spondylosis Cervical rib	2	Lecture	CC	Knows-how	CBL,X-Ray,L&PPT

CO2,CO4,CO6	Apply the Shoulder Supraspinatus tendinitis Calcification,Rupture of rotator cuff Periarthritis shoulder, Deltoid fibrosis	8	Experiential-Learning 27.3	CS	Shows-how	CBL,L_VC,DIS,X-Ray

Practical Training Activity

Practical Training 27.1 : Clinical evaluation of arthritis

Total learning hours (6 hours)
Case based learning (3 hours)
The faculty member instructs the students to prepare the Case for based learning ,Faculty teaches to Diagnose the type of arthritis (RA vs OA), Identify pattern of joint involvement, Suggest relevant lab tests (RA factor, ESR, CRP) Plan referral or rehabilitation steps
Discussion (3 hours)
Understand the pathophysiology of varies type of arthritis. Diagnose and manage Ankylosing spondylitisReiter's disease, Psoriatic arthritis,Enteropathy arthritis, Degenerative arthritis-Oteoarthrosis knee Osteoarthritis of hip joint . Develop problem-solving skills

Practical Training 27.2 : Clinical diagnosis with imaging techniques

Total learning hours (7 hours)
Case based learning & discussion
The faculty member instructs the students to see xray under their observation and teaches to
Identify and diagnose elbow and forearm injuries
Understand X-ray interpretation for elbow and forearm fractures and dislocations 3 hours
Develop critical thinking and problem-solving skills

Practical Training 27.3 : Clincal examination of cervical spine

Total learning hours (7 hours)
Flipped Class Room: Have Students Observe the Patient's Deformities through Videos or Live Demonstrations. Encourage Them to Note Key Features and Compare Them with Normal Patterns.
Poster Creation: 2 hours
Title and Introduction: Start with a clear title and a brief introduction to the disease, including its significance 30 minutes
Etiology and Pathophysiology: Explain the causes and mechanisms of the disease 1 hour
Clinical Features: Describe the symptoms and signs associated with the disease 1 hour

Diagnosis: Outline the diagnostic methods, including lab tests and imaging studies 2 hours
Treatment: Discuss the available treatment options and management strategies 30 minutes

Experiential learning Activity

Experiential-Learning 27.1 : Clinical evaluation of varies type of arthriris

Total activity hours (8 hours)
Case based learning & xray identification
The faculty instruct the students to prepare the patients for CBL on varies type of arthritis Clinical Evaluation:
Patient history (complaints,symptoms)
Physical examination (inspect, palpate, move)
Assess the xray investigation

Experiential-Learning 27.2 : Clinical evaliuation on avascular necrosis

Total activity hours (10 hours)
The student able to give projects in certain topics
Instructions:
Research in assigned topic.
Create a comprehensive project:
- Mechanism of injury
- Classification systems
- Diagnostic approaches
- Management options
- Complications and rehabilitation

Participate in peer evaluation and feedback.

Experiential-Learning 27.3 : Clinical diagnosis of cervical diseases

Total activity hours (8 hours)
Case based learning (4 hours)
History taking focused on red flag symptoms (e.g., trauma, systemic features, neurological deficits).
Clinical examination:

Inspection (alignment, posture) Palpation (spinous processes, paraspinal muscle spasm) Range of motion (flexion, extension, lateral flexion, rotation) Neurological screening (motor, sensory, reflexes in upper limbs) Special tests (Spurling's test, Lhermitte's sign, Distraction test)
Discussion (4 hours)
Clinical reasoning process used to reach diagnosis, Variability in presentation between mechanical and neurological conditions, Communication strategies when explaining findings to patients

Modular Assessment

Assessment method	**Hour**
Instructions: Conduct a structured modular assessment. Assessment will be 50 marks. Keep structured marking pattern. Use different assessment methods in each module for the semester. Keep a record of the structured pattern used for assessment. Calculate the modular grade point as per table 6c. 1. Clinical video case presentation -25 marks Instructions 1. The clinical video case presentation should be 10-15 minutes long. 2. The presentation should include a clear and concise case presentation, a video recording of the patient, and a clinical analysis and discussion. 3. The presenter should provide accurate and complete case details. 4. The video recording should be of good quality, with clear audio and visual aids. 5. The presenter should demonstrate confidence and clarity, and engage with the audience. 6. The presentation should adhere to the time limit and patient confidentiality and consent. 7. The presenter should be prepared to answer questions from the other students. Mark distribution : Case Presentation (10 marks) Video Recording (5 marks) Clinical Analysis and Discussion (5 marks) Presentation Skills (3 marks) Overall Impression (2 marks) Or Clinical Case Demonstration – 25 Marks Instructions: 1. The clinical case demonstration should be conducted in person and last 10–15 minutes. 2. The student must present a real patient case they have worked on, including clinical findings and examination. 3. The demonstration should include:	4

- Brief case summary
- Live or simulated examination (on patient or mannequin)
- Interpretation of signs
- Clinical reasoning
- Treatment principles (including Siddha or integrative approach if applicable)

4. Hands-on examination techniques should be appropriate, respectful, and accurate.
5. The student must maintain patient privacy, comfort, and consent throughout the demonstration.
6. The student should demonstrate:
   - Confidence and clarity in communication
   - Structured clinical thinking
   - Ability to answer relevant questions from peers and faculty

7. Use of any supportive materials (charts, tools, etc.) is allowed but should be minimal and purposeful.

1. Case History and Summary - 5 Marks
2. Physical Examination Skills - 8 Marks
3. Interpretation of Findings - 5 Marks
4. Clinical Reasoning & Diagnosis - 3 Marks
5. Presentation Skills - 2 Marks
6. Response to Questions - 2 Marks

2. Each students making posters based on the compilation of treatment reports - 25 marks

Instructions:

1. The poster should be compiled on the theme of treatment reports.
2. The poster should be visually appealing and easy to read.
3. The content should be accurate, complete, and well-organized.
4. The poster should include images, diagrams, and charts to support the written content.
5. The compilation and analysis of treatment reports should be clear and concise.
6. The poster should be able to draw meaningful conclusions from the data.
7. The poster should adhere to the given theme and guidelines.
8. The poster should be submitted on the due date and time.

Mark distribution :

Content (10 marks)

Visual Presentation (8 marks)
Compilation and Analysis (4 marks)
Overall Impression (3 marks)
Or
Any practical in converted form can be taken for assessment (25 marks)
and
Any of the experiential as portfolio/reflevtions/presentations can be taken as an assessment (25 marks)

Module 28 : Diseases of upper limb, lower limb and spine

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

Identify the anatomy, Physiology. Biomechanics of Musculo skeletal system
Identify and describe various orthopaedic conditions, injuries, and Diseases
Analyse the signs and Symptoms of orthopaedic disorders

M 28 Unit 1 Regional conditions of upperlimb

28.1.1 Regional conditions of elbow 28.1.2 Tennis elbow 28.1.3 Recurrent subluxation of the ulnar nerve 28.1.4 Cubitus valgus 28.1.5 Cubitus varus 28.1.6 Wrist and Hand ganglion 28.1.7 De Quervain’s disease 28.1.8 Trigger finger 28.1.9 Trigger thumb 28.1.10 Carpal tunnel syndrome 28.1.11 Dupuytren’s contracture

References: 2,3,4,5,6

3A	3B	3C	3D	3E	3F	3G
CO2,CO4,CO6	Discuss Elbow-Tennis elbow	4	Lecture	CC	Knows-how	L&PPT
CO2,CO4,CO6	Identify Recurrent subluxation of the ulnar nerve Cubitus valgus Cubitus varus	6	Practical	PSY-SET	Shows-	DIS

			Training 28.1		how	
CO2,CO4,CO6 ,CO8	Evaluate and predict Wrist and Hand ganglion,De Quervain’s disease,Trigger finger,Trigger thumb Carpal tunnel syndrome,Dupuytren’s contracture	8	Experiential-Learning 28. 1	CE	Shows-how	CD,CBL

M 28 Unit 2 Regional conditions of spine

28.2.1 Spine deformities 28.2.2 Kyphosis 28.2.3 Spondylolisthesis 28.2.4 Backache 28.2.5 lumbosacral strain 28.2.6 Fibrositis back 28.2.7 Sacralisation of 5th lumbar vertebra 28.2.8 Intervertebral disc prolapsed 28.2.9 Lumbar canal stenosis 28.2.10 Scoliosis

References: 2,3,4,5,6

3A	3B	3C	3D	3E	3F	3G
CO2,CO4,CO6	Discuss and relate The Spine deformities	2	Lecture	CC	Knows-how	L_VC,DIS
CO2,CO4,CO6	Demonstrate the spinal disorders like Kyphosis Scoliosis, Spondylolisthesis, Backache lumbosacral strain Fibrositis back	7	Practical Training 28.2	PSY-GUD	Shows-how	CBL,L_VC,DIS,CD
CO2,CO4,CO6 ,CO8	Analyse the diagnosis of the Sacralisation of 5th lumbar vertebra, Intervertebral disc prolapsed,Lumbar canal stenosis	10	Experiential-Learning 28. 2	PSY-SET	Shows-how	L_VC,D-BED

M 28 Unit 3 Regional conditions of lower limb

28.3.1 Lower limb deformities 28.3.2 Coxa vara 28.3.3 Slipped upper femoral epiphysis 28.3.4 Idiopathic chondrolysis of hip 28.3.5 Knee deformities 28.3.6 Genu valgum 28.3.7 Genu varum 28.3.8 Tibia varum 28.3.9 Genu recurvatum 28.3.10 Quadriceps fibrosis 28.3.11 Recurrent dislocation of patella 28.3.12 Bursae around the knee 28.3.13 Loose bodies in the knee 28.3.14 Anterior knee pain 28.3.15 Chondromalacia patella 28.3.16 Foot diseases such as 28.3.17 Painful heel 28.3.18 Plantar fasciitis 28.3.19 Posterior heel pain 28.3.20 Rat foot 28.3.21 Foot strain 28.3.22 Pain in the fore foot 28.3.23 Hallux valgus 28.3.24 Anterior metatarsalgia

References: 2,3,4,5,6

3A	3B	3C	3D	3E	3F	3G
CO2,CO4,CO6	Analyse and judge the Lower Limb deformities, Coxa Vara ,Slipped upper femoral ,epiphysis, Idiopathic chondrolysis of hip	4	Lecture	CC	Knows-how	CBL,L_VC
CO2,CO4,CO6	Describe the Knee deformities, Genu valgum Genu varum, Tibia varum, Genu recurvatum, Quadriceps fibrosis ,Recurrent dislocation of patella	7	Practical Training 28.3	PSY-SET	Shows-how	DIS,X-Ray,CBL
CO2,CO4,CO6 ,CO8	Discuss and Identify Bursae around the knee, Loose bodies in the knee ,Anterior knee pain ,Chondromalacia patella and the Foot diseases such as Painful Heel, Plantar Fasciitis, Posterior heel pain, Rat foot, Foot strain Sprain in the fore foot, Hallux valgus ,Anterior metatarsalgia	8	Experiential-Learning 28.3	AFT-RES	Shows-how	CBL,D,X-Ray

Practical Training Activity

Practical Training 28.1 : Clinical examination abnormality of lower limb

Total learning hours (6 hours)
Flipped Classroom (3 hours)
Students receive videos, readings, and case vignettes.
Topics: anatomy, exam steps, abnormal gait, key signs.
Complete pre-class MCQs or short answers.
Come prepared for discussion and hands-on sessions.
In-Class Discussion (1 hours)
Students discuss assigned clinical cases in small groups.
Present expected findings and pathology correlation.
Facilitator guides with feedback and key points.
Enhances clinical reasoning and teamwork.
Practical Skills Stations (2 hours)
Four stations: gait, motor/reflex, sensory, joint exam.
Each has a demonstrator, tools, and step-by-step tasks.
Use of checklists for peer/self-assessment.
Focus on hands-on learning and skill-building.
Assessment & Wrap-Up

Observe students at stations and during discussions.
Optional quiz or OSCE-style assessment.
End with group reflection and Q&A.
Collect feedback to improve future sessions.

Practical Training 28.2 : Clinical evaluation on spinal disorders through lab report investigations

Total learning hours (7 hours)
Lab Report Investigations:
Objective: Define the purpose of the investigation.
Methods: Describe the experimental procedures and techniques used.
Results: Present the data collected during the investigation, using tables and graphs.
Discussion: Interpret the results, compare them with existing literature, and discuss their implications.
Conclusion: Summarize the findings and suggest future research directions.

Practical Training 28.3 : Clinical examination of knee deformities

Total learning hours (7 hours)
The faculty member instructs the students to split into groups(2-3) ask to prepare on given topics and then students and faculty discuss to
1. Understand ankle anatomy and stability.
2. Diagnose and manage ankle fractures, dislocations, and epiphyseal injuries.

