Curriculum for MD/ MS Ayurveda
(PRESCRIBED BY NCISM)

अभ्यासात्प्राप्यते दृष्टिः कर्मसिद्धिप्रकाशिनी।

Semester II
Applied Basics of Shalakya Tantra - NETRA

(SUBJECT CODE : AYPG-AB-N)

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

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

PREFACE

Netra Tantra has occupied a distinct place within the discipline of Shalakya Tantra. The classical Ayurvedic texts describe in detail the anatomical, physiological, diagnostic, and therapeutic dimensions of Netra Tantra. Vision has always been regarded as central to quality of life, and therefore, the prevention and management of eye diseases is a subject of paramount importance in both classical Ayurveda and contemporary Biomedical healthcare.

Advances in ophthalmology have brought remarkable progress in diagnosis, and medical and surgical management of ophthalmic conditions. Despite all advances the burden of ocular morbidity and avoidable blindness continues to be a major public health challenge, nationally and globally. At the same time, there is growing recognition of the role of Ayurveda in preventive ophthalmology, integrative care, and the development of cost-effective, holistic treatment approaches. Against this background, the design and implementation of a structured postgraduate program in Netra Tantra becomes imperative.

This curriculum has been prepared with the objective of providing a comprehensive framework for postgraduate training in Netra Tantra. It aims to equip students with integration of classical Ayurvedic principles and contemporary scientific knowledge, enabling them to become competent clinicians, effective educators, and capable researchers. The document comprises the academic objectives, teaching-learning methodologies, clinical training requirements, and research components that together constitute a PG program of high academic and professional standards.

The curriculum emphasizes the following core areas:

Classical Ayurvedic concepts, including ocular anatomy, physiology, pathology, diagnosis, therapeutics, and surgical practices as described in the Ayurveda.

Contemporary knowledge integration, focusing on modern ophthalmic sciences, diagnostic techniques, surgical interventions, and recent advances, to ensure that students acquire skills relevant to present-day healthcare delivery.

Structured clinical training in outpatient, inpatient, surgical, and community settings serves as backbone of this program.

Professional and ethical orientation, preparing students to uphold the values of Ayurveda while maintaining the highest standards of medical ethics, patient safety, and community service.

This curriculum upholds the vision of the National Commission for Indian System of Medicine (NCISM), the needs of academic institutions, and the expectations of the healthcare system at large. It is intended to serve as a standard reference for universities, regulatory bodies, faculty members, and postgraduate students across the country.

It is anticipated that the structured implementation of this program will lead to the development of a new generation of specialists in Netra Tantra who are academically sound, clinically skilled, research-oriented, and committed to advancing the discipline.

The National Commission for Indian System of Medicine (NCISM) thus places before the academic community a framework by integrating ancient Ayurvedic and modern Biomedical teaching and training considering the current needs of education, clinical service, and research in Netra Tantra (Ophthalmology).

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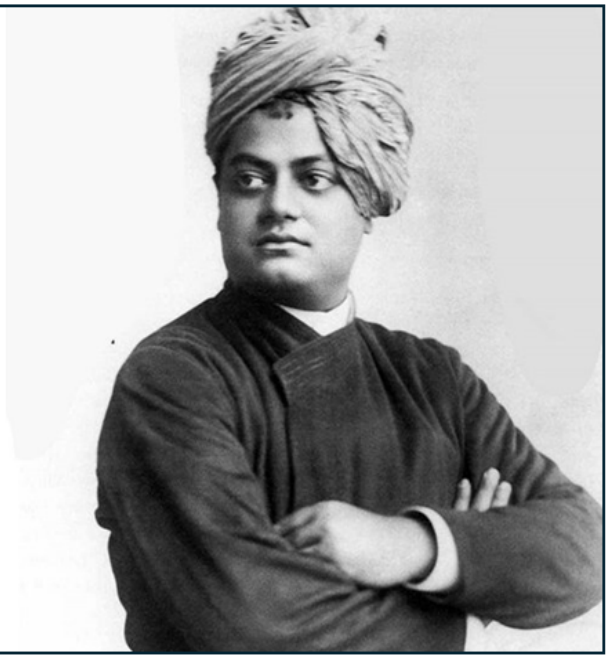
We want that education by which **character** is formed, **strength of mind** is increased, the **intellect** is expanded, and by which one can **stand on one's own feet.**

-Swami Vivekananda



NCISM

(NATIONAL COMMISSION FOR INDIAN SYSTEM OF MEDICINE)

Curriculum for MD/ MS Ayurveda

Applied Basics of Shalakya Tantra - NETRA (AYPG-AB-N)

Summary & Credit Framework

Semester II

Module Number & Name	Credits	Notional Learning Hours	Maximum Marks of assessment of modules (Formative assessment)
M1. Chikitsiya Netra Sharira (Clinical Anatomy and Physiology of Eye)	2	60	50
M2. Prakashiki evam Apvartana (Optics and Refraction)	2	60	50
M3. Netra Roga Nidana evam Krimi Vigyan (Ocular Pathology, Microbiology and Parasitology)	2	60	50
M4. Netra Roga-Rogi Pareeksha (Ophthalmic history taking and Eye Examination)	2	60	50
M5. Jivan Rakshaka evam Atyayika Aushadha Vigyana (Life Saving and Emergency Drugs Pharmacology)	2	60	50
M6. Yantra-Shashtra Vigyan (Basic Equipment and Instruments for Ophthalmology)	2	60	50
M7. Agropharniya and Yogya Vidhi (Basic Surgical Preparedness and Skill Labs)	2	60	50
M8. Kriyakalpa and Panchkarma	2	60	50
	16	**480**	**400**

Credit frame work

AYPG-AB-N consists of 8 modules totaling 16 credits, which correspond to 480 Notional Learning Hours. Each credit comprises 30 hours of learner engagement, distributed across teaching, practical, and experiential learning in the ratio of 1:2:3. Accordingly, one credit includes 5 hours of teaching, 10 hours of practical training, 13 hours of experiential learning, and 2 hours allocated for modular assessment, which carries 25 marks.

Important Note: The User Manual MD/MS Ayurveda is a valuable resource that provides comprehensive details about the curriculum file. It will help you understand and implement the curriculum. Please read the User Manual before reading this curriculum file. The curriculum file has been thoroughly reviewed and verified for accuracy. However, if you find any discrepancies, please note that the contents related to the MSE should be considered authentic. In case of

difficulty and questions regarding the curriculum, write to syllabus24ayu@ncismindia.org.

Course Code and Name of Course

Course code	Name of Course
AYPG-AB-N	Applied Basics of Shalakya Tantra - NETRA

Table 1 : Course learning outcomes and mapped Program learning outcomes

CO No	A1 Course learning Outcomes (CO) AYPG-AB-N At the end of the course AYPG-AB-N, the students should be able to-	B1 Course learning Outcomes mapped with program learning outcomes.
CO1	Demonstrate proficiency in academic, experimental, practical, and clinical decision-making based on acquired knowledge in Netra Tantra.	PO1,PO2
CO2	Perform Netra Tantra procedures (Surgical / experiments / clinical/ research) and therapeutic maneuvers with skill and dexterity.	PO1,PO2
CO3	Apply and integrate knowledge of Netra Tantra, biomedical, clinical, and allied sciences in delivering comprehensive patient care.	PO1,PO2,PO3
CO4	Perform research in Netra Tantra by classical methods and scientific advances adhering to national/international regulations and guidelines	PO5,PO7,PO8
CO5	Demonstrate leadership qualities and effective communication skills when engaging with students, patients, families, and peers.	PO6,PO8
CO6	Demonstrate continual advancement of knowledge and skills in Netra Tantra through self-directed learning.	PO3,PO7
CO7	Practice and promote Ayurveda with cultural sensitivity, technological agility for integration of Netra Tantra in evolving healthcare framework.	PO5,PO8
CO8	Demonstrate agility, virtuous and ethical behavior and compassion to improve the well-being of individuals and society.	PO4

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

2A Module No	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 Chikitsiya Netra Sharira (Clinical Anatomy and Physiology of Eye)** This module covers the advances in clinical Rachana Sharira (anatomy) and Kriya Sharira (physiology) of the human eye, adnexa, and visual pathways. This will serve as the foundation for accurate clinical assessments of the performance of the medical and surgical procedures. • **M1U1 Netra Rachana Sharir (Clinical Anatomy of Eye)** Evolution of Netra Tantra (Ophthalmology). Chikitsiya Netra Rachana Sharira (Clinical Anatomy of the eye). • **M1U2 Netra and Chakshuendriya Kriya Sharira (Clinical Physiology of Eye)** Akshi peshi kriya (Actions of the Extraocular muscles). Concepts of Ashru (tear-film), Ashru-srava (Tear secretion and drainage). Applied physiology of Conjunctiva, Cornea, Sclera, Uvea, Lens, Retina, and Visual pathway. Aqueous humor dynamics. Pupillary reflexes and Accommodation. Kriya-Sharira of Drishti and abhyantara Patala with the concept of Chakshurendriyartha sannikarsh, including Indriya Panch-panchaka and the concept of visual perception.	2	10	20	30	60
2	**M-2 Prakashiki evam Apvartana (Optics and Refraction)** This module is designed to provide postgraduate students in Netra Tantra with advanced knowledge and clinical competence in the field of Prakashiki evam Apavartana (optics and refraction). It includes the fundamental principles	2	10	20	30	60

of geometrical and physical optics, the study of refractive errors and presbyopia, and the acquisition of skills for clinical refraction and spectacle prescription.

• **M2U1 Moolbhoot Prakashiki (Fundamentals of optics)**

Geometrical and physical optics, laws of reflection and refraction, total internal reflection, ophthalmic lenses, sign conventions, image formation, and optical aberrations.
Trial lenses, clock dial, astigmatic fan, pin-hole, Madox rod, prisms, lensometer, and retinoscope.
Optical principles used in retinoscopy, keratometry, autorefractometry, and visual acuity assessment.

• **M2U2 Apvartana Dosha evam Jara Drishti (Refractive Errors and Presbyopia)**

Emmetropia, myopia, hypermetropia, astigmatism, anisometropia, accommodation, presbyopia.
Visual acuity and other subjective testing, pinhole test.
Ammetropia management.
Refraction in children (cycloplegic), presbyopic corrections.

• **M2U3 Apvartana Kriyavidhi (Clinical Refraction Techniques)**

Retinoscopy (static/dynamic), subjective refraction, fogging technique, clock-dial, astigmatism fan, axis refinement, Jackson’s cross-cylinder, duochrome test, subjective acceptance testing and verification, including balancing of refraction.
Retinoscopy practice, endpoint determination, integration of objective and subjective findings.
Clinical refraction in special scenarios in OPD settings, such as pseudophakia, high myopia, keratoconus, and irregular astigmatism, post-refractive surgery.

• **M2U4 Upnetra evam Upnetra-Patraka (Spectacles & Spectacle Prescription)**

Principles of spectacle correction, types of lenses

	(single vision, bifocal, progressive, high-index, aspheric, special-purpose lenses-sports, occupational), prism correction. Spectacle prescription writing, interpupillary distance (IPD) measurement, and lens centering. Patient counselling, troubleshooting spectacle intolerance.					
3	**M-3 Netra Roga Nidana evam Krimi Vigyan (Ocular Pathology, Microbiology and Parasitology)** This module integrates Ayurvedic and modern concepts of ocular pathology, microbiology, and parasitology. It explains the role of Dosha-Dhatu-Mala imbalance, systemic disorders, and microbial or parasitic infections in ocular diseases. Topics include normal ocular flora, krimi (ocular infections and manifestations), and basic laboratory diagnostics. Learners will develop diagnostic, analytical, and laboratory skills to identify ocular disorders and design integrative treatment approaches. • **M3U1 Netra Roga Nidana (Ocular Pathology)** Influence of Dosha attributes (Anshansh Kalpana) on Dhatu and Mala in the causation of ocular signs and symptoms. Treatment protocols, specific drugs, and formulations for managing these manifestations. Vyadhi Samprapti of Netra Roga arising from systemic pathology. Application of Nidana Panchaka and Chikitsa Sutra of systemic diseases (e.g., Jwara, Raktapitta, Vatashonita, Sopha, Prameha, Vatavyadhi, Pandu) in ocular disorders. Systemic pathology and its ocular relevance (diabetes, hypertension, thyroid, rheumatic diseases, etc.). Basic pathological principles: inflammation, dystrophy, degeneration, developmental anomalies, neoplasia, and wound healing. Collection, processing, and preservation of ocular specimens for pathological examination. • **M3U2 Netra Krimi Vigyan (Ocular Microbiology and Parasitology)** Concept of Krimi and its relevance to health and	2	10	20	30	60

	disease from both Ayurveda and modern perspectives. Sahaja Krimi (normal ocular flora) and defense mechanisms. Gut microbiota and Ophthalmic diseases. Common Ocular Infections. Diagnostic Techniques - Specimen collection (scraping, swabs). Laboratory methods.					
4	**M-4 Netra Roga-Rogi Pareeksha (Ophthalmic history taking and Eye Examination)** This module covers the principles of ophthalmic history taking and eye examination, integrating Ayurvedic and modern approaches. It emphasizes systematic history collection, symptom assessment, ocular examination techniques, visual function testing, appropriate use of equipment, and accurate documentation for precise diagnosis and patient care. • **M4U1 Netra Roga-Rogi Itivritta (Ophthalmic history taking)** Importance of history taking in the diagnosis, management, and prognostic assessment of ocular diseases. General information: demographic details, systemic history, past ocular and medical history, personal and family history, and drug history. Presenting complaints: onset, duration, progression, laterality, severity, and associated symptoms. Symptomatology of common ocular complaints and development of differential diagnostic skills — e.g., defective vision, pain, redness, swelling, watering, itching, photophobia, diplopia, flashes/floaters, and field defects. • **M4U2 Netra Pareeksha (Eye Examination and Assessment)** General Inspection: Head posture, facial symmetry, and ocular adnexa. Visual Function Tests: Visual acuity, pinhole test, near vision, color vision, contrast sensitivity, and visual field assessment. Systematic Ocular Examination: Forehead,	2	10	20	30	60

	eyebrows, eyelids, conjunctiva, cornea, sclera, anterior chamber, iris, pupil, lens, vitreous, retina, and optic disc. Basic Diagnostic Tools: Torchlight, loupe, slit-lamp biomicroscopy, ophthalmoscopy (direct and indirect), tonometry, and gonioscopy. Functional Assessment: Ocular motility, pupillary reflexes, accommodation, and binocular vision. Imaging: Overview of ocular imaging modalities relevant to diagnosis and documentation. Biochemical Investigations: Relevant laboratory tests supportive of ocular and systemic diagnosis. Documentation: Systematic recording of clinical findings, investigation results, and treatment details.					
5	**M-5 Jivan Rakshaka evam Atyayika Aushadha Vigyana (Life Saving and Emergency Drugs Pharmacology)** This module discusses the fundamental principles of pharmacology and their application in clinical practice. It covers the basic concepts of pharmacokinetics, pharmacodynamics, and pharmacotherapeutics, followed by a systematic study of drugs acting on body organ systems. Special emphasis is placed on life-saving and emergency drugs along with their mechanisms, therapeutic uses, adverse effects, and rational prescribing. Students will develop the knowledge, skills, and attitudes necessary for safe, effective, and rational drug use in patient care as well as emergency scenarios. • **M5U1 Samanya Aushadha Vigyana Siddhanta (General Pharmacological Principles)** Definitions Pharmacokinetics Pharmacodynamics Pharmacotherapeutics • **M5U2 Sarvadaihika Aushadha Vigyan (Systemic Pharmacology)** Drugs Acting on Autonomic Nervous System: General considerations; cholinergic transmission and cholinergic drugs; anti-cholinergic drugs and drugs acting on autonomic ganglia; adrenergic transmission and adrenergic	2	10	20	30	60

drugs; anti-adrenergic drugs.
Central and Peripheral Nervous System: General anesthetics; sedatives-hypnotics; anti-epileptic drugs; opioid analgesics and antagonists; skeletal muscle relaxants; and local anesthetics.
Cardiovascular System: Drugs acting on renin-angiotensin system; cardiac glycosides and drugs for heart failure; antiarrhythmic drugs; antianginal and other anti-ischaemic drugs; antihypertensive drugs.
Endocrine System: Anterior pituitary hormones; thyroid hormones and thyroid inhibitors; insulin, oral antidiabetic drugs, and glucagon.
Blood and blood formation: Haematinics and erythropoietin; drugs affecting coagulation, bleeding, and thrombosis; hypolipidemic drugs.
Gastrointestinal drugs: Drugs for peptic ulcer and GERD; antiemetic, prokinetic, digestant drugs; drugs for constipation and diarrhoea.
Drugs acting on Respiratory system: Drugs for cough and bronchial asthma.
Drugs acting on Kidney: Diuretics; antidiuretics.

• **M5U3 Anya Aushadha (Other drugs)**

Corticosteroids.
Autacoids and related drugs: Histamine and antihistaminics; serotonin, its antagonists; eicosanoids (prostaglandins, leukotrienes) and platelet activating factor; NSAIDs, antipyretics and analgesics.
Anti-migraine, anti-rheumatoid, and anti-gout drugs.
Miscellaneous drugs: Immunosuppressant drugs; antiseptics, disinfectants, and parasiticides; chelating agents; vitamins and nutrients; immunoglobulins; anticancer drugs.

• **M5U4 Krimighna Aushadha (Antimicrobials and Anthelmintics)**

General considerations: sulphonamides, cotrimoxazole and quinolones; beta-lactam antibiotics; tetracyclines and chloramphenicol (broad-spectrum antibiotics); aminoglycoside antibiotics; macrolide, lincosamide, glycopeptide and other antibacterial antibiotics; urinary antiseptics; antitubercular drugs; antileprotic drugs; antimalarial drugs.

	Antifungal drugs. Antiviral drugs: Non-retroviral and anti-retroviral drugs. Anthelmintics and Antimalarial Drugs. Antamoebic and other Antiprotozoal drugs.					
6	**M-6 Yantra-Shashtra Vigyan (Basic Equipment and Instruments for Ophthalmology)** This module provides a comprehensive understanding of ophthalmic instruments and equipment by integrating Ayurvedic principles with modern diagnostic and surgical practices. It focuses on the principles, operation, and clinical applications of essential diagnostic and surgical tools, emphasizing proper handling, maintenance, and safety protocols to build a strong practical foundation for clinical and surgical ophthalmology. • **M6U1 Yantra related to Netra Pariksha (Basic Equipment for Eye Examination)** Yantra described in Ayurveda related to Netra Tantra. Principles, Techniques, Clinical Use and Interpretation of: Visual Testing Equipment, Color Vision Tests, Autorefractometer, Retinoscope, Keratometer, Slit Lamp Biomicroscopy, Direct and Indirect Ophthalmoscopy, 90 D, 78 D, 20 D lenses, Tonometry, Lensometer, Gonioscopy, etc. Care and handling of Equipment. • **M6U2 Shashtra related to Netra (Instruments for Ophthalmology)** Shashtra described in Ayurveda related to Netra Tantra. Concept of Shashtrakarmagara. Ophthalmic surgical instruments. Principles and techniques of suturing, suturing materials, types of needles, etc. Care and handling of blunt and sharp instruments.	2	10	20	30	60
7	**M-7 Agropharniya and Yogya Vidhi (Basic Surgical Preparedness and Skill Labs)** This module focuses on foundational surgical preparedness	2	10	20	30	60

and skill development in ophthalmology. It covers patient and surgeon preparation, operation theatre setup, asepsis, sterilization, infection control, and postoperative care. Through simulation-based learning, wet lab exercises, and virtual surgical skills conducted as per ethical and institutional guidelines, students will develop precision, ergonomic skills, and confidence in performing safe and sterile ophthalmic procedures.

• **M7U1 Agropaharaniya for Netra Shalya Karma (Preparedness for Eye Surgery)**

Eye OPD ergonomics.
Agropaharniya karmas in Ayurveda.
Selection and Preparation of the patient: Informed Consent, Systemic health evaluation, Counselling of the patient, Local preparation of the operative eye.
Preparation of the surgeon: Maintenance of personal hygiene and asepsis, Surgical attire, gowning, gloving techniques, and OT etiquette.
Preparation of the Operation Theatre (OT): Layout and principles of OT design for ophthalmic surgery, Preparation and maintenance of OT equipment.

• **M7U2 Nirjantukarana (Sterilization)**

Concept of Sterilization in Ayurveda.
Principles of sterilization and disinfection.
Methods of sterilization: heat, chemical, gaseous, and modern techniques.
Sterilization of ophthalmic instruments, lenses, and materials.
OT fumigation and aseptic protocols.
Infection control, Prophylaxis, Prevention, and management of postoperative complications.
Recent Advances in techniques of sterilization (e.g CSSD).

• **M7U3 Yogya Vidhi (Skill labs)**

Concept of Yogya Vidhi in Ayurveda.
Hands-on training in ophthalmic surgical skills using simulation, wet labs, model/animal eyes, and virtual simulators.
Training in OT ergonomics, preoperative preparation, asepsis, sterile technique, and emergency surgical scenarios.

	Continuous assessment and feedback to develop precision, hand–eye coordination, and confidence.					
8	**M-8 Kriyakalpa and Panchkarma** This module introduces Ayurvedic topical ocular therapeutics (Netra Kriyakalpa) and Panchakarma procedures for the treatment of ophthalmic conditions and the maintenance of ocular health. It covers the principles, indications, standard procedures, drug formulations, and mechanisms of action of Kriyakalpa and Panchakarma therapies. Emphasis is placed on safety, prevention, and management of complications, clinical documentation, and integration with contemporary ophthalmic practice, following standard operating procedures (SOPs) and institutional guidelines. The module enables learners to develop clinical competence in performing, documenting, and interpreting Kriyakalpa and Panchakarma procedures for Netra Rogas. • **M8U1 Kriyakalpa (Topical Ocular Therapeutics)** Introduction: Definition, Types, Classification, and Importance of Kriyakalpa. Principles and procedures: Seka, Ashchyotana, Pindi, Bidalaka, Tarpana, Putapaka, Anjana. Avgunthan, Thalam, Kizi, Netrapichu, Shirolepa, and Mukhalepa. Indications, contraindications, dose, time, duration, and Standard operating procedure (SOP) of each procedure. Purvakarma, Pradhan karma, and Pashchat karma of Kriyakalpa. Samyaka yoga, Hina yoga, and Atiyoga of each procedure. Mode of action of Kriyakalpa in Netra rogas with reference to ocular pharmacology. Complications of Kriyakapla and their management. Common drugs and formulations used for Kriyakalpa procedures. Modern tools, technologies, and innovations for Kriyakalpa procedures. • **M8U2 Panchkarma in Netra Chikitsa** Application and therapeutic utility of Snehana, Swedana, Vamana, Virechana, Nasya, Nirooha vasti,	2	10	20	30	60

	Anuvasana vasti, and Raktamokshana therapy in the treatment of various Netra rogas. Murdha Taila - Shiro-abhyanga, Shiropichu, Shirodhara, Shirobasti for Netra chikitsa. Mode of action of Panchakarma procedures in Netra chikitsa. Complications and their management of Panchakarma procedures relevant to Netra chikitsa.					
		16	**80**	**160**	**240**	**480**

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

3A Course Outcome	3B Learning Objective (At the end of the (lecture/practical 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 : Chikitsiya Netra Sharira (Clinical Anatomy and Physiology of Eye)						
Module Learning Objectives **(At the end of the module, the students should be able to)** 1. Explain the advances in Rachana Sharira (anatomy) and Kriya Sharira (physiology) of the eye, adnexa, and visual pathways, emphasizing their importance in diagnosis and surgical practice. 2. Identify and demonstrate key anatomical structures and physiological functions of the eye and visual pathways using models, dissection, and examination techniques. 3. Integrate Ayurvedic and modern concepts of ocular anatomy and physiology to understand their application in clinical decision-making.						
Unit 1 Netra Rachana Sharir (Clinical Anatomy of Eye) Evolution of Netra Tantra (Ophthalmology). Chikitsiya Netra Rachana Sharira (Clinical Anatomy of the eye). **References:** 1,2,3,4,5,6,7,8,9,10,11,17,24,25,26,30,33						
3A	**3B**	**3C**	**3D**	**3E**	**3F**	**3G**

CO1,CO3,CO7	Discuss the major milestones in the evolution of Netra Tantra (Ophthalmology) in India and across the world, tracing its development from the earliest available records to contemporary advancements.	1	Lecture	CK	Know	L,L&GD, L&PPT ,L _VC,SDL
CO1,CO3,CO4	Examine the potential benefits of integrating Netra Tantra and Western Ophthalmology, emphasizing their collective contributions to holistic eye care and societal well-being.	1	Experiential-Learning 1.1	PSY-MEC	Knows-how	CBL,PL,PBL,PrBL, RP,SIM
CO1,CO3,CO5 ,CO7	Discuss the advanced clinical aspects of the following: Netra Asthi Sharira, including the clinical anatomy of Akshikoota (bony orbit) and its relations; Akshibandhana; the contents of the orbit, including the lacrimal apparatus; and the orbital fascia. Netra Peshi-Snayu Sharira, including extra-ocular muscles and muscles of the adnexa. Vartma-Shukla Sharira (Gross anatomy of eyelids, conjunctiva, and sclera). Akshi Samranchana, including Krishnamandala (cornea), Uveal tract, anterior and posterior chambers, lens, and vitreous. Drishti, including retina and visual pathways. Blood, lymphatic, and nerve supply to the eye.	4	Lecture	CK	Know	L,L&PPT ,L_VC
CO2,CO6	Identify the anatomical structures of: Akshikoota (bony orbit) and its contents. Ashrumarga (lacrimal glands and drainage system). Netra (eyeball). Ocular adnexa. Netra Sira-Dhamani Srotas-Snayu-Kandara (vascular supply of the orbit, ocular circulation,lymphatic pathways, and nerve supply to the eye and adnexa; course of ocular nerves and vessels within orbit and cranial cavity).	10	Practical Training 1.1	PSY-GUD	Shows-how	D,D-M,DIS,DSN,SIM,X-Ray

CO1,CO3	Describe and illustrate the structural details of Netra Rachana, including the eyeball, adnexa, Netra Sira-Dhamani Srotas-Snayu-Kandra (vascular supply of the orbit, ocular circulation, lymphatic pathways, and neural supply to the eye and adnexa).	6	Experiential-Learning 1.2	PSY-MEC	Does	CBL,DSN,PL,RP,SIM,X-Ray
CO2,CO6	Interpret and analyze netra rachana sharira (ocular and orbital anatomy) using imaging modalities such as fundus photography, fundus angiography, ultrasonography (USG), computed tomography (CT), and optical coherence tomography (OCT).	7	Experiential-Learning 1.3	PSY-MEC	Does	CBL,DIS,PL,SIM,X-Ray

Unit 2 Netra and Chakshuendriya Kriya Sharira (Clinical Physiology of Eye)

Akshi peshi kriya (Actions of the Extraocular muscles).
Concepts of Ashru (tear-film), Ashru-srava (Tear secretion and drainage).
Applied physiology of Conjunctiva, Cornea, Sclera, Uvea, Lens, Retina, and Visual pathway.
Aqueous humor dynamics.
Pupillary reflexes and Accommodation.
Kriya-Sharira of Drishti and abhyantara Patala with the concept of Chakshurendriyartha sannikarsh, including Indriya Panch-panchaka and the concept of visual perception.

References: 1,2,3,4,5,6,7,8,9,24,25,27,30,33

3A	3B	3C	3D	3E	3F	3G
CO1,CO2	Discuss concepts of Akshi-peshi kriya (ocular motility), Ashru and Ashru-srava (tear-film, tear secretion and drainage), and physiology of Drishti-patala (visual perception).	5	Lecture	CK	Know	D,L&PPT,L_VC,PL
CO1,CO2,CO7	Demonstrate normal functions of Ashrugranthi (lacrimal glands, tears, and tear-film) and Ashru marga (lacrimal drainage system), Vartma (eyelids), Akshi (eyeball) movements, and extraocular muscles, pupillary reflexes, and accommodation using standard clinical examination methods.	10	Practical Training 1.2	PSY-GUD	Shows-how	D,D-BED,D-M,L&GD,L&PPT,L_VC,PL

CO1,CO2,CO6	Demonstrate visual acuity charting, subjective visual field examination, testing of color vision, contrast sensitivity, and stereopsis, and use of the Amsler grid in normal subjects.	6	Experiential-Learning 1.4	PSY-SET	Does	C_L,D,D-BED,ECE,JC
CO1,CO4,CO6	Integrate the concept of chakshu-indriyartha sannikarsha and indriya pancha-panchaka with the contemporary understanding of sensory perception through interactive discussions.	6	Experiential-Learning 1.5	PSY-MEC	Does	CBL,DIS,PL,PBL,TUT

Practical Training Activity

Practical No	Name	Activity details
Practical Training 1.1	Netra Rachana: Pre-clinical Practice	Demonstrate and identify anatomical structures of the orbit, adnexa, eyeball, intracranial structures related to eye and vision, and surgical landmarks using cadaveric specimens, skull models, 3D virtual anatomy tools, teaching videos, or web resources.
Practical Training 1.2	Netra Kriya: Measuring normal parameters	Demonstrate and quantify the normal functions of Ashrugranthi (lacrimal glands, tears, and tear-film) and Ashru-marga (lacrimal drainage system), Vartma (eyelids), Akshi (eyeball) movements and extraocular muscles, pupillary reflexes, and accommodation using standard clinical examination methods on normal persons or patients.

Experiential learning Activity

Experiential learning No	Name	Activity details
Experiential-Learning 1.1	Integrative Netra Tantra (Ophthalmology)	Students will deliver a seminar presentation exploring how the exchange of ideas between Ayurveda and modern ophthalmology can contribute to addressing contemporary challenges in eye care.
Experiential-Learning 1.2	Netra Rachana: Clinical Correlation Practice	1. Students will perform basic ophthalmic examination techniques (inspection, palpation, lacrimal syringing, etc.) linking anatomical landmarks with clinical procedures. 2. Students will identify and chart the arterial, venous, lymphatic, and nerve supply of the eyeball and adnexa using

		anatomical charts, models, and digital simulations.
Experiential-Learning 1.3	Netra Rachana: Imaging reports and Biometry	1. Students will analyze and interpret imaging and radiological reports (such as USG, CT-scan, OCT) to identify normal orbital and ocular structures. 2. Students will perform Ophthalmic Biometry and interpret the reports.
Experiential-Learning 1.4	Netra Kriya: Psycho-physical evaluation	Students will perform and record the visual acuity charting; visual field examination; testing of colour vision, contrast sensitivity, stereopsis; and use of the Amsler grid in normal subjects.
Experiential-Learning 1.5	Chakshurendriya Vyapara: Interactive Discussions	Students will discuss and correlate the chakshu-indriyartha sannikarsha and indriya pancha-panchaka with the contemporary understanding of sensory perception.

Modular Assessment

Assessment method	**Hour**
Instructions - Conduct a structured Modular assessment. Assessment will be for 50 marks. Keep structured marking pattern. Keep record of the structured pattern used for assessment. Calculate the Modular grade point as per table 6 C. Following methods are suggested. • Theory Test (10 Marks): Contains Long Answer Question (LAQ), or Short Answer Questions (SAQ), or Multiple Choice Questions (MCQ). • Viva (10 Marks): Consists of questions testing clinical knowledge and reasoning across all units of the module. • OSPE (Objective Structured Practical Examination) (10 Marks) or OSCE (Objective Structured Clinical Examination) (10 Marks). • Direct Observation of Procedural Skills (DOPS) (10 Marks). • Experiential learning, such as clinical records, seminars, or case presentations (10 marks). or Any practical in converted form can be taken for assessment (25 Marks)	4

and Any Experiential Learning as portfolio / reflections / presentations, can be taken as an assessment.(25 Marks)	

Module 2 : Prakashiki evam Apvartana (Optics and Refraction)

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

1. Explain the principles of geometrical and physical optics, refraction, types of refractive errors, and their application in clinical practice.
2. Perform objective and subjective refraction accurately and prescribe appropriate corrective lenses based on findings.
3. Apply refractive techniques in real patient settings, demonstrating patient-centered communication and adherence to ethical and professional standards.

Unit 1 Moolbhoot Prakashiki (Fundamentals of optics)

Geometrical and physical optics, laws of reflection and refraction, total internal reflection, ophthalmic lenses, sign conventions, image formation, and optical aberrations.
Trial lenses, clock dial, astigmatic fan, pin-hole, Madox rod, prisms, lensometer, and retinoscope.
Optical principles used in retinoscopy, keratometry, autorefractometry, and visual acuity assessment.

References: 1,2,3,24,25,28,29,30,33

3A	3B	3C	3D	3E	3F	3G
CO1,CO3	Discuss geometrical and physical optics, laws of reflection and refraction, total internal reflection, prisms, ophthalmic lenses, sign conventions, image formation, and optical aberrations with the objective to learn clinical refraction.	2	Lecture	CK	Know	L,L&PPT ,L_VC
CO1,CO2,CO3	Identify, handle, and use the trial lens set, prisms, lensometer, retinoscope, and other refraction instruments effectively.	3	Practical Training 2.1	PSY-GUD	Shows-how	D,DIS,PT
CO1,CO2,CO3 ,CO6	Analyse the limitations of clinical instruments such as the pinhole, retinoscope, keratometer, and autorefractor in different clinical situations.	3	Experiential-Learning 2.1	PSY-MEC	Does	CBL,DIS, ECE,PT,P BL,SDL

Unit 2 Apvartana Dosha evam Jara Drishti (Refractive Errors and Presbyopia)

Emmetropia, myopia, hypermetropia, astigmatism, anisometropia, accommodation, presbyopia.
Visual acuity and other subjective testing, pinhole test.
Ammetropia management.
Refraction in children (cycloplegic), presbyopic corrections.