Experiential learning Activity

Experiential-Learning 28.1 : Clinical examination on wrist deformities

Total activity hours (8 hours)
CBL Objectives
1. Diagnose and manage wrist injuries.
2. Develop critical thinking and problem-solving skills.
3. Improve communication and teamwork skills.
CBL Structure
1. Introduction
2. Case presentation

3. Group discussion
4. Conclusion and feedback

Experiential-Learning 28.2 : Clinical evaluation of regional condition of the spine

Total activity hours (10 hours)
CBL Objectives
1. Diagnose and manage spine injuries.
2. Develop critical thinking and problem-solving skills.
3. Improve communication and teamwork skills.
CBL Structure
1. Introduction
2. Case presentation
3. Group discussion
4. Conclusion and feedback

Experiential-Learning 28.3 : Clinical evaluation regional conditon of lower limb

Total activity hours (8 hours)
CBL Objectives
1. Diagnose and manage wrist injuries.
2. Develop critical thinking and problem-solving skills.
3. Improve communication and teamwork skills.
CBL Structure
1. Introduction
2. Case presentation
3. Group discussion
4. Conclusion and feedback

Modular Assessment

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

in each module for the semester. Keep a record of the structured pattern used for assessment. Calculate the modular grade point as per table 6c.
1. Clinical video case presentation -25 marks
Instructions:
1. The clinical video case presentation should be 10-15 minutes long.
2. The presentation should include a clear and concise case presentation, a video recording of the patient, and a clinical analysis and discussion.
3. The presenter should provide accurate and complete case details.
4. The video recording should be of good quality, with clear audio and visual aids.
5. The presenter should demonstrate confidence and clarity, and engage with the audience.
6. The presentation should adhere to the time limit and patient confidentiality and consent.
7. The presenter should be prepared to answer questions from the other students.
Mark distribution :
Case Presentation (10 marks)
Video Recording (5 marks)
Clinical Analysis and Discussion (5 marks)
Presentation Skills (3 marks)
Overall Impression (2 marks)
2. Each students making posters based on the compilation of treatment reports - 25 marks
Instructions:
1. The poster should be compiled on the theme of treatment reports.
2. The poster should be visually appealing and easy to read.
3. The content should be accurate, complete, and well-organized.
4. The poster should include images, diagrams, and charts to support the written content.
5. The compilation and analysis of treatment reports should be clear and concise.
6. The poster should be able to draw meaningful conclusions from the data.
7. The poster should adhere to the given theme and guidelines.
8. The poster should be submitted on the due date and time.
Mark distribution :
Content (10 marks)
Visual Presentation (8 marks)
Compilation and Analysis (4 marks)
Overall Impression (3 marks)
Or

Any practical in converted form can be taken for assessment (25 marks)
and
Any of the experiential as portfolio/reflevtions/presentations can be taken as an assessment (25 marks)

Semester No : 5

Module 29 : Injuries of bone, joint and upper extremities

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

Understand the anatomy, physiology. biomechanics of musculo skeletal system
Identify and describe various orthopaedic conditions, injuries, and Diseases
Recognize the signs and Symptoms of orthopaedic disorders

M 29 Unit 1 Injuries to bones and joints

29.1.1 Fractures, types of fractures 29.1.2 Mechanism of fracture 29.1.3 Biology of fracture 29.1.4 Healing Factors which influence fracture heal 29.1.5 General Principles of management of fractures diagnosis 29.1.6 Conservative management functional cast bracing 29.1.7 Open reduction and internal fixation 29.1.8 Complications of fracture 29.1.9 Volkmann ischaemic contracture 29.1.10 Myositis ossificans 29.1.11 Fat embolism 29.1.12 Non-union 29.1.13 Malunion 29.1.14 Cross union 29.1.15 Sudeck's osteodystrophy 29.1.16 Birth fractures 29.1.17 Battered baby syndrome 29.1.18 Epiphyseal injuries 29.1.19 Pathological fracture 29.1.20 Dislocation of joints 29.1.21 Traumatic dislocation 29.1.22 Pathological dislocation 29.1.23 Paralytic dislocation

References: 2,3,4,5,6

3A	3B	3C	3D	3E	3F	3G
CO2,CO6	Describe the fractures – Types, Mechanism, Biology, healing Factors which influence fracture,General Principles of management of fractures, Diagnosis,Conservative management Functional Cast Bracing,Open reduction and internal fixation	3	Lecture	CC	Knows-how	L,TUT,X-Ray

CO2,CO4	Identify the Complications of fracture Volkmann’s Ischaemic contracture Myositis Ossifians, Fat Embolism Non-union, Malunion Cross union Sudeck’s Osteodystrophy	7	Practical Training 29.1	PSY-SET	Knows-how	CBL
CO2,CO4,CO6	Appreciate the differences and clinical significance of fractures and dislocations in children, including birth fractures, battered baby syndrome, epiphyseal injuries, pathological fractures, and various types of dislocations (traumatic, pathological, and paralytic)	9	Experiential-Learning 29.1	AFT-VAL	Shows-how	D-BED

M 29 Unit 2 Injuries of the shoulder and arm

29.2.1 The shoulder 29.2.2 Fracture clavicle 29.2.3 Dislocation of the acromioclavicular joint 29.2.4 Dislocation of the shoulder joint 29.2.5 Recurrent dislocation of shoulder 29.2.6 Tabulate the arm 29.2.7 Fracture of the proximal end of humorous 29.2.8 Fracture of the greater tuberosity 29.2.9 Fracture neck of humerus 29.2.10 Fracture of the shaft of the humorous

References: 2,3,4,5,6

3A	3B	3C	3D	3E	3F	3G
CO2,CO4,CO6	Describe the Shoulder – Fracture clavicle Dislocation of the Acromioclavicular joint	3	Lecture	CK	Knows-how	CBL,L&PPT ,D-BED
CO2,CO6,CO8	Discuss the dislocation of the shoulder joint Recurrent dislocation of shoulder	4	Practical Training 29.2	PSY-SET	Shows-how	CBL
CO2,CO4,CO6 ,CO8	Identify and differentiate the Arm with Fracture of the proximal end of humorus, Fracture of the greater tuberosity, Fracture neck of humerus,Fracture of the shat of the humorous	8	Experiential-Learning 29.2	CAN	Shows-how	CBL

M 29 Unit 3 Injuries of the elbow forearm and wrist

29.3.1 Examination of the elbow 29.3.2 Supracondylar fracture 29.3.3 Inter condylar fracture 29.3.4 Fracture of the medial epicondyle 29.3.5 Fracture of the lateral condyle of the humerus 29.3.6 Fracture capitulum 29.3.7 Dislocation of the elbow 29.3.8 Pulled elbow 29.3.9 Fractures of the proximal end of the radius 29.3.10 Fractures of the neck of the radius 29.3.11 Fractures of the olecranon 29.3.12 Examination the forearm 29.3.13 Fracture both bones forearm 29.3.14 Monteggia

fracture dislocation 29.3.15 Galeazzi fracture dislocation 29.3.16 Classify the wrist 29.3.17 Colles'fracture 29.3.18 Fracture separation of lower epiphysis of radius 29.3.19 Smith's fracture 29.3.20 Barton's fracture 29.3.21 Fracture of the scaphoid 29.3.22 Dislocation of the lunate bone

References: 2,3,4,5,6

3A	3B	3C	3D	3E	3F	3G
CO2	Describe the Elbow – Examine Supracondylar fracture Inter condylar fracture, Fracture of the medial epicondyle, Fracture of the lateral condyle of the humerus, Fracture capitulum	4	Lecture	CC	Knows-how	L&PPT
CO2,CO4,CO8	Exhibit Dislocation of the elbow, Pulled elbow, Fractures of the Proximal end of the Radius, Fractures of the neck of the radius,Fractures of the olecranon, Examine the Forearm – Fracture both bones forearm,Monteggia fracture dislocation Galeazzi fracture dislocation	9	Practical Training 29.3	PSY-GUD	Knows-how	D,X-Ray
CO2,CO6,CO8	Construct the knowledge of diagnosis and clinical examination of the Wrist– Colles'fracture, Fracture separation of lower epiphysis of radius, Smith's fracture, Barton's fracture,Fracture of the Scaphoid and Dislocation of the Lunate bone	9	Experiential-Learning 29.3	CS	Shows-how	CBL,D,PBL

Practical Training Activity

Practical Training 29.1 : Complication of fractures through radiological findings

Total learning hours (7 hours)
Case based learning & Dicussion
The faculty members instruct the students to see xray /lab report investigation. Faculty teaches to
Understand complications of fractures.
Identify and diagnose complications using X-rays.
Develop critical thinking and problem-solving skills.

Practical Training 29.2 : Clinical diagnosis of the shoulder joint dislocation

Total learning hours (4 hours)
Case based learning (4 hours)

The faculty member instructs the students to prepare the Case for based learning Faculty teaches to
Understand the anatomy and stability of the shoulder joint.
Diagnose and manage shoulder dislocation and recurrent dislocation.
Develop problem-solving skills.

Practical Training 29.3 : Clinical diagnosis and evaluation of the elbow fractures

Total learning hours (9 hours)
Demonstartion & xray identification (9 hours)
The faculty member instructs the students to see xray under their observation and teaches to
Identify and diagnose elbow and forearm injuries.
Understand X-ray interpretation for elbow and forearm fractures and dislocations.
Develop critical thinking and problem-solving skills.

Experiential learning Activity

Experiential-Learning 29.1 : Perform the fractures and dislocation

Total activity hours (9 hours)
Simulation (3 hours)
Use mannequins or simulated patients with moulage (mock injuries) showing various fractures/dislocations (e.g., Colles' fracture, shoulder dislocation). Students perform inspection, palpation, and immobilization. Use splints, slings, or bandages as appropriate
Case-Based Learning (3 hours)
Provide brief clinical scenarios. Discuss diagnosis, management, and potential complications. Relate X-ray images to the clinical scenario.
Discussion (3 hours)
Discuss what went well, what was missed, and how to improve real-life response. Faculty gives feedback on technique, decision-making, and communication.

Experiential-Learning 29.2 : Fracture of the arm

Total activity hours (8 hours)
Problem based learning (4 hours)
History taking, Physical examination, Imaging interpretation (X-rays)
Case based learning (4 hours)
Identify possible fracture site. List signs indicating nerve injury (e.g., radial nerve involvement) Decide on first aid and transport method. Discuss when to refer to

emergency care

Experiential-Learning 29.3 : Clinical diagnosis of wrist fracture

Total activity hours (9 hours)
CBL Objectives
Diagnose and manage wrist injuries.
Develop critical thinking and problem-solving skills.
Improve communication and teamwork skills.

Modular Assessment

Assessment method	**Hour**
Instructions: Conduct a structured modular assessment. Assessment will be 50 marks. Keep structured marking pattern. Use different assessment methods in each module for the semester. Keep a record of the structured pattern used for assessment. Calculate the modular grade point as per table 6c. 1. Clinical video case presentation -25 marks * Instructions: 1. The clinical video case presentation should be 10-15 minutes long. 2. The presentation should include a clear and concise case presentation, a video recording of the patient, and a clinical analysis and discussion. 3. The presenter should provide accurate and complete case details. 4. The video recording should be of good quality, with clear audio and visual aids. 5. The presenter should demonstrate confidence and clarity, and engage with the audience. 6. The presentation should adhere to the time limit and patient confidentiality and consent. 7. The presenter should be prepared to answer questions from the other students. * Mark distribution : - Case Presentation (10 marks) - Video Recording (5 marks) - Clinical Analysis and Discussion (5 marks) - Presentation Skills (3 marks) - Overall Impression (2 marks) or Clinical Case Demonstration – 25 Marks Instructions:	4

1. The clinical case demonstration should be conducted in person and last 10–15 minutes.
2. The student must present a real patient case they have worked on, including clinical findings and examination.
3. The demonstration should include:
   • Brief case summary
   • Live or simulated examination (on patient or mannequin)
   • Interpretation of signs
   • Clinical reasoning
   • Treatment principles (including Siddha or integrative approach if applicable)

4. Hands-on examination techniques should be appropriate, respectful, and accurate.
5. The student must maintain patient privacy, comfort, and consent throughout the demonstration.
6. The student should demonstrate:
   • Confidence and clarity in communication
   • Structured clinical thinking
   • Ability to answer relevant questions from peers and faculty

7. Use of any supportive materials (charts, tools, etc.) is allowed but should be minimal and purposeful.
1. Case History and Summary 5
2. Physical Examination Skills 8
3. Interpretation of Findings 5
4. Clinical Reasoning & Diagnosis 3
5. Presentation Skills 2
6. Response to Questions 2

2. Each students making posters based on the compilation of treatment reports - 25 marks

* Instructions:
1. The poster should be compiled on the theme of treatment reports.
2. The poster should be visually appealing and easy to read.
3. The content should be accurate, complete, and well-organized.
4. The poster should include images, diagrams, and charts to support the written content.
5. The compilation and analysis of treatment reports should be clear and concise.
6. The poster should be able to draw meaningful conclusions from the data.
7. The poster should adhere to the given theme and guidelines.

8. The poster should be submitted on the due date and time.
* Mark distribution :
- Content (10 marks)
- Visual Presentation (8 marks)
- Compilation and Analysis (4 marks)
- Overall Impression (3 marks)
Or
Any practical in converted form can be taken for assessment (25 marks)
And
Any of the experiential as portfolio/reflevtions/presentations can be taken as an assessment (25 marks)

Module 30 : Injuries of lower extremities

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

Understand the anatomy, physiology. biomechanics of musculo skeletal system
Identify and describe various orthopaedic conditions, injuries, and Diseases
Recognize the signs and symptoms of orthopaedic disorders

M 30 Unit 1 Injuries of the hip and thigh

30.1.1 Dislocation of the hip joint 30.1.2 Posterior dislocation anterior 30.1.3 Dislocation central dislocation 30.1.4 Old unreduced dislocation of the hip 30.1.5 Intra capsular fracture 30.1.6 Neck of femur fracture 30.1.7 Trochanteric fracture of femur 30.1.8 Fracture shaft of the femur 30.1.9 Proximal third middle third distal third fracture femur in children 30.1.10 Complications of fracture femur

References: 2,3,4,5,6

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

CO2,CO4,CO8	Describe the Hip Dislocation and the hip joint Posterior dislocation Anteriordislocation	4	Lecture	CC	Knows-how	L,L&PPT
CO2,CO4,CO8	Describe the dislocation ,Central dislocation ,Old unreduced , dislocation of the hip Intra capsular fracture neck of femur Trochanteric fracture of femur.	8	Practical Training 30.1	PSY-SET	Knows-how	CBL,X-Ray
CO2,CO4,CO8	Identify and differentiate the Fracture shaft of the femur, Proximal third Middle third Distal third Fracture femur in children Complications of Fracture Femur	10	Experiential-Learning 30. 1	CAN	Does	X-Ray,D-BED,DIS

M 30 Unit 2 Injuries of the knee

30.2.1 Knee fracture 30.2.2 Fracture of the femoral condyles 30.2.3 Fracture of the tibial condyles 30.2.4 Fracture patella 30.2.5 Injuries of the extensor mechanism 30.2.6 Dislocation of the knee 30.2.7 Traumatic dislocation of patella

References: 2,3,4,5,6

3A	3B	3C	3D	3E	3F	3G
CO2,CO4,CO8	Describe the Knee –Fracture of the Femoral condyles	3	Lecture	CC	Knows-how	L&GD,L &PPT ,L
CO2,CO4,CO8	Adapt the knowledge of the Fracture of the tibial condyles and Fracture patella	8	Practical Training 30.2	PSY-ADT	Shows-how	DIS,CBL
CO2,CO4,CO8	Identify and differentiate between injuries of the extensor mechanism, knee dislocations, and traumatic patellar dislocations	8	Experiential-Learning 30. 2	AFT-VAL	Shows-how	CD,PBL, X-Ray

M 30 Unit 3 Injuries of leg ankle and foot

30.3.1 Leg fractures 30.3.2 Fracture of tibia 30.3.3 Fibula fracture 30.3.4 Ankle fracture 30.3.5 Dislocation of the ankle 30.3.6 Epiphyseal injury lower end of tibia 30.3.7 Foot fractures 30.3.8 Fracture of talus 30.3.9 Fractures of calcaneum 30.3.10 Fractures of metatarsals 30.3.11 Fractures phalanges 30.3.12 Jones fracture

References: 2,3,4,5,6

3A	3B	3C	3D	3E	3F	3G
CO2,CO4,CO8	Discuss the Leg – Fracture of Tibia and Fibula Fracture Fibula	3	Lecture	CC	Shows-how	L,L&PPT
CO2,CO4,CO6 ,CO8	Identifythe Ankle Fracture ,dislocation of the ankle, epiphyseal injury lower end of tibia.	4	Practical Training 30.3	PSY-SET	Knows-how	CBL,DIS
CO2,CO4,CO8	Categorize the Foot-fractures of talus, fractures of calcaneum fractures of metatarsals and phalanges fracture	8	Experiential-Learning 30. 3	CAP	Shows-how	PBL,CBL

Practical Training Activity

Practical Training 30.1 : Clinical evaluation of femur

Total learning hours (8 hours)
Case based learning (4 hours)
Faculty members instruct the students to see xray /lab report investigation. Faculty teaches to
Understand complications of fractures. Develop critical thinking and problem-solving skills.
Xray identification and discussion (4 hours)
Review X-rays: Identify site of fracture (intertrochanteric, shaft, supracondylar) Match clinical signs with radiological findings

Practical Training 30.2 : Clinical evaluation of tibia and patella

Total learning hours (8 hours)
Case based learning (4 hours)
Faculty teaches to
1. Understand the anatomy and stability of the shoulder joint.
2. Diagnose and manage shoulder dislocation and recurrent dislocation.
3. Develop problem-solving skills.
Discussion (4 hours)
Describe the working diagnosis. Suggest immediate and long-term management options. Emphasize the importance of muscle strength and knee protection

Practical Training 30.3 : Clinical evaluation of ankle and tibia

Total learning hours (4 hours)
Case based learning & discussion (4 hours)
The faculty member instructs the students to see xray under their observation and teaches to
Identify and diagnose elbow and forearm injuries.
Understand X-ray interpretation for elbow and forearm fractures and dislocations.
Develop critical thinking and problem-solving skills.

Experiential learning Activity

Experiential-Learning 30.1 : Clinical diagnosis of femur with its complications

Total activity hours (10 hours)
Demonstartion bed side (5 hours)
Understand femur anatomy and fracture classification.Diagnose and manage femur fractures. Develop critical thinking and problem-solving skills.Enhance clinical decision-making and patient care skills.
X-ray identification & discussion (5 hours)
Midshaft fracture, Intertrochanteric fracture, Supracondylar fracture
Discuss fracture classification and stability

Experiential-Learning 30.2 : Clinical diagnosis of knee and patella

Total activity hours (8 hours)
The students where grouped (2-3 students) and done mini- CEX on certain given topic by faculty
Mini-CEX Stations
History taking
Physical examination
Imaging interpretation (X-rays)
Management planning

Experiential-Learning 30.3 : Clinical diagnosis of foot fractures

Total activity hours (8 hours)

Problem based learning (4 hours)
Understand foot anatomy and fracture classification. Diagnose and manage foot fractures. Research and write a case report. Create an educational poster. Design a rehabilitation protocol.
Case based learning (4 hours)
Perform focused clinical examination of foot trauma. Identify signs and symptoms of different types of foot fractures. Apply diagnostic reasoning to differentiate between fracture types. Recommend suitable diagnostic investigations and basic management.

Modular Assessment

Assessment method	**Hour**
Instructions: Conduct a structured modular assessment. Assessment will be 50 marks.Keep structured marking pattern. Use different assessment methods in each module for the semester. Keep a record of the structured pattern used for assessment. Calculate the modular grade point as per table 6c. 1. Clinical video case presentation -25 marks * Instructions: 1. The clinical video case presentation should be 10-15 minutes long. 2. The presentation should include a clear and concise case presentation, a video recording of the patient, and a clinical analysis and discussion. 3. The presenter should provide accurate and complete case details. 4. The video recording should be of good quality, with clear audio and visual aids. 5. The presenter should demonstrate confidence and clarity, and engage with the audience. 6. The presentation should adhere to the time limit and patient confidentiality and consent. 7. The presenter should be prepared to answer questions from the other students. * Mark distribution : - Case Presentation (10 marks) - Video Recording (5 marks) - Clinical Analysis and Discussion (5 marks) - Presentation Skills (3 marks) - Overall Impression (2 marks) or Clinical Case Demonstration – 25 Marks Instructions: 1. The clinical case demonstration should be conducted in person and last 10–15 minutes. 2. The student must present a real patient case they have worked on, including clinical findings and examination.	4

3. The demonstration should include:
- Brief case summary
- Live or simulated examination (on patient or mannequin)
- Interpretation of signs
- Clinical reasoning
- Treatment principles (including Siddha or integrative approach if applicable)

4. Hands-on examination techniques should be appropriate, respectful, and accurate.
5. The student must maintain patient privacy, comfort, and consent throughout the demonstration.
6. The student should demonstrate:
- Confidence and clarity in communication
- Structured clinical thinking
- Ability to answer relevant questions from peers and faculty

7. Use of any supportive materials (charts, tools, etc.) is allowed but should be minimal and purposeful.

1. Case History and Summary 5
2. Physical Examination Skills 8
3. Interpretation of Findings 5
4. Clinical Reasoning & Diagnosis 3
5. Presentation Skills 2
6. Response to Questions 2

2. Each students making posters based on the compilation of treatment reports - 25 marks

Instructions:

1. The poster should be compiled on the theme of treatment reports.
2. The poster should be visually appealing and easy to read.
3. The content should be accurate, complete, and well-organized.
4. The poster should include images, diagrams, and charts to support the written content.
5. The compilation and analysis of treatment reports should be clear and concise.
6. The poster should be able to draw meaningful conclusions from the data.
7. The poster should adhere to the given theme and guidelines.
8. The poster should be submitted on the due date and time.

Mark distribution :

- Content (10 marks)
- Visual Presentation (8 marks)
- Compilation and Analysis (4 marks)
- Overall Impression (3 marks)

Or

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

and

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

Semester No : 6

Module 31 : Injuries of spine soft tissue and sports injury

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

Identify the anatomy, physiology. biomechanics of musculo skeletal system
Identify and describe various orthopaedic conditions, injuries, and Diseases
Analyse the signs and Symptoms of orthopaedic disorders

M 31 Unit 1 Injuries of the spine

31.1.1 Classification- thoraco- lumbar spine 31.1.2 Mechanism and types of injuries 31.1.3 Stable fractures 31.1.4 Management of paraplegia 31.1.5 Bed sore 31.1.6 Bladder care 31.1.7 Lower cervical spine injuries 31.1.8 Upper cervical spine injuries 31.1.9 Fractures of the pelvis ring 31.1.10 Mechanism of fracture 31.1.11 Classification of fracture 31.1.12 Management of fracture 31.1.13 Fractures of the acetabulum 31.1.14 Fractures of the sacrum 31.1.15 Fractures of the coccyx 31.1.16 Incidence primary survey Glasgow coma scale 31.1.17 Triage resuscitation- management 31.1.18 Classification-emergency surgical treatment-management of wound 31.1.19 Evaluate the management of fracture 31.1.20 Management of infected open fracture 31.1.21 Complication of open wound 31.1.22 Management of the crush injury gunshot injury

References: 2,3,4,5,6

3A	3B	3C	3D	3E	3F	3G
CO2,CO4,CO6 ,CO8	Discuss the Thoraco-Lumbar Spine classification, mechanism and types of injuries,stable fractures, management of paraplegia,bed sore and bladder care	4	Lecture	CC	Knows-how	L&PPT
CO2,CO4,CO6 ,CO8	Demonstrate the lower & upper cervical spine injuries, fractures of the pelvis ring, mechanism, classification,management,fractures of the acetabulum and sacrum and coccyx	8	Practical Training 31.1	PSY-SET	Knows-how	CBL
CO2,CO4,CO6 ,CO8	Discuss the Glasgow coma scale, triage resuscitation, emergency surgical treatment,management of wound, Evaluate the management of fracture,management of infected open fracture and the complication of open wound, Management of the crush injury gunshot injury	10	Experiential-Learning 31.1	CAN	Shows-how	PSM,PrBL,TPW

M 31 Unit 2 Soft tissue injuries

31.2.1 Ankle joint-knee joint-internal derangements 31.2.2 Collateral ligament injuries 31.2.3 Cruciate ligament injuries 31.2.4 Injuries to semilunar cartilage 31.2.5 Pathology rupture of the biceps brachi 31.2.6 Rupture of the supraspinatus 31.2.7 Rupture of the tendo achillies 31.2.8 Nerve injuries-injuries of peripheral nerves 31.2.9 Classification- mechanism of closed nerve injuries 31.2.10 Diagnosis of nerve lesion- 31.2.11 Clinical examination-management of nerve injuries 31.2.12 Radial nerve injuries 31.2..13 Median nerve injuries 31.2.14 Ulnar nerve injuries 31.2.15 Brachial plexus injuries 31.2.16 Erb’s palsy 31.2.17 Klumpke’s palsy 31.2.18 Sciatic nerve injuries 31.2.19 Lateral popliteal nerve injuries

References: 2,3,4,5,6

3A	3B	3C	3D	3E	3F	3G
CO2,CO4,CO6 ,CO8	Describe the ankle joint, knee joint, internal derangements, collateral ligament injuries,cruciate ligament injuries and injuries to semilunar cartilage	3	Lecture	CC	Knows-how	DIS,L_VC
CO2,CO4,CO6 ,CO8	Demonstrate the rupture of the biceps brachi, supraspinatus, tendoachillies	6	Practical Training 31.2	PSY-GUD	Shows-how	CBL

CO2,CO4,CO6 ,CO8	Describe peripheral nerve injuries, closed nerve injuries, radial nerve injuries- median nerve injuries-ulnar nerve injuries, brachial plexus, diagnosis of nerve lesion, management of nerve injuries- injuries erb's palsy,klumpke's palsy, sciatic nerve injuries, lateral popliteal nerve injuries	8	Experiential-Learning 31.2	PSY-GUD	Shows-how	PBL,CBL

M 31 Unit 3 Sports injuries

31.3.1 Classification etiology pathology clinical presentation and management 31.3.2 Subfascial compartment syndrome 31.3.3 Brachial artery injury 31.3.4 Popliteal artery injuries 31.3.5 Injuries of tibia arteries 31.3.6 Types selection of level of amputation 31.3.7 Stump and its management 31.3.8 Complication 31.3.9 Amputation in children 31.3.10 Prosthetic fitting and rehabilitation

References: 2,3,4,5,6

3A	3B	3C	3D	3E	3F	3G
CO2,CO4,CO6 ,CO8	Discuss the Classification,etiology,pathology,clinical presentation and management of Sports injuries	3	Lecture	CAN	Knows-how	L_VC
CO2,CO4,CO6 ,CO8	Demonstrate the subfascial compartment syndrome, Brachial artery injury, Popliteal artery injury and Injury of tibial artery	6	Practical Training 31.3	PSY-SET	Knows-how	DIS,CBL
CO2,CO4,CO6 ,CO8	Evaluate the Indication, types, selection of level of amputation,level of amputation,stump and its management, complication, amputation in children, prosthetic fitting and rehabilitation	8	Experiential-Learning 31.3	CE	Knows-how	RP,PrBL

Practical Training Activity

Practical Training 31.1 : Clinical evaluation on spine injuries

Total learning hours (8 hours)
Case Based Learning
The faculty instruct the students to prepare the patients for CBL
To Assess for cranial nerve deficits (CN IX-XII)
To Check for cervical spine instability

To Evaluate for signs of spinal cord injury (SCI)
To Perform thorough neurological exam
To Order imaging studies as needed
Are assessed by the faculty, or if students can assess on the observation of faculty

Practical Training 31.2 : Clinical evaluation on rupture of supraspinatus,tendoachillies

Total learning hours (6 hours)
Case based Learning (3 hours)
Patient history (mechanism of injury, symptoms)
Physical examination (inspect, palpate, move)
Assess elbow flexion, supination strength
Perform Hook test, Cubitus test
Demonstration (3 hours)
1. Check for ecchymosis, swelling
2. Palpate for defect
3. Test for weakness in movements
4. Order imaging (X-ray, MRI) to confirm diagnosis

Practical Training 31.3 : Clinical diagosis on arterial injuries

Total learning hours (6 hours)
Case Based Learning (3 hours)
Patient history (mechanism of injury, symptoms)
Physical examination (inspect, palpate, move)
Discussion (3 hours)
Assess elbow flexion, supination strength
Perform Hook test, Cubitus test

Experiential learning Activity

Experiential-Learning 31.1 : Projects on management on wounds and injury

Total activity hours (10 Hours)

Team Project Work (5 Hours)
1. Research in assigned topic.
2. Create a comprehensive project:
   - Mechanism of injury
   - Classification systems
   - Diagnostic approaches
   - Management options
   - Complications and rehabilitation

Peer learning (5 Hours)
1. Written report
2. Power Point presentation
3. Case study presentation
4. Poster or infographic

Experiential-Learning 31.2 : Clinical diagnosis of nerve injuries

Total activity hours (8 hours)
case based learning (4 hours)
Classification and mechanism of nerve injuries.
Diagnostic skills for nerve lesions.
Treatment Manage nerve injuries through case-based learning.
Problem based learning (4 hours)
Classification and mechanism of nerve injuries.
Diagnostic skills for nerve lesions.
Treatment Manage nerve injuries through case-based learning.