References: 1,2,3,24,25,28,29,30,33

3A	3B	3C	3D	3E	3F	3G
CO1,CO3	Describe the etiology, optical principles, and classification of refractive errors and presbyopia.	3	Lecture	CK	Know	L,L&PPT ,L_VC
CO1,CO2,CO3	Demonstrate accurate measurement of visual acuity and perform preliminary refraction assessment.	6	Practical Training 2.2	PSY-GUD	Shows-how	D-BED,DIS,ECE,PT,PBL
CO1,CO2,CO3 ,CO6	Apply appropriate refraction techniques for children, presbyopes, and patients with ametropia in clinical settings.	6	Experiential-Learning 2.2	PSY-MEC	Does	CBL,DIS, ECE,PBL, SDL

Unit 3 Apvartana Kriyavidhi (Clinical Refraction Techniques)

Retinoscopy (static/dynamic), subjective refraction, fogging technique, clock-dial, astigmatism fan, axis refinement, Jackson’s cross-cylinder, duochrome test, subjective acceptance testing and verification, including balancing of refraction.
Retinoscopy practice, endpoint determination, integration of objective and subjective findings.
Clinical refraction in special scenarios in OPD settings, such as pseudophakia, high myopia, keratoconus, and irregular astigmatism, post-refractive surgery.

References: 25,28,29,30,33

3A	3B	3C	3D	3E	3F	3G
CO1,CO3	Explain the principles and stepwise procedures of objective and subjective refraction.	3	Lecture	CK	Know	L,L&PPT ,L_VC
CO1,CO2,CO3	Perform complete refraction, including objective assessment and subjective refinement.	6	Practical Training 2.3	PSY-GUD	Shows-how	D,DIS,PBL
CO1,CO2,CO3 ,CO6	Apply refraction skills in diverse clinical scenarios, including complex refractive conditions such as high myopia, keratoconus, pseudophakia, and post-refractive surgery.	10	Experiential-Learning 2.3	PSY-MEC	Does	CBL,IBL, PBL,SDL

Unit 4 Upnetra evam Upnetra-Patraka (Spectacles & Spectacle Prescription)

Principles of spectacle correction, types of lenses (single vision, bifocal, progressive, high-index, aspheric, special-purpose lenses-sports, occupational), prism correction.
Spectacle prescription writing, interpupillary distance (IPD) measurement, and lens centering.
Patient counselling, troubleshooting spectacle intolerance.

References: 25,28,29,30,33

3A	3B	3C	3D	3E	3F	3G
CO1,CO3	Discuss the principles of spectacle correction, various lens types, and their clinical indications.	2	Lecture	CK	Know	L,L&PPT ,L_VC
CO1,CO2,CO3	Demonstrate accurate spectacle prescription writing, including interpupillary distance (IPD) measurement and prism correction.	5	Practical Training 2.4	PSY-GUD	Shows-how	D,DIS,PBL
CO1,CO2,CO3 ,CO5,CO6	Apply knowledge in clinical practice by counselling patients, prescribing spectacles, and managing intolerance or adaptation issues.	7	Experiential-Learning 2.4	PSY-MEC	Does	CBL,PBL ,SDL

Practical Training Activity

Practical No	Name	Activity details

Practical Training 2.1	Clinical Optics and Refraction: Instrument Handling	1. Illustration and identification of properties of lenses, prisms, and mirrors, and guide students through lens identification, trial frame insertion, and differentiation between spherical and cylindrical lenses. 2. Demonstrate and show the use of clinical refraction tests, including clock dial, astigmatic fan, duochrome test, pinhole, Maddox rod, and streak retinoscopy with reflex observation and neutralization on models or volunteers. 3. Perform and explain spectacle lens measurements, verification of prescriptions, and prism orientation, base direction, and clinical applications. 4. Demonstrate and operate corneal curvature measurement techniques and the autorefractor, and accurately interpret K-values and output readings for clinical relevance.
Practical Training 2.2	Refraction and Presbyopia – Clinical Evaluation and Correction Practical	1. Demonstrate measurement of distance and near visual acuity using vision charts and perform the pinhole test to differentiate refractive errors from pathological causes of decreased vision. 2. Illustrate the use of optical models, trial lenses, and diagrams to explain emmetropia, myopia, hypermetropia, astigmatism, and anisometropia, highlighting differences in image formation. 3. Demonstrate streak retinoscopy followed by subjective refraction to refine visual correction and accurately record the final prescription. 4. Perform cycloplegic refraction under supervision using appropriate mydriatic/cycloplegic agents and interpret post-cycloplegia findings. 5. Demonstrate the determination of near addition power using age-related charts and trial lenses, and guide prescription and verification of bifocal/multifocal corrections. 6. Discuss and demonstrate various spectacle correction options for refractive errors.
Practical Training 2.3	Supervised Clinical Refraction	1. Demonstrate retinoscopy on the patient's eyes under static and dynamic conditions, observing reflex movement and

		determining the neutralization endpoint. 2. Demonstrate subjective refraction following retinoscopy, refining spherical and cylindrical correction using trial lenses and patient feedback. 3. Illustrate and perform accommodation control using the fogging technique and refine the axis and cylinder using Jackson's cross-cylinder. 4. Demonstrate the duochrome test for spherical refinement and finalize prescriptions through subjective acceptance for best visual comfort. 5. Correlate retinoscopic and subjective results, record differences, and finalize the best corrected visual acuity (BCVA). 6. Demonstrate refraction in special situations such as pseudophakia, high myopia, keratoconus, irregular astigmatism, and post-refractive surgery cases under supervision. 7. Illustrate a complete recording of refraction data, interpret clinical relevance, and discuss implications for patient management.
Practical Training 2.4	Supervised Spectacle Prescription	1. Demonstrate writing complete spectacle prescriptions, including sphere, cylinder, axis, near addition, and prism, using sample cases. 2. Demonstrate measurement of distance and near interpupillary distance (IPD) with a pupillometer or ruler and ensure correct lens alignment in the spectacle frame. 3. Illustrate correct lens placement in frames, frame adjustment to the patient's facial anatomy, and verification of centration over the pupil and optical axis. 4. Explain and demonstrate proper spectacle use, cleaning, adaptation, and methods to address intolerance or troubleshoot common problems. 5. Demonstrate identification and correction of issues like prismatic effect, discomfort, and blurred vision through adjustments or patient counseling. 6. Demonstrate the transposition rule and professional conduct with adherence to ethical standards during refraction practice.
Experiential learning Activity		

Experiential learning No	Name	Activity details
Experiential-Learning 2.1	Dealing with Difficult Refraction	1. Students perform all practical activities under faculty supervision to gain hands-on experience in optics, refraction, and instrumentation. 2. Students discuss the difficulties arising in refraction due to irregular astigmatism, kerectasias, corneal opacities, central and peripheral lenticular opacities, and vitreous opacities.
Experiential-Learning 2.2	Refraction and Presbyopia – Clinical Evaluation and Correction Practice	1. Students will carry out all practical activities under faculty supervision to strengthen hands-on skills, observation accuracy, and clinical interpretation related to refractive errors and presbyopia. 2. Students will validate their subjective refraction choices and explain key patient counseling points.
Experiential-Learning 2.3	Clinical Refraction Practice	1. Students will perform all practical refraction activities under faculty supervision to build confidence, accuracy, and consistency across diverse clinical scenarios. 2. Students will document detailed retinoscopic observations, subjective refraction steps, final prescription, patient counseling points, and follow-up plan
Experiential-Learning 2.4	Spectacle Prescription Practice	Students will repeat all practical activities under faculty supervision to reinforce precision, patient interaction skills, and clinical problem-solving related to spectacle prescription and dispensing.
Modular Assessment		

Assessment method	Hour
Instructions - Conduct a structured Modular assessment. Assessment will be for 50 marks. Keep structured marking pattern. Keep record of the structured pattern used for assessment. Calculate the Modular grade point as per table 6 C. Same as Module - 1 or Any practical in converted form can be taken for assessment (25 Marks) and Any Experiential Learning as portfolio / reflections / presentations, can be taken as an assessment.(25 Marks)	4

Module 3 : Netra Roga Nidana evam Krimi Vigyan (Ocular Pathology, Microbiology and Parasitology)

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

1. Explain the Ayurvedic and modern principles of ocular pathology, systemic correlations, and the concept of Krimi in eye diseases.
2. Demonstrate collection, processing, and microscopic examination of ocular specimens for pathological and microbiological study.
3. Analyze clinical cases to correlate pathophysiology and design integrative treatment approaches.

Unit 1 Netra Roga Nidana (Ocular Pathology)

Influence of Dosha attributes (Anshansh Kalpana) on Dhatu and Mala in the causation of ocular signs and symptoms.
Treatment protocols, specific drugs, and formulations for managing these manifestations.
Vyadhi Samprapti of Netra Roga arising from systemic pathology.
Application of Nidana Panchaka and Chikitsa Sutra of systemic diseases (e.g., Jwara, Raktapitta, Vatashonita, Sopha, Prameha, Vatavyadhi, Pandu) in ocular disorders.
Systemic pathology and its ocular relevance (diabetes, hypertension, thyroid, rheumatic diseases, etc.).
Basic pathological principles: inflammation, dystrophy, degeneration, developmental anomalies, neoplasia, and wound healing.
Collection, processing, and preservation of ocular specimens for pathological examination.

References: 1,2,3,4,5,6,7,8,9,10,11,12,13,14,15,17,25,30,31,33

3A	3B	3C	3D	3E	3F	3G
CO1	Describe the vitiation of doshas (vata, pitta, kapha, tridosha, and their attributes - Anshansh kalpana) and their effects on dhatus and malas of the Netra. Explain how dosha attributes influence ocular structures, secretions, and intraocular fluid dynamics. Correlate Tridosha vitiation–induced ocular manifestations with modern systemic pathologies such as diabetes, hypertension, and thyroid disorders.	2	Lecture	CK	Know	BL,FC,JC ,L&GD,L &PPT ,TUT

CO1,CO2,CO4	Identify and describe specific Ayurvedic drugs and formulations used in the management of ocular diseases arising from systemic conditions, explaining their probable mode of action.	4	Practical Training 3.1	PSY-GUD	Knows-how	D-BED,L_VC,PAL,SDL,SIM
CO2,CO6,CO7	Observe and interpret clinical cases of Netra Rogas associated with systemic disorders such as Prameha, Pandu, Jwara, and Raktapitta, and correlate the Ayurvedic Samprapti with corresponding modern pathophysiological mechanisms through clinical observation and analysis.	8	Experiential-Learning 3.1	PSY-MEC	Does	ECE,JC,L_VC,Mnt,PL
CO1,CO2,CO4	Participate in and reflect upon the formulation of individualized treatment protocols for such ocular cases, applying Nidana Panchaka and Chikitsa Sutra of systemic disorders and evaluating treatment outcomes through clinical observation.	8	Experiential-Learning 3.2	PSY-MEC	Does	CBL,D,D-BED,JC,LRI,PT
CO1,CO2,CO6,CO7	Explain the fundamental pathological mechanisms in ocular inflammation, degeneration, dystrophy, developmental anomalies, neoplasia, and wound healing. Describe the principles and rationale behind specimen collection, processing, and preservation for ocular pathological examination.	4	Lecture	CK	Know	CBL,D,DA,SDL
CO1,CO2,CO4,CO6	Demonstrate and practice the collection, processing, and preservation of ocular specimens for pathological examination and identify microscopic features of common ocular pathological conditions.	8	Practical Training 3.2	PSY-GUD	Shows-how	CBL,L&PPT,PL,SDL

Unit 2 Netra Krimi Vigyan (Ocular Microbiology and Parasitology)

Concept of Krimi and its relevance to health and disease from both Ayurveda and modern perspectives.
Sahaja Krimi (normal ocular flora) and defense mechanisms.
Gut microbiota and Ophthalmic diseases.
Common Ocular Infections.
Diagnostic Techniques - Specimen collection (scraping, swabs).
Laboratory methods.

References: 1,2,3,4,5,6,7,8,9,30,32,33,41

3A	3B	3C	3D	3E	3F	3G
CO1,CO2,CO7	Explain the concept of Krimi in Ayurveda and its role in ocular health and disease. Describe Sahaja Krimi (normal ocular flora), host defense mechanisms, and the influence of gut microbiota on eye diseases. Discuss common ocular infections, their etiology, and principles of laboratory diagnosis.	4	Lecture	CK	Know	CBL,DL,ECE,L_VC,PT,SDL
CO1,CO2,CO7	Demonstrate aseptic collection of ocular specimens (conjunctival swabs, corneal scrapings) for microbiological examination. Perform basic laboratory techniques: smear preparation, staining, culture, and observation of microorganisms. Identify microorganisms and correlate findings with clinical presentations of ocular infections.	8	Practical Training 3.3	PSY-GUD	Shows-how	D,JC,PL,SDL
CO1,CO4,CO7	Participate in case-based discussions linking microbial findings to patient symptoms and systemic factors. Observe the application of microbiological diagnostics in clinical decision-making and patient management. Reflect on infection control practices and the importance of maintaining normal ocular flora in preventive care.	10	Experiential-Learning 3.3	PSY-MEC	Does	CBL,DIS,FV,LRI

Practical Training Activity

Practical No	Name	Activity details
Practical Training 3.1	Pharmacotherapeutic correlation in ocular diseases related to systemic conditions.	1. Students visit herbal gardens, Ayurvedic pharmacies, and museums to study sources and preparation of ocular and systemic drugs. 2. Documentation and analysis of key Ayurvedic drugs and formulations, emphasizing Rasapanchaka and effects on Netra

		Dosha-Dhatu-Mala and systemic balance. 3. Analyze patient follow-ups to correlate drug use with clinical outcomes in ocular disorders.
Practical Training 3.2	Ocular Specimen Handling and Pathological Examination	1. Collection and preservation of ocular specimens (e.g., conjunctival swab, corneal scraping, enucleated eye, tumors) using aseptic precautions, proper labeling, and fixation for histopathological study. 2. Observe and assist with laboratory processing steps - dehydration, embedding, section cutting, and staining (H&E and special stains). 3. Identification and documentation of microscopic features of common ocular pathologies and help students correlate histopathological findings with clinical features.
Practical Training 3.3	Ocular Microbiology and Diagnostic Techniques	1. Collect conjunctival swabs and corneal scrapings using aseptic techniques. 2. Labeling and preservation of specimens for laboratory examination. 3. Preparation of smears, staining (Gram, Giemsa, or other relevant stains), and culture of specimens. 4. Identify microorganisms microscopically and correlate findings with clinical features.
Experiential learning Activity		
Experiential learning No	**Name**	**Activity details**
Experiential-Learning 3.1	Clinical observations of Netra Rogas with Systemic Disorders	1. Students will observe patients presenting with ocular diseases secondary to systemic disorders in OPD and IPD settings, and record detailed clinical findings.

		2. Students will analyze each case to identify the involvement of dosha, dushya, and srotas in the development of Netra Rogas, and construct the Ayurvedic Samprapti, modern pathophysiological explanations, such as microvascular changes or metabolic dysfunctions. 3. Students will present and discuss observed cases in group sessions or clinical demonstrations, highlighting Ayurvedic–modern correlations, diagnostic reasoning, and potential treatment approaches, with proper documentation in the clinical logbook.
Experiential-Learning 3.2	Integrative Treatment Planning and Outcome Evaluation in Systemic Ocular Disorders	1. Students will actively participate in clinical discussions and case evaluations of patients with ocular manifestations secondary to systemic diseases and apply Nidana Panchaka principles to identify causative factors and Dosha–Dushya involvement. 2. Students will assist in planning individualized treatment protocols based on Chikitsa Sutra—including Shodhana, Shamana, Rasayana, and local Netra Chikitsa procedures—tailored to each patient's systemic and ocular condition. 3. Students will observe and document treatment progress and outcomes at regular intervals, reflect on the effectiveness of interventions, and correlate clinical improvements with Ayurvedic pathophysiological understanding in the clinical logbook or case summary.
Experiential-Learning 3.3	Clinical Microbiology Correlation in Ophthalmology	1. Students will analyze patient cases with ocular infections and correlate laboratory findings with clinical symptoms. 2. Students will shadow microbiology lab staff during specimen processing and culture techniques. 3. Students will reflect on infection control measures, the role of normal ocular flora, and the impact of gut microbiota on eye health.
Modular Assessment		

Assessment method	Hour
Instructions - Conduct a structured Modular assessment. Assessment will be for 50 marks. Keep structured marking pattern. Keep record of the structured pattern used for assessment. Calculate the Modular grade point as per table 6 C. Same as Module - 1 or Any practical in converted form can be taken for assessment (25 Marks) and Any Experiential Learning as portfolio / reflections / presentations, can be taken as an assessment.(25 Marks)	4

Module 4 : Netra Roga-Rogi Pareeksha (Ophthalmic history taking and Eye Examination)

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

1. Describe the principles and sequence of comprehensive ophthalmic history taking and systematic eye examination using Ayurvedic and modern approaches.
2. Perform accurate methods of ocular examination, correlate findings with patient history, and document results systematically.
3. Analyze clinical cases to integrate history, examination findings, and documentation for effective diagnosis and management of ocular disorders.

Unit 1 Netra Roga-Rogi Itivritta (Ophthalmic history taking)

Importance of history taking in the diagnosis, management, and prognostic assessment of ocular diseases.
General information: demographic details, systemic history, past ocular and medical history, personal and family history, and drug history.
Presenting complaints: onset, duration, progression, laterality, severity, and associated symptoms.
Symptomatology of common ocular complaints and development of differential diagnostic skills — e.g., defective vision, pain, redness, swelling, watering, itching, photophobia, diplopia, flashes/floaters, and field defects.

References: 1,2,3,4,5,6,7,8,9,10,11,17,24,25,30,33,34,35,36,38,41

3A	3B	3C	3D	3E	3F	3G
CO1,CO3,CO5	Describe the importance of history taking in Netra Tantra for accurate diagnosis and management. Outline the Nidana Panchaka and the relevance of Trividha, Shadvidha, Ashtavidha, and Dashavidha Pariksha in Netra Roga. Discuss general information, including demographic data, systemic history, past history, family history, personal and drug history, and emphasize how these aspects contribute to understanding etiopathogenesis and prognosis. Explain the characteristics of presenting complaints (onset, duration, progression, laterality, severity, associated symptoms, etc.).	3	Lecture	CK	Know	CD,CBL, L,L&GD, L&PPT ,L _VC,PT,S IM

	Classify and discuss the common ocular symptoms with their differential diagnostic relevance.					
CO1,CO5,CO6,CO8	Demonstrate the ability to obtain a comprehensive and systematic ophthalmic history from patients using a structured approach. Record general and ocular history accurately in a standard clinical format with emphasis on clarity, completeness, and relevance to diagnosis. Identify, elicit, and differentiate common ocular symptoms through focused questioning and observation. Analyze Ayurvedic methods of Pareeksha and modern structured ophthalmic history taking to develop an integrative diagnostic perspective.	6	Practical Training 4.1	PSY-GUD	Shows-how	CBL,D-BED,ECE,IBL,PL
CO1,CO6,CO8	Perform complete ophthalmic history taking independently in real patient settings. Apply both modern and Ayurvedic diagnostic approaches during patient interaction. Demonstrate effective communication and empathy while eliciting patient history. Analyze and interpret history findings to formulate probable and differential diagnoses. Reflect on challenges encountered during history taking and refine clinical and interpersonal skills.	8	Experiential-Learning 4.1	AFT-VAL	Does	CBL,ECE,IBL,PAL,SDL

Unit 2 Netra Pareeksha (Eye Examination and Assessment)

General Inspection: Head posture, facial symmetry, and ocular adnexa.
Visual Function Tests: Visual acuity, pinhole test, near vision, color vision, contrast sensitivity, and visual field assessment.
Systematic Ocular Examination: Forehead, eyebrows, eyelids, conjunctiva, cornea, sclera, anterior chamber, iris, pupil, lens, vitreous, retina, and optic disc.
Basic Diagnostic Tools: Torchlight, loupe, slit-lamp biomicroscopy, ophthalmoscopy (direct and indirect), tonometry, and gonioscopy.
Functional Assessment: Ocular motility, pupillary reflexes, accommodation, and binocular vision.
Imaging: Overview of ocular imaging modalities relevant to diagnosis and documentation.
Biochemical Investigations: Relevant laboratory tests supportive of ocular and systemic diagnosis.
Documentation: Systematic recording of clinical findings, investigation results, and treatment details.

References: 1,2,3,4,5,6,7,8,9,10,11,12,13,14,15,17,24,25,30,33,34,35,36,40						
3A	**3B**	**3C**	**3D**	**3E**	**3F**	**3G**
CO1,CO2,CO3 ,CO7,CO8	Explain the principles of general and systematic ocular examination, including inspection of head posture, facial symmetry, and adnexa. Describe visual function and functional assessments, including visual acuity, pinhole test, near vision, colour vision, contrast sensitivity, visual fields, ocular motility, pupillary reflexes, accommodation, and binocular vision. Discuss methods of anterior and posterior segment examination using clinical equipment such as torchlight, loupe, slit lamp, direct and indirect ophthalmoscopy, and tonometry. Outline the principles of accurate documentation and systematic recording of clinical findings to support diagnosis and management.	7	Lecture	CK	Know	CBL,L& GD,L&PP T ,L_VC, PAL,PBL, SIM
CO1,CO2,CO7	Demonstrate systematic general inspection of patients, assessing head posture, facial symmetry, and ocular adnexa accurately. Perform visual function tests, including visual acuity, pinhole test, near vision, color vision, contrast sensitivity, and visual field assessment, and interpret the findings. Conduct a detailed ocular examination of anterior and posterior segments (eyelids, conjunctiva, cornea, sclera, anterior chamber, iris, pupil, lens, vitreous, retina, optic disc) using appropriate equipment. Demonstrate functional assessments, including ocular motility, pupillary reflexes, accommodation, and binocular vision. Apply clinical equipment correctly, including torchlight, loupe, slit lamp, direct and indirect ophthalmoscopes, tonometer, etc., ensuring proper technique and safety. Record and document examination findings systematically, correlating observations with clinical relevance for diagnosis and management.	10	Practical Training 4.2	PSY-GUD	Shows-how	CBL,PAL ,RP
CO1,CO2,CO5 ,CO6	Demonstrate the use of ocular equipment for accurate anterior and posterior segment examination. Demonstrate proper methods for systematic documentation of ocular examination findings, ensuring clarity, completeness, and clinical relevance.	4	Practical Training 4.3	PSY-GUD	Shows-how	CBL,D-B ED,ECE,I BL,PAL,P BL,RP
CO1,CO2,CO5	Develop independent competency in performing comprehensive ocular examinations.	10	Experiential-	PSY-	Does	CBL,ECE

,CO6	Apply analytical skills to interpret ocular findings and correlate them with clinical relevance. Enhance reflective and professional skills by recognizing challenges, refining techniques, and improving patient interactions.		Learning 4.2	MEC		,IBL,PAL, SIM
CO1,CO2,CO5 ,CO6	Integrate modern and Ayurvedic perspectives during ocular examinations to enhance holistic diagnostic reasoning. Develop communication and patient management skills by effectively interacting with patients while performing examinations and explaining procedures.	8	Experiential-Learning 4.3	PSY-MEC	Does	CBL,ECE ,IBL,PAL, SIM

Practical Training Activity

Practical No	Name	Activity details
Practical Training 4.1	Netra Roga-Rogi Itivritta Practical	1. Demonstrate the systematic method of ophthalmic history taking, highlighting components of general and ocular history and their diagnostic relevance. 2. Perform structured ophthalmic history taking on patients, identify and differentiate common ocular symptoms, and record findings in standard format under supervision. 3. Correlate Ayurvedic Pareeksha methods with modern history taking through volunteers/patients and discussion.
Practical Training 4.2	Ocular Examination and Functional Assessment	1. Demonstrate systematic general inspection and examination of the anterior and posterior ocular segments using appropriate equipment. 2. Perform visual function tests and functional assessments under supervision. 3. Practice proper use of clinical equipment and record all findings systematically in a standard format.

Practical Training 4.3	Equipment Handling and Documentation	1. Demonstrate the correct use of ocular equipment, highlighting proper technique and safety. 2. Demonstrate systematic examination of anterior and posterior ocular segments using appropriate equipment, emphasizing accurate observation and clinical relevance. 3. Demonstrate proper methods for documenting examination findings clearly and systematically, including recording structural and functional assessments.
Experiential learning Activity		
Experiential learning No	**Name**	**Activity details**
Experiential-Learning 4.1	Integrative Ophthalmic History Practice	1. Students will perform complete ophthalmic history taking on patients in a clinical setting, demonstrating effective communication, empathy, and accurate documentation. 2. Students will apply Ayurvedic diagnostic frameworks along with modern methods to interpret findings and generate differential diagnoses. 3. Students will present their recorded case histories, reflect on challenges faced during history taking, and discuss strategies for improvement through teacher feedback.
Experiential-Learning 4.2	Independent Clinical Ocular Examination and Reflection	1. Students will perform hands-on ocular examinations on real patients, including inspection, visual function tests, and anterior/posterior segment assessment under real-world conditions. 2. Students will record and discuss findings with teachers to interpret results, generate differential diagnoses, and integrate observations with clinical context. 3. Students will engage in reflection sessions, analyzing challenges faced during examination (e.g., patient cooperation,

		instrument handling) and proposing strategies for improving clinical performance and patient communication.
Experiential-Learning 4.3	Integrative Ocular Examination and Patient Interaction	1. Students will perform ocular examinations incorporating both modern clinical methods and Ayurvedic diagnostic principles to correlate findings holistically. 2. Students will explain examination procedures to patients during the session, ensuring clear communication, building trust, and addressing patient concerns effectively. 3. Students will participate in teacher-led discussion sessions to reflect on integrative findings, patient interaction, and strategies for improving examination technique and communication skills.

Modular Assessment

Assessment method	**Hour**
Instructions - Conduct a structured Modular assessment. Assessment will be for 50 marks. Keep structured marking pattern. Keep record of the structured pattern used for assessment. Calculate the Modular grade point as per table 6 C. Same as Module - 1 or Any practical in converted form can be taken for assessment (25 Marks) and Any Experiential Learning as portfolio / reflections / presentations, can be taken as an assessment.(25 Marks)	4

Module 5 : Jivan Rakshaka evam Atyayika Aushadha Vigyana (Life Saving and Emergency Drugs Pharmacology)

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

1. Explain the principles of pharmacokinetics, pharmacodynamics, and pharmacotherapeutics of commonly used and emergency drugs.
2. Describe mechanisms of action, therapeutic indications, and adverse effects of key ophthalmic and systemic drugs.
3. Apply the principles of rational prescribing for safe and effective patient care.

Unit 1 Samanya Aushadha Vigyana Siddhanta (General Pharmacological Principles)

Definitions
Pharmacokinetics
Pharmacodynamics
Pharmacotherapeutics

References: 30,33,37

3A	3B	3C	3D	3E	3F	3G
CO1,CO2,CO3	Define key pharmacological terms (drug, Pharmacology, pharmacokinetics, pharmacodynamics, pharmacotherapeutics, clinical pharmacology). Describe the routes of drug administration. Explain the principles of drug absorption, membrane transport, distribution, bioavailability, metabolism, and elimination. Explain the mechanisms of drug action. Describe receptor types, drug–receptor interactions, dose-response relationships, tolerance, tachyphylaxis, desensitization, and up/down regulation of receptors. Discuss therapeutic index, potency, efficacy, safety margin, and adverse drug reactions, drug-drug interactions.	2	Lecture	CK	Know	L,L&PPT

CO1,CO2,CO3	Analyse pharmacokinetic profiles of commonly used drugs through problem-based learning.	2	Practical Training 5.1	PSY-GUD	Shows-how	CBL,PBL
CO1,CO2,CO3 ,CO6	**1. Discuss Adverse Drug Reactions and Drug-Drug interactions.** **2. Analyze prescription errors or ADR reports from real/virtual case records.** **3. Reflect on ethical and safety considerations in drug administration.**	2	Experiential-Learning 5.1	PSY-MEC	Does	CBL,DIS, PBL

Unit 2 Sarvadaihika Aushadha Vigyan (Systemic Pharmacology)

Drugs Acting on
Autonomic Nervous System: General considerations; cholinergic transmission and cholinergic drugs; anti-cholinergic drugs and drugs acting on autonomic ganglia; adrenergic transmission and adrenergic drugs; anti-adrenergic drugs.
Central and Peripheral Nervous System: General anesthetics; sedatives-hypnotics; anti-epileptic drugs; opioid analgesics and antagonists; skeletal muscle relaxants; and local anesthetics.
Cardiovascular System: Drugs acting on renin-angiotensin system; cardiac glycosides and drugs for heart failure; antiarrhythmic drugs; antianginal and other anti-ischaemic drugs; antihypertensive drugs.
Endocrine System: Anterior pituitary hormones; thyroid hormones and thyroid inhibitors; insulin, oral antidiabetic drugs, and glucagon.
Blood and blood formation: Haematinics and erythropoietin; drugs affecting coagulation, bleeding, and thrombosis; hypolipidemic drugs.
Gastrointestinal drugs: Drugs for peptic ulcer and GERD; antiemetic, prokinetic, digestant drugs; drugs for constipation and diarrhoea.
Drugs acting on Respiratory system: Drugs for cough and bronchial asthma.
Drugs acting on Kidney: Diuretics; antidiuretics.

References:

3A	3B	3C	3D	3E	3F	3G
CO1,CO3	Describe pharmacokinetics of important drugs in above categories. Describe mechanisms of drug action, therapeutic uses, dose, dosage, contraindications,	2	Lecture	CK	Know	L,L&PPT

	and adverse effects of prototype and other important drugs related to above topics. Explain drug–drug interactions.					
CO1,CO2,CO3	Analyse classes of drugs (e.g., sympathomimetics vs. sympatholytics) in group discussions. Demonstrate the case scenarios using OPD, IPD patients, and web-based resources. Demonstrate rational prescription writing for common clinical conditions.	10	Practical Training 5.2	PSY-GUD	Shows-how	CBL,DIS, PBL
CO1,CO2,CO3 ,CO6	Review and present journal articles on drugs acting on the above systems.	10	Experiential-Learning 5.2	PSY-MEC	Does	CBL,DIS, JC,PER,SDL

Unit 3 Anya Aushadha (Other drugs)

Corticosteroids.
Autacoids and related drugs: Histamine and antihistaminics; serotonin, its antagonists; eicosanoids (prostaglandins, leukotrienes) and platelet activating factor; NSAIDs, antipyretics and analgesics.
Anti-migraine, anti-rheumatoid, and anti-gout drugs.
Miscellaneous drugs: Immunosuppressant drugs; antiseptics, disinfectants, and parasiticides; chelating agents; vitamins and nutrients; immunoglobulins; anticancer drugs.

References: 30,33,37

3A	3B	3C	3D	3E	3F	3G
CO1,CO3	Describe pharmacokinetics of important drugs in above categories. Describe mechanisms of drug action, therapeutic uses, dose, dosage, contraindications, and adverse effects of prototype and other important drugs related to above topics. Explain drug–drug interactions. Describe the role of vitamins and nutrients, and their pharmacotherapeutics in health and	4	Lecture	CK	Know	L,L&PPT

	disease.					
CO1,CO2,CO3	Demonstrate the case scenarios using OPD, IPD and web-based resources.	3	Practical Training 5.3	PSY-GUD	Shows-how	CBL,DIS, IBL
CO1,CO2,CO3 ,CO6	Discuss rational drug selection from the above drug categories for therapeutic indications. Analyze the risk-benefit profiles of various drugs in different case scenarios and clinical presentations. Reflect on nutritional supplementation.	8	Experiential-Learning 5.3	PSY-MEC	Does	CBL,DIS, IBL,PBL, SDL

Unit 4 Krimighna Aushadha (Antimicrobials and Anthelmintics)

General considerations: sulphonamides, cotrimoxazole and quinolones; beta-lactam antibiotics; tetracyclines and chloramphenicol (broad-spectrum antibiotics); aminoglycoside antibiotics; macrolide, lincosamide, glycopeptide and other antibacterial antibiotics; urinary antiseptics; antitubercular drugs; antileprotic drugs; antimalarial drugs.
Antifungal drugs.
Antiviral drugs: Non-retroviral and anti-retroviral drugs.
Anthelmintics and Antimalarial Drugs.
Antamoebic and other Antiprotozoal drugs.

References: 30,33,37

3A	3B	3C	3D	3E	3F	3G
CO1,CO3	Define and classify antibiotic, antifungal, antiviral, antiprotozoal and anthelmintic drugs. Describe the mechanism of action, resistance, therapeutic uses, and adverse effects of drugs of above-mentioned categories.	2	Lecture	CK	Know	L,L&PPT
CO1,CO2,CO3	Present case discussions on rational antimicrobial use. Review resistance patterns and discuss strategies to minimize antimicrobial resistance.	5	Practical Training 5.4	PSY-GUD	Shows-how	CBL,DIS, IBL,PBL

CO1,CO2,CO3,CO6	Demonstrate rational prescription for bacterial, fungal, viral, and helminthic infections.	6	Experiential-Learning 5.4	PSY-MEC	Does	CBL,DIS,DA,IBL,PBL,SDL

Practical Training Activity

Practical No	Name	Activity details
Practical Training 5.1	Applied Pharmacology 1	1. Demonstrate analysis of pharmacokinetic and pharmacodynamic profiles of selected drug groups using clinical case discussions. • Examples: ANS Drugs: Pilocarpine vs. Physostigmine; Atropine vs. Homatropine vs. Tropicamide, Cardiovascular drugs: Atenolol vs. Metoprolol vs. Propranolol, NSAIDs: Ibuprofen vs. Diclofenac vs. Naproxen. Antidiabetics: Metformin vs Sulfonylureas vs. DPP-4 inhibitors. Antibiotics: Amoxicillin vs. Azithromycin vs. Ciprofloxacin. 2. Illustrate the interpretation of dose-response and bioavailability graphs through interactive examples.
Practical Training 5.2	Applied Pharmacology-II	1. Conduct group discussions to compare the actions, indications, and contraindications of commonly used drugs. 2. Demonstrate clinical case scenarios using real or simulated cases and guide students in correlating appropriate drug choices with specific patient conditions.
Practical Training 5.3	Applied Pharmacology-III	1. Conduct group discussions to compare the actions, indications, and contraindications of important drugs. 2. Demonstrate clinical case scenarios (OPD/IPD) and correlate drug choice with patient condition using web-based simulation or real cases.