Experiential-Learning 31.3 : Projects on rehabilitation

Total activity hours (8 hours)
Project based learning (4 hours)
Visit a nearby village or urban slum. Conduct surveys to identify disabled or chronically ill individuals. Record their condition, mobility, assistive devices, and family support.Submit a rehabilitation care plan
Role play (4 hours)

Form student teams representing physiotherapists, Siddha physicians, psychologists, social workers,etc.Discuss a case and formulate a comprehensive rehabilitation plan.Present to peers.

Modular Assessment

Assessment method	**Hour**
Instructions: Conduct a structured modular assessment. Assessment will be 50 marks. Keep structured marking pattern. Use different assessment methods in each module for the semester. Keep a record of the structured pattern used for assessment. Calculate the modular grade point as per table 6c. 1. Clinical video case presentation -25 marks Instructions: 1. The clinical video case presentation should be 10-15 minutes long. 2. The presentation should include a clear and concise case presentation, a video recording of the patient, and a clinical analysis and discussion. 3. The presenter should provide accurate and complete case details. 4. The video recording should be of good quality, with clear audio and visual aids. 5. The presenter should demonstrate confidence and clarity, and engage with the audience. 6. The presentation should adhere to the time limit and patient confidentiality and consent. 7. The presenter should be prepared to answer questions from the other students. Mark distribution : - Case Presentation (10 marks) - Video Recording (5 marks) - Clinical Analysis and Discussion (5 marks) - Presentation Skills (3 marks) - Overall Impression (2 marks) Or Short Answer Questions : 25 marks (5x5) Types of fractures/dislocations (clavicle, shoulder, humerus, elbow, wrist), diagnosis, management principles 5 Hip fracture, femur, tibia, knee, ankle, foot injuries; classification and treatment 5 Spinal cord injuries, disc prolapse, strain, sprain, ligament tear, sports rehab 5	4

Stroke, peripheral nerve injuries, hemiplegia,
neuropathies, cerebral palsy 5
Management 5
2. Each students making posters based on the compilation of treatment reports - 25 marks
Instructions:
1. The poster should be compiled on the theme of treatment reports.
2. The poster should be visually appealing and easy to read.
3. The content should be accurate, complete, and well-organized.
4. The poster should include images, diagrams, and charts to support the written content.
5. The compilation and analysis of treatment reports should be clear and concise.
6. The poster should be able to draw meaningful conclusions from the data.
7. The poster should adhere to the given theme and guidelines.
8. The poster should be submitted on the due date and time.
Mark distribution :
- Content (10 marks)
- Visual Presentation (8 marks)
- Compilation and Analysis (4 marks)
- Overall Impression (3 marks)
Or
Any practical in converted form can be taken for assessment (25 marks)
and
Any of the experiential as portfolio/reflevtions/presentations can be taken as an assessment (25 marks)

Module 32 : Neurological and neuromuscular disorder

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

Identify the anatomy, physiology, biomechanics of musculo skeletal system
Identify and describe various orthopaedic conditions, injuries, and diseases
Analyse the signs and symptoms of orthopaedic disorders

M 32 Unit 1 Neuromuscular skeletal disorders

32.1.1 Extra pyramidal lesions 32.1.2 Parkinsonism 32.1.3 Neurological features of wilson disease 32.1.4 Huntington’s disease 32.1.5 Tardine dyskinesia 32.1.6 Restless leg syndrome 32.1.7 Demylinating lesion 32.1.8 Multiple sclerosis 32.1.9 Children’s diffuse cerebral sclerosis

References: 2,3,4,5,6

3A	3B	3C	3D	3E	3F	3G
CO2,CO4,CO6,CO8	Define extra pyramidal lesions enumerate the parkinsonism	4	Lecture	CK	Know	L,L&PPT,L_VC
CO2,CO4,CO6,CO8	Distinguish between the signs and symptoms, diagnostic methods and clinical examination of Demylinating lesion Multiple sclerosis Schildre’s diffuse cerebral sclerosis	8	Experiential-Learning 32.1	CAN	Shows-how	DIS,L_VC,CBL
CO2,CO4,CO6,CO8	Demonstrate the Neurological features Wilson disease Huntington’s disease Tardine dyskinesia restless leg syndrome	8	Practical Training 32.1	PSY-SET	Shows-how	CBL

M 32 Unit 2 Motor neuron disorder

32.2.1 Disease of cerebellum 32.2.2 Motor neuron disease 32.2.3 Ataxias 32.2.4 Amyotrophic lateral sclerosis 32.2.5 Spinal muscular atrophies 32.2.6 Hemiplegia 32.2.7 Paraplegia 32.2.8 Quadriplegia 32.2.9 Bulbar palsy

References: 2,3,4,5,6

3A	3B	3C	3D	3E	3F	3G
CO2,CO4,CO6,CO8	Describe the disease of cerebellum	3	Lecture	CC	Knows-how	CBL

CO2,CO4,CO6 ,CO8	Distinguish between the Hemiplegia, Paraplegia,Quadriplegia and Bulbar palsy	8	Experiential-Learning 32. 2	CAN	Shows-how	CBL,DIS
CO2,CO4,CO6 ,CO8	Describe the diagnostic methods of Motor neuron disease Ataxias, Amyotrophic lateral sclerosis, Spinal muscular atrophies	8	Practical Training 32.2	PSY-SET	Shows-how	PSM,PrB L

M 32 Unit 3 Spinal card disorders

32.3.1 Disease of spinal cord 32.3.2 Myelopathy 32.3.3 Nerve Root and plexuses 32.3.4 Disease of vertebral column discuss 32.3.5 Klippel feil syndrome 32.3.6 Arnold-chiari malformation 32.3.7 Peripheral nervous syndrome 32.3.8 Guillain-barre's syndrome 32.3.9 Diabetic neuropathy 32.3.10 Neuralgic amyotrophy 32.3.11 Disease of muscles 32.3.12 Muscular dystrophy 32.3.13 Polymyositis

References: 2,3,4,5,6

3A	3B	3C	3D	3E	3F	3G
CO2,CO4,CO6 ,CO8	Discuss the disease of spinal cord and describe Myelopathy	3	Lecture	CC	Knows-how	L&PPT ,L
CO2,CO4,CO6 ,CO8	Analyses Peripheral Nervous Syndrome,Guillain-Barre's syndrome, Diabetic neuropathy, Neuralgic amyotrophy,Muscular dystrophy and Polymyositis	10	Experiential-Learning 32. 3	CAN	Knows-how	CBL,CD
CO2,CO4,CO6 ,CO8	Demonstrate the Nerve Root and Plexuses Disease of Vertebral Column, Klippel Feil syndrome Arnold-Chiari malformation	4	Practical Training 32.3	PSY-ADT	Knows-how	CD

Practical Training Activity

Practical Training 32.1 : Clinical diagnosis on neuromuscular skeletal disorder

Total learning hours (8 hours)
The faculty instruct the students to prepare the patients for CBL{each nerve 2 hours 9-12)
To Assess for cranial nerve deficits (CN IX-XII)

To Check for cervical spine instability
To Evaluate for signs of spinal cord injury (SCI)
To Perform thorough neurological exam
To Order imaging studies as needed
Are assessed by the faculty, or if students can assess on the observation of faculty

Practical Training 32.2 : Clinical diagnosis on motor neuron disease

Total learning hours (8 hours)
The faculty instruct the students to prepare the patients for CBL on Rupture Clinical Evaluation:
Patient history (mechanism of injury, symptoms)
Physical examination (inspect, palpate, move)
Assess elbow flexion, supination strength
Perform Hook test, Cubitus test

Practical Training 32.3 : Spinal card disorders

Total learning hours (4 hours)
The faculty instruct the students to prepare on certain topics through the case based diagnosis
Introduction to nerve root anatomy[1 hour]
Patient presentation: radiculopathy case study(2 hour)
Group discussion: diagnosis and management(1 hour)

Experiential learning Activity

Experiential-Learning 32.1 : Clinical diagnosis of spinal injuries

Total activity hours (8 hours)
Case Based Learning
To assess the cranial nerves (3 hours)
To Assess for cranial nerve deficits (1 hour)
To Check for cervical spine instability (1 hour)
To Evaluate for signs of spinal cord injury (SCI) (1 hour)

To Perform thorough neurological exam (1 hour)
To Order imaging studies as needed (1 hour)
Are assessed by the faculty, or if students can assess on the observation of faculty

Experiential-Learning 32.2 : Clinical evaluation on motor neuron disorder

Total activity hours (8 hours)
Students able to deliver
The pathophysiology and clinical features of Hemiplegia, Paraplegia, Quadriplegia, and Bulbar palsy.(2 hours)
Diagnostic skills for these conditions.(3 hours)
Rehabilitate patients effectively through case-based learning (3 hours)

Experiential-Learning 32.3 : Disorders of spinal card

Total activity hours (10 hours)
Case based learning
Peripheral Nervous Syndrome and its types (2 hours)
Diagnosis and management Guillain-Barre's syndrome, Diabetic neuropathy, and Neuralgic amyotrophy (4 hours)
Case diagnosis
Muscular dystrophy and its types (2 hours)
Critical thinking and problem-solving skills (2 hours)

Modular Assessment

Assessment method	**Hour**
Instructions: Conduct a structured modular assessment. Assessment will be 50 marks. Keep structured marking pattern. Use different assessment methods in each module for the semester. Keep a record of the structured pattern used for assessment. Calculate the modular grade point as per table 6c. 1. Clinical video case presentation -25 marks * Instructions: 1. The clinical video case presentation should be 10-15 minutes long. 2. The presentation should include a clear and concise case presentation, a video recording of the patient, and a clinical analysis and discussion. 3. The presenter should provide accurate and complete case details. 4. The video recording should be of good quality, with clear audio and visual aids.	4

5. The presenter should demonstrate confidence and clarity, and engage with the audience. 6. The presentation should adhere to the time limit and patient confidentiality and consent. 7. The presenter should be prepared to answer questions from the other students. Mark distribution : - Case Presentation (10 marks) - Video Recording (5 marks) - Clinical Analysis and Discussion (5 marks) - Presentation Skills (3 marks) - Overall Impression (2 marks) 2. Each students making posters based on the compilation of treatment reports - 25 marks Instructions: 1. The poster should be compiled on the theme of treatment reports. 2. The poster should be visually appealing and easy to read. 3. The content should be accurate, complete, and well-organized. 4. The poster should include images, diagrams, and charts to support the written content. 5. The compilation and analysis of treatment reports should be clear and concise. 6. The poster should be able to draw meaningful conclusions from the data. 7. The poster should adhere to the given theme and guidelines. 8. The poster should be submitted on the due date and time. Mark distribution : - Content (10 marks) - Visual Presentation (8 marks) - Compilation and Analysis (4 marks) - Overall Impression (3 marks) Or Any practical in converted form can be taken for assessment (25 marks) and Any of the experiential as portfolio/reflevtions/presentations can be taken as an assessment (25 marks)	

Table 4 : Practical Training Activity

(*Refer table 3 of similar activity number)		
Practical No*	**Practical name**	**Hours**
1.1	Assessment of trauma & pathological diseases	2
1.2	Mukkutra seersei (Restoration) maruthuvam	4
1.3	Clinical assessment, diagnosis and treatment of ulcers	6
1.4	Clinical assessment, diagnosis and treatment of lump/swelling	4
1.5	Clinical assessment, diagnosis and treatment of sinus & fistula	4
2.1	Clinical assessment, diagnosis and treatment of anorectal diseases	6
2.2	Mukkutra iyal based treatments for anorectal diseases	4
2.3	Clinical assessment, diagnosis and treatment of diseases of female external genitalia and reproductive organ diseases	4
2.4	Clinical assessment, diagnosis and treatment of diseases of salivary gland & thyroid gland	6
3.1	Clinical assessment, diagnosis and treatment of eye diseases	6
3.2	Clinical assessment, diagnosis and treatment of ear diseases	6
3.3	Clinical assessment, diagnosis and treatment of nasal diseases	4
3.4	Clinical assessment, diagnosis and treatment of diseases of mouth	4
4.1	Clinical assessment, diagnosis and treatment of diseases of tongue & dental diseases	4
4.2	Clinical assessment, diagnosis and treatment of viral skin infections	4
4.3	Clinical assessment, diagnosis and treatment of dermatological diseases	8
4.4	Clinical assessment, diagnosis and treatment of Lump of the mammary gland	4

5.1	Clinical assessment, diagnosis and treatment of bronchial asthma	4
5.2	Clinical assessment, diagnosis and treatment of rheumatism	7
5.3	Clinical assessment, diagnosis and treatment of jaundice	5
5.4	Clinical assessment, diagnosis and treatment of urethral diseases	4
6.1	Clinical assessment, diagnosis and treatment of bone and joint diseases with the application of mukkutra iyal	8
6.2	Clinical assessment, diagnosis and treatment of musculoskeletal, neurological and neuromuscular disorder with the application of mukkutra iyal	6
6.3	Clinical assessment, diagnosis and treatment of Traumatology with the application of mukkutra iyal & X-ray	6
7.1	Clinical assessment, diagnosis and treatment of psychological diseases	6
7.2	Clinical assessment, diagnosis and treatment of diseases of vascular system and lymphatic system	6
7.3	Clinical assessment of geriatric diseases	4
7.4	Clinical assessment, diagnosis and treatment of pediatric diseases	4
8.1	Hospital Planning and Infrastructure for Siddha external therapy hospital	5
8.2	Accreditation and Licensing: QCI, NABH, and Government Norms	5
8.3	Marketing and Financing Strategies for Hospital Projects	5
8.4	Hospital Operations: Execution, Management, and Growth	5
9.1	Commonly used puramarunthugal	4
9.2	Medicinal preparation used for Kattu	2
9.3	Therapeutic application of Kattu	2
9.4	Medicinal preparation and therapeutic application of Patru	4
9.5	Medicinal preparation and therapeutic application of poochu	4