Practical Training 5.4	Infection Management	1. Discuss case scenarios focusing on rational antimicrobial selection based on sensitivity patterns. 2. Review and demonstrate local microbial resistance patterns from hospital or simulated data.
Experiential learning Activity		
Experiential learning No	**Name**	**Activity details**
Experiential-Learning 5.1	Pharmacovigilance and Pharmaco-ethics	1. Students will observe a demonstration of correct prescription writing. 2. Students will analyze real or simulated case records to identify prescription errors and adverse drug reactions (ADRs), including drug-drug interactions. 3. Students will reflect through guided discussion or journaling on ethical and safety considerations in drug prescription and administration.
Experiential-Learning 5.2	Journal Club	1. Students will select and review recent journal articles related to drugs acting on different systems. 2. Students will present findings in groups and engage in guided discussion to integrate evidence-based understanding into clinical practice.
Experiential-Learning 5.3	Integrated Clinical Therapeutics Exercise	

		1. Students will participate in supervised case-based discussions to select appropriate drugs for specific ocular conditions and justify the rationale based on indication, mechanism of action, safety profile, and patient-specific factors. 2. Students will analyze real or simulated clinical case scenarios to evaluate the risk–benefit profile of different therapeutic options, including identification of potential adverse effects and contraindications. 3. Students will counsel patients under supervision regarding nutritional supplementation and maintain a brief reflective log on its role and clinical relevance in selected ocular disorders.
Experiential-Learning 5.4	Clinical Decision-Making in Antimicrobial Therapy	1. Students will participate in simulated or real OPD/IPD sessions to design rational prescriptions for bacterial, fungal, viral, and helminthic infections. 2. Students will analyze patient case records to evaluate drug choice, dosage, route, and duration of antimicrobial therapy. 3. Students will reflect through group discussion or debriefing on outcomes of rational versus irrational prescribing in infectious diseases.

Modular Assessment

Assessment method	**Hour**
Instructions - Conduct a structured Modular assessment. Assessment will be for 50 marks. Keep structured marking pattern. Keep record of the structured pattern used for assessment. Calculate the Modular grade point as per table 6 C. Same as Module - 1 or Any practical in converted form can be taken for assessment (25 Marks) and Any Experiential Learning as portfolio / reflections / presentations, can be taken as an assessment.(25 Marks)	4

Module 6 : Yantra-Shashtra Vigyan (Basic Equipment and Instruments for Ophthalmology)

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

1. Explain Ayurvedic and modern principles governing the design and function of ophthalmic diagnostic and surgical instruments.
2. Demonstrate proper handling, operation, and interpretation of findings using essential ophthalmic equipment and instruments.
3. Perform basic diagnostic and surgical procedures with accuracy, safety, and integrative clinical insight.

Unit 1 Yantra related to Netra Pariksha (Basic Equipment for Eye Examination)

Yantra described in Ayurveda related to Netra Tantra.
Principles, Techniques, Clinical Use and Interpretation of: Visual Testing Equipment, Color Vision Tests, Autorefractometer, Retinoscope, Keratometer, Slit Lamp Biomicroscopy, Direct and Indirect Ophthalmoscopy, 90 D, 78 D, 20 D lenses, Tonometry, Lensometer, Gonioscopy, etc.
Care and handling of Equipment.

References: 1,2,3,4,5,6,7,8,9,10,11,17,25,30,33,34,35,36,38

3A	3B	3C	3D	3E	3F	3G
CO1,CO2,CO3 ,CO4	Discuss the principles, techniques, and clinical applications of ophthalmic diagnostic instruments.	7	Lecture	CC	Know	L&PPT ,L _VC,PAL
CO1,CO2,CO4 ,CO7	Demonstrate correct identification, handling, application, and maintenance of diagnostic ophthalmic equipment such as retinoscope, slit lamp, tonometer, ophthalmoscopes, gonio lenses, etc.	4	Practical Training 6.1	PSY-GUD	Shows-how	D,DIS,PA L,PT
CO1,CO2,CO4 ,CO6	Perform basic ophthalmic diagnostic procedures using equipment such as retinoscope, slit lamp, tonometer, ophthalmoscopes, gonio lenses, etc., with accuracy and patient safety.	10	Practical Training 6.2	PSY-GUD	Shows-how	D,ECE,P AL,SIM

CO1,CO2,CO3,CO6	Interpret and correlate findings obtained from diagnostic equipment with normal and abnormal ocular conditions under supervision.	9	Experiential-Learning 6.1	PSY-MEC	Does	CBL,DIS,ECE,IBL,SDL
CO1,CO2,CO3,CO6	Apply interpreted diagnostic findings to formulate preliminary clinical impressions and contribute to supervised clinical decision-making.	9	Experiential-Learning 6.2	PSY-MEC	Does	CBL,DIS,ECE,IBL,PBL,SDL

Unit 2 Shashtra related to Netra (Instruments for Ophthalmology)

Shashtra described in Ayurveda related to Netra Tantra.
Concept of Shashtrakarmagara.
Ophthalmic surgical instruments.
Principles and techniques of suturing, suturing materials, types of needles, etc.
Care and handling of blunt and sharp instruments.

References: 1,2,3,4,5,6,7,8,9,25,30,33,34,35,36,38,39

3A	3B	3C	3D	3E	3F	3G
CO1,CO2	Discuss the principles, techniques, and clinical applications of ophthalmic blunt and sharp instruments. Describe Shashtrakarmagara in Ayurveda.	3	Lecture	AFT-CHR	Know	SDL,TUT
CO2	Demonstrate correct handling and basic operation of ophthalmic blunt and sharp instruments.	6	Practical Training 6.3	PSY-MEC	Knows-how	D,TUT
CO2	Conduct regular care of the blunt and sharp instruments used in OPD, IPD, and OT.	8	Experiential-Learning 6.3	AFT-SET	Does	DIS,SDL

Practical Training Activity

Practical No	Name	Activity details

Practical Training 6.1	Demonstration of Diagnostic Ophthalmic Equipment	1. Demonstrate identification and assembly of basic diagnostic equipment, including retinoscope, slit lamp, tonometer, ophthalmoscopes, and gonio lenses. 2. Illustrate proper handling, focusing, and positioning techniques for each equipment on patients, models, or volunteers. 3. Explain cleaning, calibration, and maintenance procedures, ensuring safety and equipment longevity.
Practical Training 6.2	Demonstration of Basic Ophthalmic Diagnostic Techniques	1. Demonstrate proper patient positioning and equipment setup for diagnostic procedures. 2. Illustrate the step-by-step examination technique for each procedure, emphasizing accuracy and patient comfort. 3. Explain safety precautions, error minimization, and infection control during equipment-based examinations.
Practical Training 6.3	Instrument identification and care	1. Demonstrate the identification and classification of ophthalmic blunt and sharp instruments. 2. Illustrate correct methods of holding, passing, and operating instruments safely during examination and minor procedures. 3. Explain cleaning, sterilization, and safe storage practices for maintaining instrument functionality.
Experiential learning Activity		
Experiential learning No	**Name**	**Activity details**
Experiential-Learning 6.1	Interpretation of Diagnostic Findings	1. Students will independently observe and record findings from slit lamp, tonometry, ophthalmoscopy, and gonioscopy

		examinations. 2. Students will interpret results by comparing observed findings with normal ocular anatomy and function. 3. Students will correlate abnormal findings with possible ocular pathologies and discuss interpretations under faculty supervision.
Experiential-Learning 6.2	Clinical Correlation and Decision-Making	1. Students will analyze and interpret diagnostic findings to identify potential ocular conditions. 2. Students will formulate preliminary clinical impressions and discuss differential diagnoses. 3. Students will participate in supervised case discussions to contribute to management planning and clinical decision-making.
Experiential-Learning 6.3	Instrument Care and Maintenance Practice	1. Students will clean, dry, and store ophthalmic blunt and sharp instruments following standard aseptic protocols. 2. Students will perform an inspection of instruments for sharpness, alignment, and integrity before and after use. 3. Students will maintain an instrument care log, documenting cleaning schedules and maintenance actions under supervision.

Modular Assessment

Assessment method	**Hour**
Instructions - Conduct a structured Modular assessment. Assessment will be for 50 marks. Keep structured marking pattern. Keep record of the structured pattern used for assessment. Calculate the Modular grade point as per table 6 C. Same as Module - 1 or Any practical in converted form can be taken for assessment (25 Marks) and	4

Any Experiential Learning as portfolio / reflections / presentations, can be taken as an assessment.(25 Marks)	

Module 7 : Agropharniya and Yogya Vidhi (Basic Surgical Preparedness and Skill Labs)

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

1. Explain the principles of preoperative preparation, asepsis, sterilization, and operation theatre maintenance for safe ophthalmic surgery.
2. Develop hands-on proficiency in basic surgical techniques through supervised clinical and simulation-based training.
3. Integrate theoretical knowledge with practical skills to demonstrate readiness and confidence in performing clinical ophthalmic procedures.

Unit 1 Agropaharaniya for Netra Shalya Karma (Preparedness for Eye Surgery)

Eye OPD ergonomics.
Agropaharniya karmas in Ayurveda.
Selection and Preparation of the patient: Informed Consent, Systemic health evaluation, Counselling of the patient, Local preparation of the operative eye.
Preparation of the surgeon: Maintenance of personal hygiene and asepsis, Surgical attire, gowning, gloving techniques, and OT etiquette.
Preparation of the Operation Theatre (OT): Layout and principles of OT design for ophthalmic surgery, Preparation and maintenance of OT equipment.

References: 1,2,3,4,5,6,7,8,9,17,25,30,34,40

3A	3B	3C	3D	3E	3F	3G
CO1,CO2,CO3	Describe Eye OPD ergonomics. Discuss and apply the principles of patient, surgeon, and operation theatre preparation for Netra-Shalya karmas.	3	Lecture	CAP	Know	L&PPT ,L_VC,PT,TUT
CO1,CO2,CO3	Demonstrate OT preparation, surgeon preparation, and patient preparation. Demonstrate correct gowning, gloving, and OT etiquette in a simulated or real environment.	6	Practical Training 7.1	PSY-GUD	Shows-how	FV,PAL,PT,TUT
CO1,CO2,CO6	Apply OT ergonomics and aseptic protocols in a real or simulated OPD/OT setting under	7	Experiential-	AFT-	Does	ECE,FV,P

,CO8	supervision and independently.		Learning 7.1	VAL		AL,PT,SDL

Unit 2 Nirjantukarana (Sterilization)

Concept of Sterilization in Ayurveda.
Principles of sterilization and disinfection.
Methods of sterilization: heat, chemical, gaseous, and modern techniques.
Sterilization of ophthalmic instruments, lenses, and materials.
OT fumigation and aseptic protocols.
Infection control, Prophylaxis, Prevention, and management of postoperative complications.
Recent Advances in techniques of sterilization (e.g CSSD).

References: 1,2,3,4,5,6,7,8,9,25,30,34,40

3A	3B	3C	3D	3E	3F	3G
CO1,CO2,CO3	Describe various sterilization and disinfection methods relevant to ophthalmic surgery described in Ayurveda and contemporary scientific practice.	3	Lecture	CK	Know	L,L&PPT,L_VC
CO1,CO2,CO6,CO7,CO8	Perform sterilization of ophthalmic instruments and demonstrate OT aseptic protocols.	7	Practical Training 7.2	PSY-GUD	Shows-how	D,PT,TUT
CO1,CO2,CO6,CO7,CO8	Plan infection control and sterilization measures during OT preparation and postoperative care in simulated and real settings.	9	Experiential-Learning 7.2	AFT-RES	Does	D,FV,PrBL,TUT

Unit 3 Yogya Vidhi (Skill labs)

Concept of Yogya Vidhi in Ayurveda.
Hands-on training in ophthalmic surgical skills using simulation, wet labs, model/animal eyes, and virtual simulators.
Training in OT ergonomics, preoperative preparation, asepsis, sterile technique, and emergency surgical scenarios.

Continuous assessment and feedback to develop precision, hand–eye coordination, and confidence.

References: 1,3,4

3A	3B	3C	3D	3E	3F	3G
CO1,CO3	Describe the role of simulation-based learning, wet lab exercises, and virtual surgical skill in developing ophthalmic surgical skills.	4	Lecture	CK	Know	L,L&PPT,L_VC
CO1,CO2,CO3	Demonstrate basic ophthalmic surgical skills (e.g., suturing, instrument handling, tissue dissections, etc.) on models or simulators.	7	Practical Training 7.3	PSY-GUD	Shows-how	D,DL,D-M,DIS,DSN,ECE,SIM
CO1,CO2,CO3,CO6	Apply, integrate hand–eye coordination, and precision through supervised practice in skill labs and simulated surgical scenarios.	10	Experiential-Learning 7.3	PSY-MEC	Does	D,DL,D-M,DSN,PT,SDL,SIM,TBL

Practical Training Activity

Practical No	Name	Activity details
Practical Training 7.1	Ophthalmic OT Preparation and Aseptic Technique Practice	1. Demonstrate a mock pre-operative patient preparation, including eye marking, draping, and antisepsis. 2. Demonstrate proper hand scrubbing, gowning, and gloving techniques under supervision. 3. Participate in an OT setup demonstration, arranging instruments and materials according to surgical requirements.
Practical Training 7.2	Instrument Sterilization & OT Protocol Drill	1. Demonstrate the sterilization of surgical instruments and intraocular lenses (IOLs) using various methods (All the

		sterilization procedures must align with institutional biosafety and infection control policies as per NABH and AYUSH Hospital Accreditation Standards). 2. Illustrate correct packing, loading, and unloading procedures of the autoclave. 3. Demonstrate chemical sterilization techniques for lenses. 4. Conduct a mock protocol for OT cleaning and fumigation.
Practical Training 7.3	Surgical Simulation and Reflective Learning	1. Perform independent surgical steps on simulators or animal eyes and provide corrective feedback. 2. Demonstrate OT simulations, including patient preparation, aseptic conduct, and ergonomic positioning. 3. Conduct mock emergency drills (e.g., anaphylaxis, intraoperative bleeding) and demonstrate proper management. 4. Participate in reflective writing sessions, identify personal skill gaps, and areas for improvement after feedback.
Experiential learning Activity		
Experiential learning No	**Name**	**Activity details**
Experiential-Learning 7.1	Preoperative Counseling and OT Preparedness Practice	1. Students will conduct role-play sessions simulating patient–surgeon counseling and consent to understand communication, empathy, and ethical aspects. 2. Students will perform and reflect on aseptic preparation drills (gowning, gloving, maintaining sterility) and discuss implications of breaches in sterility. 3. Shadow OT staff during preoperative preparation and write reflective notes on teamwork, coordination, and its effect on surgical outcomes.
Experiential-	Infection Control	

Learning 7.2	Simulation & Reflection	1. Students will shadow OT staff to observe sterilization procedures and aseptic preparation. 2. Students will participate in a mock “infection outbreak drill” and propose corrective and preventive measures. 3. Students will reflect through writing on a case of postoperative infection, analyzing how it could have been prevented.
Experiential-Learning 7.3	Ophthalmic Microsurgery Simulation Lab	1. Students will perform basic and advanced surgical procedures on synthetic or biological eye models (e.g., suturing, capsulorhexis, IOL implantation, trabeculectomy) under microscope guidance. 2. Students will engage in micro-instrument handling and precision drills, such as threading fine sutures or bead transfer, to enhance dexterity and hand–eye coordination. 3. Students will record and review surgical simulations for structured peer and faculty feedback to refine technique and build surgical confidence.

Modular Assessment

Assessment method	**Hour**
Instructions - Conduct a structured Modular assessment. Assessment will be for 50 marks. Keep structured marking pattern. Keep record of the structured pattern used for assessment. Calculate the Modular grade point as per table 6 C. Same as Module - 1 or Any practical in converted form can be taken for assessment (25 Marks) and Any Experiential Learning as portfolio / reflections / presentations, can be taken as an assessment.(25 Marks)	4

Module 8 : Kriyakalpa and Panchkarma

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

1. Discuss the principles, indications, and procedures of Ayurvedic topical ocular therapies and Panchkarma techniques.
2. Develop practical skills in performing Kriyakalpa and related procedures with awareness of safety, pharmacology, and possible complications.
3. Integrate classical Ayurvedic concepts with modern ophthalmic practice through effective clinical application and documentation.

Unit 1 Kriyakalpa (Topical Ocular Therapeutics)

Introduction: Definition, Types, Classification, and Importance of Kriyakalpa.
Principles and procedures: Seka, Ashchyotana, Pindi, Bidalaka, Tarpana, Putapaka, Anjana.
Avgunthan, Thalam, Kizi, Netrapichu, Shirolepa, and Mukhalepa.
Indications, contraindications, dose, time, duration, and Standard operating procedure (SOP) of each procedure.
Purvakarma, Pradhan karma, and Pashchat karma of Kriyakalpa.
Samyaka yoga, Hina yoga, and Atiyoga of each procedure.
Mode of action of Kriyakalpa in Netra rogas with reference to ocular pharmacology.
Complications of Kriyakapla and their management.
Common drugs and formulations used for Kriyakalpa procedures.
Modern tools, technologies, and innovations for Kriyakalpa procedures.

References: 1,2,3,4,5,6,7,8,9,14,15,17,18,19,20,21

3A	3B	3C	3D	3E	3F	3G
CO1,CO2,CO3	Describe the definition, classification, evolution, and importance of Netra Kriyakalpa and related classical procedures.	6	Lecture	CK	Know	L&GD,L &PPT ,LS ,PL,TUT

CO2	Demonstrate stepwise performance of Seka, Ashchyotana, Pindi, Bidalaka, Tarpana, Putapaka, and Anjana with proper Purvakarma, Pradhanakarma, and Paschat karma as per SOPs.	10	Practical Training 8.1	PSY-GUD	Shows-how	D-BED,D-M,L_VC
CO1,CO2	Demonstrate stepwise performance of additional Kriyakalpa Procedures described in Ayurvedic classics with proper Purvakarma, Pradhanakarma, and Paschat karma as per SOPs.	2	Practical Training 8.2	PSY-GUD	Shows-how	CBL,D-BED,L&PPT ,PL,PER,SDL
CO1,CO2,CO7	Analyze and perform Netra Kriyakalpa procedures, elucidating their mode of action and pharmacological basis by integrating Ayurvedic principles with modern scientific concepts.	10	Experiential-Learning 8.1	PSY-MEC	Does	BL,CBL,D,L&PPT,L_VC,PT
CO1,CO2,CO7	Identify, analyze, and manage possible complications of Kriyakalpa procedures, incorporating modern tools, safety measures, and innovative approaches.	8	Experiential-Learning 8.2	PSY-MEC	Does	CBL,D,PBL,RLE

Unit 2 Panchkarma in Netra Chikitsa

Application and therapeutic utility of Snehana, Swedana, Vamana, Virechana, Nasya, Nirooha vasti, Anuvasana vasti, and Raktamokshana therapy in the treatment of various Netra rogas.
Murdha Taila - Shiro-abhyanga, Shiropichu, Shirodhara, Shirobasti for Netra chikitsa.
Mode of action of Panchakarma procedures in Netra chikitsa.
Complications and their management of Panchakarma procedures relevant to Netra chikitsa.

References:

3A	3B	3C	3D	3E	3F	3G
CO1	Describe and explain the therapeutic application and indications of Panchakarma	4	Lecture	CK	Know	PER,PBL,

	procedures and Murdha taila in Netra Rogas.					RLE,TUT
CO1,CO2,CO7	Demonstrate and perform Panchakarma and Murdha Taila procedures relevant to Netra Chikitsa with proper technique, sequence, and patient safety.	8	Practical Training 8.3	PSY-GUD	Shows-how	D,L_VC, PL,PBL
CO1,CO2	Perform Panchakarma procedures, recognize possible complications, and apply appropriate management strategies in the context of Netra Chikitsa.	8	Experiential-Learning 8.3	PSY-ORG	Does	CBL,D,D-BED,PT

Practical Training Activity

Practical No	Name	Activity details
Practical Training 8.1	Practical Skill Demonstration in Standardized Performance of Netra Kriyakalpa	1. Demonstrate patient preparation, material arrangement, and environmental setup as per SOP, ensuring aseptic conditions, correct formulation, appropriate temperature, and proper patient positioning. 2. Demonstrate the execution of Netra Kriyakalpa procedures - Seka, Ashchyotana, Pindi, Bidalaka, Tarpana, Putapaka, and Anjana, covering Purvakarma, Pradhankarma, and Paschatkarma as per standard operating procedures (SOPs). 3. Illustrate post-procedure care, cleaning the area, applying soothing dravya, advising rest and precautions, and ensuring safe disposal of used materials. 4. Document and reflect on clinical activities by recording observations, patient responses, and feedback in logbooks for skill evaluation. 5. Explain and illustrate the identification and management of indications, contraindications, and potential complications of each Kriyakalpa procedure, emphasizing aseptic practice, correct formulation handling, and integration of modern tools and techniques.
Practical Training 8.2	Netra Kriyakalpa practical additional Procedures	1. Perform and explain selected additional Kriyakalpa procedures (e.g., Avgunthan, Thalam, Kizi, Netrapichu, Shirolepa, and Mukhalepa, etc.) step-by-step, maintaining correct technique, duration, and patient comfort.

		2. Document and reflect on clinical experiences by recording observations, patient responses, and feedback in logbooks for ongoing skill evaluation.
Practical Training 8.3	Demonstration of Panchakarma and Murdhataila Procedures in Netra Chikitsa	1. Demonstrate the preparation of the patient, instruments, and medicaments as per SOP, ensuring hygiene, comfort, and correct positioning. 2. Demonstrate, step-by-step, the indicated Panchakarma procedures and Murdha Taila therapies with proper sequence and technique. 3. Observe and record patient responses, therapeutic outcomes, and any adverse events during or after the procedure. 4. Explain post-procedure care, documentation standards, and reflective note writing in the logbook for performance evaluation.
Experiential learning Activity		
Experiential learning No	**Name**	**Activity details**
Experiential-Learning 8.1	Perform Kriyakalpa and additional procedures with clinical documentation.	1. Students will perform and document the procedures stepwise (minimum 10 procedures each) for Kriyakalpa and associated therapies. 2. Students will analyze and correlate Ayurvedic principles - Rasa, Guna, Veerya, Vipaka, Prabhava, and Doshagati with modern pharmacological mechanisms such as absorption, local action, and anti-inflammatory effects. 3. Students will present reflections and interpretations through group discussions, charts, or concise reports that integrate Ayurvedic concepts with modern scientific understanding.
Experiential-	Complications	

Learning 8.2	management of Kriyakalpa and additional Procedures	1. Students will perform and record common procedural errors and patient responses observed during or after various Netra Kriyakalpa and additional procedures. 2. Students will analyze and discuss the underlying causes, preventive strategies, and management of complications. 3. Students will demonstrate appropriate corrective and preventive measures, emphasizing aseptic techniques, patient safety, and innovative best practices.
Experiential-Learning 8.3	Hands-on Practice of Panchakarma and Murdhataila Procedures in Netra Chikitsa	1. Students will observe, perform, and document clinical cases where Panchakarma and Murdha taila procedures are applied in the management of Netra Roga. 2. Students will analyze therapeutic mechanisms and correlate outcomes with Ayurvedic principles and modern physiological understanding. 3. Students will identify causes of complications or variations in response and discuss preventive and corrective measures using integrative approaches.

Modular Assessment

Assessment method	**Hour**
Instructions - Conduct a structured Modular assessment. Assessment will be for 50 marks. Keep structured marking pattern. Keep record of the structured pattern used for assessment. Calculate the Modular grade point as per table 6 C. Same as Module - 1 or Any practical in converted form can be taken for assessment (25 Marks) and Any Experiential Learning as portfolio / reflections / presentations, can be taken as an assessment.(25 Marks)	4

Table 4 : Practical Training Activity

Practical No	Practical name	Hours
1.1	Netra Rachana: Pre-clinical Practice	10
1.2	Netra Kriya: Measuring normal parameters	10
2.1	Clinical Optics and Refraction: Instrument Handling	3
2.2	Refraction and Presbyopia – Clinical Evaluation and Correction Practical	6
2.3	Supervised Clinical Refraction	6
2.4	Supervised Spectacle Prescription	5
3.1	Pharmacotherapeutic correlation in ocular diseases related to systemic conditions.	4
3.2	Ocular Specimen Handling and Pathological Examination	8
3.3	Ocular Microbiology and Diagnostic Techniques	8
4.1	Netra Roga-Rogi Itivritta Practical	6
4.2	Ocular Examination and Functional Assessment	10
4.3	Equipment Handling and Documentation	4
5.1	Applied Pharmacology 1	2
5.2	Applied Pharmacology-II	10
5.3	Applied Pharmacology-III	3

5.4	Infection Management	5
6.1	Demonstration of Diagnostic Ophthalmic Equipment	4
6.2	Demonstration of Basic Ophthalmic Diagnostic Techniques	10
6.3	Instrument identification and care	6
7.1	Ophthalmic OT Preparation and Aseptic Technique Practice	6
7.2	Instrument Sterilization & OT Protocol Drill	7
7.3	Surgical Simulation and Reflective Learning	7
8.1	Practical Skill Demonstration in Standardized Performance of Netra Kriyakalpa	10
8.2	Netra Kriyakalpa practical additional Procedures	2
8.3	Demonstration of Panchakarma and Murdhataila Procedures in Netra Chikitsa	8

Table 5 : Experiential learning Activity

Experiential learning No	Experiential name	Hours
1.1	Integrative Netra Tantra (Ophthalmology)	1
1.2	Netra Rachana: Clinical Correlation Practice	6
1.3	Netra Rachana: Imaging reports and Biometry	7
1.4	Netra Kriya: Psycho-physical evaluation	6
1.5	Chakshurendriya Vyapara: Interactive Discussions	6
2.1	Dealing with Difficult Refraction	3
2.2	Refraction and Presbyopia – Clinical Evaluation and Correction Practice	6
2.3	Clinical Refraction Practice	10
2.4	Spectacle Prescription Practice	7
3.1	Clinical observations of Netra Rogas with Systemic Disorders	8
3.2	Integrative Treatment Planning and Outcome Evaluation in Systemic Ocular Disorders	8
3.3	Clinical Microbiology Correlation in Ophthalmology	10
4.1	Integrative Ophthalmic History Practice	8
4.2	Independent Clinical Ocular Examination and Reflection	10
4.3	Integrative Ocular Examination and Patient Interaction	8
5.1	Pharmacovigilance and Pharmaco-ethics	2
5.2	Journal Club	10
5.3	Integrated Clinical Therapeutics Exercise	8

5.4	Clinical Decision-Making in Antimicrobial Therapy	6
6.1	Interpretation of Diagnostic Findings	9
6.2	Clinical Correlation and Decision-Making	9
6.3	Instrument Care and Maintenance Practice	8
7.1	Preoperative Counseling and OT Preparedness Practice	7
7.2	Infection Control Simulation & Reflection	9
7.3	Ophthalmic Microsurgery Simulation Lab	10
8.1	Perform Kriyakalpa and additional procedures with clinical documentation.	10
8.2	Complications management of Kriyakalpa and additional Procedures	8
8.3	Hands-on Practice of Panchakarma and Murdhataila Procedures in Netra Chikitsa	8

Table 6 : Assessment Summary: Assessment is subdivided in A to H points

6 A : Number of Papers and Marks Distribution

Subject Code	Paper	Theory	Practical	Total
AYPG-AB-N	1	100	200	300

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

Credit frame work

AYPG-AB-N consists of 8 modules totaling 16 credits, which correspond to 480 Notional Learning Hours. Each credit comprises 30 Hours of learner engagement, distributed across teaching, practical, and experiential learning in the ratio of 1:2:3. Accordingly, one credit includes 5 hours of teaching, 10 hours of practical training, 13 hours of experiential learning, and 2 hours allocated for modular assessment, which carries 25 marks.

Formative Assessment : Module wise Assessment:will be done at the end of each module. Evaluation includes learners active participation to get Credits and Marks. Each Module may contain one or more credits.
Summative Assessment: Summative Assessment (University examination) will be carried out at the end of Semester II.

6 C : Calculation Method for Modular Grade Points (MGP)

Module Number & Name (a)	Credits (b)	Actual No. of Notional Learning Hours (c)	Attended Number of notional Learning hours (d)	Maximum Marks of assessment of modules (e)	Obtained Marks per module (f)	MGP =d* f/c*e*100
M1. Chikitsiya Netra Sharira (Clinical Anatomy and Physiology of Eye)	2	60		50		
M2. Prakashiki evam Apvartana (Optics and Refraction)	2	60		50		
M3. Netra Roga Nidana evam Krimi Vigyan (Ocular Pathology, Microbiology and Parasitology)	2	60		50		
M4. Netra Roga-Rogi Pareeksha (Ophthalmic history taking and Eye Examination)	2	60		50		
M5. Jivan Rakshaka evam Atyayika Aushadha Vigyana (Life Saving and Emergency Drugs Pharmacology)	2	60		50		
M6. Yantra-Shashtra Vigyan (Basic Equipment and Instruments for Ophthalmology)	2	60		50		

M7. Agropharniya and Yogya Vidhi (Basic Surgical Preparedness and Skill Labs)	2	60		50		
M8. Kriyakalpa and Panchkarma	2	60		50		
MGP = ((Number of Notional learning hours attended in a module) X (Marks obtained in the modular assessment) / (Total number of Notional learning hours in the module) X (Maximum marks of the module)) X 100						

6 D : Semester Evaluation Methods for Semester Grade point Average (SGPA)

SGPA will be calculated at the end of the semester as an average of all Module MGPs. Average of MGPS of the Semester For becoming eligible for Summative assessment of the semester, student should get minimum of 60% of SGPA

SGPA = Average of MGP of all modules of all papers = add all MGPs in the semester/ no. of modules in the semester

Evaluation Methods for Modular Assessment

A S.No	B Module number and Name	C MGP
1	M1.Chikitsiya Netra Sharira (Clinical Anatomy and Physiology of Eye)	C1
2	M2.Prakashiki evam Apvartana (Optics and Refraction)	C2
3	M3.Netra Roga Nidana evam Krimi Vigyan (Ocular Pathology, Microbiology and Parasitology)	C3
4	M4.Netra Roga-Rogi Pareeksha (Ophthalmic history taking and Eye Examination)	C4
5	M5.Jivan Rakshaka evam Atyayika Aushadha Vigyana (Life Saving and Emergency Drugs Pharmacology)	C5
6	M6.Yantra-Shashtra Vigyan (Basic Equipment and Instruments for Ophthalmology)	C6
7	M7.Agropharniya and Yogya Vidhi (Basic Surgical Preparedness and Skill Labs)	C7
8	M8. Kriyakalpa and Panchkarma	C8
	Semester Grade point Average (SGPA) of Sem 3	(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 Ayurveda Examination
AYPG-AB-N
Sem II

Time: 3 Hours ,**Maximum Marks:** 100
INSTRUCTIONS: All questions compulsory

		Number of Questions	Marks per question	Total Marks
Q 1	Application-based Questions (ABQ)	1	20	20
Q 2	Short answer questions (SAQ)	8	5	40

Q 3	Analytical based structured Long answer question (LAQ)	4	10	40
				100

6 F : Distribution for summative assessment (University examination)

S.No	List of Module/Unit	ABQ	SAQ	LAQ
(M-1)Chikitsiya Netra Sharira (Clinical Anatomy and Physiology of Eye) (Marks: Range 5-20)				
1	**(U-1)** Netra Rachana Sharir (Clinical Anatomy of Eye)	Yes	Yes	Yes
2	**(U-2)** Netra and Chakshuendriya Kriya Sharira (Clinical Physiology of Eye)	Yes	Yes	Yes
(M-2)Prakashiki evam Apvartana (Optics and Refraction) (Marks: Range 5-20)				
1	**(U-1)** Moolbhoot Prakashiki (Fundamentals of optics)	Yes	Yes	Yes
2	**(U-2)** Apvartana Dosha evam Jara Drishti (Refractive Errors and Presbyopia)	Yes	Yes	Yes
3	**(U-3)** Apvartana Kriyavidhi (Clinical Refraction Techniques)	Yes	Yes	Yes
4	**(U-4)** Upnetra evam Upnetra-Patraka (Spectacles & Spectacle Prescription)	Yes	Yes	Yes
(M-3)Netra Roga Nidana evam Krimi Vigyan (Ocular Pathology, Microbiology and Parasitology) (Marks: Range 5-20)				
1	**(U-1)** Netra Roga Nidana (Ocular Pathology)	Yes	Yes	No
2	**(U-2)** Netra Krimi Vigyan (Ocular Microbiology and Parasitology)	Yes	Yes	No
(M-4)Netra Roga-Rogi Pareeksha (Ophthalmic history taking and Eye Examination) (Marks: Range 5-20)				
1	**(U-1)** Netra Roga-Rogi Itivritta (Ophthalmic history taking)	Yes	Yes	Yes
2	**(U-2)** Netra Pareeksha (Eye Examination and Assessment)	Yes	Yes	Yes
(M-5)Jivan Rakshaka evam Atyayika Aushadha Vigyana (Life Saving and Emergency Drugs Pharmacology) (Marks: Range 5-20)				
1	**(U-1)** Samanya Aushadha Vigyana Siddhanta (General Pharmacological Principles)	Yes	Yes	Yes
2	**(U-2)** Sarvadaihika Aushadha Vigyan (Systemic Pharmacology)	Yes	Yes	Yes
3	**(U-3)** Anya Aushadha (Other drugs)	Yes	Yes	Yes
4	**(U-4)** Krimighna Aushadha (Antimicrobials and Anthelmintics)	Yes	Yes	Yes
(M-6)Yantra-Shashtra Vigyan (Basic Equipment and Instruments for Ophthalmology) (Marks: Range 5-20)				
1	**(U-1)** Yantra related to Netra Pariksha (Basic Equipment for Eye Examination)	Yes	Yes	Yes
2	**(U-2)** Shashtra related to Netra (Instruments for Ophthalmology)	Yes	Yes	Yes
(M-7)Agropharniya and Yogya Vidhi (Basic Surgical Preparedness and Skill Labs) (Marks: Range 5-20)				

1	**(U-1)** Agropaharaniya for Netra Shalya Karma (Preparedness for Eye Surgery)	Yes	Yes	Yes
2	**(U-2)** Nirjantukarana (Sterilization)	Yes	Yes	Yes
3	**(U-3)** Yogya Vidhi (Skill labs)	Yes	Yes	Yes
(M-8) Kriyakalpa and Panchkarma (Marks: Range 5-20)				
1	**(U-1)** Kriyakalpa (Topical Ocular Therapeutics)	Yes	Yes	Yes
2	**(U-2)** Panchkarma in Netra Chikitsa	Yes	Yes	Yes

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

Instructions for the paper setting.