9.6	Medicinal preparation and therapeutic application of Kalimbu	4
10.1	Medicinal preparation and therapeutic application of Seelai	4
10.2	Medicinal preparation and therapeutic application of Kaaram	2
10.3	Medicinal preparation and therapeutic application of Varthi	2
10.4	Medicinal preparation and therapeutic application of Pasai	4
10.5	Medicinal preparation and therapeutic application of Kali	4
10.6	Medicinal preparation and therapeutic application of podi and Neer	4
11.1	Medicinal preparation and Therapeutic application of Nasiyam	6
11.2	Medicinal preparation and Therapeutic application of Nasigabaranam	6
11.3	Medicinal preparation and Therapeutic application of Oodhal	2
11.4	Demonstrate the Medicinal preparation and Therapeutic application of Mai,Kalikkam	6
12.1	Therapeutic application of kuruthivaangal,urinchal	2
12.2	Identification and Therapeutic application of Attai vidal	4
12.3	Breeding, nutrition and technique for leech separation	2
12.4	Therapeutic application of Murichal	5
12.5	Demonstrate the Therapeutic application of Kombukattal	7
13.1	Medicinal preparation and therapeutic application of Podithimirthal	6
13.2	Medicinal preparation and therapeutic application of Vedhu	4
13.3	Medicinal preparation and Therapeutic application of Pottanam	4
13.4	Medicinal preparation and Therapeutic application of Suttigai	6

14.1	Medicinal preparation and Therapeutic application of Otradam	6
14.2	Medicinal preparation and Therapeutic application of Pugai	4
14.3	Aruvai, keeral parigaaram (Sathiraayudha karuvigal) Materials and Equipments	4
14.4	Medicinal preparation and Therapeutic application of Peechu	6
15.1	Medicinal preparation and Therapeutic application of Thaarai, Puravalaiyam	6
15.2	Medicinal preparation and Therapeutic application of Thappalam	4
15.3	Medicinal preparation and Therapeutic application of Dhuvalai	4
15.4	Medicinal preparation and Therapeutic application of Ennai Muzhukku, ennai thaekkam	6
16.1	Siddha external therapy equipment development	4
16.2	Siddha external therapy product approval and compliance	6
16.3	Export Strategy for Siddha External Medicine	4
16.4	Siddha external therapy based Wellness Centers	6
17.1	Center of gravity (COG), Base of support (BOS).	1
17.2	Assessment of body alignments	1
17.3	Range of motion assessment.	4
17.4	Assessment of gait and its abnormalities.	4
17.5	Assessment of Limb Length, and Girth	4
17.6	Demonstration of Traction Kits, Methods, and Techniques	6
18.1	Electromyography	3
18.2	Ligamental injury grading system.	2

18.3	Intervertbral disc and nerve injuries assessment.	3
18.4	Assessment of pain	2
18.5	Demonstration of Electrotherapy Equipment, Electrode Selection, Placement, Intensity, and Timing	2
18.6	Demonstration of Cold Therapy Techniques	3
18.7	Electrotherapy and Thermal Therapy Equipment demonstration	5
19.1	Head & neck palpation	4
19.2	Shoulder palpation	4
19.3	Elbow palpation	2
19.4	Lumbo sacral palpation	4
19.5	Knee palpation	4
19.6	Ankle palpation	2
20.1	Inspection of structural deformities.	2
20.2	Skin consistency tests.	2
20.3	Vibration test	2
20.4	Muscle function test	2
20.5	Special tests for joint stability	2
20.6	Dasa nadi paathaiyin varmangal	3
20.7	Advantages and disadvantages of tensegrity structure.	3
20.8	Ethical principles	2
20.9	Dos and don'ts of thokkanam	2

21.1	Thattal	3
21.2	Method of Irukkal	2
21.3	Piditthal	2
21.4	Method of Murukkal	3
21.5	Kaikattal	2
21.6	Demonstration of Azutthal	2
21.7	Izhutthal	2
21.8	Mallatthuthal	2
21.9	Asaitthal	2
22.1	Measurement of physiological changes	4
22.2	Neurotransmitters estimation	4
22.3	Cortisol measurement	2
22.4	Various Orthoses for Spine and Extremity Disorders	2
22.5	Assistive Devices	2
22.6	Neurological Assessment and Use of Assistive Instruments	2
22.7	Treatment Techniques for Common Sports Injuries	2
22.8	First Aid, Management, and Rehabilitation of Sports Injuries	2
23.1	Thokkanam on Head & neck postural disorders	4
23.2	Thokkanam for Elbow and lumbosacral postural disorders	4
23.3	Thokkanam demonstration of Knee and ankle postural disorders	4

23.4	Thokkanam for Shoulder postural disorders and pakkavatham	4
23.5	Clinical Examination of Arterial, Venous, and Lymphatic Diseases	2
23.6	Clinical Examination in Geriatric Rehabilitation	2
24.1	Thokkanam demonstration on cumulative trauma disorders of knee & ankle	4
24.2	Thokkanam demonstration of Lumbosacral and cervical disorders.	4
24.3	Thokkanam for elbow ,wrist and shoulder cumulative trauma disorder	4
24.4	Demonstration - Thokkanam	4
24.5	Rehabilitative Methods for Joint and Bone Conditions	2
24.6	Rehabilative methods of rheumatological conditions	2
25.1	Identification and Management Principles of Acquired Deformities	6
25.2	Conducting case based learning	8
25.3	Assessment for the upper limb deformities	6
26.1	Lab report interpretation of varies infective diseases	6
26.2	Evaluate the clinical evaluation diagnosis metobolic bone diseases	7
26.3	Clinical examination for miscellaneous bone diseases	7
27.1	Clinical evaluation of arthritis	6
27.2	Clinical diagnosis with imaging techniques	7
27.3	Clincal examination of cervical spine	7
28.1	Clinical examination abnormality of lower limb	6
28.2	Clinical evaluation on spinal disorders through lab report investigations	7

28.3	Clinical examination of knee deformities	7
29.1	Complication of fractures through radiological findings	7
29.2	Clinical diagnosis of the shoulder joint dislocation	4
29.3	Clinical diagnosis and evaluation of the elbow fractures	9
30.1	Clinical evaluation of femur	8
30.2	Clinical evaluation of tibia and patella	8
30.3	Clinical evaluation of ankle and tibia	4
31.1	Clinical evaluation on spine injuries	8
31.2	Clinical evaluation on rupture of supraspinatus,tendoachillies	6
31.3	Clinical diagosis on arterial injuries	6
32.1	Clinical diagnosis on neuromuscular skeletal disorder	8
32.2	Clinical diagnosis on motor neuron disease	8
32.3	Spinal card disorders	4

Table 5 : Experiential learning Activity

(*Refer table 3 of similar activity number)		
Experiential learning No*	**Experiential name**	**Hours**
1.1	Diagnostic image modalities and envagai thervugal	2
1.2	The efficacy of mukkutra seersei maruthuvam	4
1.3	Mukkutra iyal based treatments for ulcers	8
1.4	Mukkutra iyal based treatments for lump/swelling	6
1.5	Mukkutra iyal based treatments for silaipun	6
2.1	Mukkutra iyal based treatments for anorectal diseases	7
2.2	Mukkutra iyal based treatments for Testicular diseases & diseases of male genitalia	6
2.3	Mukkutra iyal based treatments for diseases of female genitalia & female reproductive organs	6
2.4	Mukkutra iyal based treatments for surappu kola noigal	7
3.1	Mukkutra iyal based treatments for kan noigal	8
3.2	Mukkutra iyal based treatments for sevi noigal	8
3.3	Mukkutra iyal based treatments for the mookku noigal	5
3.4	Mukkutra iyal based treatments for vaai noigal	5
4.1	Mukkutra iyal based treatments for tongue and dental diseases	5
4.2	Ammai noigal - Mukkutra iyal based treatment	6
4.3	Mukkutra iyal based treatments for thol noigal	9
4.4	Mukkutra iyal based treatments for nagir katti	6

5.1	Mukkutra iyal based treatments for Iraippu noi through patient.	5
5.2	Mukkutra iyal based treatments for Soolai noi	9
5.3	Mukkutra iyal based treatments for Manjal noi	6
5.4	Mukkutra iyal based treatments for Siruneeraka noikal	6
6.1	Documentation of the efficacy of mukkutra iyal based treatments of bone and joint diseases through patients.	9
6.2	Documentation of the efficacy of mukkutra iyal based treatments of musculoskeletal, neurological disorder through patients.	8
6.3	Documentation of the efficacy of mukkutra iyal based treatments for traumatic conditions	9
7.1	Mukkutra iyal based treatments of psychological diseases	8
7.2	Mukkutra iyal based treatments for management of diseases of vascular system and lymphatic system	8
7.3	Mukkutra iyal based treatments for geriatric diseases	5
7.4	Mukkutra iyal based treatments for pediatric diseases	5
8.1	Hospital management analyzes	8
8.2	Accreditation and Licensing: QCI, NABH, and Government Norms	6
8.3	Marketing and Financing Strategies for Hospital Projects	6
8.4	Hospital Operations: Execution, Management, and Growth	6
9.1	Topical drug delivery procedure	5
9.2	Therapeutic application of kattu	5
9.3	Therapeutic application of patru	6
9.4	Therapeutic application of poochu	5

9.5	Therapeutic application of kalimbu	5
10.1	Therapeutic application of Seelai	5
10.2	Therapeutic application of varthi and kaaram	5
10.3	Therapeutic application of Pasai	6
10.4	Therapeutic application of Kali	5
10.5	Therapeutic application of Podi and Neer	5
11.1	Therapeutic application of Nasiyam	8
11.2	Therapeutic application of Nasigabaranam	8
11.3	Therapeutic application of Oodhal	2
11.4	Therapeutic application of Mai,Kalikkam	8
12.1	Therapeutic application of kuruthivaangal, urinchal	3
12.2	Procedure of attai vidal	5
12.3	Storage of leech in hospital setup	3
12.4	Therapeutic application of Murichal	6
12.5	Therapeutic application of Kombukattal	9
13.1	Therapeutic application of Podithimirthal	8
13.2	Therapeutic application of vedhu	5
13.3	Therapeutic application of pottanam	5
13.4	Therapeutic application of Suttigai	8
14.1	Therapeutic application of Otradam	8

14.2	Therapeutic application of pugai	5
14.3	Therapeutic application of Aruvai, keeral, salaagai	5
14.4	Therapeutic application of Peechu	8
15.1	Therapeutic application of Thaarai,Puravalaiyam	8
15.2	Therapeutic application of Thappalam	5
15.3	Therapeutic application of Dhuvalai	5
15.4	Therapeutic application of Ennai Muzhukku,ennai thaekkam	8
16.1	Product Design, formulation, launch and Distribution	8
16.2	Tax Incentives and Government Contracts	5
16.3	Export Incentives and Marketing	5
16.4	Mobile Apps for Siddha Health Tracking	8
17.1	Applied biomechanics	3
17.2	Assessment of ergonomics	3
17.3	Examination of Range of motion	3
17.4	Gait analysis	4
17.5	Case-Based Assessment and Exercise Program Development for Muscle and Joint Rehabilitation	6
17.6	Case-Based Traction Application and Patient Treatment Planning	7
18.1	Muscle and nerve assessments	3
18.2	Proficiency demonstration - ligamental injury diagnosis.	3

18.3	Imaging techniques and nerve compression assessments	4
18.4	Evaluation of pain	3
18.5	Electrotherapy Application and Patient Comfort Evaluation	4
18.6	Application of Cold Therapy Techniques	5
18.7	Equipment Application and Treatment Planning	4
19.1	Proficiency in palpation	5
19.2	Shoulder palpation demonstration	4
19.3	Proficiency demonstration - Elbow palpation	4
19.4	Lumbo sacral palpation demonstration	5
19.5	Knee palpation demonstration	4
19.6	Ankle palpation demonstration	4
20.1	Inspection assessment.	4
20.2	Palpation techniques	3
20.3	Vibration tests demonstration	2
20.4	Muscle function test demonstration	2
20.5	Special tests demonstration	2
20.6	Dasanadikal role on movement	4
20.7	Structure of dasanadikal	5
20.8	Rules and regulations for thokkanam	2
20.9	Execution of dos and don'ts	2

21.1	Thattal technique	3
21.2	Irukkal Technique	3
21.3	Piditthal technique	3
21.4	Murukkal technique	4
21.5	Kaikattal technique	3
21.6	Demonstration of Azutthal	2
21.7	Demonstration of Izhutthal	2
21.8	Demonstration Mallatthuthal	3
21.9	Demonstration of Asaitthal	3
22.1	Mechanical effects of thokkanam	5
22.2	Neurotransmitter level	5
22.3	Thokkanam effects on ulanoikal	3
22.4	Orthoses for Spine and Extremity Disorders	3
22.5	Adjustment of Assistive Devices	3
22.6	Neurological Assessment and Interpretation of Findings	3
22.7	Treatment Planning and Execution for Sports Injuries	2
22.8	Case-Based First Aid, Management, and Rehabilitation Planning for Sports Injuries	2
23.1	Treatment plan for head & neck postural disorders	5
23.2	Thokkanam for elbow and lumbosacral postural disorders	5

23.3	Treatment plan for knee and ankle postural disorders	5
23.4	Thokkanam and treatment plan for pakkavatham	5
23.5	Examination and Diagnosis of Arterial, Venous, and Lymphatic Diseases	3
23.6	Assessment and planning for geriatric rehabilitation	3
24.1	Proficiency demonstration- Thokkanam and treatment plan.	5
24.2	Demonstration of thokkanam & treatment plan.	5
24.3	Proiciency demonstration - Thokkanam and treatment plan.	5
24.4	Proficiency demonstration - Thokkanam & treatment plan.	5
24.5	Rehabilitative Planning and Execution for Joint and Bone Conditions	3
24.6	Rehabilitative Planning and Execution for Rheumatological rehabilitation	3
25.1	Abnormal Gait Patterns	10
25.2	Presentation and Practical Model for congenital deformities	8
25.3	Clinical examination of congenital deformities	8
26.1	Clinical examination for infective dieases	8
26.2	Evaluation of clinical and lab report diagnosis for endocrine disorders	8
26.3	Miscellaneous bone diseases assessment	10
27.1	Clinical evaluation of varies type of arthriris	8
27.2	Clinical evaliuation on avascular necrosis	10
27.3	Clinical diagnosis of cervical diseases	8
28.1	Clinical examination on wrist deformities	8

28.2	Clinical evaluation of regional condition of the spine	10
28.3	Clinical evaluation regional conditon of lower limb	8
29.1	Perform the fractures and dislocation	9
29.2	Fracture of the arm	8
29.3	Clinical diagnosis of wrist fracture	9
30.1	Clinical diagnosis of femur with its complications	10
30.2	Clinical diagnosis of knee and patella	8
30.3	Clinical diagnosis of foot fractures	8
31.1	Projects on management on wounds and injury	10
31.2	Clinical diagnosis of nerve injuries	8
31.3	Projects on rehabilitation	8
32.1	Clinical diagnosis of spinal injuries	8
32.2	Clinical evaluation on motor neuron disorder	8
32.3	Disorders of spinal card	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
SIDPG-PUM	4	100 x 4 Papers = 400	400	800

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

Credit frame work

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

Formative Assessment : Module wise Assessment:will be done at the end of each module. Evaluation includes learners active participation to get Credits and Marks. Each Module may contain one or more credits.
Summative Assessment: Summative Assessment (University examination) will be carried out at the end of Semester VI.