1. 100 marks question paper shall contain:-
• Application Based Question: 1 No (carries 20 marks)
• Short Answer Questions: 8 Nos (each question carries 05 marks)
• Long Answer Questions: 4 Nos (each question carries 10 marks)
2. Questions should be drawn based on the table 6F.
3. Marks assigned for the module in 6F should be considered as the maximum marks. No question shall be asked beyond the maximum marks.
4. Refer table 6F before setting the questions. Questions should not be framed on the particular unit if indicated “NO”.
5. There will be a single application-based question (ABQ) worth 20 marks. No other questions should be asked from the same module where the ABQ is framed.
6. Except the module on which ABQ is framed, at least one Short Answer Question should be framed from each module.
7. Long Answer Question should be analytical based structured questions assessing the higher cognitive ability.
8. Use the Blueprint provided in 6G or similar Blueprint created based on instructions 1 to 7

6 H : Distribution of Practical Exam (University Examination)

S.No	Heads	Marks
1	1.One Long Case & bedside Viva - 40 marks 2.One Short Case - 20 marks 3.One Kriyakalpa procedure case taking along with demonstration - 20 Marks	80
2	1) Demonstration of two OPD and or ward procedures (e.g. Sac syringing, Tonometry, Indirect & Direct Ophthalmoscopy etc.) carrying 10 marks each - 20 Marks 2) 10 Instruments and drug specimen spotters carrying 2 mark each - 20 Marks 3)10 items like pathological specimen, clinical photographs such as fundus photos, OCT images, visual field reports, etc., carrying 2 marks each- 20 Marks	60
3	Viva (2 examiners: 20 marks/each examiner)	40
4	Logbook (Activity record)	10
5	Practical / Clinical Record - minimum 20 activities. 1) Long cases- 5 2) Short cases - 5 3) Skill Lab procedures - 5. 4) Practical Writings.- 5	10
Total Marks		**200**

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Abbreviations

Domain		T L Method		Level	
CK	Cognitive/Knowledge	L	Lecture	K	Know
CC	Cognitive/Comprehension	L&PPT	Lecture with PowerPoint presentation	KH	Knows how
CAP	Cognitive/Application	L&GD	Lecture & Group Discussion	SH	Shows how
CAN	Cognitive/Analysis	L_VC	Lecture with Video clips	D	Does
CS	Cognitive/Synthesis	REC	Recitation		
CE	Cognitive/Evaluation	SY	Symposium		
PSY-SET	Psychomotor/Set	TUT	Tutorial		
PSY-GUD	Psychomotor/Guided response	DIS	Discussions		
PSY-MEC	Psychomotor/Mechanism	BS	Brainstorming		
PSY-ADT	Psychomotor Adaptation	IBL	Inquiry-Based Learning		
PSY-ORG	Psychomotor/Origination	PBL	Problem-Based Learning		
AFT-REC	Affective/ Receiving	CBL	Case-Based Learning		
AFT-RES	Affective/Responding	PrBL	Project-Based Learning		
AFT-VAL	Affective/Valuing	TBL	Team-Based Learning		
AFT-SET	Affective/Organization	TPW	Team Project Work		
AFT-CHR	Affective/ characterization	FC	Flipped Classroom		
		BL	Blended Learning		
		EDU	Edutainment		
		ML	Mobile Learning		
		ECE	Early Clinical Exposure		
		SIM	Simulation		
		RP	Role Plays		
		SDL	Self-directed learning		
		PSM	Problem-Solving Method		
		KL	Kinaesthetic Learning		
		W	Workshops		
		GBL	Game-Based Learning		
		LS	Library Session		
		PL	Peer Learning		
		RLE	Real-Life Experience		
		PER	Presentations		
		D-M	Demonstration on Model		
		PT	Practical		
		X-Ray	X-ray Identification		
		CD	Case Diagnosis		
		LRI	Lab Report Interpretation		

		DA	Drug Analysis		
		D	Demonstration		
		D-BED	Demonstration Bedside		
		DL	Demonstration Lab		
		DG	Demonstration Garden		
		FV	Field Visit		
		JC	Journal Club		
		Mnt	Mentoring		
		PAL	Peer Assisted Learning		
		C_L	Co Learning		
		DSN	Dissection		
		PSN	Prosection		

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Curriculum for MD/ MS Ayurveda
(PRESCRIBED BY NCISM)

अभ्यासात्प्राप्यते दृष्टिः कर्मसिद्धिप्रकाशिनी।

Semester II
Applied Basics of Shalakya Tantra - KARNA NASA & MUKHA

(SUBJECT CODE : AYPG-AB-KNM)

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

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PREFACE

The postgraduate training in Shalakya Tantra (Karna–Nasa–Mukha domain) focuses on the advanced study and surgical management of diseases affecting the ear, nose, throat, and oro-facial region. This specialized area demands a high level of clinical acumen, anatomical precision, and procedural expertise, as the structures involved are delicate, functionally critical, and closely interrelated. Classical Ayurvedic texts provide detailed descriptions of Karna, Nasa, and Mukha rogas along with specific para-surgical and surgical interventions, forming a strong foundation for contemporary practice. The scope of postgraduate education in Karna–Nasa–Mukha extends beyond theoretical understanding to the development of refined surgical judgment, ensuring safe and effective management of both routine and complex clinical conditions.

This Competency-Based Dynamic Curriculum is designed to ensure progressive attainment of domain-specific competencies in Karna–Nasa–Mukha. The curriculum emphasizes advanced diagnostic skills, including clinical examination techniques and the use of modern ENT and oro-dental instruments. Focus is placed on the mastery of specialized procedures such as Nasya karma, Karna Purana, Karnadhavana, Kavala, Gandusha, Pratisarana, and minor surgical interventions relevant to this domain. Particular attention is given to the acquisition of precision-based procedural skills, atraumatic handling of tissues, maintenance of asepsis, and peri-procedural care. Training includes simulation-based skill development, supervised clinical practice, and structured assessment to ensure competency in decision-making, operative execution, and management of complications. Integration with contemporary ENT and dental sciences is encouraged to enhance diagnostic accuracy and therapeutic outcomes.

The programme aims to develop specialists who demonstrate competence in clinical practice, surgical skills, research, and professional conduct within the Karna–Nasa–Mukha domain. It fosters critical thinking, ethical practice, and effective communication, enabling graduates to function independently as skilled Shalakya practitioners. Emphasis is placed on domain-specific surgical dexterity, fine motor coordination, endo-cavity procedural skills, and patient-centered care, which are essential for this specialty. The curriculum supports lifelong learning and encourages contribution to academic and clinical advancements. Graduates are expected to uphold high standards of safety, quality, and integrative care while contributing to the advancement of Shalakya Tantra in national and global healthcare contexts.

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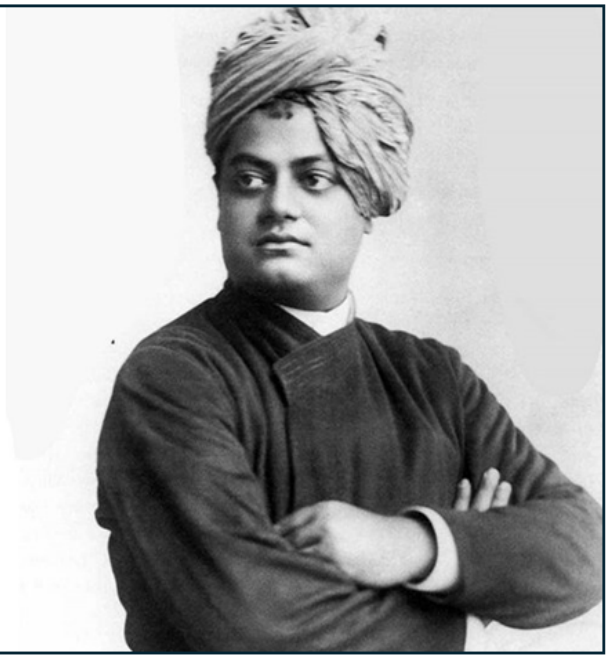
We want that education by which **character** is formed, **strength of mind** is increased, the **intellect** is expanded, and by which one can **stand on one's own feet.**

-Swami Vivekananda



NCISM

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Curriculum for MD/ MS Ayurveda

Applied Basics of Shalakya Tantra - KARNA NASA & MUKHA (AYPG-AB-KNM)

Summary & Credit Framework

Semester II

Module Number & Name	Credits	Notional Learning Hours	Maximum Marks of assessment of modules (Formative assessment)
M1. Shalakyatantra Siddhanta Parichaya	1	30	25
M2. Applied Rachana & Kriya Sharira of KNM, Greeva Shira (Head & Neck)	2	60	50
M3. Agropaharaniya and Yogya vidhi	3	90	75
M4. Oushadha Vijnana in KNM	3	90	75
M5. Vrana siddhanta	1	30	25
M6. Parikshana vidhi (Clinical methods) in Karna and Nasa	2	60	50
M7. Parikshana vidhi (Clinical methods) in Mukha, Shiro and Greeva	3	90	75
M8. Swara Yantra and its clinical significance	1	30	25
	16	**480**	**400**

Credit frame work

AYPG-AB-KNM consists of 8 modules totaling 16 credits, which correspond to 480 Notional Learning Hours. Each credit comprises 30 hours of learner engagement, distributed across teaching, practical, and experiential learning in the ratio of 1:2:3. Accordingly, one credit includes 5 hours of teaching, 10 hours of practical training, 13 hours of experiential learning, and 2 hours allocated for modular assessment, which carries 25 marks.

Important Note: The User Manual MD/MS Ayurveda is a valuable resource that provides comprehensive details about the curriculum file. It will help you understand and implement the curriculum. Please read the User Manual before reading this curriculum file. The curriculum file has been thoroughly reviewed and verified for accuracy. However, if you find any discrepancies, please note that the contents related to the MSE should be considered authentic. In case of difficulty and questions regarding the curriculum, write to syllabus24ayu@ncismindia.org.

Course Code and Name of Course

Course code	Name of Course
AYPG-AB-KNM	Applied Basics of Shalakya Tantra - KARNA NASA & MUKHA

Table 1 : Course learning outcomes and mapped Program learning outcomes

CO No	A1 Course learning Outcomes (CO) AYPG-AB-KNM At the end of the course AYPG-AB-KNM, the students should be able to-	B1 Course learning Outcomes mapped with program learning outcomes.
CO1	Diagnose and treat various KNM conditions independently with clinical decision-making capacity and to handle all conditions in KNM with an integrative holistic, preventive and therapeutic approach in order to give the best clinical practice in patient care.	PO1
CO2	Handle the emergencies in various conditions in KNM maintaining all the good clinical practices.	PO1,PO2,PO3
CO3	Perform all diagnostic, surgical and Para surgical procedures as per Ayurveda and Contemporary science skilfully with all legal and safety standards.	PO1,PO2
CO4	Perform and maintain high standards of research and develop innovative ideas and publish scientific research papers and adhere to the national /International regulations and guidelines of Research and Development.	PO5
CO5	Demonstrate leadership qualities and excellent communication skills in training the undergraduate students and motivate them to become a proficient Shalakya practitioner and provide standards for community health.	PO1,PO6
CO6	Demonstrate upgradation of knowledge and application of advanced technologies in surgical, para-surgical, and drug development practices in Shalakya Netra, with an inclination towards self-directed learning.	PO7
CO7	Promote and advance Ayurveda by establishing high standards in new drug development, grounded in fundamental Ayurvedic principles.	PO7,PO8
CO8	Demonstrate effective communication and interpersonal skills with ethical behavior towards the well-being of patients and society.	PO4,PO6

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

2A Module No	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 Shalakyatantra Siddhanta Parichaya** This module provides an overview of the basic concepts of Dosha- Dhatu-Mala and Srotas in context of KNM Chikitsa. Student will be able to understand, identify and analyse the dosha, dhushya and srotodusti related to KNM vyadhis and the basic principles of Nidana Panchaka and Chikitsa Sutra in KNM. • **M1U1 Dosha, Dhatu, Mala, and Srotas in KNM** Principles of dosha, dushya, mala and srotas related to KNM and their clinical significance. • **M1U2 Samanya Nidana Panchaka and Chikitsa sutras in Karna-Nasa -Shiro-Mukharogas** Ayurvedic Approaches: Understanding of Samanya Nidana Panchaka and Chikitsa Sutras in KNM.	1	5	10	15	30
2	**M-2 Applied Rachana & Kriya Sharira of KNM, Greeva Shira (Head & Neck)** This module will give the foundation for the study of Shalakyatantra – KNM. It describes the applied anatomy and physiology of KNM, Head, neck and KNM related cranial nerves with their functions. And the cadaveric dissection, identification of key anatomical structures of the KNM, head and neck will provide profound knowledge about the normalcy and abnormalities and pathophysiology of diseases. Identification of KNM related Marmas and understanding its clinical significance in preventive and therapeutic aspect will make a KNM shalaki proficient in practice. • **M2U1 Rachana Sharira of Karna, Nasa, Mukha, Shiro and Greeva**	2	10	20	30	60

	Applied Rachana Sharira of Karna, Nasa, Mukha, Shiro and Greeva, KNM related cranial nerves with their functions and Cadaveric Dissection. • **M2U2 Exploring Marma Sharira: Identification and Significance of Vital Points in Karna - Nasa - Mukharoga - Greeva** Marma Sharira and identification of Marmas with reference to vital points pertaining to Karna, Nasa, Mukha, Shiro and Greeva. Fundamentals of Marma chikitsa. • **M2U3 Sharira Kriya of Karna, Nasa, Mukha, Shiro and Greeva** Applied Sharira Kriya - Related to Karna, Nasa, Mukha, Shiro, and Greeva, Integrated clinical examinations and assessment.					
3	**M-3 Agropaharaniya and Yogya vidhi** This module describes the functional setup of KNM OPD/OT/Kriyakalpa unit and its ergonomics. Student will be able to understand how to organize Agra sangraharaniya, dhupana (fumigation), raksha karma (protective measures), Sterilization, Vranitopasana in KNM, para surgical and surgical procedures with contemporary science knowledge. And gives a platform to perform Pre-operative and post-operative patient care, consent taking, Astha vidha shastra karma –related to KNM with contemporary science knowledge and attain the skills of a KNM Practitioner. • **M3U1 Agra Sangraharaniya** Constitutional setup of KNM OPD Ergonomics Agra Sangraharaniya, Yogya vidhi, Raksha Karma, Mantra Pathana, Seevana Vidhi evam dravya. • **M3U2 Yogya Vidhi** Skills of a KNM Practitioner.	3	15	30	45	90

	• **M3U3 Vranitopasana Agara** Integrative approach of Vranitopasana (Concept of Wound care) in Karna, Nasa, Mukha, Shiro, and Greeva . • **M3U4 Astha Vidha Shastra Karma** Principles and application of Astha Vidha Shastra Karma related to Karna, Nasa, Mukha, Shiro, and Greeva. • **M3U5 Nirjantukarana (Sterilization) Prakriya** Dhupana Karma, Methods, Types and applications of Nirjantukarana and consideration of modern sterlization methods. • **M3U6 Sangyaharana** Sangyaharana / Anaesthesia in Karna, Nasa, Mukha, Shiro, Greeva. Concept of Vedana Sthapana.					
4	**M-4 Oushadha Vijnana in KNM** This module provides the comprehensive explanation of drugs used in Ayurveda, contemporary science related to KNM. Give an idea, how to perform different treatment methodologies applicable in KNM like sthanik chikitsa, murdhni chikitsa, para surgical procedures etc. provides in depth knowledge about identification of Emergencies in ENT with their management and Lifesaving Medicines in ENT. • **M4U1 Oushadha Vijnana** Abhyantara Oushadha Prayoga in Karna, Nasa, Mukha, Shiro, and Greeva Vyadhis. • **M4U2 Contemporary Medicines** Contemporary Modern Medicine pharmacology in KNM.	3	15	30	45	90

	• **M4U3 Sthanik Chikitsa** Sthanik Chikitsa in Karna, Nasa, Mukha, Shiro and Greeva rogas. • **M4U4 Murdhni Chikitsa** Murdhni Chikitsa in Karna, Nasa, Mukha, Shiro and Greeva rogas. • **M4U5 Anushastra Karma** Anushastra Karma (Para-Surgical Procedures) in Karna, Nasa, Mukha, Shiro and Greeva rogas. • **M4U6 Atyayika Chikitsa** Atyayika Chikitsa & Pranabhisara Oushadhis in Karna, Nasa, Mukha, Shiro and Greeva rogas.					
5	**M-5 Vrana siddhanta** This module covers wound healing process comprising three phases: Inflammatory, Proliferative and Remodelling. It emphasizes concept of dusta vrana, Ayurvedic and contemporary approach along with bandhana techniques. • **M5U1 Vrana siddhanta** Trividha shopha, Shuddha vrana, Dusta Vrana, concepts of Wound, infected wound, Basics of wound healing and their clinical importance. • **M5U2 Vrana bhandha and Vranitopasana in KNM** Materials for wound dressing, Bandhana vidhi, Selection of bandhana dravya for different vranas	1	5	10	15	30
6	**M-6 Parikshana vidhi (Clinical methods) in Karna**	2	10	20	30	60

	and Nasa This module provides a comprehensive overview of essential surgical and diagnostic instruments and equipment used in Karna & Nasa examinations. and procedures. The description and demonstration of Yogya (simulated training for examination of nose and ear) and proper sterilization techniques for maintaining Yantra and Shastra (surgical and diagnostic instruments) in clinical practice is also included. The module emphasizes the significance of precision and skill in the use of these instruments for effective diagnostic outcomes. • **M6U1 Yantra and Shastra used in Karna Evam Nasa Pariksha and chikitsa** Knowledge, handling and Nirjantukarana (Sterilization) of Yantra and Shastra used in Vyadhi Vinischaya and Chikitsa of Karna and Nasarogas • **M6U2 Karna Parikshana vidhi** Karna Parikshana vidhi (Clinical Otology) • **M6U3 Nasa Parikshana Vidhi** Nasa Parikshana Vidhi (Clinical Rhinolgy)					
7	**M-7 Parikshana vidhi (Clinical methods) in Mukha, Shiro and Greeva** This module covers diagnostic tools and techniques used in Mukha, Kantha, Shiro and Greeva (Head, and Neck) examination and treatment. It includes physical examination, lab tests, imaging methods and sterilization methods. Emphasis is placed on interpreting findings and understanding their indications and limitations. Practical skills in diagnosis are developed through clinical application. • **M7U1 Yantra and Shastra used in Parikshana vidhi and chikitsa of Mukha, shiro and Greeva** Knowledge, Handling and Nirjantukarana of Yantra and Shastra used in Vyadhi Vinischaya and Chikitsa of Mukha, Shiro and Greeva.	3	15	30	45	90

	• **M7U2 Mukha Parikshana Vidhi** Mukha Parikshana Vidhi (Clinical examination of Oral cavity and Pharynx) • **M7U3 Shiro Evam Greeva Parikshana Vidhi** Shiro Evam Greeva Parikshana Vidhi (Clinical examination of Head and Neck)					
8	**M-8 Swara Yantra and its clinical significance** This module explores the applied anatomy and physiology of Swara Utpatti and Vaak Pravrutti. Through dissections, simulations, and clinical discussions, this module teaches learners to perform voice assessments and apply clinical methods in voice and speech disorders. • **M8U1 Rachana Sharira of swara yantra and related parts** Applied Rachana Sharira of swara yantra, swara utpatti and vaak pravrutti. • **M8U2 Kriya Sharira of swara yantra and related parts** Applied Kriya Sharira of swara yantra, swara utpatti and vaak pravrutti. • **M8U3 Yantra and shastra in Swara vikaras** Yantra and shastra used in Vyadhi Vinischaya and chikitsa of swara yantra related vikaras • **M8U4 Swara Yantra and related parts Parikshana Vidhi** Clinical methods of examination of Swara Yantra and related parts, Voice assessment and Basics of Speech therapy	1	5	10	15	30

		16	**80**	**160**	**240**	**480**

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

3A Course Outcome	3B Learning Objective (At the end of the (lecture/practical 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 : Shalakyatantra Siddhanta Parichaya						
Module Learning Objectives **(At the end of the module, the students should be able to)** 1. Describe the concept of Dosha- Dhatu-Mala and Srotas in context of KNM Chikitsa. 2. Apply the Basic principles of Nidana Panchaka and Chikitsa Sutra in KNM. 3. Identify the Dosha, Dushya and Srotodusti in the KNM Diseases. 4. Analyse pancha mahabouthika sangatana, Tridosha Dusti, Tridosha guna Dusti, and their interpretations on clinical pictures of KNM disorders: decision on treatment procedure and drug selection in KNM disorders.						
Unit 1 Dosha, Dhatu, Mala, and Srotas in KNM Principles of dosha, dushya, mala and srotas related to KNM and their clinical significance. **References:** 1,2,3,4,5,6,7,8,9,10,11,13,18,19						
3A	**3B**	**3C**	**3D**	**3E**	**3F**	**3G**
CO1	Discuss the principles of dosha, dushya, mala and srotas related to Karna, Mukha and describe its clinical significance.	1	Lecture	CC	Knows-how	L,L&GD

CO1	Interpret the types of dosha, dushya, srotas gets vitiated pertaining to, • **Karnagata roga** • **Mukhagata roga**	2	Practical Training 1.1	PSY-GUD	Shows-how	C_L,DIS
CO1	Categorize and justify the given clinical conditions related to Karnagata and Mukhagata rogas according to dosha and dushya involvement.	3	Experiential-Learning 1.1	CE	Does	PL
CO1	Discuss the concept of Dosha, Dushya, Mala and Srotas related to Nasa and Shiras and describe its clinical significance.	1	Lecture	CC	Knows-how	L&GD
CO1	Interpret the types of Dosha, Dushya, Srotas gets vitiated pertaining to • **Nasagata roga** • **Shirogata roga**	2	Practical Training 1.2	CAP	Knows-how	C_L,DIS
CO1,CO3	Categorize and justify the given clinical scenarios related to Nasagata, Shirogata rogas according to dosha and dushya involvement. Identify and interpret the specific Sroto Dushti in the patients related nasa and shirorogas.	3	Experiential-Learning 1.2	CE	Does	PL
Unit 2 Samanya Nidana Panchaka and Chikitsa sutras in Karna-Nasa -Shiro-Mukharogas Ayurvedic Approaches: Understanding of Samanya Nidana Panchaka and Chikitsa Sutras in KNM. **References:** 1,2,3,4,5,7,8,9,10,11,12,13,15,16,17,18						
3A	**3B**	**3C**	**3D**	**3E**	**3F**	**3G**
CO1	Describe the samanya nidana panchaka and chikitsa sutra of karnarogas.	1	Lecture	CC	Knows-	FC,L

					how	
CO1	Demonstrate various chikitsa siddhant used for vitiated dosha, dhatu and srotas related to Karnarogas with examples.	2	Practical Training 1.3	CAP	Shows-how	D-BED,DIS,TBL
CO1	Identify the etiological factors and correlate with contemporary etiologies in a given case scenario of karnaroga.	3	Experiential-Learning 1.3	PSY-GUD	Does	BS,LS
CO1	Describe the samanya nidana panchaka and chikitsa sutra of Nasa and Shirorogas.	1	Lecture	CC	Knows-how	L,SDL
CO1,CO2,CO3	Demonstrate the various roopa and pratyatma lakshanas of nasa and shirorogas along the treatment principles applicable for vitiated dosha, dhatu, mala and srotas related to nasa and shirorogas.	2	Practical Training 1.4	PSY-GUD	Shows-how	D,PAL
CO1,CO6	Apply the knowledge of etiologies of Vata, Pitta and Kapha dushta karma in correlating with contemporary etiologies in nasa and shirorogas.	3	Experiential-Learning 1.4	CAP	Does	LS
CO1	Describe the samanya nidana panchaka and chikitsa sutra of Mukharogas.	1	Lecture	CC	Knows-how	L&PPT
CO1,CO3	Demonstrate the various Roopa and Pratyatma Lakshana with suitable examples related to mukharogas.	2	Practical Training 1.5	PSY-ADT	Shows-how	PL,TBL
CO1,CO6,CO8	Apply the knowledge of etiologies of Vata, Pitta and Kapha dushta karma in correlating with contemporary etiologies in mukharogas and do a survey on small group population.	1	Experiential-Learning 1.5	CAP	Does	FV,TPW

Practical Training Activity

Practical No	Name	Activity details
Practical Training 1.1	Interpretation of dosha, dushya, srotas pertaining to Karnagata roga and Mukhagata roga.	The teacher will demonstrate karna and mukha related clinical scenarios and explains about the dosha, dushya and srotas (Vriddhi, Kshaya and Dushta Karma) as mentioned in various contexts as a part of case diagnosis. eg- in a clinical scenario of karnapaka the vitiated dosha is pitta and dushya is rakta, in mukha shosha - vitiated dosha is vata vruddhi, kapha ksheenata and dushya is rasa dhatu etc. Students will be divided into groups and each group will be given a case scenario like vataja karnaroga, bahya karnagata rogas, dantarogas, mukhapaka etc. The group has to identify, analyze, and present the dosha, dushya and srotas in particular

		condition. The teacher facilitates discussion among groups and summarises the key points.
Practical Training 1.2	Interpretation of Dosha, Dushya and Srotas pertaining to Nasagata and Shirogata rogas.	The teacher will demonstrate shiro and nasa related clinical scenarios and explains about the dosha, dushya and srotas (Vriddhi, Kshaya and Dushta Karma) as mentioned in various contexts as a part of case diagnosis. eg- in a clinical scenario of nasapaka the vitiated dosha is pitta and dushya is rakta, in Ardhavabhedaka - vitiated dosha is vata-kapha, and dushya is rakta dhatu and srotas is raktavaha etc. Students will be divided into 1or 2 groups and each group will be given a case scenario like nasanaha, nasaarsha, shirorogas etc. The group has to identify, analyze, and present the dosha, dushya and srotas in particular condition. The teacher facilitates discussion among groups and summarises the key points.
Practical Training 1.3	Demonstration of various chikitsa siddhanta of Karnarogas with examples.	The teacher will demonstrate a few treatment principle concepts quoted in Ayurveda medicine texts. Students will be divided into groups. Each group should refer to Ayurveda medicine texts quoting treatment principle concepts, enlist any two principles related to karnagata rogas and submit assignments. Students will be encouraged to do GD on the submitted assignments and present their relevance and applications in current otological practice.
Practical Training 1.4	Demonstartion of case scenarios of nasa and shiroroga.	The teacher will demonstrate a few case scenarios based on roopa and pratyatma lakshanas explained in texts. Students will be divided into groups. Each group should refer to Ayurveda medicine texts/contemporary ref enlist any two nasa and shiroroga based on roopa and pratyatma lakshanas and submit assignments. Students will be encouraged to do GD on the submitted assignments and present their importance in current otological practice.
Practical Training 1.5	Demonstration of various of Roopa and Pratyatma Lakshana of Mukharogas.	The teacher will demonstrate a few case scenarios based on roopa and pratyatma lakshanas explained in texts. Students will be divided into groups. Each group should refer to Ayurveda medicine texts/contemporary ref, enlist any two mukharoga based on roopa and pratyatma lakshanas and submit assignments. Students will be encouraged to do GD on the submitted assignments and present their importance in current ENT practice.
Experiential learning Activity		
Experiential learning No	**Name**	**Activity details**
Experiential-Learning 1.1	Categorization and justification of dosha, dushya in Karnagata and Mukhagata rogas.	Divide the students into small groups. 2-3 different clinical cases of Karna and Mukharogas will be given to each group of students and students are asked to identify dosha, dushya, srotas involvement in a given case and categorize the given cases as per dosha and dushya involvement like nanatmaja vikara, rasa pradoshaja vikara, pranavaha srotodusti etc. followed by a presentation, discussion and write the justification.
Experiential-	Categorization and	Peer learning - 10 different clinical cases of Nasa and Shirorogas will be given to each group of 1-2 students and students are asked

Learning 1.2	justification of clinical scenarios related to Nasagata and Shirogata rogas. Identifcation and interpretation of the specific Sroto Dushti in the patients related nasa and shirorogas.	to identify dosha, dushya, srotas involvement in a given case and categorize the given cases as per dosha and dushya involvement like nanatmaja vikara, rasa pradoshaja vikara, raktavaha srotodusti etc. followed by a presentation, discussion and write the justification. Minimum - 5 cases each (shiro and nasa rogas)
Experiential-Learning 1.3	Identification and correlation of nidanas with contemporary etiologies in a given case scenario of karnaroga.	Students will be divided into groups and given the task of searching for nidanas from different classical texts with contemporary correlation of etiologies as per the given case scenarios, followed by discussion and interpretation of those factors. Students shall share their observations and the teacher will summarize. Minimum- 5 karnarogas
Experiential-Learning 1.4	Discussion and interpretation of etiologies of Vata, Pitta and Kapha dushta karma in correlating with contemporary etiologies in nasa and shirorogas.	Library session/simulated patients - The teacher will divide students into 2 to 3 groups. Each group should be assigned a set of research papers, classical text books, contemporary sources, simulated patients, real patients and asked to make the list of tridosha prakopaka nidanas/agantuja nidanas as per the nasa and shirogata rogas along with correlated contemporary etiologies followed by discussion and interpretaion of those factors. Students shall share their observations and the teacher will summarize. Minimum- 5 diseases of nasa and shirorogas
Experiential-Learning 1.5	Survey on small group population to gain the knowledge of etiologies of Vata, Pitta and Kapha dushta karma in correlating with contemporary etiologies in mukharogas.	The teacher will give a few areas for survey to a group of students. Each group should gather the information about the oral cavity health/diseases and etiological factors like improper oral hygiene, eating junk foods, etc. Students shall share their observations followed by discussion and interpretation and the teacher will summarise. Minimum- survey of 50 subjects

Modular Assessment	
Assessment method	**Hour**
Instructions - Conduct a structured Modular assessment. Assessment will be for 25 marks. Keep structured marking pattern. Keep record of the structured pattern used for assessment. Calculate the Modular grade point as per table 6 C. Select any one or two methods for the assessment. 1. Theory Open Book Test - Conduct theory open book test for 25 marks which will contain either 2 LAQ and 6 SAQ. OR 2. Short case/long case evaluating Dosha, Dhushya and Srotodusti pertaining to KNM diseases OR 3.Any practical in converted form can be taken for assessment (25 Marks) or Any Experiential Learning as portfolio / reflections / presentations, can be taken as an assessment.(25 Marks)	2

Module 2 : Applied Rachana & Kriya Sharira of KNM, Greeva Shira (Head & Neck)

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

1 Describe the applied Sharira Rachana and Kriya of Karna, Nasa, Mukha, Shiro and Greeva & related Cranial nerves with their functions.
2 Perform cadaveric dissection and identify key anatomical structures of the Karna, Nasa, Mukha, Shiro and Greeva (collaboration with Shareera Rachana dept).
3 Identify the Karna, Nasa, Mukha, Shiro and Greeva related Marmas and understand its clinical significance in preventive and therapeutic aspects.

Unit 1 Rachana Sharira of Karna, Nasa, Mukha, Shiro and Greeva

Applied Rachana Sharira of Karna, Nasa, Mukha, Shiro and Greeva, KNM related cranial nerves with their functions and Cadaveric Dissection.