6 C : Calculation Method for Modular Grade Points (MGP)

Module Number & Name (a)	Credits (b)	Actual No. of Notional Learning Hours (c)	Attended Number of notional Learning hours (d)	Maximum Marks of assessment of modules (e)	Obtained Marks per module (f)	MGP =d*f/c*e*100
Semester No : 3						
Paper No : 1 (Principles and Practices of Pura Maruthuvam)						
M1 Fundamental principles of Pura Maruthuvam & Therapeutic application of external medicine for Pun (Ulcer), Kiranthi (Chronic ulcers), Katti (Abscess), Veekkam (Swelling) & silaipun (Sinus & Fistula)	2	60		50		
M2 Therapeutic application of external medicine for Moolam-Pouthiram-Adithallal (Ano rectal diseases), Vithai noikal and Aankuri noikal (Testicular diseases & Diseases of male genitalia), Penkuri noikal & Magalir noikal (Diseases of female external genitalia and reproductive organ diseases) and Umizh neer kola noikal & Veethana kola noikal (Diseases of salivary gland & thyroid gland)	2	60		50		

Paper No : 2 (Preparation and Applications of Pura Marunthukal)						
M9 Preparation of Pura Marunthukal	2	60		50		
M10 Siddha topical application I	2	60		50		
Paper No : 3 (Thokkanam, Biomechanics and Physical Medicine)						
M17 Essentials of stability, mobility, Therapeutic exercise and Traction	2	60		50		
M18 Thasai Enbu Mandala Kayangal (Common Musculo skeletal system injuries), Electrotherapy, Cryotherapy, Heat therapy	2	60		50		
Paper No : 4 (Essentials of Orthopaedics and Traumatology)						
M25 General orthopaedics and congenital deformities	2	60		50		
M26 Common metabolic and endocrine disease of bone	2	60		50		
	16	480		400		
Semester No : 4						
Paper No : 1 (Principles and Practices of Pura Maruthuvam)						
M3 Therapeutic application of external medicine for Kann noikal (eye diseases), Sevi noikal (Ear diseases), Mookku noikal (Nasal diseases) and Vaai noikal (Diseases of mouth)	2	60		50		
M4 Therapeutic application of external medicine for Naakku & Pal noikal (Diseases of tongue & Dental disorders), Ammai noikal (Viral skin infections), Thol noikal (Dermatological disorders) and Nagirkatti (Lump of the mammary gland)	2	60		50		
Paper No : 2 (Preparation and Applications of Pura Marunthukal)						
M11 Nasal, Ophthalmic and Auricular application	2	60		50		
M12 Bloodletting and bone setting techniques	2	60		50		
Paper No : 3 (Thokkanam, Biomechanics and Physical Medicine)						
M19 Surface anatomy related to Thokkanam – Upper body & Lower body	2	60		50		
M20 Elements of clinical reasoning, principles of movement & Procedures of Thokkanam	2	60		50		

Paper No : 4 (Essentials of Orthopaedics and Traumatology)						
M27 Diseases of joints and cervical spine	2	60		50		
M28 Diseases of upper limb, lower limb and spine	2	60		50		
	16	480		400		
Semester No : 5						
Paper No : 1 (Principles and Practices of Pura Maruthuvam)						
M5 Therapeutic application of external medicine for Iraippu noi (Bronchial asthma), Soolai noi (Rheumatism), Manjal noi (Jaundice) and Siruneerpathai noikal (Urethral diseases)	2	60		50		
M6 Therapeutic application of external medicine for vaatha noikal, keelvayu , Thasai mattrum narambu mandala noikal (Musculoskeletal, neurological and neuromuscular disorder) and Enbu murivu noikal (Traumatology)	2	60		50		
Paper No : 2 (Preparation and Applications of Pura Marunthukal)						
M13 Physical therapy and Heat therapy I	2	60		50		
M14 Heat therapy II and Surgical medicines	2	60		50		
Paper No : 3 (Thokkanam, Biomechanics and Physical Medicine)						
M21 Thokkanam types and it’s applications	2	60		50		
M22 Udal seyaliyal matrangal (Physiological response) of thokkanam and sports rehabilitation	2	60		50		
Paper No : 4 (Essentials of Orthopaedics and Traumatology)						
M29 Injuries of bone, joint and upper extremities	2	60		50		
M30 Injuries of lower extremities	2	60		50		
	16	480		400		
Semester No : 6						
Paper No : 1 (Principles and Practices of Pura Maruthuvam)						
M7 Therapeutic application of external medicine for Matha noikal (Psychological disorders), Rathanaala noikal, Ninaneer kola noikal ((Diseases of vascular system and lymphatic system), Muthiyor noikal	2	60		50		

(Geriatric diseases) and Kuzhanthaikal noikal (Pediatric diseases)						
M8 Establishing and Managing Siddha external therapy hospital	2	60		50		
Paper No : 2 (Preparation and Applications of Pura Marunthukal)						
M15 Topical application II	2	60		50		
M16 Innovation and Opportunities in Siddha external therapy Entrepreneurship	2	60		50		
Paper No : 3 (Thokkanam, Biomechanics and Physical Medicine)						
M23 Postural disturbance, lymphatic, peripheral vascular disease and Rehabilitation of neuromuscular disease	2	60		50		
M24 Diseases treated with thokkanam -Cumulative trauma disorder (CTD) & Others	2	60		50		
Paper No : 4 (Essentials of Orthopaedics and Traumatology)						
M31 Injuries of spine soft tissue and sports injury	2	60		50		
M32 Neurological and neuromuscular disorder	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 Principles and Practices of Pura Maruthuvam		
A **S.No**	**B** **Module number and Name**	**C** **MGP**
1	M1.Fundamental principles of Pura Maruthuvam & Therapeutic application of external medicine for Pun (Ulcer), Kiranthi (Chronic ulcers), Katti (Abscess), Veekkam (Swelling) & silaipun (Sinus & Fistula)	C1
2	M2.Therapeutic application of external medicine for Moolam-Pouthiram-Adithallal (Ano rectal diseases), Vithai noikal and Aankuri noikal (Testicular diseases & Diseases of male genitalia), Penkuri noikal & Magalir noikal (Diseases of female external genitalia and reproductive organ diseases) and Umizh neer kola noikal & Veethana kola noikal (Diseases of salivary gland & thyroid gland)	C2
Paper No : 2 Preparation and Applications of Pura Marunthukal		
A **S.No**	**B** **Module number and Name**	**C** **MGP**
3	M9.Preparation of Pura Marunthukal	C3
4	M10.Siddha topical application I	C4
Paper No : 3 Thokkanam, Biomechanics and Physical Medicine		
A **S.No**	**B** **Module number and Name**	**C** **MGP**
5	M17.Essentials of stability, mobility, Therapeutic exercise and Traction	C5
6	M18.Thasai Enbu Mandala Kayangal (Common Musculo skeletal system injuries), Electrotherapy, Cryotherapy, Heat therapy	C6
Paper No : 4 Essentials of Orthopaedics and Traumatology		
A **S.No**	**B** **Module number and Name**	**C** **MGP**
7	M25.General orthopaedics and congenital deformities	C7
8	M26.Common metabolic and endocrine disease of bone	C8
	Semester Grade point Average (SGPA)	(C1+C2+C3+C4+C5+ C6+C7+C8) / Number

		of modules(8)
Semester No : 4		
Paper No : 1 Principles and Practices of Pura Maruthuvam		
A S.No	**B Module number and Name**	**C MGP**
1	M3.Therapeutic application of external medicine for Kann noikal (eye diseases), Sevi noikal (Ear diseases), Mookku noikal (Nasal diseases) and Vaai noikal (Diseases of mouth)	C1
2	M4.Therapeutic application of external medicine for Naakku & Pal noikal (Diseases of tongue & Dental disorders), Ammai noikal (Viral skin infections), Thol noikal (Dermatological disorders) and Nagirkatti (Lump of the mammary gland)	C2
Paper No : 2 Preparation and Applications of Pura Marunthukal		
A S.No	**B Module number and Name**	**C MGP**
3	M11.Nasal, Ophthalmic and Auricular application	C3
4	M12.Bloodletting and bone setting techniques	C4
Paper No : 3 Thokkanam, Biomechanics and Physical Medicine		
A S.No	**B Module number and Name**	**C MGP**
5	M19.Surface anatomy related to Thokkanam – Upper body & Lower body	C5
6	M20.Elements of clinical reasoning, principles of movement & Procedures of Thokkanam	C6
Paper No : 4 Essentials of Orthopaedics and Traumatology		
A S.No	**B Module number and Name**	**C MGP**
7	M27.Diseases of joints and cervical spine	C7
8	M28.Diseases of upper limb, lower limb and spine	C8
	Semester Grade point Average (SGPA)	(C1+C2+C3+C4+C5+C6+C7+C8) / Number of modules(8)
Semester No : 5		
Paper No : 1 Principles and Practices of Pura Maruthuvam		
A S.No	**B Module number and Name**	**C MGP**

1	M5.Therapeutic application of external medicine for Iraippu noi (Bronchial asthma), Soolai noi (Rheumatism), Manjal noi (Jaundice) and Siruneerpathai noikal (Urethral diseases)	C1
2	M6.Therapeutic application of external medicine for vaatha noikal, keelvayu , Thasai mattrum narambu mandala noikal (Musculoskeletal, neurological and neuromuscular disorder) and Enbu murivu noikal (Traumatology)	C2
Paper No : 2 Preparation and Applications of Pura Marunthukal		
A S.No	**B Module number and Name**	**C MGP**
3	M13.Physical therapy and Heat therapy I	C3
4	M14.Heat therapy II and Surgical medicines	C4
Paper No : 3 Thokkanam, Biomechanics and Physical Medicine		
A S.No	**B Module number and Name**	**C MGP**
5	M21.Thokkanam types and it’s applications	C5
6	M22.Udal seyaliyal matrangal (Physiological response) of thokkanam and sports rehabilitation	C6
Paper No : 4 Essentials of Orthopaedics and Traumatology		
A S.No	**B Module number and Name**	**C MGP**
7	M29.Injuries of bone, joint and upper extremities	C7
8	M30.Injuries of lower extremities	C8
	Semester Grade point Average (SGPA)	(C1+C2+C3+C4+C5+ C6+C7+C8) / Number of modules(8)
Semester No : 6		
Paper No : 1 Principles and Practices of Pura Maruthuvam		
A S.No	**B Module number and Name**	**C MGP**
1	M7.Therapeutic application of external medicine for Matha noikal (Psychological disorders), Rathanaala noikal, Ninaneer kola noikal ((Diseases of vascular system and lymphatic system), Muthiyor noikal (Geriatric diseases) and Kuzhanthaikal noikal (Pediatric diseases)	C1
2	M8.Establishing and Managing Siddha external therapy hospital	C2
Paper No : 2 Preparation and Applications of Pura Marunthukal		
A	**B**	**C**

S.No	Module number and Name	MGP
3	M15.Topical application II	C3
4	M16.Innovation and Opportunities in Siddha external therapy Entrepreneurship	C4
Paper No : 3 Thokkanam, Biomechanics and Physical Medicine		
A S.No	**B Module number and Name**	**C MGP**
5	M23.Postural disturbance, lymphatic, peripheral vascular disease and Rehabilitation of neuromuscular disease	C5
6	M24.Diseases treated with thokkanam -Cumulative trauma disorder (CTD) & Others	C6
Paper No : 4 Essentials of Orthopaedics and Traumatology		
A S.No	**B Module number and Name**	**C MGP**
7	M31.Injuries of spine soft tissue and sports injury	C7
8	M32.Neurological and neuromuscular disorder	C8
	Semester Grade point Average (SGPA)	(C1+C2+C3+C4+C5+ C6+C7+C8) / Number of modules(8)

S. No	Evaluation Methods
1.	Method explained in the Assessment of the module or similar to the objectives of the module.

6 E : Question Paper Pattern

MD/MS SIDDHA Examination
SIDPG-PUM
Sem VI

Time: 3 Hours ,**Maximum Marks:** 100
INSTRUCTIONS: All questions compulsory

		Number of Questions	Marks per Question	Total Marks
Q 1	Application-based Questions (ABQ)	1	20	20
Q 2	Short answer questions (SAQ)	8	5	40
Q 3	Analytical based structured Long answer question (LAQ)	4	10	40
				100