References: 1,3,4,9,13,19,20,21,22,23,25,27,29,30,40,42

3A	3B	3C	3D	3E	3F	3G
CO1,CO2	Analyse the clinical implications of applied anatomy of the ear, nose and throat.	1	Lecture	CC	Knows-how	D-M,L&PPT
CO1	Demonstrate cadaveric dissection focusing on ear, nose and throat anatomy.	2	Practical Training 2.1	PSY-ADT	Shows-how	D,D-M,DSN,W
CO1	Perform cadaveric dissection and identify structures of the KNM related areas on cadaver specimens / models.	3	Experiential-Learning 2.1	PSY-ADT	Does	D,D-M,DSN
CO1,CO2	Analyse the clinical implications of applied anatomy of the head & neck and the functions and pathways of cranial nerves associated with KNM. Describe the importance of cadaveric dissection in understanding applied anatomy.	1	Lecture	CC	Knows-how	L&PPT,L_VC

CO1	Demonstrate cadaveric dissections focusing on the head and neck anatomy, pathways of cranial nerves associated with KNM.	2	Practical Training 2.2	PSY-ADT	Shows-how	D,D-M,DSN
CO1	Perform cadaveric dissection and identify structures of the head and related areas on cadaver specimens, pathways of cranial nerves associated with KNM.	3	Experiential-Learning 2.2	PSY-ADT	Does	DSN,SIM
CO1	Perform cadaveric dissection and identify structures of the neck and related areas on cadaver specimens; pathways of cranial nerves associated with KNM.	3	Experiential-Learning 2.3	PSY-ADT	Shows-how	D,D-M,DSN

Unit 2 Exploring Marma Sharira: Identification and Significance of Vital Points in Karna - Nasa - Mukharoga - Greeva

Marma Sharira and identification of Marmas with reference to vital points pertaining to Karna, Nasa, Mukha, Shiro and Greeva. Fundamentals of Marma chikitsa.

References: 1,2,3,9,13,18,40,52,53,54

3A	3B	3C	3D	3E	3F	3G
CO1,CO2	Analyse and interpret the concept and classification of Marmas relevant to KNM and the head & neck. Narrate the importance of marma in Parasurgical and Surgical aspect.	1	Lecture	CAN	Knows-how	D-M,L_VC,SIM
CO1,CO2,CO3	Demonstrate the specific location of marmas as per modern anatomy related to parts of the KNM, head and neck.	2	Practical Training 2.3	PSY-GUD	Shows-how	D,IBL,SIM
CO1,CO2,CO3	Identify the marmas with reference to anatomical points and discuss about the fundamentals of marma chikitsa.	3	Experiential-Learning 2.4	PSY-GUD	Does	C_L,D,D-M,W

Unit 3 Sharira Kriya of Karna, Nasa, Mukha, Shiro and Greeva

Applied Sharira Kriya - Related to Karna, Nasa, Mukha, Shiro, and Greeva, Integrated clinical examinations and assessment.

References: 1,3,5,6,9,15,16,17,19,20,21,22,23,41,43,44

3A	3B	3C	3D	3E	3F	3G
CO1	Perform integrated clinical examinations to assess Rasa and Gandha related vyadhis	3	Experiential-Learning 2.5	PSY-MEC	Does	BL,D,D-M
CO1,CO3	Demonstrate integrated clinical examinations to assess Rasa and Gandha jnana vyadhis.	2	Practical Training 2.4	PSY-MEC	Does	CBL,D-M,RP
CO1	Demonstrate different steps used to know the Physics of sound and physiology of hearing.	2	Practical Training 2.5	CC	Shows-how	D-M,IBL
CO1,CO3	Identify different tests used to analyse the mechanism of breathing, deglutition and salivation and discuss the principles behind it.	3	Experiential-Learning 2.6	PSY-MEC	Shows-how	BL,PL
CO1	Analyse and intepret the applied physiology of smell, taste perception with its central connections	1	Lecture	CC	Knows-how	BL,L_VC,PL
CO1	• **Discuss and analyse the applied physiology of breathing.** • **Discuss and analyse the applied physiology of deglutition and salivation.**	2	Lecture	CC	Know	L,L&PPT,L_VC
CO1	Analyse and interpret the Physics of sound, mechanism of hearing and perception of sound with their central connections.	1	Lecture	CC	Know	L&GD,L&PPT
CO1	Discuss and analyse the applied physiology of balance and related cerebral functions.	1	Lecture	CK	Know	C_L,L,L&PPT,L_VC
CO1	Discuss and analyse the applied physiology and functions of the pharynx.	1	Lecture	CK	Know	L,L&PPT,L_VC
CO1	Discuss and analyse the lymphoepithelial system and immune mechanisms about KNM.	1	Lecture	CC	Knows-	BL,BS,L,

					how	L&PPT
CO1	Identify immune system abnormalities in KNM-related conditions.	3	Experiential-Learning 2.7	CAN	Shows-how	BL,CBL,DIS,PL
CO1,CO3	Identify clinical abnormalities of the pharynx.	2	Practical Training 2.6	CAN	Shows-how	BL,CD,DIS,IBL
CO1,CO3	Demonstrate the clinical examination of pharynx.	2	Practical Training 2.7	PSY-MEC	Shows-how	D,D-M,RP
CO1,CO3	Demonstrate the mechanism of breathing. Demonstrate the mechanism of deglutition and salivation.	4	Practical Training 2.8	PSY-MEC	Shows-how	CBL,D,D-BED,D-M
CO1	Demonstrate clinical assessment of balance and related cerebral functions.	2	Practical Training 2.9	PSY-ADT	Shows-how	D-BED,D-M,DIS
CO1,CO2,CO3	Perform balance related tests and analyse the results.	3	Experiential-Learning 2.8	PSY-ORG	Shows-how	CBL,RP
CO1	Discuss about the mechanism of perception of sound, hearing and speech production.	2	Experiential-Learning 2.9	PSY-SET	Shows-how	CBL,C_L,JC

Practical Training Activity

Practical No	Name	Activity details
Practical Training 2.1	Demonstration of cadaveric dissection focusing on ear, nose and throat anatomy	Demonstration by Teacher- Collaborate with the Anatomy department for supervised cadaveric dissection sessions. Ensure students observe the dissection of ear, nose and throat regions to study anatomical landmarks. Demonstrate the relationships between the various structures, including muscles, bones, arteries, and nerves relevant to KNM. Guide students in handling cadaveric specimens for a better understanding of marma points and vulnerable regions in surgery. Provide worksheets for students to note down critical observations and clinical applications.
Practical Training 2.2	Cadaveric dissection focusing on the head	Demonstration by teacher- Collaborate with the Anatomy department for supervised cadaveric dissection sessions. Ensure students observe the dissection of head and neck anatomy, pathways of cranial nerves associated with KNM. Demonstrate the relationships

	and neck anatomy, pathways of cranial nerves associated with KNM.	between the various structures, including muscles, bones, arteries, and nerves relevant to KNM. Guide students in handling cadaveric specimens for a better understanding of marma points and vulnerable regions in surgery. Provide worksheets for students to note down critical observations and clinical applications.
Practical Training 2.3	Demonstration of the specific location of marmas as per modern anatomy related to parts of the KNM, head and neck.	Demonstration by teacher- The student will be instructed to observe demonstration of Marma Surface markings of all Marma points and its anatomical demarcation. Inquiry based learning- Students are asked to generate queries related to the marmas which already demonstrated by the teacher and apply the same for preparing models.
Practical Training 2.4	Integrated clinical examinations to assess Rasa and Gandha jnana vyadhis.	Practical Demonstration - Teacher will demonstrate detailed clinical examination of taste and smell disorder related case through different tests like clinical assessment of smell - Clinical history, Physical examination, Imaging, Olfactory testing, Psychophysical tests, Olfactory threshold tests, Odor identification tests, Electrophysiologic tests, Cross-cultural smell identification test etc and evaluation of taste through Spatial gustatory testing, Magnitude matching, Electrogustometry etc Trividha Pariksha. Students will simulate the symptoms of taste and smell disorders and will be the asked to do clinical examination of the case under the supervision of teacher.
Practical Training 2.5	Physics of sound and physiology of hearing.	Demonstration by teacher- The student will be instructed to observe demonstration of different steps used to know the physics of sound and physiology of hearing shown through different models and videos. Inquiry based learning- Students are asked to generate queries related to the theory of physics of sound and physiology of hearing which already demonstrated by the teacher and apply the same for preparing models.
Practical Training 2.6	Clinical abnormalities of the pharynx.	Teacher will demonstrate detailed clinical examination of pharynx, normal findings and common clinical abnormalities like Infections & Inflammation, Structural Abnormalities, Functional Abnormalities etc and summarizes the findings. Inquiry based learning- Students will imitate the proceedings of case and generate queries related to abnormalities of the pharynx and plan for clinical examination.
Practical Training 2.7	Clinical examination of pharynx.	Practical Demonstration - Teacher will demonstrate detailed clinical examination of pharynx. Key Examination Components - Oropharynx Inspection, Indirect Laryngoscopy (Mirror Examination), Flexible Endoscopy, Palpation etc and summarizes the findings. The students will imitate the proceedings of case.

		Min cases for pharyngeal examination - 5
Practical Training 2.8	Mechanism of breathing. Mechanism of deglutition and salivation.	Demonstration by teacher- Teacher will demonstrate digital spirometry by ensuring proper calibration, proper guidance of the participant for inhalation and exhalation; interpreting the spirometric values displayed on the device followed by practice sessions. The student will be instructed to observe demonstration of mechanism of breathing, deglutition and salivation shown through different models and videos. Inquiry based learning- Students are asked to generate queries related to the mechanism of breathing, deglutition and salivation which already demonstrated by the teacher and apply the same for preparing models.
Practical Training 2.9	Clinical assessment of balance and related cerebral functions.	Practical Demonstration - Teacher will demonstrate detailed clinical assessment of balance and cerebral functions and the students will imitate the proceedings of case. Role play- Students will simulate the symptoms of balance related disease and will be asked to do clinical examination of the case under the supervision of teacher.
Experiential learning Activity		
Experiential learning No	**Name**	**Activity details**
Experiential-Learning 2.1	Cadaveric dissection and focus on structures of the KNM related areas.	Student should perform cadaveric dissection and able to appreciate anatomical position, anatomical terms related to skin, fasciae, ligaments, tendons, blood vessels, nerves etc related to ENT.
Experiential-Learning 2.2	Cadaveric dissection and identification of structures of the head and related areas on cadaver specimens, pathways of cranial nerves associated with KNM.	Students should perform cadaveric dissection and able to appreciate anatomical position, anatomical terms related to skin, fasciae, ligaments, tendons, blood vessels, nerves etc related to ENT.
Experiential-	Cadaveric dissection	Perform cadaveric dissection and able to appreciate anatomical position, anatomical terms related to skin, fasciae, ligaments,

Learning 2.3	and identification of structures of the neck and related areas; pathways of cranial nerves associated with KNM.	tendons, blood vessels, nerves etc related to KNM
Experiential-Learning 2.4	Identification of marmas w r to anatomical points and discussion on fundamentals of marma chikitsa.	Model preparation- Students are asked to prepare models depicting marmas with anatomical regions. 2-3 students group will discuss on fundamentals of marma chikitsa considering the site of marma, type of marma and its viddha lakshanas etc.
Experiential-Learning 2.5	Integrated clinical examinations for Rasa and Gandha related vyadhis	Simulated patient- Student will be asked to perform and demonstrate clinical examination for the assessment of rasa and gandha jnana on simulated patients. Project based learning- Group of students will be asked to make a project on methods of rasa jnana assessment by using Three-drop method, Taste tablets, Taste strip, Filter-paper disk (FPD) method, Electrical Test – Electrogustometry, Gustatory evoked potentials, Imaging Test, etc gustatory tests and gandha jnana assessment by Odor identification tests, Sniffin Sticks test etc. Present it within 15 days.
Experiential-Learning 2.6	Analysis of the mechanism of breathing, deglutition and salivation by different tests and discussion on the principles behind it.	Peer learning- Students will compile and make a list of tests like Spirometry, Pulmonary exercise tests, laryngoscopy, Fiberoptic endoscopic evaluation of swallowing (FEES) etc and exchange ideas regarding detailed explaination of these tests and discuss the principles behind it. Charts/Model preparation- Students are asked to prepare models / charts depicting the principles of different tests used in analysis of the mechanism of breathing, deglutition and salivation. Submit within 15 days.
Experiential-Learning 2.7	Immune system abnormalities in KNM-related conditions.	Group discussion - 2-3 students will be assigned with different immune system abnormalities or related cases and asked to discuss and present in the group.
Experiential-Learning 2.8	Balance related tests and analysis of the results.	Peer learning- Students will compile and make a list of tests used in assessment of balanced related diseases and exchange ideas regarding detailed explanation of these tests and discuss the principles behind it and analyze the results.

Experiential-Learning 2.9	Discussion on mechanism of perception of sound, hearing and speech production.	Simulated patient - Student will be asked to perform and demonstrate the tests used to check the mechanism of perception of sound, hearing and speech production on simulated patients. Stages of Sound Perception and Sound Processing [i.e Collection and Amplification sound waves, Fluid Wave Creation, Transduction (Hair Cells), Neural Transmission and Brain Interpretation etc. Tonotopic Organization, Sound Localization, Auditory Scene Analysis etc.] Stages of Auditory Perception and Auditory Process - Collection (Outer Ear), Amplification (Middle Ear), Transduction (Inner Ear), Neural Transmission & Perception (Brain), Frequency Coding, Intensity Coding, Central Auditory Pathway etc. These mechanisms will be assessed through different tools like Speech-in-Noise tests (e.g. Matrix test), Dichotic Listening tests, Temporal Patterning tests and gap detection. Common tools include the Goldman-Fristoe Test of Articulation (GFTA-3), Diagnostic Evaluation of Articulation and Phonology (DEAP) and Oral Mechanism Exams, pure-tone audiometry, speech testing and tympanometry etc, Interpret the finding and present the cases.

Modular Assessment

Assessment method	**Hour**
Instructions - Conduct a structured Modular assessment. Assessment will be for 50 marks. Keep structured marking pattern. Keep record of the structured pattern used for assessment. Calculate the Modular grade point as per table 6 C. Select any one or two methods for the asssessment. 1. Theory Open Book Test Conduct theory open book test for 50 marks which will contain either 5 SAQ. (25 marks) and Viva-voce. (25 marks) OR 2. OSPE (Objective Structured Practical Examination) - 10 stations from the list of practicals can be planned which carries 50 marks Preparation: Develop multiple stations covering practical and theoretical aspects (e.g., cadeveric dissection,identification of key structures). Execution: Students rotate through stations within a set time frame. Station formats may include tasks, demonstrations, or written responses. Evaluation: Evaluate based on the application of knowledge of applied anatomy and applied physiology and skill performance.and record/present it. OR • Any practical in converted form can be taken for assessment. (25 Marks) • and Any experiential as portfolio /reflections/ presentations, can be taken as an assessment. (25 Marks)	4

Module 3 : Agropaharaniya and Yogya vidhi

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

1 Describe Agrya Sangraharaniya (medicinal collection and preservation and other basic materials required in surgical unit/para-surgical/kriyakalpa unit, Dhupana (fumigation), Raksha karma (protective measures), Nirjantukarana (Sterilization), Vranitopasana in KNM, Anushastra Karma (Para surgical) & Shalya Karma (surgical procedures) with Integrated knowledge.
2 Perform Pre-operative and post-operative patient care, consent taking, Astha Vidha shastra karma –related to KNM with an integrated approach.
3 Develop skills in applying traditional Ayurvedic guidelines for sustainable harvesting and proper preparation of medicinal herbs, ensuring quality control and adherence to environmental and ethical practices.

Unit 1 Agra Sangraharaniya

Constitutional setup of KNM OPD Ergonomics
Agra Sangraharaniya, Yogya vidhi, Raksha Karma, Mantra Pathana, Seevana Vidhi evam dravya.

References: 1,2,3,4,9,14,15,19,20,21,22,23,31,45,49

3A	3B	3C	3D	3E	3F	3G
CO1	Describe and analyse the Agra sangraharaniya (Collection of basic materials needed in kriyakalpa unit, minor / major OT like sterile surgical instruments, dressing materials, lifesaving and emergency oushadhi etc), Raksha karma, Mantra pathana used in KNM.	1	Lecture	CC	Knows-how	D,DL,SIM
CO1,CO6	Discuss and analyse the role of Rakshakarma vidhi and Mantra pathana paddhati with scientific knowledge. Organize the Agra sangraharaniya.	3	Experiential-Learning 3.1	CC	Shows-how	BL,BS,D,DIS

CO1	Analyse the indications and contraindications of Seevana dravya and Seevana Vidhi (Sutures, Suture material and methods / techniques of Suturing) used in KNM Shalyachikitsa.	1	Lecture	CC	Knows-how	L&GD,L&PPT,L_VC
CO1,CO3,CO6	Demonstrate different types of suturing materials along with their applicability and suturing methods.	2	Practical Training 3.1	PSY-ADT	Shows-how	D,D-M,DIS,SIM
CO1,CO3	Perform Seevana vidhi (suturing techniques / methods) with different Seevana dravyas.	3	Experiential-Learning 3.2	PSY-ADT	Does	D,D-M,DIS
CO1,CO3,CO6	Perform the different methods of Nirjantukarana - Heat, moist, chemicals, radiation etc and Disinfection of Surgical instruments.	6	Experiential-Learning 3.3	PSY-MEC	Shows-how	BL,SIM,W

Unit 2 Yogya Vidhi

Skills of a KNM Practitioner.

References: 1,2,26,27,28

3A	3B	3C	3D	3E	3F	3G
CO1	Describe the yogya vidhi and basic skills of a KNM shalaki along with the knowledge of etiquettes in kriyakalpa unit / minor OT / major OT and trividha karma. Describe different types of surgical models, including synthetic, biological, virtual reality (VR) and animal models.	1	Lecture	AFT-SET	Does	BL,D,D-M,DIS,L&PPT,SIM
CO1,CO3,CO5,CO8	Demonstrate the assessment of Pre-operative Patient fitness, consent and relevant investigations knowledge (like pathological, microbiological, and histopathological investigations like CBC, Serum Electrolytes, Creatinine, Blood Glucose and HbA1c, Coagulation Profile (PT, APTT, INR), ESR and C-Reactive Protein, consent for all types of procedures etc.) and Etiquettes in kriyakalpa unit/minor OT/ major OT	4	Practical Training 3.2	AFT-SET	Shows-how	D,D-M,PT,W
CO1,CO3,CO8	Perform purva karma and paschat karma (pre-operative procedures / postoperative	3	Experiential-	AFT-SET	Does	D,PER,SI

	procedures) as per prepared SOP's, Patient fitness form and Consent of the patient along with relevant investigations.		Learning 3.4			M,W

Unit 3 Vranitopasana Agara

Integrative approach of Vranitopasana (Concept of Wound care) in Karna, Nasa, Mukha, Shiro, and Greeva .

References: 1,2,5,10,19,20,22,23,25,26,27,28,32,37

3A	3B	3C	3D	3E	3F	3G
CO1	Discuss and interpret Vranitopasana, do's & dont's, Vranitagaar (Ward for the wounded) etc.	1	Lecture	CC	Knows-how	BL,C_L,L,L&PPT
CO1,CO6	Arrange and analyse the key components of Vranitopasana.	4	Practical Training 3.3	PSY-SET	Shows-how	D,DIS,PT,PER
CO1,CO6	Discuss and analyse the concept of vranitopasana and justify the same. Perform Vranitopasana (Wound Healing) care and Do's & Dont's.	3	Experiential-Learning 3.5	PSY-ADT	Shows-how	C_L,DIS,PL

Unit 4 Astha Vidha Shastra Karma

Principles and application of Astha Vidha Shastra Karma related to Karna, Nasa, Mukha, Shiro, and Greeva.

References: 1,2,7,8,9,18,23

3A	3B	3C	3D	3E	3F	3G
CO1,CO2,CO3,CO6	Analyse principles and application of Ashta Vidha Shastra Karma (eight kinds of surgical procedures) - Chedyam (Excision), Bhedyam (Incision), Lekhyam (Scrapping), Vedyam (Puncturing) with their indications, importance and contraindications in KNM.	2	Lecture	CC	Knows-how	L,L&GD,L&PPT,L_VC
CO1,CO2,CO3	Analyse principles and application of Ashta Vidha Shastra Karma (eight kinds of surgical	2	Lecture	CC	Knows-	L,L&GD,

,CO6	procedures) - Eshyam (Probing), Aaharyam (Extraction), Visravyam (Drainage), Seevyam (Suturing) in KNM surgeries with their indications, importance and contraindications in KNM.				how	L&PPT ,L_VC
CO1,CO2,CO3 ,CO6	Demonstrate the Ashta Vidha Shastra Karma - Chedyam (Excision), Bhedyam (Incision), Lekhyam (Scrapping), Vedyam (Puncturing).	4	Practical Training 3.4	PSY-ADT	Shows-how	CBL,D,L &PPT ,L_VC
CO1,CO2,CO3 ,CO6	Demonstrate the Ashta Vidha Shastra Karma - Eshyam (Probing), Aaharyam (Extraction), Visravyam (Drainage), Seevyam (Suturing).	4	Practical Training 3.5	PSY-SET	Shows-how	BL,D,D-M,DSN,PT,PSN,SIM
CO1,CO2,CO3 ,CO6	Perform the Ashta Vidha Shastra Karma - Chedyam (Excision), Bhedyam (Incision), Lekhyam (Scrapping), Vedyam (Puncturing).	6	Experiential-Learning 3.6	PSY-ADT	Does	BL,D,D-M,SIM
CO1,CO2,CO3 ,CO6	Perform the Ashta Vidha Shastra Karma - Eshyam (Probing), Aaharyam (Extraction), Visravyam (Drainage), Seevyam (Suturing).	3	Experiential-Learning 3.7	PSY-ADT	Shows-how	D,DSN

Unit 5 Nirjantukarana (Sterilization) Prakriya

Dhupana Karma, Methods, Types and applications of Nirjantukarana and consideration of modern sterlization methods.

References: 1,2,3,4,8,9,10,12,27,32

3A	3B	3C	3D	3E	3F	3G
CO1,CO6	Analyse and interpret Dhupana karma and Nirjantukarana techniques as per Ayurveda classics.	1	Lecture	CC	Knows-how	BL,L,L&PPT
CO1,CO3,CO6	Demonstrate different dhupana karma methods as per Ayurvedic classics.	2	Practical Training 3.6	PSY-SET	Shows-how	BL,D,TPW
CO1,CO6	Identify dhupana dravyas as per different classical texts and critical analyse its efficacy.	3	Experiential-	CAP	Shows-	LS,PrBL

			Learning 3.8		how	
CO1,CO3,CO6	Discuss and analyse the aseptic techniques of sterilization and disinfection of Surgical instruments, OT sterilization - disinfection of OT room & control of infection.	4	Lecture	CK	Know	BL,L,L&PPT
CO1,CO3,CO6	Demonstration of the different methods of Nirjantukarana - Heat, moist, chemicals, radiation etc and OT Nirjantukarana technique.	2	Practical Training 3.7	PSY-GUD	Shows-how	BL,C_L,D

Unit 6 Sangyaharana

Sangyaharana / Anaesthesia in Karna, Nasa, Mukha, Shiro, Greeva.
Concept of Vedana Sthapana.

References: 1,2,3,9,10,11,12,13,18,19,20,21,22,23,24,25,27

3A	3B	3C	3D	3E	3F	3G
CO1,CO2,CO3,CO6	Define Sangyaharan (Anaesthesia) and explain its types Indications, Contraindications & application in KNM surgeries.	1	Lecture	CC	Knows-how	L,L&GD,L&PPT,L_VC
CO1,CO2,CO6	Demonstration of Sangyaharana (Anaesthesia) procedure – Local, Regional and General. Pre & post assessment, pre & post check list of instruments etc.	6	Practical Training 3.8	PSY-ADT	Shows-how	D,D-M,SIM
CO2,CO3,CO6	Perform the different techniques used in sanjnaharana (anaesthesia) applied in KNM diseases.	6	Experiential-Learning 3.9	PSY-MEC	Shows-how	D,PT,SIM,W
CO1,CO2,CO3	Compile and discuss Sangyaharana (Anaesthetic Drugs) dravyas, Techniques, Complications and their Management.	3	Experiential-Learning 3.10	PSY-GUD	Shows-how	LS,PT
CO1,CO2,CO6	Analyse and interpret the vedanasthapana karma and enlist the vedanasthapaka dravyas mentioned as per different Ayurvedic texts along with their active principles, pharmacology and mechanism of action pertaining to KNM.	1	Lecture	CAP	Knows-how	BL,L,L&GD,L&PPT

CO1,CO2,CO3	Discuss on the role of Vedana Sthapaka Dravyas in minor and major OT in KNM.	2	Practical Training 3.9	PSY-GUD	Shows-how	BL,CD,CBL,PrBL,TPW

Practical Training Activity

Practical No	Name	Activity details
Practical Training 3.1	Suturing materials and their applicability and suturing methods.	Demonstration by teacher- The student will be instructed to observe demonstration of different types of suturing materials along with their applicability and suturing methods used in KNM on simulators done by the teacher in skill lab. Some of the key points regarding the applicability and methods of suturing to be considered like - Absorbable sutures, non - absorbable sutures, monofilament sutures, multifilament sutures, size. Suturing in Specific ENT Procedures - Suturing in Tonsillectomy, Suturing in Rhinoplasty, Cartilage Grafting etc. Hands on training: Students will be asked to follow the steps enumerated in the demonstration under the supervision of instructor.
Practical Training 3.2	Demonstration of assessment of Pre-operative Patient fitness, consent and relevant investigations knowledge and Etiquettes in kriyakalpa unit/minor OT/ major OT	Demonstration by Teacher - Teach the criteria for assessing the patient’s physical fitness before any KNM procedures. Guide students in evaluating vital signs (blood pressure, heart rate, respiratory rate). Conduct mock sessions where students practice Karna-Nasa-Mukha (KNM)-specific assessments. Discuss and demonstrate how to examine a patient's ENT condition to assess whether they are fit for surgery. Use clinical case studies to evaluate fitness based on contemporary science knowledge. The instructor should show the normal and abnormal values of some relevant investigational reports related to KNM surgeries like pathological, microbiological, and histopathological investigations eg. CBC, Serum Electrolytes, Creatinine, Blood Glucose and HbA1c, Coagulation Profile (PT, APTT, INR), ESR and C-Reactive Protein etc)
Practical Training 3.3	Key components of Vranitopasana.	Under the guidance and demonstration by the faculty- Make small teams comprising of 1-2 students. Assign roles to each group related to the Key components of Vranitopasana. Each participant in a group should compile (Vranitagar, Patya - Apatya, Wound Management, Rakshakarma etc) and explain the importance of it. Give some time to each group to discuss and prepare for their topic. At the end of the role session ask each group to reflect and discuss on the key takeaways from the activity.
Practical Training 3.4	Ashta Vidha Shastra Karma - Chedyam (Excision), Bhedyam (Incision), Lekhyam	Demonstration performance method - The micro-teaching skill of demonstrating is more like a 'show and tell' for teaching. It involves explaining and illustrating concepts, ideas, principles, laws or teaching points by using specimens, mannequins during the teaching - learning process.Teacher can demonstrate blunt dissection/sharp dissection techniques chosen based on tissue type, surgical approach and risk of injury to surrounding structures by using simulated models. Also students can discuss about specific

	(Scrapping), Vedyam (Puncturing).	instruments utilized in blunt or sharp dissections, purpose & principles, techniques of both types of Dissection must be demonstrated. Use anatomical models/fruits/vegetables/mannequins for practicing excision, incision, scrapping and puncturing techniques.
Practical Training 3.5	Demonstration of Ashta Vidha Shastra Karma - Eshyam (Probing), Aaharyam (Extraction), Visravyam (Drainage), Seevyam (Suturing).	Demonstration by the teacher - Teacher will demonstrate a session with a brief explanation of the Ashta Vidha Shastra Karma procedure - including its purpose, sequence of steps, and potential challenges. Demonstration to students with techniques like probing, extraction, drainage, suturing etc can be adopted. Describe precision in each technique and why it's essential for successful outcomes in any surgical disease. Students are instructed to observe the demo of probing, extracting, suturing and drainage techniques or sharing videos.
Practical Training 3.6	Demonstration of different dhupana karma methods as per Ayurvedic classics.	Collection of dhupana dravyas used for dhupana karma. Critically analyse rationality of dhupana karma. Demonstrate the dhupana karma (fumigation technique) using ingredients like laksha, haridra, ativisha, haritaki and kustha.
Practical Training 3.7	Demonstration of the different methods of Nirjantukarana.	Demonstration of different methods of sterilization - Heat, moist, chemicals, radiation etc through videos, workshops, simulated environment etc. Teacher can demonstrate cleaning and disinfection of OT surfaces like Daily Cleaning Protocol and Terminal Cleaning (After each Surgery), Microbial Swab Testing of the surfaces of OT (Operation Theatre), its importance and method of documentation. OT Fumigation and UV-C Light Disinfection Method of Maintaining sterilization logs and validation reports.
Practical Training 3.8	Demonstration of Sanjnaharana (Anaesthesia) procedure – Local, Regional and General.	Demonstration by teacher- The student will be instructed to observe demonstration of anaesthesia procedure – Local, Regional and General as done by the instructor in the OT unit or on simulators/pre-recorded videos. Case based learning- Teacher will demonstrate local anaesthesia in detail related to KNM related diseases and students will imitate the proceedings of case. Inquiry based learning - Students are asked to generate queries related to the case already demonstrated by the teacher and engage hands on training done by instructor.
Practical Training 3.9	Discussion on the role of Vedana Sthapaka Dravyas in minor and major OT in KNM.	Interactive session – Teacher will make two to three groups and a set of vedana sthapaka dravyas useful in minor OT/major OT will be given and asked for review then interaction begins, keeping the objectives of the session in mind and at the end the teacher will conclude the session. Project based learning – write an article on vedana sthapaka dravyas in KNM etc. or small research project may be given.
Experiential learning Activity		

Experiential learning No	Name	Activity details
Experiential-Learning 3.1	Discussion and analysis of the rationale behind Rakshakarma and Mantra pathana (Chanting shlokas / Prayer).	Group discussion- After having the knowledge of core concept of rakshakarma vidhi and mantra pathana paddhati explained by the teacher; group of students will engage in discussion and analyse the role of rakshakarma vidhi and mantra pathana paddhati with scientific knowledge. Blended learning- Students will learn and analyse the method and role of rakshakarma vidhi and mantra pathana paddhati as explained by the teacher combined with online mode. Team based learning- Students are asked to prepare the topic and come together in separate teams to discuss what they have learned.
Experiential-Learning 3.2	Seevana dravyas (suturing materials) and Seevana vidhi (suturing techniques / methods).	Student will - Demonstrate different types of Suchi (surgical needles), Seevana dravyas (Sutures and Suturing materials) and different Seevana vidhi (suturing techniques/ methods). Enumerate the indications and contraindications of different methods of Seevana karma (Suturing). Elicit the merits and demerits of different types of Suchi (surgical needles), Sutures and Suturing materials (Seevana dravyas).
Experiential-Learning 3.3	Different methods of Nirjantukarana - Heat, moist, chemicals, radiation etc and Disinfection of Surgical instruments.	Ask the students to perform principles and procedure of sterilization of surgical instruments by using Physical agents and Chemical agents of sterilization. Practice operation of an autoclave and how to sterilize surgical instruments in a simulated environment. Also audio-visual aids can be use to demonstrate the sterilization methods Station 1 Steam Sterilization (Autoclaving) Load, run and validate an autoclave cycle using indicators Station 2 Ethylene Oxide (ETO) Sterilization Safely operate an ETO sterilizer and discuss aeration steps Station 3 Plasma Sterilization (Hydrogen Peroxide Gas) Perform plasma sterilization on heat-sensitive instruments Station 4 Chemical Sterilization (Glutaraldehyde, Peracetic Acid) Soak endoscopes in glutaraldehyde & check sterilization effectiveness Station 5 Dry Heat Sterilization (Hot Air Oven) Run a hot air oven cycle for glassware sterilization.
Experiential-Learning 3.4	Performance of purva karma and paschat	Independently perform – Student is asked to perform independently pre-operative procedures / postoperative procedures and take the consent under the supervision of instructor and prepare SOP's and check the relevant investigation reports.

	karma (pre-operative procedures / postoperative procedures) as per prepared SOP's, Patient fitness form and Consent of the patient along with relevant investigations.	
Experiential-Learning 3.5	Concept of vranitopasana and performance of Wound Healing care and Do's & Dont's.	Peer learning and GD – different contents of vranitopasana will be given to each set of 2 students and are asked to discuss about the concept and rationale behind it. Finally make a report and submit to Dept. Perform the principles of vranitopasana (wound healing) in KNM, focusing on do's & dont's. Practice different wound dressing techniques and discuss the role of herbs and medicated oils in wound care. Demonstrate and explain the importance of asepsis and preventing infection during and after surgery. Assign students to perform mock surgeries where they apply vranitopasana techniques and follow post-operative protocols. Discuss case studies of wound healing complications and their management in KNM and develop Holistic Ayurveda Wound care protocol Comprising of Vranitagara (The Ward), management guidelines, Aahara (Dietary Regimen), Pathya - Apathya, Vihara (Lifestyle Regimen), Psychological Care etc.
Experiential-Learning 3.6	Performance of Ashta Vidha Shastra Karma - Chedyam (Excision), Bhedyam (Incision), Lekhyam (Scrapping), Vedyam (Puncturing).	Simulation- Student will be asked to perform and demonstrate Chedyam (Excision), Bhedyam (Incision), Lekhyam (Scrapping), Vedyam (Puncturing) on simulator/ animal/vegetable models as per Sushruta Samhita. Rationality behind using such models in the text must be explained logically. Make the students to appreciate between the surgical techniques demonstrated on vegetable model and Synthetic models.
Experiential-Learning 3.7	Ashta Vidha Shastra Karma - Eshyam (Probing), Aaharyam (Extraction), Visravyam (Drainage), Seevyam (Suturing).	Simulation- Student will be asked to perform and demonstrate Eshyam (Probing), Aaharyam (Extraction), Visravyam (Drainage), Seevyam (Suturing) on simulator or vegetable models as per Sushruta Samhita. Rationality behind using such models in the text must be explained logically. Make the students to appreciate between the surgical techniques demonstrated on vegetable model, synthetic models, biological, virtual reality (VR) and animal models.

Experiential-Learning 3.8	Identification and critical analysis of dhupana dravyas.	Library session - Students are asked to identify and make a list of dhupan dravyas and analyse their antiseptic, asepsis, disinfectant properties. Project based learning - Group of students will be asked to make a project on dhupana dravyas with scientific reasoning and present it within 10 days. Research papers – Review and article publication.
Experiential-Learning 3.9	Performance of the different techniques used in anaesthesia applied in KNM diseases.	As per the demonstration done by teacher, students has to practice on simulators, cadaver, models etc and able to identify the areas where to give block, check vitals etc.The performance of different techniques should be done depending on the specific ENT subspecialty with a shift towards Total Intravenous Anesthesia (TIVA), regional blocks, and tubeless techniques etc for improved outcomes.
Experiential-Learning 3.10	Compilation and discussion on Anaesthetic Drugs, Techniques, Complications and their Management.	Library session – students are assigned to compile anaesthetic drugs and discuss about techniques, complications and their management and asked to prepare charts and models. Introduce the basics of anaesthesia; including local, regional and general anesthesia used in KNM surgery. Demonstrate the administration of local anaesthesia for minor procedures on models. Teach students to monitor vitals during anaesthesia, explaining the effects on respiration, heart rate, and blood pressure. Conduct mock sessions where students simulate the administration of anesthesia under supervision. Discuss the possible complications and management of anesthesia reactions.

Modular Assessment

Assessment method	**Hour**
Instructions—Conduct a structured modular assessment. The assessment will be for 75 marks. Keep a structured marking pattern. Use different assessment methods in each module for the semester. Keep a record of the structured pattern used for assessment. Calculate the Modular grade point as per Table 6C. Class presentation on various medicinal collection and preservation required in surgical unit, Dhupana (fumigation) and Raksha karma (protective measures) (45 marks) and Application and Practical demonstration of Astha Vidha Shastra Karma in KNM diseases. (30 marks) OR DOPS - Preparation and performance of consent taking, Pre-operative and post-operative patient care with an integrated appraoch in clinical settings such as wards, clinics, or theaters (50 marks) and .Viva -voce (25marks) OR	6

Any practical in converted form can be taken for assessment. (45 Marks) and Any experiential as portfolio/reflections/presentations, can be taken as an assessment. (30 Marks)	

Module 4 : Oushadha Vijnana in KNM

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

1 Describe the Integrated comprehensive explanation of drugs used in KNM
2 Conduct different treatment methodologies applicable in KNM like Sthanik Chikitsa, Murdhni Chikitsa, para surgical procedures etc
3 Identify Atyayika Chikitsa (Emergencies) in KNM and Pranabhisara (Lifesaving) Medicines in KNM

Unit 1 Oushadha Vijnana

Abhyantara Oushadha Prayoga in Karna, Nasa, Mukha, Shiro, and Greeva Vyadhis.

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

3A	3B	3C	3D	3E	3F	3G
CO1,CO4,CO6	Discuss principles of KNM Pharmacology and use of systemic drugs - An integrative perspective.	1	Lecture	CC	Knows-how	BL,L,L&PPT
CO1,CO6	Discuss and analyse selection of drug, mechanism of drug action, bioavailability, drug dosage forms and route of drug administration as per Ayurveda and contemporary science.	1	Lecture	CC	Knows-how	C_L,L&PPT
CO1,CO6	Identify commonly used Kashthaushadhi (Ekamulika dravya, compound formulations) and Rasaushadhi (Herbo-mineral, metallic and mineral formulations) and Collect some of them used in KNM chikitsa like Triphala, Yastimadhu, Shunti, Jeeraka, Musta, Haritaki, Haridra, Triphala guggulu, Vyoshadi vati, Patyadi khada etc. Tabulate the drugs used as Agni Deepana - pachana, Vatanulomana, vamaka,	4	Practical Training 4.1	CAP	Knows-how	DA,FV,PT,PrBL,RLE

	virechaneeya, vedanasthapaka, shothaghna etc treatments in the form of vati, gutika, churna, kashaya, grita and taila etc.					
CO1,CO6	Interpret the selection of appropriate drugs in different vyadhis as per criteria's mentioned in Bheshaj avacharaniya - "Kalobhaishajya yoga krt" (as per As.Sha.Su 23)	3	Experiential-Learning 4.1	CAP	Knows-how	BS,C_L,PL
CO1,CO6	Analyze the effects of oushadhi dravyas used for Virechaneeya, Vamaka and Basti chikitsa such as Trivrut, Amlavetasa and others.	1	Lecture	CAP	Knows-how	BL,C_L,DIS
CO1,CO4,CO6	Discuss and analyse Pharmacokinetics of (ADME- Absorption, Distribution, Metabolism and Excretion) drugs and Pharmacodynamics of drugs used in ENT.	1	Lecture	CAP	Knows-how	BL,C_L,L&GD,L&PPT
CO1,CO4	Perform the procedures like karnapurana, prakshalana, pramarjana, dhupana, avchurnana, pichu and Lepa etc used in karnagata rogas.	3	Experiential-Learning 4.2	PSY-ADT	Shows-how	D,D-M,PT

Unit 2 Contemporary Medicines

Contemporary Modern Medicine pharmacology in KNM.

References: 19,20,21,22,23,37

3A	3B	3C	3D	3E	3F	3G
CO1,CO4,CO6	Discuss and analyse the role of corticosteroids, antihistamines and immunotherapy in treating inflammation and allergic responses in ENT conditions. Analyse the use of antibiotics, decongestants, and antifungals in managing ENT infections and decongestion.	6	Experiential-Learning 4.3	CAN	Knows-how	BL,L&GD,L&PPT

Unit 3 Sthanik Chikitsa

Sthanik Chikitsa in Karna, Nasa, Mukha, Shiro and Greeva rogas.

References: 1,2,3,4,5,6,7,8,9,10,11,12,13,14,15,17

3A	3B	3C	3D	3E	3F	3G
CO1	Discuss ototoxic drugs and their effects, ensuring safe drug use in patients with hearing risks. Specify the drugs acting on CNS and their mode of action with examples related to KNM	2	Lecture	CC	Knows-how	BL,CBL,C_L,DA,PrBL
CO4,CO6	Discuss and analyse the Sthanika chikitsa (local treatment) used in nasagata rogas such as Nasya, Pichu, dhumapana, nasapana, greya chikitsa and Lepa etc.	1	Lecture	CC	Knows-how	L,L&GD,L&PPT,L_VC
CO1	Demonstrate the Sthanik shehana (Abhyanga) and swedana karma used in karna, nasa, shiro & mukharogas Demonstrate the Sthanik chikitsa applicable in nasagata rogas like dhumapana, nasya, pichu, greya chikitsa lepa etc.	4	Practical Training 4.2	PSY-GUD	Shows-how	CBL,D,D-M
CO1	Perform the sthanik chikitsa applicable in nasagata rogas like dhumapana, nasya, pichu,greya chikitsa lepa etc. along with the preparation of SOPs.	3	Experiential-Learning 4.4	PSY-GUD	Does	CBL,D,D-BED,D-M,SIM
CO1,CO4	Analyse the Sthanika chikitsa (local treatment) used in karnagata rogas such as karnapurana, prakshalana, pramarjana, dhupana, avchurnana, pichu and Lepa etc.	1	Lecture	CC	Knows-how	L,L&PPT,L_VC,LS
CO1,CO4,CO5	Demonstrate the sthanik chikitsa used in karnagata rogas such as karnapurana, prakshalana, pramarjana, dhupana, avchurnana, pichu and Lepa etc. Demonstrate the sthanik chikitsa used in mukhagata rogas like kavala, gandush, pratisarana, lepa, hanubasti, pichu etc.	4	Practical Training 4.3	PSY-ADT	Shows-how	D,D-M
CO1,CO3,CO4	Perform the procedures like kavala, gandush, pratisarana, lepa, hanubasti, pichu etc used in mukhagata rogas along with SOP's. Perform topical treatment procedures applicable in karna, nasa & mukha rogas like wick preparation, nasal packing, nasal spray etc.	6	Experiential-Learning 4.5	PSY-MEC	Shows-how	D,D-M,KL,SIM
CO1	Analyse the Sthanika chikitsa explained in mukhagata rogas.	1	Lecture	CC	Knows-	L,L&GD,

					how	L&PPT ,L_VC
CO1,CO2,CO3 ,CO4	Demonstrate the nasal drops instillation, nasal spray, inhalation, ear drops, ear wick, oral painting etc. Demonstrate nasal packing – anterior and posterior nasal packing.	4	Practical Training 4.4	PSY-ADT	Shows-how	D,D-M,PT,SIM
CO1,CO4	Discuss the local treatment methodologies used in KNM practice as per contemporary science with examples.	1	Lecture	CC	Knows-how	L,L&GD, L&PPT ,L_VC
Unit 4 Murdhni Chikitsa Murdhni Chikitsa in Karna, Nasa, Mukha, Shiro and Greeva rogas. **References:** 1,2,3,4,6,7,8,9						
3A	**3B**	**3C**	**3D**	**3E**	**3F**	**3G**
CO1,CO6	**1. Discuss and interpret Murdhni Chikitsa in karna and mukhagata rogas** **2. Analyse Murdhni Chikitsa in nasa and shirogata rogas**	2	Lecture	CC	Knows-how	C_L,L,L&GD,L&PPT ,L_VC
Unit 5 Anushastra Karma Anushastra Karma (Para-Surgical Procedures) in Karna, Nasa, Mukha, Shiro and Greeva rogas. **References:** 1,6,7,8,13						
3A	**3B**	**3C**	**3D**	**3E**	**3F**	**3G**

CO1,CO3,CO6 ,CO7	Discuss and interpret the principles and techniques of Kshara karma, Agnikarma and Jaloukavacharana in karna, nasa, shiro & mukhagata rogas.	1	Lecture	CAN	Knows-how	JC,L,L& GD,L&PP T ,L_VC,LS
Unit 6 Atyayika Chikitsa Atyayika Chikitsa & Pranabhisara Oushadhis in Karna, Nasa, Mukha, Shiro and Greeva rogas. **References:** 1,6,22,23,24,25,26,29,39,40						
3A	**3B**	**3C**	**3D**	**3E**	**3F**	**3G**
CO1,CO2,CO6	Categorize the Atyayika chikitsa realted dravya (emergency medicine) and Pranabhisara dravyas in KNM practice. Understand the pharmacological action of emergency drugs like Salbutamol, Aspirin, Diazepam, etc and their use in ENT emergencies.	1	Lecture	CAN	Knows-how	CBL,L,L &GD,L& PPT ,L_VC,LS
CO1,CO2,CO3 ,CO6	Discuss and analyse integrated Raktasthambaka chikitsa (sandhana, skandana, dahana and pachana) applicable in KNM.	1	Lecture	CAP	Knows-how	BL,L,L& GD,L&PP T ,L_VC
CO1,CO4,CO7	**1. Demonstrate the procedures of murdhni chiktsa - Shirobasti and Shiro abhyanga applicable in karna, nasa,shiro & mukhagata rogas along with SOP's** **2. Demonstrate the procedures of murdhni chiktsa - Shirodhara and Shirolepa applicable in karna nasa shiro mukhagata rogas along with SOP's**	4	Practical Training 4.5	PSY-GUD	Shows-how	D,D-M,K L,RP,SIM
CO1,CO3,CO4 ,CO6	**1. Perform the procedures of murdhni chiktsa - Shirobasti and shiro abhyanga applicable in karna, nasa, shiro & mukhagata rogas along with SOP's.**	6	Experiential-Learning 4.6	PSY-ADT	Shows-how	KL,PAL, PER,RP

	2. Perform the procedures of murdhni chiktsa - Shirodhara and shirolepa applicable in karna, nasa, shiro & mukhagata rogas along with SOP's.					
CO1,CO3,CO6	**1. Demonstrate the ksharakarma application in karna nasa mukha rogas with SOP's and do's and don'ts** **2. Demonstrate the agnikarma procedure in karna nasa mukha rogas with SOP's** **3. Demonstrate the jaloukavacharana procedure in karna nasa mukha rogas with SOP's**	6	Practical Training 4.6	PSY-GUD	Shows-how	CBL,D-M
CO1,CO3,CO4,CO6	**1. Perform the Ksharakarma application in karna, nasa & mukha rogas with SOP's and do's and dont's** **2. Perform the Agnikarma procedure in karna, nasa & mukha rogas with SOP's.** **3. Perform the jaloukavacharana in karna, nasa & mukha rogas with SOP's.**	9	Experiential-Learning 4.7	PSY-ADT	Shows-how	KL,PT,SIM,W
CO1,CO2,CO6	Demonstrate Atyayika chikitsa (Emergency interventions) using oxygen, epinephrine, other critical drugs and the techniques and considerations for hemostasis in ENT surgery - direct pressure, cautery, suturing, and clips, Valsalva maneuver, Trendelenburg tilt, Hydrogen peroxide wash. Individualized approach and referral knowledge.	4	Practical Training 4.7	PSY-GUD	Shows-how	D,DIS,DA
CO1,CO2,CO3,CO4	Identify the situations requiring immediate drug intervention in KNM Atyayika avastha (Emergencies) such as airway obstruction or anaphylaxis and perform how to handle it.	3	Experiential-Learning 4.8	AFT-SET	Shows-how	D-M,DA,IBL,KL

Practical Training Activity

Practical No	**Name**	**Activity details**
Practical Training 4.1	Collection of key drugs used in KNM chikitsa. Tabulation of drugs indicated in KNM chikitsa	Visit to pharmacy - The students will be taken to pharmacy for collection of drugs used in KNM chikitsa. Practical Application: Prepare herbal formulations such as Jeeraka Jala, yastimadhu phanta or Manda, Triphala kashaya and analyze their effects on digestion and metabolism. Group Discussion of Ayurvedic Drugs: Present and discuss various Agni Deepana and Pachana dravyas like Shunti, Jeeraka, etc highlighting their pharmacological properties and clinical applications.

		Group Activities: Divide students into groups and assign each group a specific drug category (e.g. Virechaneeya, Vedanasthapak dravyas) for in-depth research and presentations. Hands-On Workshop: Conduct a hands-on workshop where students prepare selected churna and vati formulations and discuss their applications.
Practical Training 4.2	demonstration of sthanika snehana and swedana in KNM diseases. demonstration of sthanika chiktsa in nasagata rogas.	Demonstration of Nasagata sthanik chikitsa in three stages- purvakarma, pradhana karma and paschat karma along with do's and don’ts explanation (SOP's). Teacher will demonstrate sthanika chikitsa (snehana, swedana, abhyanga,nasapana, nasya, dhumapana, greya chikitsa pichu etc) with standard guidelines (preparation of Kwatha, Nasa Pichu, varti, swarasa, Kalka). Teacher will emphasize on temperature of prepared dravya, appropriate case selection and communication with the patient for specific sthanika chikitsa. Following the demonstration; students will observe the teacher’s demonstration and assist in the selection of appropriate drugs and materials for sthanika chikitsa. preparation of the patient, application technique, prevention of burns / injury during procedure, post procedure care. Practice Sthanika chikitsa techniques on simulation model / patient, under teacher supervision Identify challenges in performing Sthanika chikitsa and seek clarification. Teacher will summarise the session highlighting the key points.
Practical Training 4.3	Demonstration of sthanik chikitsa used in karnagata rogas. Demonstration of sthanik chikitsa used in mukhagata rogas.	Demonstration of Karnagata sthanik chikitsa in three stages- purvakarma, pradhana karma and paschat karma along with do's and don’ts explanation (SOP's). Demonstration of mukhagata sthanik chikitsa in three stages- purvakarma, pradhana karma and paschat karma along with do's and don’ts explanation (SOP's). Teacher will demonstrate Sthanika chikitsa of karna and mukha - karnapurana, prakshalana, pramarjana, dhupana, avchurnana, pichu, lepa etc and kavala, gandush, pratisarana, lepa, hanubasti, pichu etc with standard guidelines (preparation of Kwatha, swarasa, Kalka, Pichu, varti). Teacher will emphasize on temperature of prepared dravya, appropriate case selection and communication with the patient for specific sthanika chikitsa. Following the demonstration; students will observe the teacher’s demonstration and assist in the selection of appropriate drugs and materials for sthanika chikitsa, preparation of the patient, application technique, prevention of burns / injury during procedure, post procedure care. Practice Sthanika chikitsa techniques on simulation model / patient, under teacher supervision. Identify challenges in performing Sthanika chikitsa and seek clarification. Teacher will summarise the session highlighting the key points.

Practical Training 4.4	Demonstration of nasal topical treatment. Demonstration nasal packing – anterior and posterior nasal packing.	Demonstration of nasal drops instillation, nasal spray, inhalation, ear drops, ear wick, oral painting etc. on simulators/ on real patients. Demo of nasal packing will be done on simulators or videos.
Practical Training 4.5	Demonstration of murdhni chiktsa.	Demonstration of murdhni chiktsa in three stages- purvakarma, pradhana karma and paschat karma along with dos and don'ts explanation (SOP's) in KNM.
Practical Training 4.6	Demonstration of parasurgical procedures in KNM practice.	Demonstration of parasurgical procedures in three stages- purvakarma, pradhana karma and paschat karma along with do's and don'ts explanation. (SOP's) applicable in KNM.
Practical Training 4.7	Demonstration of Atyayika chikitsa in KNM.	Demonstration Atyayika chikitsa (Emergency interventions) using oxygen, epinephrine, other critical drugs and the techniques and considerations for hemostasis in ENT surgery - direct pressure, cautery, suturing, and clips, Valsalva maneuver, Trendelenburg tilt, Hydrogen peroxide wash, Individualized approach and referral knowledge.
Experiential learning Activity		
Experiential learning No	**Name**	**Activity details**
Experiential-Learning 4.1	Selection of appropriate drugs in different KNM vyadhis.	Compilation and peer learning – The students are instructed to compile the formulation specific Bheshaja sevana kala related to KNM and draw a conclusion on Rationale behind time specificity of drug administration after through discussion with each other and teacher. Students has to do IPD rounds and make a compilation on prescribed medicine, sevana kala, anupana, patya apatya etc and discuss with the concerned consultant.
Experiential-Learning 4.2	Karnagata sthanika chikitsa.	Perform the procedures like karnapurana, prakshalana, pramarjana, dhupana, avchurnana, pichu and Lepa etc used in karnagata rogas as per SOP's.
Experiential-Learning 4.3	Role of contemporary science medicines and	1. Overview of Medications: Start with a lecture on the mechanisms of action, indications, and contraindications of corticosteroids, antihistamines, decongestants, and other relevant medications.

	its analysis	2. Case Studies: Present case studies highlighting the use of these medications in ENT conditions (e.g. allergies, infections). 3. Simulation Exercises: Conduct simulation exercises where students practice prescribing and counselling patients on these medications, considering factors like drug interactions and side effects. 4. Group Discussions: Facilitate discussions on the importance of understanding pharmacodynamics and pharmacokinetics in prescribing these medications. Blended learning and peer learning - students will be asked to refer classical and advances scientific knowledge and discuss among thmeselves, conclude and present infront of peers.
Experiential-Learning 4.4	sthanik chikitsa applicable in nasagata roga	Demonstration of nasagata sthanik chikitsa in three stages- purvakarma, pradhana karma and paschat karma along with dos and don’ts explanation. (SOPs)
Experiential-Learning 4.5	Topical treatments in mukha and karnagata rogas.	Perform the procedures like kavala, gandush, pratisarana, lepa, hanubasti, pichu etc used in mukhagata rogas along with SOP's. Each student will perform five different Sthanika cikitsa (like karnapurana, karnapichu, kavala etc.) adhering to standard guidelines in a minimum of three patients. Monitor the temperature of materials being used for these procedures and observe for the complications (redness, itching, burning sensation and pain). They will actively document their experience and learnings in the logbook. Activity: Each student will prepare a standard operating procedure for any one of the sthanika chikitsa and present in class.Teacher will facilitate discussion and students will document their learnings and experiences in the logbook.
Experiential-Learning 4.6	Murdhni chiktsa in KNM.	Perform murdhni chiktsa in three stages- purvakarma, pradhana karma and paschat karma along with do's and don’ts explanation (SOP's) applicable in KNM .
Experiential-Learning 4.7	Para surgical procedures in KNM diseases.	Perfrom para surgical procedures in KNM diseases in three stages- purvakarma, pradhana karma and paschat karma along with do's and dont's explanation. (SOP's)
Experiential-Learning 4.8	Atyayika avastha (Emergencies) handling in KNM.	Identify the situations requiring immediate drug intervention in KNM Atyayika avastha (emergencies) such as airway obstruction or anaphylaxis and perform how to handle it.
Modular Assessment		

Assessment method	Hour
Instructions - Conduct a structured Modular assessment. Assessment will be for 75 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 6 C. DOPS Assessment – 75 marks Perform on a patient/simulated patient. Real-time observation by faculty assessor. Procedure to be Observed -Select any two of the Sthanika chikitsa/ Parasurgical Procedures for DOPS: Components of Assessment: 1. Preparation for Procedure: Assembles necessary materials, maintains hygiene & patient preparation. 2. Explanation to Patient: Explains the procedure, indications, and obtains consent. 3. Demonstration of Procedure: Performs/explain therapy correctly with appropriate technique. 4. Knowledge of Ingredients & Dosage: Describes ingredients, dose, route, and method of preparation. 5. Recognition of Contraindications/Complications: Identifies when not to perform or possible risks. 6. Post-Procedure Care: Explain Post procedural care. OR 1. Theory Open book Test :Conduct theory open book test for 75 marks which will contain 2 LAQ and 6 SAQ. OR 2. Viva: Viva -Take questions from each Units and select 25 questions for the module. 2marks for each question can be allocated Preparation: Create open-ended questions testing clinical knowledge, procedural steps, and reasoning. Execution: Conduct one-on-one or panel-based interviews. Evaluation: Assess knowledge depth, clarity, and application ability. OR Any practical in converted form can be taken for assessment. (45 Marks) and Any of the experiential as portfolio/ reflections / presentations can be taken as assessment. (30 Marks)	6

Module 5 : Vrana siddhanta

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

a. Describe the wound healing process, including the stages of inflammation, proliferation, and remodelling, as well as granulation, collagen maturation, and scar formation.
b. Identify Dushta Vrana (non-healing wounds) and the factors affecting wound healing.
c. Describe the materials and techniques used for Bandhana (wound dressing).
d. Conduct appropriate Bandhana techniques in clinical settings for effective wound management.

Unit 1 Vrana siddhanta

Trividha shopha, Shuddha vrana, Dusta Vrana, concepts of Wound, infected wound, Basics of wound healing and their clinical importance.

References: 1,2,3,4,5,6,7,8,9,11,19,20,21,22,23

3A	3B	3C	3D	3E	3F	3G
CO1,CO3	Demonstrate trividha shopha (three phases of swelling) Amavastha, Pachyamanavastha and Pakvavastha, Dosha-wise symptoms of Shopha.	2	Practical Training 5.1	PSY-GUD	Shows-how	BL,D,DIS,LS,TBL
CO1,CO3	Discuss and analyse trividha shopha in KNM.	1	Lecture	CC	Knows-how	L,L&GD,L&PPT
CO1,CO2,CO3	Perform examination of trividha shopha - amavastha, pachyamanavasta and pakwavastha (stages of inflammation)	3	Experiential-Learning 5.1	AFT-RES	Does	BL,D,D-M,DIS,TBL
CO1,CO3	Discuss and analyse dusta vrana (infected wound) and shuddha vrana along with concept	1	Lecture	CC	Knows-	BL,L,L&

	of wound.				how	GD,L&PPT ,L_VC,LS
CO1,CO3	Demonstrate the stages and types of vrana - dusta vrana, shuddha vrana, wounds based on characteristics such as size, depth, and infection status.	2	Practical Training 5.2	PSY-GUD	Shows-how	BL,CBL, TBL
CO1,CO3,CO6	Present the stages and types of vrana - dusta vrana, shuddha vrana, wounds based on characteristics such as size, depth, and infection status and perform Wond Cleaning & Dressing and observe the wound healing process.	3	Experiential-Learning 5.2	CC	Does	D,D-M,DIS,LS,PER ,W
CO1,CO3	Discuss and analyse the phases of wound healing and physiological importance	1	Lecture	CAP	Knows-how	L,L&PPT
CO1,CO3	Identify and discuss about the factors delaying or disrupting wound healing. and demonstrate the wound healing process.	2	Practical Training 5.3	PSY-GUD	Shows-how	D,DIS
CO1,CO3	Perform wound care techniques based on the healing stage.	3	Experiential-Learning 5.3	PSY-ADT	Know	RLE,RP,SIM

Unit 2 Vrana bhandha and Vranitopasana in KNM

Materials for wound dressing, Bandhana vidhi, Selection of bandhana dravya for different vranas

References: 1,19,20,21,23,45

3A	3B	3C	3D	3E	3F	3G
CO1	Describe Materials used for wound dressing and analyse selection of bandhana dravya for different vranas	1	Lecture	CC	Knows-how	L,L&GD, L&PPT ,L_VC
CO1	Demonstrate dressing materials based on wound type.	2	Practical Training 5.4	CC	Shows-how	PT,PrBL, SIM

CO3,CO6	Practice Principles of (Bandhana) Bandages as per Ayurveda and contemporary science.	2	Experiential-Learning 5.4	CC	Does	L&GD,L&PPT ,PAL
CO1	Describe and classify different types of bandhanas (bandages) and unique properties and primary functions of bandages.	1	Lecture	CAP	Knows-how	BL,L,L&GD,L&PPT ,L_VC
CO1,CO3,CO6	Demonstrate wound dressing techniques & Choose dressing materials for different types of wounds.	2	Practical Training 5.5	PSY-GUD	Shows-how	CBL,D,DIS,LRI
CO1,CO4	Perform wound dressing techniques & Choose appropriate dressings for different types of wounds.	2	Experiential-Learning 5.5	AFT-REC	Does	CBL,RP,W

Practical Training Activity

Practical No	Name	Activity details
Practical Training 5.1	Demonstration of trividha shopha.	Demonstration- Teacher will explain and demonstrate the trividha shopha (three phases of swelling) Amavastha, Pachyamanavastha and Pakvavastha, Dosha-wise symptoms of Shopha with help of different teaching sources like videos, photos, original cases and methodology of shopha examination. Clinical Demonstration of Trividha Shopha - In a clinical or academic setting, a demonstration of Trividha Shopha involves diagnosing the type based on Lakshanas (symptoms) through examination: • Darshana (Observation): Assessing the color of the skin (red for Pitta, discolored for Vata/Kapha), shape, and size. • Sparshana (Palpation): Checking for temperature (hot in Pitta), consistency (hard in Kapha, soft in Vata), and tenderness. • Prashna (History Taking): Understanding the onset, nature of pain, and associated diet/lifestyle causes. Discussion - After having the knowledge of core concept of trividha shopha, demonstrated by the teacher, group of students will engage in discussion of shopha types, dosha involvement, lakshanas etc. and their interpretation. Blended learning- Students will learn and analyse the steps of examination of trividha shopha as demonstrated by the teacher combined with online mode. Team based learning- After demonstration given by the teacher, Students are asked to prepare the topic and come together in

		separate teams to discuss what they have learned.
Practical Training 5.2	1. Demonstration of the stages and types of vrana.	Case diagnosis- Teacher will demonstrate in detail about the history taking, types, dosha involvement, physical examination of the vrana. integrated approach, Student will be asked to observe and draw conclusion of diagnosis. Blended learning -- Students will learn and analyse the stages, doshic involvement and types of vrana - dusta vrana, shuddha vrana, wounds based on characteristics such as size, depth, and infection status etc and examination of vrana as demonstrated by the teacher combined with online mode and are asked to prepare the topic and come together in separate teams to discuss what they have learned.
Practical Training 5.3	Systemic and local Factors and environmental Influences affecting wound healing.	Demonstration by Faculty - Present different types of wounds (clean, infected, chronic) using models. Explain the physiological processes of wound healing and the importance of recognizing factors that delay wound healing. Highlight the common systemic & local factors, specific factors (e.g., diabetes, obesity, medications, oxygenation, infection, poor circulation, nutrition etc.) that can delay healing. Discuss how each factor affects the healing process, supported by visual aids. To enhance understanding, show graphs, images, and case studies. Organize students into groups to discuss real-life scenarios. Encourage them to brainstorm strategies to address factors delaying healing and clarify doubts. Discuss any misconceptions or uncertainties regarding wound care. Ask students to write a short reflection on what they learned during the practical session and how they might apply this knowledge in future clinical practice. Collect written reflections for review and feedback.
Practical Training 5.4	Demonstration of dressing materials.	Demonstration by Faculty - Teacher will start with the Review on different types of wounds like - Superficial infected wounds, Deep infected wounds, Exudative (wet) wounds, Dry necrotic wounds etc. so that students understand wound characteristics, including infection status, exudate level, and tissue involvement. Then based on the type of wound, appropriate dressing material will be selected from a variety of materials including: Sterile Gauze, Alginate Dressings, Hydrocolloid Dressings, Honey-based Dressings, Silver-Based Dressings, Neem Paste or Oil Dressings, Hydrogel Dressings, Ayurvedic Herbal Dressings (e.g., Turmeric, Jatyadi Taila, Kalonji Oil) etc. Demonstrate proper techniques for applying dressings to different wound types: Superficial Infected Wounds: Demonstrate using sterile gauze, honey-based dressings, or turmeric paste as antimicrobial agents. Wet/Exudative Wounds: Apply alginate dressings for absorption and silver-infused dressings to reduce bacterial load. Deep Infected Wounds: Demonstrate hydrocolloid dressings or neem paste to promote healing and prevent infection. Dry Necrotic Wounds: Apply hydrogel dressings or Ayurvedic oils like Kalonji oil for rehydration and tissue regeneration.

Practical Training 5.5	Master Techniques of bandhana (Bandages).	Hands-On practice in applying bandages - Teacher can initially demonstrate the importance of Bandaging in surgical conditions, trauma, and post-operative care. Also, mentions the properties of bandage which provides support, protection, and compression to wounds and injuries. Students can demonstrate the utility of bandages in different conditions.
Experiential learning Activity		
Experiential learning No	**Name**	**Activity details**
Experiential-Learning 5.1	Examination of trividha shopha.	Demonstration- student should perform examination of shopha on simuators/ patients under the supervision of consultant and explain the three main stages - amavastha, pachyamanavasta and pakwavastha (Acute, Sub-acute, Chronic), cardinal signs: pain (dolor), heat (calor), redness (rubor), swelling (tumor), and loss of function (functio laesa) and doshic involvement etc. minimum - 5 cases Discussion - After having the knowledge of core concept of trividha shopha, demonstrated by the teacher, group of students will engage in discussion of shopha types, dosha involvement, lakshanas etc. and their interpretation and do the case presentation Blended learning -- Students will learn and analyse the steps of examination of trividha shopha as demonstrated by the teacher combined with online mode and are asked to prepare the topic and come together in separate teams to discuss what they have learned.
Experiential-Learning 5.2	Observation of vrana - stages and types and Wound management	Workshops: Organize workshops focused on the stages, types and charecteristics of vrana, infection status. Performance of wound cleaning and dressing techniques along with the wound healing process. Students should have Hands-on practice with models or simulated wounds. Perform step-by-step examination, evaluation of doshic involvement, size, depth and infection status of the wound and cleaning/dressing procedures after thorough diagnosis of dusta vrana and shuddha vrana. Case based scenario- students should present the case.The case presentation should begin with the patient history, assessing pathophysiology of wound, factors affecting wound healing, assessment to dressing application, emphasizing aseptic techniques and patient communication etc. PPT Presentations- Use PowerPoint presentations to visually demonstrate techniques and concepts. Group Discussions - Facilitate discussions among students about challenges and sharing of personal experiences related to wound management. Case studies for students to analyze and propose treatment plans. Q&A sessions to clarify doubts
Experiential-Learning 5.3	Wound care techniques	Analyse Clinical Scenarios: Students will engage in case-based learning to analyse different types of cases where wound healing is impaired. They should recognise and discuss on potential factors delaying or disrupting wound healing like - Systemic Factors such as diabetes, obesity, age etc, Local Factors: such as infection, blood supply, moisture levels etc. Environmental Influences:

		such as nutrition, medications etc. Students will collaborate in group discussions to share insights and develop strategies for mitigating factors that disrupt healing and draw the wound care practices in the healing process. Arrange a clinical skills lab with various wound models e.g., simulated wounds, animal models, or real-life case studies, Dressing materials, Instruments for wound assessment - e.g., scissors, forceps, gloves etc. Divide students into small groups and assign each group a type of wound. Instruct them to assess the wound using the materials provided. Ask them to identify and discuss potential factors delaying healing in their assigned wound. and Draw the effective wound care protocol which involves cleaning, irrigating, protecting, and dressing the wound to promote healing and prevent infection. Key steps include washing hands, using sterile antiseptic kashayas or mild soap and water to clean, applying a thin layer of Vranaropana ointment, and covering with a clean bandage changed daily. Student has to perform Key Wound Care Techniques - like Assessment & Hand Hygiene,Cleaning, Irrigation, Debridement,Dressing of minor wounds, draining wounds, deep wounds etc.
Experiential-Learning 5.4	Identification different techniques of Bandhana(Bandages).	Demonstration of Bandhana Technique – Initially Teacher will highlight types of bandages, wrapping techniques, application in different anatomical regions, and the purpose of each method to familiarize students with the Bandhana (bandaging) technique using all methods applicable in different situations (e.g., head, neck, oral cavity). The teacher demonstrates different types of Bandhana techniques (circular, spiral, figure-of-eight, recurrent, triangular bandages) for various clinical scenarios. Hands-on workshop where students are divided into small groups and practice Bandhana techniques on each other, models, or mannequins. Explain about the historical significance of Bandhana in Ayurveda, its applications in modern medical practice, and the indications for various types of bandages.
Experiential-Learning 5.5	Mastering Dressing Techniques for different types of wounds.	Experiential Learning Activities 1. Hands-On Practice Sessions: (to develop manual skills and gain confidence in dressing application) Engage in practical sessions to practice various wound dressing techniques on simulated models or standardized patients. 2. Assessment of Wound Types: (to enhance critical thinking and decision-making in wound management) Analyse different types of wounds (e.g., surgical, traumatic, chronic) and determine appropriate dressing options for each. 3. Demonstration of Aseptic Techniques: (to reinforce the importance of maintaining a sterile environment during wound care) Participate in workshops demonstrating aseptic techniques during dressing changes, focusing on infection control. 4. Role-Playing Scenarios: (to improve communication skills and patient education regarding wound care) Conduct role-playing exercises where participants take on the roles of healthcare providers and patients to simulate wound dressing

		scenarios. 5. Selection of Dressings: (to deepen understanding of dressing properties and their therapeutic benefits) Participate in group discussions to explore different types of dressings (e.g., hydrocolloid, alginate, foam) and their indications for deep or large wounds.