6 F : Distribution for summative assessment (University examination)

S.No	List of Module/Unit	ABQ	SAQ	LAQ
Paper No : 1 (Principles and Practices of Pura Maruthuvam)				
(M-1)Fundamental principles of Pura Maruthuvam & Therapeutic application of external medicine for Pun (Ulcer), Kiranthi (Chronic ulcers), Katti (Abscess), Veekkam (Swelling) & silaipun (Sinus & Fistula) (Marks: Range 5-20)				
1	(U-1) Principles of Pura Maruthuvam	No	Yes	No
2	(U-2) Mukkutra seersei(Restoration) maruthuvam	No	Yes	No
3	(U-3) Pun (Ulcer), Kiranthi (Chronic ulcers)	Yes	Yes	No
4	(U-4) Katti (Abscess) & Veekkam (Swelling)	No	Yes	Yes
5	(U-5) Silaipun (Sinus and Fistula)	No	Yes	Yes
(M-2)Therapeutic application of external medicine for Moolam-Pouthiram-Adithallal (Ano rectal diseases), Vithai noikal and Aankuri noikal (Testicular diseases & Diseases of male genitalia), Penkuri noikal & Magalir noikal (Diseases of female external genitalia and reproductive organ diseases) and Umizh neer kola noikal & Veethana kola noikal (Diseases of salivary gland & thyroid gland) (Marks: Range 5-20)				
1	(U-1) Moolam-Pouthiram-Adithallal (Ano rectal diseases)	Yes	Yes	Yes
2	(U-2) Vithai noikal and Aankuri noikal (Testicular diseases & Diseases of male genitalia)	No	Yes	Yes
3	(U-3) Penkuri noikal & Magalir noikal (Diseases of female external genitalia and Reproductive organ diseases)	No	Yes	No
4	(U-4) Umizh neer kola noikal & Veethana kola noikal (Diseases of salivary gland & thyroid gland)	No	Yes	No
(M-3)Therapeutic application of external medicine for Kann noikal (eye diseases), Sevi noikal (Ear diseases), Mookku noikal (Nasal diseases) and Vaai noikal (Diseases of mouth) (Marks: Range 5-15)				
1	(U-1) Kann noikal (Eye diseases)	No	Yes	Yes
2	(U-2) Sevi noikal (Ear diseases)	No	Yes	Yes
3	(U-3) Mookku noikal (Nasal diseases)	No	Yes	No
4	(U-4) Vaai noikal (Diseases of mouth)	No	Yes	No
(M-4)Therapeutic application of external medicine for Naakku & Pal noikal (Diseases of tongue & Dental disorders), Ammai noikal (Viral skin infections), Thol noikal (Dermatological disorders) and Nagirkatti (Lump of the mammary gland) (Marks: Range 5-20)				
1	(U-1) Naakku noikal & Pal noikal (Diseases of mouth & dental disorders)	No	Yes	Yes
2	(U-2) Ammai noi (Viral skin infections)	No	Yes	No
3	(U-3) Thol noikal (Dermatological disorders)	Yes	Yes	Yes
4	(U-4) Nagir katti (Lump of the mammary gland)	No	Yes	Yes

(M-5)Therapeutic application of external medicine for Iraippu noi (Bronchial asthma), Soolai noi (Rheumatism), Manjal noi (Jaundice) and Siruneerpathai noikal (Urethral diseases) (Marks: Range 5-20)				
1	(U-1) Iraippu noi (Bronchial asthma)	No	Yes	No
2	(U-2) Soolai noi (Rheumatism)	Yes	Yes	Yes
3	(U-3) Manjal noi (Jaundice)	No	Yes	No
4	(U-4) Siruneerpathai noikal (Urethral diseases)	No	Yes	Yes
(M-6)Therapeutic application of external medicine for vaatha noikal, keelvayu , Thasai mattrum narambu mandala noikal (Musculoskeletal, neurological and neuromuscular disorder) and Enbu murivu noikal (Traumatology) (Marks: Range 5-20)				
1	(U-1) Vaatha noikal-Keel vayu (Bone and joint disorders)	Yes	Yes	Yes
2	(U-2) Thasai mattrum narambu mandala noigal (Musculoskeletal, neurological and neuromuscular disorder)	Yes	Yes	Yes
3	(U-3) Enbu murivu (Traumatology)	Yes	Yes	Yes
(M-7)Therapeutic application of external medicine for Matha noikal (Psychological disorders), Rathanaala noikal, Ninaneer kola noikal ((Diseases of vascular system and lymphatic system), Muthiyor noikal (Geriatric diseases) and Kuzhanthaikal noikal (Pediatric diseases) (Marks: Range 5-20)				
1	(U-1) Matha noikal (Psychological disorders)	Yes	Yes	Yes
2	(U-2) Naala vibhatham, Kanda maalai, Yaanai kaal noi, Raththa nala noikal , ninaneer naala and ninaneer kola noikal (Diseases of vascular system and lymphatic system)	No	Yes	Yes
3	(U-3) Muthiyor noikal (Geriatric diseases)	No	Yes	No
4	(U-4) Kuzhanthaikal noikal (Pediatric diseases)	No	Yes	Yes
(M-8)Establishing and Managing Siddha external therapy hospital (Marks: Range 5-10)				
1	(U-1) Hospital Planning and Infrastructure for Siddha external therapy hospital	No	Yes	No
2	(U-2) Accreditation and Licensing: QCI, NABH, and Government Norms	No	Yes	No
3	(U-3) Marketing and Financing Strategies for Hospital Projects	No	Yes	No
4	(U-4) Hospital Operations: Execution, Management, and Growth	No	Yes	No

S.No	List of Module/Unit	ABQ	SAQ	LAQ
Paper No : 2 (Preparation and Applications of Pura Marunthukal)				
(M-9)Preparation of Pura Marunthukal (Marks: Range 5-20)				
1	(U-1) Overview of Pura Marunthukal	No	Yes	Yes
2	(U-2) Kattu (Bandage)	Yes	Yes	Yes
3	(U-3) Patru (Poultice)	No	Yes	Yes
4	(U-4) Poochu (Liquid application)	No	Yes	Yes
5	(U-5) Kalimbu (Oinment)	No	Yes	Yes
(M-10)Siddha topical application I (Marks: Range 5-20)				
1	(U-1) Seelai (Medicated gauze)	No	Yes	Yes
2	(U-2) Kaaram & Varthi (Medicated wick & Chemical cautery)	Yes	Yes	Yes
3	(U-3) Pasai (Cream)	No	Yes	Yes
4	(U-4) kali (Paste)	No	Yes	Yes
5	(U-5) Podi and Neer (Powder & Medicated liquid)	No	Yes	Yes
(M-11)Nasal, Ophthalmic and Auricular application (Marks: Range 5-20)				
1	(U-1) Nasiyam (Nasal drop)	Yes	Yes	Yes
2	(U-2) Nasikabaranam (Insufflation)	No	Yes	Yes
3	(U-3) Oodhal (Blowing)	No	Yes	No
4	(U-4) Mai,Kalikkam (Collyrium & Eye drop)	No	Yes	Yes
(M-12)Bloodletting and bone setting techniques (Marks: Range 5-20)				
1	(U-1) Kuruthivaangal &Urinchal (Venesuction & Sucction)	No	Yes	No
2	(U-2) Attaividal (Leech application)	No	Yes	Yes
3	(U-3) Murichal (Bone restructuring)	Yes	Yes	Yes
4	(U-4) Kombukattal (Fracture splinting)	Yes	Yes	Yes
(M-13)Physical therapy and Heat therapy I (Marks: Range 5-20)				
1	(U-1) Podithimirthal (Powder manipulation)	No	Yes	Yes
2	(U-2) Vedhu (Steam therapy)	No	Yes	Yes
3	(U-3) Pottanam (medicated pouch)	No	Yes	Yes
4	(U-4) Suttigai (Cautery)	Yes	Yes	Yes
(M-14)Heat therapy II and Surgical medicines (Marks: Range 5-20)				

1	(U-1) Otradam (Fomentation)	No	Yes	Yes
2	(U-2) Pugai (Fumigation)	Yes	Yes	Yes
3	(U-3) Aruvai, keeral, salaagai (Excition, Incision & Probe)	No	Yes	No
4	(U-4) Peechu (Douche)	No	Yes	Yes
(M-15)Topical application II (Marks: Range 5-20)				
1	(U-1) Thaarai, Puravalaiyam	Yes	Yes	Yes
2	(U-2) Thappalam	No	Yes	Yes
3	(U-3) Dhuvalai (Embrocation)	No	Yes	Yes
4	(U-4) Ennai Muzhukku, Ennai thekkam	No	Yes	Yes
(M-16)Innovation and Opportunities in Siddha external therapy Entrepreneurship (Marks: Range 5-15)				
1	(U-1) Pharmaceutical Development, equipment development and New Product Opportunities	No	Yes	Yes
2	(U-2) Government Subsidies and Product Approval for Pharmaceuticals	No	Yes	Yes
3	(U-3) Export Opportunities and Global Market for Siddha external medicine	No	Yes	Yes
4	(U-4) Innovative Ventures in Siddha external therapy hospital	No	Yes	Yes

S.No	List of Module/Unit	ABQ	SAQ	LAQ
Paper No : 3 (Thokkanam, Biomechanics and Physical Medicine)				
(M-17)Essentials of stability, mobility, Therapeutic exercise and Traction (Marks: Range 5-20)				
1	(U-1) Basic concepts of Bio mechanics	No	Yes	Yes
2	(U-2) Principles of posture	No	Yes	Yes
3	(U-3) Basics of human movement	Yes	Yes	Yes
4	(U-4) Essentials of Locomotion	No	Yes	Yes
5	(U-5) Overview of Therapeutic exercise	No	Yes	Yes
6	(U-6) Overview of traction	No	Yes	Yes
(M-18)Thasai Enbu Mandala Kayangal (Common Musculo skeletal system injuries), Electrotherapy, Cryotherapy, Heat therapy (Marks: Range 5-15)				
1	(U-1) Muscle & tendon injuries	No	Yes	Yes
2	(U-2) Ligament & fascia injuries	No	Yes	Yes
3	(U-3) Narambu & Inter vertebral discs (IVD) pathippukal	No	Yes	Yes
4	(U-4) Concepts of Pain	No	Yes	Yes
5	(U-5) Electrical Stimulation	No	Yes	Yes
6	(U-6) Cryo Therapy, Hydrotherapy, Photo Dynamic Therapy, Micro Needling	No	Yes	Yes
7	(U-7) Heat Therapy	No	Yes	Yes
(M-19)Surface anatomy related to Thokkanam – Upper body & Lower body (Marks: Range 5-20)				
1	(U-1) Palpatory procedures of Head & Neck	No	Yes	Yes
2	(U-2) Palpatory procedures of Shoulder	No	Yes	Yes
3	(U-3) Palpatory procedures of Elbow & Wrist	No	Yes	Yes
4	(U-4) Palpatory procedures of lumbosacral area	No	Yes	Yes
5	(U-5) Palpatory procedures of knee	Yes	Yes	Yes
6	(U-6) Palpatory procedures of Ankle	No	Yes	Yes
(M-20)Elements of clinical reasoning, principles of movement & Procedures of Thokkanam (Marks: Range 5-15)				
1	(U-1) Inspection related to musculo skeletal system’s pathologies	No	Yes	Yes
2	(U-2) Palpation related to musculo skeletal system’s pathologies	No	Yes	Yes
3	(U-3) Percussion related to musculo skeletal system’s	No	Yes	Yes

	pathologies			
4	(U-4) Test for the range of motion to rule out the functional imbalances of the joints	No	Yes	Yes
5	(U-5) Other special tests to rule out disorders of joints and its components	No	Yes	Yes
6	(U-6) Dasanadikal - Functional principles of movement	No	Yes	Yes
7	(U-7) Line of muscle pull and tensegrity	No	Yes	Yes
8	(U-8) Ethics, principles and practice of thokkanam	No	Yes	Yes
9	(U-9) Contra indications of thokkanam	No	Yes	Yes
(M-21)Thokkanam types and it's applications (Marks: Range 5-20)				
1	(U-1) Mechanism of thattal	Yes	Yes	Yes
2	(U-2) Mechanism of irukkal	No	Yes	Yes
3	(U-3) Mechanism of piditthal	No	Yes	Yes
4	(U-4) Mechanism of murukkal	No	Yes	Yes
5	(U-5) Mechanism of kaikattal	No	Yes	Yes
6	(U-6) Mechanism of azhutthal	No	Yes	Yes
7	(U-7) Mechanism of izhutthal	No	Yes	Yes
8	(U-8) Mechanism of mallatthuthal	No	Yes	Yes
9	(U-9) Mechanism of asaitthal	No	Yes	Yes
(M-22)Udal seyaliyal matrangal (Physiological response) of thokkanam and sports rehabilitation (Marks: Range 5-20)				
1	(U-1) Mechanical responses of thokkanam	Yes	Yes	Yes
2	(U-2) Relaxation responses of thokkanam	Yes	Yes	Yes
3	(U-3) Stress response and thokkanam	Yes	Yes	Yes
4	(U-4) Orthosis for spine and extremities	No	Yes	Yes
5	(U-5) Mobility Aids	No	Yes	Yes
6	(U-6) Orthosis in neurological disorders	No	Yes	Yes
7	(U-7) Overview of sports medicine	No	Yes	Yes
8	(U-8) Overview of rehabilitation in sport injury	No	Yes	Yes
(M-23)Postural disturbance, lymphatic, peripheral vascular disease and Rehabilitation of neuromuscular disease (Marks: Range 5-20)				
1	(U-1) Postural disorders of head & neck and its management	Yes	Yes	Yes

2	(U-2) Postural disorders of elbow & lumbosacral and its management	Yes	Yes	Yes
3	(U-3) Postural disorders of knee & ankle and its management	Yes	Yes	Yes
4	(U-4) Postural disorders of shoulder & pakkavatham and its management	No	Yes	Yes
5	(U-5) Overview of lymphatic and peripheral vascular disease	No	Yes	Yes
6	(U-6) Rehabilitation of neuromuscular disease	No	Yes	Yes
(M-24)Diseases treated with thokkanam -Cumulative trauma disorder (CTD) & Others (Marks: Range 5-20)				
1	(U-1) Cumulative trauma disorders of ankle & knee and its management	Yes	Yes	Yes
2	(U-2) Cumulative trauma disorders of lumbosacral & cervical and its management	Yes	Yes	Yes
3	(U-3) Cumulative trauma disorders of elbow, wrist and shoulder and its management	Yes	Yes	Yes
4	(U-4) Systemic , metabolic disorders and other diseases treated with thookkanam	Yes	Yes	Yes
5	(U-5) Management of orthopedic condition	No	Yes	Yes
6	(U-6) Management of Rheumatological conditions	No	Yes	Yes