Modular Assessment	
Assessment method	**Hour**
Instructions – Conduct a structured modular assessment. Assessment will be for 25 marks. Keep structured marking pattern. Use different assessment methods in each semester. Keep records of the structured pattern used for assessment. Calculate modular grade points as per table 6C Two questions can be asked each one 25 marks 1.Case-based evaluation: 15 marks and 2 structrured Viva-voce- 10 marks OR Any practical in convenient form can be taken for assessment- 25 marks- or Any of experiential learning can be taken for assessment -25 marks	2

Module 6 : Parikshana vidhi (Clinical methods) in Karna and Nasa

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

1. Describe the various surgical and diagnostic instruments used in Karna & Nasa examinations and procedures including their functions and handling.
2. Identify the appropriate instruments required for different clinical situations related to ear and nose procedures.
3. Conduct proper sterilization techniques for maintaining Yantra and Shastra (surgical and diagnostic instruments) in clinical practice.

Unit 1 Yantra and Shastra used in Karna Evam Nasa Pariksha and chikitsa

Knowledge, handling and Nirjantukarana (Sterilization) of Yantra and Shastra used in Vyadhi Vinischaya and Chikitsa of Karna and Nasarogas

References: 1,18,19,20,21,22,23,24,25

3A	3B	3C	3D	3E	3F	3G
CO1,CO3	Identify and understand the principles, handling, and sterilization of diagnostic, therapeutic, and surgical instruments used in otology.	2	Lecture	CAP	Knows-how	FC,L&GD,L&PPT,L_VC
CO1,CO3,CO6	**1. Identify the appropriate diagnostic equipment and instruments used in otology like nadi yantras, shalakas, Otoscopes, tuning forks, ear probes, oto-endoscope, Otoacoustic Emission (OAE) devices, Audiometers, Tympanometry, Brainstem Evoked Response Audiometry (BERA), SiSi(Short Increment Sensitivity Index), Tone decay, FNAC needles, Biopsy forceps and microbiology laboratory equipments. Demonstrate handling and sterilization techniques along with their principles.** **2. Identify the appropriate shastras/surgical instruments used in ear**	4	Practical Training 6.1	PSY-GUD	Shows-how	D-M,SIM,W

	surgeries and demonstrate handling and sterilization techniques along with their principles.					
CO1,CO3	**1. Select and practice of instruments and equipment used for diagnostic and therapeutic purpose in otology like nadi yantras, shalakas, Otoscopes, tuning forks, ear probes, oto-endoscope, Otoacoustic Emission (OAE) devices, Audiometers, Tympanometry, Brainstem Evoked Response Audiometry (BERA), SiSi(Short Increment Sensitivity Index), Tone decay, FNAC needles, Biopsy forceps, microbiology laboratory equipments as per need and their readings used in otology. And perform sterilization techniques.** **2. Select and practice of shastras/surgical instruments used for surgeries in otology and perform sterilization techniques.**	6	Experiential-Learning 6.1	PSY-GUD	Does	D-M,KL, SIM,W
CO1,CO3,CO6	**1. Prepare the list of yantra and shastra (instruments and equipments) used for the diagnosis and therapeutic procedures in Rhinology along with its principles, handling and sterilization methods.** **2. Prepare the list of shastras (instruments) used for the surgical procedures in Rhinology along with its principles, handling and sterilization methods.** **3. Describe imaging techniques in otology and rhinology.**	3	Lecture	AFT-SET	Knows-how	BL,FC,L, L&GD,L &PPT ,L_VC
CO1,CO3,CO6	**1. Identify the appropriate diagnostic yantra and shastra (equipment and instruments) used in Rhinology like nadi yantras, shalakas, speculums/rhinoscopies, probes, nasal endoscope, FNAC needles, Biopsy forceps and microbiology laboratory equipments and allergy testing devices.** **2. Demonstration of handling of diagnostic tools and sterilization techniques along with their principles used in Rhinology.**	8	Practical Training 6.2	PSY-GUD	Shows-how	D-BED,D L,W,X-Ray

	3. Identify the appropriate shastras/surgical instruments used in nasal surgeries and demonstrate handling and sterilization techniques along with their principles. **4. Demonstrate imaging techniques used in otology and rhinology.**					
CO1,CO3,CO6	**1. Select and practice of instruments and equipment used for diagnostic and therapeutic purpose in Rhinilogy. And perform sterilization techniques.** **2. Select and practice of shastras/surgical instruments used for surgeries in Rhinology and perform sterilization techniques.** **3. choose of appropriate imaging techniques and its reading methods in otology and rhinology.**	9	Experiential-Learning 6.2	AFT-REC	Does	D,D-M,KL,SIM,W,X-Ray
Unit 2 Karna Parikshana vidhi Karna Parikshana vidhi (Clinical Otology) **References:** 19,20,21,22,23,24,25						
3A	**3B**	**3C**	**3D**	**3E**	**3F**	**3G**
CO1	Describe Karna Pariksha (functional examination of ear - auditory and vestibular functions) with an integrated approach.	2	Lecture	CC	Knows-how	C_L,FC,L,L&GD,L&PPT,L_VC
CO1,CO3	Demonstrate physical examination of ear with an integrated approach. Demonstrate functional examination of ear with an integrated approach.	4	Practical Training 6.3	PSY-GUD	Does	CD,CBL,C_L,DG,GBL,IBL,Mnt,ML
CO1,CO3	**1. Perform physical examination of ear.**	6	Experiential-	AFT-RES	Does	D-BED,P

	2. Perform functional examination of ear.		Learning 6.3			ER,RP,SIM

Unit 3 Nasa Parikshana Vidhi

Nasa Parikshana Vidhi (Clinical Rhinolgy)

References: 20,21,22,23

3A	3B	3C	3D	3E	3F	3G
CO1	Describe Nasa Pariksha (physical and functional examination of Nose) with an integrated approach. Explain examination of para nasal sinuses in detail.	3	Lecture	CC	Knows-how	L&PPT,L_VC,LS
CO1,CO3	**1. Demonstrate physical examination of Nose and para nasal sinuses with an integrated approach.** **2. Demonstrate functional examination of Nose with an integrated approach.**	4	Practical Training 6.4	PSY-GUD	Shows-how	CBL,D,IBL
CO1,CO3	Practice physical examination of nose with an integrated approach. Perform functional examination nose with an integrated approach.	5	Experiential-Learning 6.4	PSY-GUD	Does	D,PL,SIM

Practical Training Activity

Practical No	Name	Activity details
Practical Training 6.1	1. Identification, handling and sterilization of diagnostic	1. Demonstration on model /Simulation - Teacher will demonstrate the instruments and equipment, their names, proper handling techniques step by step and care of instruments to ensure patient safety and prevent infections. Maintain precision and avoid contamination of instruments. Practice safe and controlled usage during simulated ear examination procedures. Demonstration of Sterilization Techniques: Understand and demonstrate different methods of sterilization and disinfection

	equipments and instruments used in otology. 2. Selection, handling and sterilization of surgical instruments in ear surgeries.	for ear related instruments including autoclaving, chemical disinfection and ultrasonic cleaning especially focusing on prevention of cross-contamination and ensuring sterility before each use. 2. Recognize specialized instruments and demonstrate the handling of instruments used in the minor/major surgical procedures of the ear like oto-endoscope,long specialized ear forceps and scissors etc. Handling of Instruments: teacher will show how to practice safe and precise handling of surgical instruments to prevent contamination and injury. Emphasize the importance of sterilization and aseptic techniques during surgical procedures to prevent infections. 3. Workshop - attend workshop/conference/webinar for acquaintance of various instruments and equipment used in otology.
Practical Training 6.2	1. Identification of diagnostic equipments and instruments used in Rhinology. 2. Handling and sterilization of diagnostic equipment and instruments used in Rhinology. 3. Selection, handling and sterilization of surgical instruments	Bedside demonstration by teacher- the teacher wil give hands on training about the identification,handling and sterilization of diagnostic equipments and instruments used in Rhinology. The student will be instructed to observe demonstration and well aquaint with the instruments as done by the instructor in the OPD unit. Demonstration lab- The teacher will demonstrate steps and methods employed in FNAC, biopsy, microbiological laboratory investigations and allergy testings along with knowledge of instruments. Workshops - the students are instructed to attend workshops which helps them to develop critical thinking skills and learn different diagnostic/therapeutical/surgical procedures along with knowledge of instruments. X-Ray identification - teacher will explain how to select, demonstrate and read the imaging techniques used in otology and rhinology. or refer gVirtualXray (gVXR): Virtual X-Ray Imaging Library on GPU - A virtual X-ray imaging library which allows teachers and students to interact with the X-ray configuration and the patient's positioning without any risk to the patient or radiographer. (ref - http://vmg.cs.bangor.ac.uk/projects/gVirtualXRay/)

	used in nasal surgeries. 4. Selection, demonstration and reading of imaging techniques used in otology and rhinology.	
Practical Training 6.3	Physical examination of ear. Functional examination of ear.	Practical -Teacher will demonstrate the physical examination of ear step by step and students are asked to follow the steps as demonstrated. Case based learning -Teacher will demonstrate functional aspect of ear examination on the case of ear diseases/simulated patients and students will engage with the cases.
Practical Training 6.4	1. Physical examination of Nose and para nasal sinuses with an integrated approach. 2. Functional examination of Nose with an integrated approach.	Demonstration by teacher- The student will be instructed to observe demonstration of history taking along with physical examination of nose and para nasal sinuses on simulated patients/ cases of nasal diseases alongwith integrated approach as done by the instructor in the OPD unit. Case based learning- Teacher will demonstrate detailed clinical examination of nose and para nasal sinuses and students will imitate the proceedings of case. Inquiry based learning- Students are asked to generate queries related to clinical examination of the nose and para nasal sinuses on simulated patients/ original cases alreadydemonstrated by the teacher and engage in the presentation of examination method done by instructor.

Experiential learning Activity		
Experiential learning No	**Name**	**Activity details**
Experiential-Learning 6.1	1. Selection and practice of Diagnostic Tools and Techniques in Otology. 2. Selecion and practice of handling of surgical instruments in Otology.	Simulation/simulated patients -Student will be asked to select appropriate instrument and perform examination of ear,hearing assessment on simulated patients/ simulator also perform sterilization methods and prevention of damage of instruments. Minimum number instruments and procedures- 5 Kinaesthetic learning: Student should perform hands on physical activities like making posters, charts, video clips regarding instruments and equipments used for examination of ear, hearing assessment techniques/surgeries etc. Minimum number of activity to be done -5 Demonstration on models - Student will be asked to select appropriate surgical instrument and show handling of instrument as per the procedure followed by sterilization methods. Minimum number of instruments- 5 Workshops - students are encouraged to attend workshops regularly to get updated knowledge about instruments, equipments and diagnostic/therapeutic/surgical methods through a variety of training methods.
Experiential-Learning 6.2	1. Selection, sterilization and practice of handling of Diagnostic Tools and Techniques in Rhinology. 2. Selecion,	Simulation/simulated patients -Student will be asked to select appropriate instrument and perform examination of Nose and PNS on simulated patients/ simulator also perform sterilization methods and prevention of damage of instruments. Minimum number instruments and procedures- 5 Kinaesthetic learning: Student should perform hands on physical activities like making posters, charts, video clips regarding instruments and equipments used for physical examination of nose, functional examination of nose. Minimum number of activity to be done -5 Demonstration on models - Student will be asked to select appropriate surgical instrument and show handling of instrument as per the procedure followed by sterilization methods. Minimum number of instruments- 5 Workshops - students are encouraged to attend workshops regularly to get updated knowledge about instruments, equipments and diagnostic/therapeutic/surgical methods through a variety of training methods. X-ray - student should be able to plan and prescribe the appropriate investigations, X-Rays or HRCT as per need and read the

	sterilization and practice of handling of surgical instruments in Rhinology. 3. Proposal of appropriate imaging techniques and reading them in otology and rhinology.	findings.
Experiential-Learning 6.3	1. Perform physical examination of ear. 2. Perform functional examination of ear.	Bedside demonstration/simulation:Students should conduct physical examination of ear on patients from OPD or in IPD/ simulated patients. Minimum number of case examination to be done - 5 Presentation/Role play:Students should be given a case with orwithout ear disease and will be asked to present thoroughfunctional examination of ear. Minimum number of presentations-5
Experiential-Learning 6.4	Physical examination of nose and paranasal sinuses with an integrated approach.	Demonstration- Students will be asked to conduct Physical and Functional examination nose and paranasal sinuses from both Ayurveda and contemporary science principles. minimum 5 patients Simulation-Student will be asked to perform and demonstrate physical/functional examination of nose and paranasal sinuses on

	Functional examination nose with an integrated approach.	simulated patients. minimum 5 patients Peer learning-Group of students will analyse clinical examination(physical and functional) and discuss among them for better understanding.

Modular Assessment

Assessment method	**Hour**
Instructions – Conduct a structured modular assessment. Assessment will be for 50 marks. Keep structured marking pattern. Use different assessment methods in each semester. Keep records of the structured pattern used for assessment. Calculate modular grade points as per table 6C Structured Assessment in following 5 Stations: 50 Marks OSPE (Objective Structured Practical Examination) - Plan 10 stations from the list of practicals can be planned which carries 50 marks Preparation: Develop multiple stations covering practical and theoretical aspects (e.g., instrument identification, their method of sterilization, handling tmethods, clinical findings). Execution: Students rotate through stations within a set time frame. Station formats may include tasks, demonstrations, or written responses. Evaluation: Evaluate based on knowledge, skill performance, communication during the procedure. OR OSCE (Objective Structured Clinical Examination) -Plan 5 clinical examination stations carrying 50marks Preparation: Set up stations mimicking real-life clinical scenarios (e.g., taking patient history, diagnosing conditions, or handling emergencies). Execution: Allow students to demonstrate clinical skills, communication, and decision-making at each station. Provide feedback immediately after the station or during review sessions. Evaluation: Assess clinical reasoning, procedural accuracy, and patient-centered approach during the task. OR Any practical in converted form can be taken for assessment (25 Marks) and Any Experiential Learning as portfolio / reflections / presentations, can be taken as an assessment.(25 Marks)	4

Module 7 : Parikshana vidhi (Clinical methods) in Mukha, Shiro and Greeva

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

1. Describe the diagnostic and surgical instruments used in the examination and treatment of Mukha, Kantha, Shiro and Greeva (Head and Neck) along with their proper handling techniques.
2. Identify the appropriate instruments required for various clinical procedures related to the Mukha, Kantha, Shiro and Greeva (Head and Neck)
3. Conduct Effective Sterilization techniques for maintaining the surgical and diagnostic instruments used in these clinical areas.

Unit 1 Yantra and Shastra used in Parikshana vidhi and chikitsa of Mukha, shiro and Greeva

Knowledge, Handling and Nirjantukarana of Yantra and Shastra used in Vyadhi Vinischaya and Chikitsa of Mukha, Shiro and Greeva.

References: 19,20,21,22,23,24,25,27,28,29,30,31,46

3A	3B	3C	3D	3E	3F	3G
CO1	Discuss The diagnostic instruments and equipment used in oral cavity along with safe handling techniques, maintenance, sterilization methods and principles of these instruments. The diagnostic instruments and equipment used in throat along with safe handling techniques, maintenance, sterilization methods and principles of these instruments. The diagnostic instruments and equipment used in head and neck along with safe handling techniques, maintenance, sterilization methods and principles of these instruments. Describe classification, design, and types of Yantras and Shastras used in Ayurvedic surgery with reference to KNM.	4	Lecture	CC	Knows-how	L,L&PPT ,L_VC
CO1,CO3	Identify, label the parts and demonstrate the safe handling and maintenance of diagnostic tools (instruments and equipments) used in Oral cavity examination, Throat	8	Practical Training 7.1	CAP	Shows-how	D,SIM,W

	examination, Head and Neck Examinations. Sterilization techniques of instruments.					
CO1,CO3,CO6	Identify the instruments and equipment used for oral cavity and throat examination. Demonstrate handling and sterilization techniques of each instruments. Identify the instruments and equipment used for head and neck examination and demonstrate handling and sterilization techniques of each instruments.	9	Experiential-Learning 7.1	AFT-RES	Does	CBL,C_L,D,PT,TBL,W
CO1	Analyse the surgical instruments used in oral cavity and throat along with safe handling techniques, maintenance and sterilization methods. Describe the surgical instruments used in head and neck along with safe handling techniques, maintenance and sterilization methods.	2	Lecture	CC	Knows-how	BL,D-BED,L,L&PPT
CO1,CO3	Analyse the surgical instruments used in oral cavity and throat along with safe handling techniques, maintenance and sterilization methods. Describe the surgical instruments used in head and neck along with safe handling techniques, maintenance and sterilization methods.	4	Practical Training 7.2	PSY-MEC	Shows-how	D,DIS,PT,SIM
CO1,CO3	Identify the appropriate surgical instrument as per the condition and practice safe handling, cleaning, sterilization, maintanance and care of Instruments used in oral cavity and throat surgeries. Identify the appropriate surgical instrument as per the condition and practice safe handling, cleaning, sterilization, maintanance and care of Instruments used in head and neck surgeries.	6	Experiential-Learning 7.2	AFT-REC	Does	D,D-M,DIS,PT
CO1	Discuss the imaging techniques and microbiological investigations used in mukha & kantha and analyse their importance in clinical diagnosis. Discuss the imaging techniques and microbiological investigations used in shiro & greeva and analyse their importance in clinical diagnosis.	2	Lecture	CC	Knows-how	L,L&PPT,L_VC,PER
CO1,CO3	Identify imaging techniques used in Oral cavity and throat like X-Ray, CT, MRI, PET, biopsy and micro biological investigations as per need and demonstration of diagnosis, evaluation of normal and abnormal findings, techniques used with their complications and challenges in acquiring and interpretation of these imaging techniques and investigations.	4	Practical Training 7.3	PSY-GUD	Shows-how	D,DIS,PT,X-Ray

	Identify of imaging techniques in head and neck like X-Ray, CT, MRI, PET, biopsy and micro biological investigations as per need and demonstration of diagnosis, evaluation of normal and abnormal findings, techniques used with their complications and challenges in acquiring and interpretation of these imaging techniques and investigations.					
CO1,CO3,CO6	Select appropriate imaging techniques, microbiological investigations and their interpretation in oral cavity and throat diseases. Proposal of appropriate imaging techniques, microbiological investigations and their interpretation in head and neck diseases.	6	Experiential-Learning 7.3	AFT-REC	Does	C_L,FV,IBL,W,X-Ray

Unit 2 Mukha Parikshana Vidhi

Mukha Parikshana Vidhi (Clinical examination of Oral cavity and Pharynx)

References: 19,20,21,22,23,25,46

3A	3B	3C	3D	3E	3F	3G
CO1	Analyse Clinical methods for examining the oral cavity - Visual inspection. Analyse Clinical methods for examining the oral cavity - Palpation. Describe examination of throat.	3	Lecture	CC	Knows-how	BL,L,L&GD,L&PPT ,L_VC,SIM,TUT
CO1,CO3,CO6	Demonstrate Visual Inspection of the Oral Cavity. Demonstrate Palpation Techniques for the Oral Cavity. Demonstrate examination of throat.	6	Practical Training 7.4	PSY-GUD	Shows-how	D,DIS,PT,RP,SIM
CO1,CO3,CO6	Perform Visual Inspection of the Oral Cavity. Perform Palpation of the Oral Cavity. Perform comphehensive examination of the Throat.	9	Experiential-Learning 7.4	AFT-SET	Does	CBL,C_L,D,DIS,PL

Unit 3 Shiro Evam Greeva Parikshana Vidhi

Shiro Evam Greeva Parikshana Vidhi (Clinical examination of Head and Neck)

References: 19,20,21,22,23,24,25,26,27,28,29,30,34,35,46

3A	3B	3C	3D	3E	3F	3G
CO1	Discuss Pariksha Vidhi in Shiro and Greeva. Examination of head – inspection, palpation and auscultation along with other facial structures. Examination of neck - inspection, palpation, assessment of mobility, reflexes. Examination of neck lymph nodes and related cranial nerves. Thyroid gland examination.	4	Lecture	CC	Knows-how	BL,L&GD,L&PPT,L_VC,LS
CO1,CO3	Demonstrate, Examination of head – inspection, palpation and auscultation along with other facial structures. Examination of neck - inspection, palpation, assessment of mobility, reflexes. Examination of neck lymph nodes and related cranial nerves. Thyroid gland examination.	8	Practical Training 7.5	PSY-GUD	Shows-how	CBL,D
CO1,CO3,CO6	Perform examination, application, analysis and interpretation of the of head, neck, lymph nodes, thyroid glands, related cranial nerves and temparo mandibular joint.	9	Experiential-Learning 7.5	AFT-RES	Does	D-BED,PER,RP

Practical Training Activity

Practical No	Name	Activity details
Practical Training 7.1	Hands-on demo of diagnostic instruments used for oral cavity, throat and head/neck examinations focusing on proper technique,	Demonstration and Hands-On Practice by Teacher - Provide an overview of the diagnostic instruments and equipment commonly used in oral cavity, throat, head and neck examinations, covering both function and design. Discuss the relevance of each instrument for specific examination and therapeutic purposes, such as for laryngoscopy, endoscopy etc. Show each instrument (laryngoscope, laryngeal mirror, tongue depressor, endoscope, suction tube, scalpel etc.) and explain its parts, function and usage. Demonstrate how each is used in a simulated examination. Safety Precautions: Teach students about ergonomic handling and infection control practices during examinations and surgeries.

	sterilization and instrument use on models/simulators.	Explain specific diagnostic procedures where each instrument is essential, such as: Laryngoscopy, Endoscopy: inserting an laryngoscope or performing an endoscopic inspection. Show proper positioning, handling, and visualization methods and observe the structures - vocal cords, throat etc. Biopsy and Excision: Removing tissue for examination or treating lesions using mannequins or models. Describe the importance of sterilization and infection control for ENT instruments. Cover key methods, including autoclaving, chemical sterilization, dry heat, and ultrasonic cleaning. Set up stations with various sterilization equipment e.g., disinfectants, cleaning brushes etc. Demonstrate proper sterilization techniques for different instruments. Show the maintenance practices that prevent wear, rust, or damage and ensure longevity of instruments, such as regular cleaning, oiling hinges, replacing parts, and proper storage and safe storage.
Practical Training 7.2	Demonstration of Surgical Instruments: identification, handling principles, positioning techniques.maintenance, sterilization, cleaning, and storage for hygiene and functionality used oral cavity, throat, head and neck surgeries.	Demonstration by Teacher - surgical Instruments used in oral cavity, throat, head and neck surgeries. 1. Instrument identification: Explain each instrument's name, function, and use. 2. Safe handling: Demonstrate proper handling, holding, and transferring instruments. 3. Maintenance and sterilization: Show cleaning, disinfecting, and sterilization procedures. Hands-on Practice 1. Instrument handling: Participants practice handling instruments under supervision. 2. Instrument maintenance: Participants practice cleaning, disinfecting, and sterilizing instruments. 3. Instrument sharpening: Participants practice sharpening instruments. Group Discussions 1. Instrument selection: Discuss factors influencing instrument selection (e.g., procedure, patient needs). 2. Instrument safety: Discuss safety precautions and potential hazards. 3. Instrument maintenance: Discuss the importance of maintenance for infection control. Visual Aids 1. Videos: Show instrument handling, maintenance, and sterilization techniques. 2. Diagrams: Illustrate instrument anatomy and proper handling. 3. Instrument catalogs/handouts: Provide detailed information on instruments.
Practical Training 7.3	Demonstration and interpretation of imaging techniques and micro biological investigations in oral	Demonstration - Teacher/ Radiologist will demonstrate selection of Imaging techniques and other micro biological investigations, safety parameters, diagnosis, normal and abnormal findings, indications, contraindications and complications of these procedures in KNM. Demonstrate microbiological investigations in KNM - Key Diagnostic Procedures – Microscopy, Culturing and identifying pathogens (bacteria, fungi, viruses) from ear, nose, and throat infections , Sensitivity Testing and Specialized Tests and guide

	cavity, throat, head and neck.	targeted therapy. X-Ray identification - teacher will explain how to select, demonstrate, read and interpret the imaging techniques used in oral cavity and throat, head and neck or refer gVirtualXray (gVXR): Virtual X-Ray Imaging Library on GPU - A virtual X-ray imaging library which allows teachers and students to interact with the X-ray configuration and the patient's positioning without any risk to the patient or radiographer. (ref - http://vmg.cs.bangor.ac.uk/projects/gVirtualXRay/)
Practical Training 7.4	Demonstration of Oral cavity and Throat Examination.	Teacher will explain and demonstrate - Visual Inspection: Tools: Good lighting (headlamps or wall-mounted lights), sterile mirrors, tongue depresors and other necessary instruments collected in a tray. Inspect the oral cavity for ulcers, lesions, tongue discoloration or any signs of infection. Palpation: Gloved hands for manual examination Procedure: Palpate the oral cavity, soft tissue, and lymph nodes around the neck. Tongue Depressor : Have the patient open their mouth and depress the tongue to view the pharyngeal wall, tonsils, uvula and any other abnormal structures.
Practical Training 7.5	Examination of head – inspection, palpation and auscultation along with other facial structures. Examination of neck - inspection, palpation, assessment of mobility, reflexes. Examination of neck lymph nodes and related cranial nerves. Thyroid gland examination.	Demonstration by teacher- The student will be instructed to observe demonstration of various techniques of head, neck, lymph nodes, cranial nerves and thyroid gland examination on simulated patients/ real case done by the instructor in the OPD unit/skill lab. Case based learning- Teacher will demonstrate examination on the cases of head/neck/ thyroid/lymphnodes related diseases and students wil engage with the case.

Experiential learning Activity

Experiential learning No	**Name**	**Activity details**
Experiential-	Identification,	Students will perform - the selection of instrument as per the given condition commonly used in oral cavity, throat and head/neck

Learning 7.1	performance and sterilization of instruments and equipment used in oral cavity, throat, head and neck.	procedures, such as laryngoscopes, mouth gags, endoscopes, laryngeal mirrors and scalpels etc. and show the parts, assembly, and disassembly of each instrument, explaining its purpose, handling and sterilize these diagnostic tools.
Experiential-Learning 7.2	Appropriate Selection, safe handling and proper maintainance of surgical instruments for oral cavity, throat, head and neck procedures, including cleaning and sterilization.	Student will present an over view of the various instruments used in Oral Cavity, throat, head and neck surgeries (e.g., scalpels, forceps, scissors, suction devices etc) along with the function of each instrument, the role of proper handling in preventing cross-contamination and ensuring safety. Perform Safe Handling – Correct Handling: students will perform holding of instruments like forceps and scalpels with the appropriate grip (e.g., the pen or palm grip) to maintain control and precision. Transfer Techniques: student perform how to transfer instruments between the surgeon and the assistant without compromising sterility. Instrument Usage: Using a mannequin or model, perform how each instrument is used in standard procedures. Perform Cleaning and Sterilization Techniques - Cleaning Process: Rinse the instruments to remove blood, debris, and other organic materials immediately after use, and the scrubbing process using a non-abrasive brush and approved cleaning agents. Perform Sterilization – Different sterilization methods, such as autoclaving (high-pressure steam sterilization), dry heat sterilization, and chemical sterilization and explain the importance of using sterilization pouches with indicators to confirm sterilization. Perform - Maintenance and Care of Surgical Instruments - Guided Practice of Instrument Care. Routine Care: perform how instruments should be lubricated periodically (if needed) to avoid rust and wear, proper storage of the instruments (e.g., in sterilized, secure containers to prevent damage or contamination), regular checks to ensure instruments are in good working condition before use.
Experiential-Learning 7.3	Selection and interpretation of Imaging techniques, microbiological investigations in oral cavity and throat diseases. Proper selection of	Co learning - a group of students will discuss about the case and select and prescribe proper imaging techniques/microbiological investigations used in Oral cavity, throat, head and neck conditions. Field visit- students will be posted to Imaging centers/Labs to obtain knowledge and hands on training about the imaging techniques used in Oral cavity, throat, head and neck conditions. Inquiry based learning - students will be provided with materials like X-ray report, CT/MRI images, microbiological reports and asked to raise the questions related to selection, demonstration and reading of imaging techniques. Workshops - the students are instructed to attend workshops which helps them to develop critical thinking skills and learn different diagnostic procedures along with knowledge of Imaging techniques.

	Imaging techniques, microbiological investigations and their interpretation in head and neck diseases.	X-Ray identification - based on previous knowledge given by teacher, student perform/demo - how to select, demonstrate and read the imaging techniques used in oral cavity, throat, head and neck disease or refer gVirtualXray (gVXR): Virtual X-Ray Imaging Library on GPU - A virtual X-ray imaging library which allows teachers and students to interact with the X-ray configuration and the patient's positioning without any risk to the patient or radiographer. (ref - http://vmg.cs.bangor.ac.uk/projects/gVirtualXRay/)
Experiential-Learning 7.4	Perfomance of examination of the oral cavity and throat using different techniques like inspection, palpation, laryngoscopy and imaging techniques for effective diagnosis.	Visual Inspection: perform visual inspection of the oral cavity and throat for signs of lesions, ulcers, discoloration, swelling, or abnormal growths etc. Show how to inspect the throat for redness, swelling, or signs of infection (e.g., tonsillitis, pharyngitis). Palpation: palpate the oral cavity and surrounging structures and indentfy normal and abnormal findings like lymph node enlargement, thyroid conditions, or masses. Show how to palpate the submandibular glands and the oral cavity for tenderness or swelling. Perform Laryngoscopy using a laryngoscope to visualize the throat, vocal cords and upper airway, identifying abnormalities such as nodules, polyps, or any swelling etc.
Experiential-Learning 7.5	Clinical examination of head, neck, lymph nodes, thyroid glands, related cranial nerves and temparo mandibular joint.	Students will conduct a detailed history-taking and clinical examination for patients exhibiting signs and symptoms related to the case with head/neck/thyroid disease/TMJ and critically interpret the diagnostic findings and present the case. Minimum number of presentations to be done - 5

Modular Assessment

Assessment method	**Hour**
Instructions - Conduct a structured Modular assessment. Assessment will be for 75 marks. Keep structured marking pattern. Keep record of the structured pattern used for assessment. Calculate the Modular grade point as per table 6 C. Select any one or two methods for the asssessment. 1. Theory Open Book Test Conduct theory open book test for 50 marks which will contain either 2 LAQ and 6 SAQ and 2. Viva - Voce : Viva -Take questions from each Units and select 25 questions for the module. 2marks for each question can be allocated Preparation: Create open-ended questions testing clinical knowledge, procedural steps, and reasoning. Execution: Conduct one-on-one or panel-based interviews. Evaluation: Assess knowledge depth, clarity, and application ability. OR 3. DOPS (Direct Observation of Procedural Skills): 10 stations (50 marks)	6

Procedure Selection: Identify appropriate diagnostic and surgical instruments used in the examination and treatment of the Mukha, Kantha, Shiro and Greeva and demo on simulated patients or .real cases and 4. OSPE (Objective Structured Practical Examination): 10 stations (25 marks) Purpose: Test theoretical knowledge and practical skills in structured stations. Station Design: Include tasks like, instrument identification, holding techniques of instruments, demonstration of assembling and functioning of OT equipment and performing specific examinations. Allocate a specific time for each station. Assessment Criteria: Precision & Accuracy of task completion Or Any practical in converted form can be taken for assessment (45 Marks) and Any Experiential Learning as portfolio / reflections / presentations, can be taken as an assessment.(30 Marks)	

Module 8 : Swara Yantra and its clinical significance

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

1 Discuss the Applied Sharira Rachana & Kriya of Swara Utpatti and Vaak Pravrutti.
Demonstrate approaches for Voice Assessment & Health of Swara.
Demonstrate Clinical Methods in Voice and speech Disorders.

Unit 1 Rachana Sharira of swara yantra and related parts

Applied Rachana Sharira of swara yantra, swara utpatti and vaak pravrutti.