S.No	List of Module/Unit	ABQ	SAQ	LAQ
Paper No : 4 (Essentials of Orthopaedics and Traumatology)				
(M-25)General orthopaedics and congenital deformities (Marks: Range 5-20)				
1	(U-1) General orthopaedics	No	Yes	Yes
2	(U-2) Congenital deformities of lower limb	Yes	Yes	Yes
3	(U-3) Congential deformities of upper limb	Yes	Yes	No
(M-26)Common metabolic and endocrine disease of bone (Marks: Range 5-20)				
1	(U-1) Infectious diseases	No	Yes	Yes
2	(U-2) Metabolic diseases of bone	Yes	Yes	Yes
3	(U-3) Miscellanous disease of bone	No	Yes	Yes
(M-27)Diseases of joints and cervical spine (Marks: Range 5-20)				
1	(U-1) Diseases of joint	Yes	Yes	Yes
2	(U-2) Avascular necrosis of bone and epiphyseal osteochondritis	Yes	Yes	Yes
3	(U-3) Regional conditions of neck	Yes	Yes	Yes
(M-28)Diseases of upper limb, lower limb and spine (Marks: Range 5-20)				
1	(U-1) Regional conditions of upperlimb	No	Yes	Yes
2	(U-2) Regional conditions of spine	Yes	Yes	Yes
3	(U-3) Regional conditions of lower limb	Yes	Yes	Yes
(M-29)Injuries of bone, joint and upper extremities (Marks: Range 5-20)				
1	(U-1) Injuries to bones and joints	Yes	Yes	Yes
2	(U-2) Injuries of the shoulder and arm	Yes	Yes	No
3	(U-3) Injuries of the elbow forearm and wrist	Yes	Yes	No
(M-30)Injuries of lower extremities (Marks: Range 5-20)				
1	(U-1) Injuries of the hip and thigh	Yes	Yes	No
2	(U-2) Injuries of the knee	No	Yes	Yes
3	(U-3) Injuries of leg ankle and foot	No	Yes	Yes
(M-31)Injuries of spine soft tissue and sports injury (Marks: Range 5-20)				
1	(U-1) Injuries of the spine	Yes	Yes	Yes
2	(U-2) Soft tissue injuries	Yes	Yes	Yes
3	(U-3) Sports injuries	Yes	Yes	No

(M-32)Neurological and neuromuscular disorder (Marks: Range 5-20)				
1	(U-1) Neuromuscular skeletal disorders	No	Yes	Yes
2	(U-2) Motor neuron disorder	Yes	Yes	Yes
3	(U-3) Spinal card disorders	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	Major Practical: Preparation of any one of the following *pura maruthungal (Kattu, Pattru, Ottradam, Nasiyam, Seelai, Vedhu)* & its application Duration: 1.30 Hours 1. Case History & Assessment – 20 Marks Patient History Taking – 5 Marks (Chief complaints, duration, pain pattern, and history) Examination & Assessment – 5 Marks (Local/systemic findings, palpation, ROM) Siddha Diagnostic Parameters – 5 Marks (Naadi, Udal Kattugal, Mukkutra balance) Indication for Pura marunthu – 5 Marks (Justification for use in the presented case) 2. Drug Selection & Preparation – 30 Marks Identification of Ingredients – 5 Marks (Mooligai / Thathu classification and action) Standard Operating Procedure (SOP) – 10 Marks (Sequential steps: cleaning, grinding, heating (if needed), binding materials) Consistency & Application Readiness – 5 Marks (Texture, temperature, binding method) Dosage Form Appropriateness – 5 Marks (Suitability of selected "Pura Marunthu" type for the clinical condition) Storage & Preservation – 5 Marks (Shelf-life, containers, expiry) 3. Demonstration of Application – 30 Marks Pre-procedure Preparation – 5 (Patient position, consent, instruments arranged) Demonstration Technique – 15 (Site selection, correct placement, firmness, fixation, covering) Hygiene & Safety Protocol – 5 (Gloves, sterile procedure, disposal) Post-Application Instructions – 5 (Rest, dietary advice, follow-up) 4. Interpretation & Clinical Reasoning – 10 Marks Therapeutic Objectives – 3 Marks Expected benefits (pain relief, inflammation reduction, etc.) Integration with Internal Medication – 2 Marks (Supportive oral therapy or dietary guidelines) Follow-up Planning & Monitoring – 3 Marks (Timeline for evaluation or reapplication) Rationale Linking Siddha and Modern Views – 2 Marks 5. Communication, Ethics & Professionalism – 10 Marks Explanation to Patient & Consent Process – 3 Marks Clarity, Confidence, Attitude – 4 Marks	100

	Adherence to Ethical and Confidential Practices – 3 Marks Total: 100 Marks Section Marks Case History & Assessment - 20 Drug Selection & Preparation - 30 Demonstration of Application - 30 Interpretation & Clinical Reasoning - 10 Communication & Ethics - 10 Total - 100	
2	Short Case / Minor Practical: Total Marks: 25 1. Examination of the Pelvis 1. History Taking : 3 marks 1.1. Elicits relevant history (trauma, pain, gait issues) – 1 1.2. Asks for associated symptoms – 1 1.3. Identifies red flags or chronicity – 1 2. Inspection of Pelvic Area : 3 marks 2.1. Posture, gait, symmetry of iliac crest & ASIS – 1 2.2. Observes for deformity or swelling – 1 2.3. Skin condition/scars – 1 3. Palpation of Bony Landmarks : 4 marks 3.1. Palpates ASIS, PSIS, iliac crest, pubic symphysis – 2 3.2. Detects tenderness or instability – 2 4. Movement Examination : 4 marks 4.1. Assesses pelvic tilt, rotation, and flexibility – 2 4.2. Evaluates associated hip/SI joint ROM – 2 5. Special Tests : 4 marks 5.1. Performs 2+ relevant tests (e.g., FABER, SI stress, Trendelenburg) – 2 5.2. Interprets findings – 2 6. Provisional Diagnosis / Clinical Reasoning : 3 marks 6.1. Proposes likely condition based on signs – 2 6.2. Correlates with anatomy/Thirithodam if relevant – 1 7. Patient Communication and Positioning : 2 marks 7.1. Informs and reassures patient – 1 7.2. Maintains comfort and proper draping – 1 8. Summary and Documentation : 2 marks 8.1. Presents findings concisely – 1 8.2. Records abnormal signs clearly – 1 Short Case / Minor Practical: Total Marks: 25 2. Poochu Application for Sprain 1. History Taking & Symptom Analysis: 3 marks 1.1. Elicits accurate pain history, duration, cause – 1 1.2. Identifies swelling, restriction – 1 1.3. Rule out fractures/red flags – 1 2. Inspection of the Affected Area: 2 marks 2.1. Observes for swelling, discoloration – 1	50

	2.2. Notes deformity or skin changes – 1 3. Palpation : 3 marks 3.1. Assesses tenderness, warmth, edema – 1 3.2. Identifies joint line or ligament involvement – 2 4. Diagnosis & Indication for Poochu: 3 marks 4.1. States clear provisional diagnosis (e.g., ankle sprain) – 1 4.2. Explains rationale for using Poochu – 2 5. Selection & Explanation of Medicine : 3 marks 5.1. Chooses appropriate herbal oil/extract – 1 5.2. Explains its action (e.g., Vatha pacifying) – 2 6. Preparation of Area & Patient Positioning : 2 marks 6.1. Cleans affected area – 1- Positions patient comfortably – 1 7. Demonstration of Poochu Application: 5 marks 7.1. Applies evenly with correct direction and technique – 2 7.2. Maintains consistent rhythm/pressure – 2 7.3. Avoids contamination – 1 8. Post-Application Care & Instructions : 2 marks 8.1. Advises rest or immobilization – 1 8.2. Cleans excess oil and wraps if needed – 1 9. Patient Comfort and Communication : 2 marks 9.1. Communicates procedure clearly – 1 9.2. Ensures comfort and observes reaction – 1	
3	Spotters Total Marks - 50 (10 X 5 = 50) 30 Minutes Spotter No. 1 Physiotherapy instrument: Any instrument Question: Identify the equipment. Mention one indication in Pura Maruthuvam. Spotter No. 2 Instrument Displayed: Questions: a) Name the instrument. b) Mention its primary use. Spotter No. 3 Specimen: Raw ingredient Questions: a) Name the drug ingredient. b) State one condition for which it is indicated. Spotter No. 4 Chart: Types of Gait Patterns Task: a) Identify the abnormal gait shown. b) Mention one associated musculoskeletal issue. Spotter No. 5 X-ray Displayed: Question: Identify the site of injury Suggest one supportive therapy under Siddha system for rehabilitation.	50

	Spotter No. 6 Case Summary (2-line description): *"Provide 2-line hall mark signs of any disease."* Question: What is your provisional diagnosis? Mention one Pura Maruthuvam treatment for it Spotter No. 7 Sample Displayed: *Any pura maruthungal* Task: a) Identify the preparation. b) Name any one common ingredient. c) Mention how it is applied. Spotter No. 8 Lab report summary (2-line description): *"Provide 2-line hall mark lab findings of any disease."* Question: What is your provisional diagnosis? Mention one Pura Maruthuvam treatment for it Spotter No. 9 Specimen: Model showing scoliosis/lordosis Questions: a) Identify the type of spinal curvature b) Name the anatomical region affected c) Suggest one functional consequence or symptom Spotter No. 10 Chart/Diagram: 12 cranial nerves Questions: a) Identify cranial nerve VII b) Mention its motor function c) State one test to examine it	
4	Assessment Format: Teaching Ability 1. Topic Selection & Relevance : 5 marks 1.1. Topic chosen is relevant to Pura Maruthuvam 1.2. Clinical/anatomical linkage is clear 2. Knowledge of Subject : 4 marks 2.1. Demonstrates accurate, up-to-date content 2.2. Applies Thirithoda/Anatomy/Procedure integration 3. Clarity of Explanation : 4 marks 3.1. Explains terms and concepts clearly 3.2. Uses simple, logical sequencing 4. Teaching Method Used : 4 marks 4.1. Appropriate method selected (chalk & talk, demonstration, model-based, roleplay, etc.) 5. Use of Teaching Aids: 4 marks 5.1. Utilizes models, diagrams, charts, PPTs, real tools (e.g., Poochu/Patru setup, anatomy models) 6. Interaction & Communication Skills : 4 marks 6.1. Maintains eye contact, voice modulation, invites questions	25

5	Assessment of Presentation skills 1. Content Accuracy & Relevance: 4 marks 1.1. Topic is relevant to Pura Maruthuvam 1.2. Accurate Siddha & functional concepts 1.3. Up-to-date examples 2. Organization & Structure: 4 marks 2.1. Logical flow (introduction, body, conclusion) 2.2. Segmented well (pathology, diagnosis, management) 3. Clarity of Delivery : 4 marks 3.1. Clear speech, terminology used appropriately 3.2. Smooth explanation of complex procedures/concepts 4. Use of Teaching Aids : 4 marks 4.1. Diagrams, charts, PPTs, instruments/models (e.g., Kattu material, wax bath device, anatomy models) 5. Confidence & Communication Skills : 4 marks 5.1. Maintains eye contact, gestures confidently- Engages audience 6. Clinical/Procedural Integration : 5 marks 6.1. Connects with applied anatomy, diagnosis, or patient care 6.2. Uses real-world cases or demonstrations	25
6	VIVA Examination Structure (4 Examiners × 25 marks each)#	100
7	Logbook (Activity record)	25
8	Practical / Clinical Record No of Case sheets - 10	25
Total Marks		**400**

#No separate marks for dissertation viva.

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Abbreviations

Domain		T L Method		Level	
CK	Cognitive/Knowledge	L	Lecture	K	Know
CC	Cognitive/Comprehension	L&PPT	Lecture with PowerPoint presentation	KH	Knows how
CAP	Cognitive/Application	L&GD	Lecture & Group Discussion	SH	Shows how
CAN	Cognitive/Analysis	L_VC	Lecture with Video clips	D	Does
CS	Cognitive/Synthesis	REC	Recitation		
CE	Cognitive/Evaluation	SY	Symposium		
PSY-SET	Psychomotor/Set	TUT	Tutorial		
PSY-GUD	Psychomotor/Guided response	DIS	Discussions		
PSY-MEC	Psychomotor/Mechanism	BS	Brainstorming		
PSY-ADT	Psychomotor Adaptation	IBL	Inquiry-Based Learning		
PSY-ORG	Psychomotor/Origination	PBL	Problem-Based Learning		
AFT-REC	Affective/ Receiving	CBL	Case-Based Learning		
AFT-RES	Affective/Responding	PrBL	Project-Based Learning		
AFT-VAL	Affective/Valuing	TBL	Team-Based Learning		
AFT-SET	Affective/Organization	TPW	Team Project Work		
AFT-CHR	Affective/ characterization	FC	Flipped Classroom		
		BL	Blended Learning		
		EDU	Edutainment		
		ML	Mobile Learning		
		ECE	Early Clinical Exposure		
		SIM	Simulation		
		RP	Role Plays		
		SDL	Self-directed learning		
		PSM	Problem-Solving Method		
		KL	Kinaesthetic Learning		
		W	Workshops		
		GBL	Game-Based Learning		
		LS	Library Session		
		PL	Peer Learning		
		RLE	Real-Life Experience		
		PER	Presentations		
		D-M	Demonstration on Model		
		PT	Practical		
		X-Ray	X-ray Identification		
		CD	Case Diagnosis		

		LRI	Lab Report Interpretation		
		DA	Drug Analysis		
		D	Demonstration		
		D-BED	Demonstration Bedside		
		DL	Demonstration Lab		
		DG	Demonstration Garden		
		FV	Field Visit		
		JC	Journal Club		
		Mnt	Mentoring		
		PAL	Peer Assisted Learning		
		C_L	Co Learning		
		DSN	Dissection		
		PSN	Prosection		