References: 1,22,23,24,25,27,31,37

3A	3B	3C	3D	3E	3F	3G
CO1	Discuss and analyse the applied anatomy of Swara Utpatti and Vaak Pravrutti (voice and Speech production).	2	Lecture	CC	Knows-how	L,L&GD,L&PPT,L_VC,LS
CO3	Analyze and interpret the applied anatomy of Swara Utpatti and Vaak Pravrutti (voice and Speech production).	2	Practical Training 8.1	CAP	Shows-how	CBL,D,DSN,PT,SIM,W
CO4	Perform the dissection, identify and interpret the structures involved in Swara Utpatti and Vaak Pravrutti -Voice and Speech production.	3	Experiential-Learning 8.1	PSY-ADT	Does	CBL,DIS,PAL
CO1,CO5,CO7,CO8	Perform Voice Assessment Mastery (Modern and Ayurvedic Techniques).	4	Experiential-Learning 8.2	AFT-REC	Does	CBL,D,SIM

	Hands-on Practice in Voice and Resonance Exercises. Integrated Approaches through Case Studies and Group Discussions.					

Unit 2 Kriya Sharira of swara yantra and related parts

Applied Kriya Sharira of swara yantra, swara utpatti and vaak pravrutti.

References: 1,2,3,6,7,10,11,16,26,27,37

3A	3B	3C	3D	3E	3F	3G
CO1	Discuss and analyze the functional physiology of Voice and Speech production. (Swara Utpatti and Vaak Pravrutti)	1	Lecture	CC	Knows-how	L,L&PPT,L_VC,TUT
CO1,CO2	Analyse and interpret the applied physiology of speech and voice production (swara utpatti and vaak pravrutti)	2	Practical Training 8.2	PSY-GUD	Shows-how	CBL,D,D-BED,D-M,DIS,PT,PER,RP
CO1,CO3,CO7	Perform Physiological Functions of the Swara Yantra: An Integrated Approach to Voice Production and Modulation"	3	Experiential-Learning 8.3	AFT-SET	Does	D,TUT,W

Unit 3 Yantra and shastra in Swara vikaras

Yantra and shastra used in Vyadhi Vinischaya and chikitsa of swara yantra related vikaras

References:

3A	3B	3C	3D	3E	3F	3G
CO1	Explain the use of Yantra (tools) and Shastra (surgical techniques) in diagnosing and	1	Lecture	CAP	Knows-	L,L&PPT

	treating voice disorders, blending Ayurvedic and modern methods for better outcomes.				how	
CO1,CO3	Demonstrate the use of Yantra (blunt instruments/apparatus) and Shastra (sharp instruments) in diagnosing and treating voice disorders, integrating Ayurvedic and modern practices for better outcomes.	1	Practical Training 8.3	AFT-REC	Does	JC,L&PPT ,PL,PT, PBL,PSM ,RLE,RP, TPW
CO1,CO7	Perform the use of Yantra and Shastra in diagnosing and treating vocal disorders, blending Ayurvedic principles with modern practices to improve clinical outcomes for voice and speech conditions.	3	Experiential-Learning 8.4	PSY-GUD	Shows-how	PT,PSM,SIM,W

Unit 4 Swara Yantra and related parts Parikshana Vidhi

Clinical methods of examination of Swara Yantra and related parts, Voice assessment and Basics of Speech therapy

References: 23,24,25,26,27,28,30

3A	3B	3C	3D	3E	3F	3G
CO1	Explain the Develop proficiency in vocal assessment techniques, integrating Ayurvedic and modern methods for effective voice disorder diagnosis and management.	1	Lecture	CC	Knows-how	BS,CD,C_L,DG,DL,L,L&GD,L&PPT
CO1,CO4	Demonstrate Integrating Modern Voice Therapy with Ayurvedic Principles for Treatment. Demonstrate Respiratory and Breath Control Integration for Voice Health. Demonstrate Monitoring, Adjusting, and Maintaining Vocal Health Using Integrated Methods.	5	Practical Training 8.4	PSY-GUD	Shows-how	D,DIS,L&GD,PT

Practical Training Activity

Practical No	Name	Activity details
Practical Training 8.1	Analysis and interpretation of the applied anatomy of the components involved in Voice and Speech production.	Demonstration by the Teacher - Interactive Visual Presentation: Teacher will give introduction about the Fundamental Ayurvedic Principles of Voice & Speech production - the initiation of Swara, Vaak Pravrutti, Key Driver - Udana Vayu, Stages of Vani -Para, Pashyanti, Madhyama and Vaikhari, the anatomical structures responsible for speech in Ayurveda including - Kantha,Talu, Oshta, Danta, Jihwa, Swaravahi Dhamani, and Shiras. Anatomy Overview: Start with an introductory presentation using detailed anatomical diagrams/3D models/simulators of the organs involved in voice and Speech production like vocal cords, larynx, pharynx, lungs, diaphragm and other relevant parts. Cadaveric dissection: Applied anatomy of swara yantra, covering the larynx, pharynx, vocal cords, respiratory components etc. in speech and sound production, anatomical location of marmas situated in relation with swara yantra etc, will be demonstrated to assess the normal anatomy and anatomical deviations. 3D Animations and Models: Use 3D animations to show how each component (e.g., vocal cords and larynx) moves and interacts during phonation.
Practical Training 8.2	Analysis and interpretation of the applied physiology o f speech and voice production.	1. Demonstration by Faculty - demonstrate how the Physiological Functions of the Swara Yantra in relation to Speech, Voice Modulation, and Resonance are crucial for understanding these systems and their role in therapy. 2. Evaluation of the involvement of Voice Production (Phonation) and Speech Production in different clinical scenarios. 3. Provide an overview of modern voice therapy techniques, focusing on breath control, hydration, and vocal exercises for maintaining vocal health. Explain Ayurvedic principles related to the voice, such as balancing the doshas and using herbs like Licorice (Yashtimadhu) and Tulsi for throat health.
Practical Training 8.3	Demonstration of utility of Yantra (blunt instruments/apparatus) and Shastra (sharp	Demonstration on model /Simulation - Teacher will demonstrate the instruments and equipment, their names, proper handling techniques step by step and care of instruments to ensure patient safety and prevent infections. Maintain precision and avoid contamination of instruments. Practice safe and controlled usage during simulated voice related organs examination procedures. Demonstrate Key Diagnostic Instruments like videolaryngostroboscopy, Rigid/Flexible Endoscopes, stroboscopy,

	instruments) in voice diseases.	Electroglottography, Laryngeal Electromyography, Acoustic Analysis Software, videochymography etc along with proper handling techniques on simulators.
Practical Training 8.4	Comprehensive Voice Assessment: Integrating Ayurvedic and modern methods for effective vocal diagnosis.	Demonstration by Teacher: The faculty will demonstrate, 1. Ayurvedic voice assessment: through Nadi Pariksha (pulse diagnosis), Jihva Pariksha (tongue diagnosis) and Akriti Vigyan (body type analysis) 2. Modern voice assessment:Endoscopy and laryngoscopy, Voice analysis software (e.g., Praat), Acoustic analysis (e.g., frequency, intensity) 3. Integrative voice assessment: Combining Ayurvedic and modern tools, Evaluating vocal parameters (pitch, volume, timbre) etc. Hands-on Practice 1. Participants practice Ayurvedic voice assessment: Nadi Pariksha, Jihva Pariksha and Akriti Vigyan 2. Participants practice modern voice assessment: - Endoscopy and laryngoscopy - Voice analysis software - Acoustic analysis 3. Participants integrate both approaches: - Evaluate vocal parameters - Identify voice disorders Case Studies - Faculty will present 3-4 case studies of voice disorders like Hoarseness of voice, Vocal cord lesions, Chronic cough, Breathing difficulties etc. and discuss and analyze each case in terms of Ayurvedic and modern assessment findings, Treatment options (Panchakarma, herbal remedies, voice therapy) etc.
Experiential learning Activity		
Experiential learning No	**Name**	**Activity details**
Experiential-Learning 8.1	Anatomical Dissection and Functional	Present anatomical charts or 3D models to mark key structures such as vocal cords, larynx, respiratory components etc. involved in Voice and Speech production.

	Interpretation of Voice and Speech Structures.	Analyze a clinical scenario involving a vocal cords, larynx, pharynx, lungs, diaphragm and other relevant parts issue and discuss the normal and abnormal findings. Simulate patient cases related to speech disorders, voice issues and expound it based on the anatomy of the affected parts.
Experiential-Learning 8.2	Integrated Voice Assessment methods.	Demonstration and Interactive Practice - Lecture: Introduce the theory behind modern (e.g., acoustic analysis, stroboscopy) and Ayurvedic (e.g., pulse and tongue diagnosis) techniques for voice assessment. Demonstration: Perform live demonstrations of acoustic analysis using software (Praat, VoceVista), and stroboscopy. Show how to assess vocal quality, pitch, loudness, and resonance. Activity: Students have to practice recording of their own voices using acoustic software to analyze vocal parameters. Allow students to practice pulse reading and tongue diagnosis for voice-related imbalances. Outcome: Students gain practical experience and develop a comprehensive understanding of modern and Ayurvedic diagnostic techniques. Hands-on Practice in Voice and Resonance Exercises Demonstration: Demonstrate effective voice and resonance exercises (e.g., humming, vowel articulation, resonance chambers) and Ayurvedic remedies (e.g., herbal gargling with licorice or turmeric). Activity: Students engage in hands-on practice of these exercises, recording and analyzing their vocal parameters. They will also experiment with resonance chambers and practice Ayurvedic remedies. Peer Collaboration: Encourage students to work in pairs or small groups to assess each other's voices and provide feedback. Outcome: Students actively practice voice-enhancing exercises and integrate Ayurvedic treatments for vocal improvement. Case-Based Learning and Group Discussion Case Studies: Present real-world case studies of voice disorders (e.g., hoarseness, breathiness). Ask students to assess the case using both modern tools (acoustic analysis, stroboscopy) and Ayurvedic techniques (pulse and tongue diagnosis). Group Activity: Divide students into groups and assign them a case study to develop a comprehensive diagnostic and treatment plan. They should combine modern diagnostic and therapeutic techniques (e.g., vocal rest, hydration) with Ayurvedic treatments (e.g., Pranayama, herbal remedies). Group Discussion: Facilitate group discussions on how Ayurvedic and modern treatments complement each other in managing voice disorders. Outcome: Students learn to synthesize both modern and Ayurvedic approaches to design effective, holistic treatment plans for voice disorders.
Experiential-Learning 8.3	Performance and interpretation	Present physiological charts, videos or peer models to mark key structures of Voice and speech production. Practice palpating landmarks and observing respiratory movements. Document the findings and correlate them with anatomical

	of Physiological Functions of the Swara Yantra	references. Discuss how these anatomical features are important in therapies. Emphasize physiological mechanisms like lymphatic drainage and respiratory function. Guided Practice - Students should practice Breathing techniques: Deep, Box, Alternate Nostril, Vocal warm-ups: Lip/Tongue trills, Humming, Articulation: Tongue twisters, Word repetition and Voice modulation: Pitch, Volume, Timbre on themselves or on simulated models. Scholars will practice in a simulated environment - Vocal cord exploration, Breathing exercises with spirometry and Voice recording/analysis etc
Experiential-Learning 8.4	Selection and perfomance of Yantra and Shastra used in diagnosis and treatment of vocal disorders	Divide the students into small groups. Each group is assigned a real or simulated patient case with symptoms indicating voice problems. Students will perform a detailed assessment of their assigned case, focusing on key symptoms and accordingly select the instruments and do the examination and diagnose the case. Case Study: Present real-world cases of voice disorders (e.g., hoarseness, vocal fatigue, aphonia). Students have to examine the cases using both Yantra and Shastra as applicable and based on dosha also (e.g., identifying dosha imbalances) and modern diagnostic tools (e.g., acoustic analysis, stroboscopy) and present the case findings.

Modular Assessment

Assessment method	**Hour**
Instructions—Conduct a structured modular assessment. The assessment will be for 25 marks. Keep a structured marking pattern. Use different assessment methods in each module for the semester. Keep a record of the structured pattern used for assessment. Calculate the Modular grade point as per Table 6C. The students may be given a case scenario or a case of voice disorder and asked to write the integrated clinical methodology and voice assessment - 15 Marks and Viva-voce - 10 Marks OR Conduct theory open book test for 25 marks which will contain 2 LAQ and 6 SAQ OR Any practical in converted form can be taken for assessment. (25 Marks) or Any experiential as portfolio/reflections/presentations, can be taken as an assessment. (25 Marks)	2

Table 4 : Practical Training Activity

Practical No	Practical name	Hours
1.1	Interpretation of dosha, dushya, srotas pertaining to Karnagata roga and Mukhagata roga.	2
1.2	Interpretation of Dosha, Dushya and Srotas pertaining to Nasagata and Shirogata rogas.	2
1.3	Demonstration of various chikitsa siddhanta of Karnarogas with examples.	2
1.4	Demonstartion of case scenarios of nasa and shiroroga.	2
1.5	Demonstration of various of Roopa and Pratyatma Lakshana of Mukharogas.	2
2.1	Demonstration of cadaveric dissection focusing on ear, nose and throat anatomy	2
2.2	Cadaveric dissection focusing on the head and neck anatomy, pathways of cranial nerves associated with KNM.	2
2.3	Demonstration of the specific location of marmas as per modern anatomy related to parts of the KNM, head and neck.	2
2.4	Integrated clinical examinations to assess Rasa and Gandha jnana vyadhis.	2
2.5	Physics of sound and physiology of hearing.	2
2.6	Clinical abnormalities of the pharynx.	2
2.7	Clinical examination of pharynx.	2
2.8	Mechanism of breathing. Mechanism of deglutition and salivation.	4
2.9	Clinical assessment of balance and related cerebral functions.	2
3.1	Suturing materials and their applicability and suturing methods.	2

3.2	Demonstration of assessment of Pre-operative Patient fitness, consent and relevant investigations knowledge and Etiquettes in kriyakalpa unit/minor OT/ major OT	4
3.3	Key components of Vranitopasana.	4
3.4	Ashta Vidha Shastra Karma - Chedyam (Excision), Bhedyam (Incision), Lekhyam (Scrapping), Vedyam (Puncturing).	4
3.5	Demonstration of Ashta Vidha Shastra Karma - Eshyam (Probing), Aaharyam (Extraction), Visravyam (Drainage), Seevyam (Suturing).	4
3.6	Demonstration of different dhupana karma methods as per Ayurvedic classics.	2
3.7	Demonstration of the different methods of Nirjantukarana.	2
3.8	Demonstration of Sanjnaharana (Anaesthesia) procedure – Local, Regional and General.	6
3.9	Discussion on the role of Vedana Sthapaka Dravyas in minor and major OT in KNM.	2
4.1	Collection of key drugs used in KNM chikitsa. Tabulation of drugs indicated in KNM chikitsa	4
4.2	demonstration of sthanika snehana and swedana in KNM diseases. demonstration of sthanika chiktsa in nasagata rogas.	4
4.3	Demonstration of sthanik chikitsa used in karnagata rogas. Demonstration of sthanik chikitsa used in mukhagata rogas.	4
4.4	Demonstration of nasal topical treatment. Demonstration nasal packing – anterior and posterior nasal packing.	4
4.5	Demonstration of murdhni chiktsa.	4
4.6	Demonstration of parasurgical procedures in KNM practice.	6
4.7	Demonstration of Atyayika chikitsa in KNM.	4
5.1	Demonstration of trividha shopha.	2
5.2	Demonstration of the stages and types of vrana.	2
5.3	Systemic and local Factors and environmental Influences affecting wound healing.	2
5.4	Demonstration of dressing materials.	2
5.5	Master Techniques of bandhana (Bandages).	2

6.1	Identification, handling and sterilization of diagnostic equipments and instruments used in otology. Selection, handling and sterilization of surgical instruments in ear surgeries.	4
6.2	Identification of diagnostic equipments and instruments used in Rhinology. Handling and sterilization of diagnostic equipment and instruments used in Rhinology. Selection, handling and sterilization of surgical instruments used in nasal surgeries. Selection, demonstration and reading of imaging techniques used in otology and rhinology.	8
6.3	Physical examination of ear. Functional examination of ear.	4
6.4	Physical examination of Nose and para nasal sinuses with an integrated approach. Functional examination of Nose with an integrated approach.	4
7.1	Hands-on demo of diagnostic instruments used for oral cavity, throat and head/neck examinations focusing on proper technique, sterilization and instrument use on models/simulators.	8
7.2	Demonstration of Surgical Instruments: identification, handling principles, positioning techniques.maintenance, sterilization, cleaning, and storage for hygiene and functionality used oral cavity, throat, head and neck surgeries.	4
7.3	Demonstration and interpretation of imaging techniques and micro biological investigations in oral cavity, throat, head and neck.	4
7.4	Demonstration of Oral cavity and Throat Examination.	6
7.5	Examination of head – inspection, palpation and auscultation along with other facial structures. Examination of neck - inspection, palpation, assessment of mobility, reflexes. Examination of neck lymph nodes and related cranial nerves. Thyroid gland examination.	8
8.1	Analysis and interpretation of the applied anatomy of the components involved in Voice and Speech production.	2
8.2	Analysis and interpretation of the applied physiology of speech and voice production.	2
8.3	Demonstration of utility of Yantra (blunt instruments/apparatus) and Shastra (sharp instruments) in voice diseases.	1
8.4	Comprehensive Voice Assessment: Integrating Ayurvedic and modern methods for effective vocal diagnosis.	5

Table 5 : Experiential learning Activity

Experiential learning No	Experiential name	Hours
1.1	Categorization and justification of dosha, dushya in Karnagata and Mukhagata rogas.	3
1.2	Categorization and justification of clinical scenarios related to Nasagata and Shirogata rogas. Identifcation and interpretation of the specific Sroto Dushti in the patients related nasa and shirorogas.	3
1.3	Identification and correlation of nidanas with contemporary etiologies in a given case scenario of karnaroga.	3
1.4	Discussion and interpretation of etiologies of Vata, Pitta and Kapha dushta karma in correlating with contemporary etiologies in nasa and shirorogas.	3
1.5	Survey on small group population to gain the knowledge of etiologies of Vata, Pitta and Kapha dushta karma in correlating with contemporary etiologies in mukharogas.	1
2.1	Cadaveric dissection and focus on structures of the KNM related areas.	3
2.2	Cadaveric dissection and identification of structures of the head and related areas on cadaver specimens, pathways of cranial nerves associated with KNM.	3
2.3	Cadaveric dissection and identification of structures of the neck and related areas; pathways of cranial nerves associated with KNM.	3
2.4	Identification of marmas w r to anatomical points and discussion on fundamentals of marma chikitsa.	3
2.5	Integrated clinical examinations for Rasa and Gandha related vyadhis	3
2.6	Analysis of the mechanism of breathing, deglutition and salivation by different tests and discussion on the principles behind it.	3
2.7	Immune system abnormalities in KNM-related conditions.	3
2.8	Balance related tests and analysis of the results.	3
2.9	Discussion on mechanism of perception of sound, hearing and speech production.	2
3.1	Discussion and analysis of the rationale behind Rakshakarma and Mantra pathana (Chanting shlokas / Prayer).	3

3.2	Seevana dravyas (suturing materials) and Seevana vidhi (suturing techniques / methods).	3
3.3	Different methods of Nirjantukarana - Heat, moist, chemicals, radiation etc and Disinfection of Surgical instruments.	6
3.4	Performance of purva karma and paschat karma (pre-operative procedures / postoperative procedures) as per prepared SOP's, Patient fitness form and Consent of the patient along with relevant investigations.	3
3.5	Concept of vranitopasana and performance of Wound Healing care and Do's & Dont's.	3
3.6	Performance of Ashta Vidha Shastra Karma - Chedyam (Excision), Bhedyam (Incision), Lekhyam (Scrapping), Vedyam (Puncturing).	6
3.7	Ashta Vidha Shastra Karma - Eshyam (Probing), Aaharyam (Extraction), Visravyam (Drainage), Seevyam (Suturing).	3
3.8	Identification and critical analysis of dhupana dravyas.	3
3.9	Performance of the different techniques used in anaesthesia applied in KNM diseases.	6
3.10	Compilation and discussion on Anaesthetic Drugs, Techniques, Complications and their Management.	3
4.1	Selection of appropriate drugs in different KNM vyadhis.	3
4.2	Karnagata sthanika chikitsa.	3
4.3	Role of contemporary science medicines and its analysis	6
4.4	sthanik chikitsa applicable in nasagata roga	3
4.5	Topical treatments in mukha and karnagata rogas.	6
4.6	Murdhni chiktsa in KNM.	6
4.7	Para surgical procedures in KNM diseases.	9
4.8	Atyayika avastha (Emergencies) handling in KNM.	3
5.1	Examination of trividha shopha.	3
5.2	Observation of vrana - stages and types and Wound management	3

5.3	Wound care techniques	3
5.4	Identification different techniques of Bandhana(Bandages).	2
5.5	Mastering Dressing Techniques for different types of wounds.	2
6.1	Selection and practice of Diagnostic Tools and Techniques in Otology. Selecion and practice of handling of surgical instruments in Otology.	6
6.2	Selection, sterilization and practice of handling of Diagnostic Tools and Techniques in Rhinology. Selecion, sterilization and practice of handling of surgical instruments in Rhinology. Proposal of appropriate imaging techniques and reading them in otology and rhinology.	9
6.3	Perform physical examination of ear. Perform functional examination of ear.	6
6.4	Physical examination of nose and paranasal sinuses with an integrated approach. Functional examination nose with an integrated approach.	5
7.1	Identification, performance and sterilization of instruments and equipment used in oral cavity, throat, head and neck.	9
7.2	Appropriate Selection, safe handling and proper maintainance of surgical instruments for oral cavity, throat, head and neck procedures, including cleaning and sterilization.	6
7.3	Selection and interpretation of Imaging techniques, microbiological investigations in oral cavity and throat diseases. Proper selection of Imaging techniques, microbiological investigations and their interpretation in head and neck diseases.	6
7.4	Perfomance of examination of the oral cavity and throat using different techniques like inspection, palpation, laryngoscopy and imaging techniques for effective diagnosis.	9
7.5	Clinical examination of head, neck, lymph nodes, thyroid glands, related cranial nerves and temparo mandibular joint.	9
8.1	Anatomical Dissection and Functional Interpretation of Voice and Speech Structures.	3
8.2	Integrated Voice Assessment methods.	4
8.3	Performance and interpretation of Physiological Functions of the Swara Yantra	3
8.4	Selection and perfomance of Yantra and Shastra used in diagnosis and treatment of vocal disorders	3

Table 6 : Assessment Summary: Assessment is subdivided in A to H points

6 A : Number of Papers and Marks Distribution

Subject Code	Paper	Theory	Practical	Total
AYPG-AB-KNM	1	100	200	300

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

Credit frame work

AYPG-AB-KNM consists of 8 modules totaling 16 credits, which correspond to 480 Notional Learning Hours. Each credit comprises 30 Hours of learner engagement, distributed across teaching, practical, and experiential learning in the ratio of 1:2:3. Accordingly, one credit includes 5 hours of teaching, 10 hours of practical training, 13 hours of experiential learning, and 2 hours allocated for modular assessment, which carries 25 marks.

Formative Assessment : Module wise Assessment:will be done at the end of each module. Evaluation includes learners active participation to get Credits and Marks. Each Module may contain one or more credits.
Summative Assessment: Summative Assessment (University examination) will be carried out at the end of Semester II.

6 C : Calculation Method for Modular Grade Points (MGP)

Module Number & Name (a)	Credits (b)	Actual No. of Notional Learning Hours (c)	Attended Number of notional Learning hours (d)	Maximum Marks of assessment of modules (e)	Obtained Marks per module (f)	MGP =d* f/c*e*100
M1. Shalakyatantra Siddhanta Parichaya	1	30		25		
M2. Applied Rachana & Kriya Sharira of KNM, Greeva Shira (Head & Neck)	2	60		50		
M3. Agropaharaniya and Yogya vidhi	3	90		75		
M4. Oushadha Vijnana in KNM	3	90		75		
M5. Vrana siddhanta	1	30		25		
M6. Parikshana vidhi (Clinical methods) in Karna and Nasa	2	60		50		
M7. Parikshana vidhi (Clinical methods) in Mukha, Shiro and Greeva	3	90		75		
M8. Swara Yantra and its clinical significance	1	30		25		
MGP = ((Number of Notional learning hours attended in a module) X (Marks obtained in the modular assessment) / (Total number of Notional learning hours in the module) X (Maximum marks of the module)) X 100						

6 D : Semester Evaluation Methods for Semester Grade point Average (SGPA)

SGPA will be calculated at the end of the semester as an average of all Module MGPs. Average of MGPS of the Semester For becoming eligible for Summative assessment of the semester, student should get minimum of 60% of SGPA

SGPA = Average of MGP of all modules of all papers = add all MGPs in the semester/ no. of modules in the semester

Evaluation Methods for Modular Assessment

A S.No	B Module number and Name	C MGP
1	M1.Shalakyatantra Siddhanta Parichaya	C1
2	M2.Applied Rachana & Kriya Sharira of KNM, Greeva Shira (Head & Neck)	C2
3	M3.Agropaharaniya and Yogya vidhi	C3
4	M4.Oushadha Vijnana in KNM	C4
5	M5.Vrana siddhanta	C5
6	M6.Parikshana vidhi (Clinical methods) in Karna and Nasa	C6
7	M7.Parikshana vidhi (Clinical methods) in Mukha, Shiro and Greeva	C7
8	M8.Swara Yantra and its clinical significance	C8
	Semester Grade point Average (SGPA) of Sem 3	(C1+C2+C3+C4+C5 +C6+C7+C8) / Num ber 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 Ayurveda Examination
AYPG-AB-KNM
Sem II

Time: 3 Hours ,**Maximum Marks:** 100
INSTRUCTIONS: All questions compulsory

		Number of Questions	Marks per question	Total Marks
Q 1	Application-based Questions (ABQ)	1	20	20
Q 2	Short answer questions (SAQ)	8	5	40
Q 3	Analytical based structured Long answer question (LAQ)	4	10	40

				100

6 F : Distribution for summative assessment (University examination)

S.No	List of Module/Unit	ABQ	SAQ	LAQ
(M-1)Shalakyatantra Siddhanta Parichaya (Marks: Range 5-20)				
1	**(U-1)** Dosha, Dhatu, Mala, and Srotas in KNM	Yes	Yes	Yes
2	**(U-2)** Samanya Nidana Panchaka and Chikitsa sutras in Karna-Nasa -Shiro-Mukharogas	Yes	Yes	Yes
(M-2)Applied Rachana & Kriya Sharira of KNM, Greeva Shira (Head & Neck) (Marks: Range 5-20)				
1	**(U-1)** Rachana Sharira of Karna, Nasa, Mukha, Shiro and Greeva	Yes	Yes	Yes
2	**(U-2)** Exploring Marma Sharira: Identification and Significance of Vital Points in Karna - Nasa - Mukharoga - Greeva	Yes	Yes	Yes
3	**(U-3)** Sharira Kriya of Karna, Nasa, Mukha, Shiro and Greeva	Yes	Yes	Yes
(M-3)Agropaharaniya and Yogya vidhi (Marks: Range 5-20)				
1	**(U-1)** Agra Sangraharaniya	Yes	Yes	Yes
2	**(U-2)** Yogya Vidhi	Yes	Yes	Yes
3	**(U-3)** Vranitopasana Agara	Yes	Yes	Yes
4	**(U-4)** Astha Vidha Shastra Karma	Yes	Yes	No
5	**(U-5)** Nirjantukarana (Sterilization) Prakriya	Yes	Yes	Yes
6	**(U-6)** Sangyaharana	Yes	Yes	Yes
(M-4)Oushadha Vijnana in KNM (Marks: Range 5-20)				
1	**(U-1)** Oushadha Vijnana	No	Yes	Yes
2	**(U-2)** Contemporary Medicines	No	Yes	Yes
3	**(U-3)** Sthanik Chikitsa	Yes	Yes	Yes
4	**(U-4)** Murdhni Chikitsa	Yes	Yes	Yes
5	**(U-5)** Anushastra Karma	Yes	Yes	Yes
6	**(U-6)** Atyayika Chikitsa	Yes	Yes	Yes
(M-5)Vrana siddhanta (Marks: Range 5-15)				
1	**(U-1)** Vrana siddhanta	Yes	Yes	No
2	**(U-2)** Vrana bhandha and Vranitopasana in KNM	No	Yes	No
(M-6)Parikshana vidhi (Clinical methods) in Karna and Nasa (Marks: Range 5-15)				
1	**(U-1)** Yantra and Shastra used in Karna Evam Nasa Pariksha and chikitsa	No	Yes	Yes
2	**(U-2)** Karna Parikshana vidhi	No	Yes	Yes

3	**(U-3)** Nasa Parikshana Vidhi	No	Yes	Yes
(M-7)Parikshana vidhi (Clinical methods) in Mukha, Shiro and Greeva (Marks: Range 5-20)				
1	**(U-1)** Yantra and Shastra used in Parikshana vidhi and chikitsa of Mukha, shiro and Greeva	Yes	Yes	Yes
2	**(U-2)** Mukha Parikshana Vidhi	Yes	Yes	Yes
3	**(U-3)** Shiro Evam Greeva Parikshana Vidhi	Yes	Yes	Yes
(M-8)Swara Yantra and its clinical significance (Marks: Range 5-15)				
1	**(U-1)** Rachana Sharira of swara yantra and related parts	No	Yes	Yes
2	**(U-2)** Kriya Sharira of swara yantra and related parts	No	Yes	Yes
3	**(U-3)** Yantra and shastra in Swara vikaras	No	Yes	Yes
4	**(U-4)** Swara Yantra and related parts Parikshana Vidhi	No	Yes	Yes

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

Instructions for the paper setting.

1. 100 marks question paper shall contain:-
• Application Based Question: 1 No (carries 20 marks)
• Short Answer Questions: 8 Nos (each question carries 05 marks)
• Long Answer Questions: 4 Nos (each question carries 10 marks)
2. Questions should be drawn based on the table 6F.
3. Marks assigned for the module in 6F should be considered as the maximum marks. No question shall be asked beyond the maximum marks.
4. Refer table 6F before setting the questions. Questions should not be framed on the particular unit if indicated “NO”.
5. There will be a single application-based question (ABQ) worth 20 marks. No other questions should be asked from the same module where the ABQ is framed.
6. Except the module on which ABQ is framed, at least one Short Answer Question should be framed from each module.
7. Long Answer Question should be analytical based structured questions assessing the higher cognitive ability.
8. Use the Blueprint provided in 6G or similar Blueprint created based on instructions 1 to 7

6 H : Distribution of Practical Exam (University Examination)

S.No	Heads	Marks
1	**Long Case - 80 Marks** Components to be assessed are as follows: • History taking- Elicits relevant history (15 marks) • Physical examination and Provisional Diagnosis- Ashtasthana Pariksha, General and Local Examination. (25 marks) • Choosing appropriate diagnostic tool/interpret the report: Makes logical correlations. (10 marks) • Choose appropriate Shamanoushadhis / Shodhana chikitsa /Stanika chikitsa with justification. (30 marks)	80
2	**Procedure based evaluation - 60 Marks** A. **Procedure-** 40 marks Perform on a patient or simulated patient. Real-time observation by faculty assessor. Components to be assessed are as follows: • Brief patient's history taking and communication skills (10 marks) • Indications and contraindications of the procedure (5 marks) • Preparation of tray (5 marks) • Poorva Karma (5 marks) • Pradhana Karma (Steps of procedure as per SOPs) (10 marks) • Paschat karma and Do's & Don'ts (5 marks) B. **Spotters:** 20 marks • Instruments and equipment (Diagnostic and surgical) • Lab Report/ Radiological Images/audiological report • Dry/Fresh Herbo-Mineral Drugs	60
3	Viva (2 examiners: 20 marks/each examiner) - 40 Marks	40
4	**Logbook (Activity record)**	10

5	**Practical/Clinical Record - 10 Marks** Case record - minimum of 20 cases	10
Total Marks		**200**

Reference Books/ Resources

S.No	References
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Abbreviations

Domain		T L Method		Level	
CK	Cognitive/Knowledge	L	Lecture	K	Know
CC	Cognitive/Comprehension	L&PPT	Lecture with PowerPoint presentation	KH	Knows how
CAP	Cognitive/Application	L&GD	Lecture & Group Discussion	SH	Shows how
CAN	Cognitive/Analysis	L_VC	Lecture with Video clips	D	Does
CS	Cognitive/Synthesis	REC	Recitation		
CE	Cognitive/Evaluation	SY	Symposium		
PSY-SET	Psychomotor/Set	TUT	Tutorial		
PSY-GUD	Psychomotor/Guided response	DIS	Discussions		
PSY-MEC	Psychomotor/Mechanism	BS	Brainstorming		
PSY-ADT	Psychomotor Adaptation	IBL	Inquiry-Based Learning		
PSY-ORG	Psychomotor/Origination	PBL	Problem-Based Learning		
AFT-REC	Affective/ Receiving	CBL	Case-Based Learning		
AFT-RES	Affective/Responding	PrBL	Project-Based Learning		
AFT-VAL	Affective/Valuing	TBL	Team-Based Learning		
AFT-SET	Affective/Organization	TPW	Team Project Work		
AFT-CHR	Affective/ characterization	FC	Flipped Classroom		
		BL	Blended Learning		
		EDU	Edutainment		
		ML	Mobile Learning		
		ECE	Early Clinical Exposure		
		SIM	Simulation		
		RP	Role Plays		
		SDL	Self-directed learning		
		PSM	Problem-Solving Method		
		KL	Kinaesthetic Learning		
		W	Workshops		
		GBL	Game-Based Learning		
		LS	Library Session		
		PL	Peer Learning		
		RLE	Real-Life Experience		
		PER	Presentations		
		D-M	Demonstration on Model		
		PT	Practical		
		X-Ray	X-ray Identification		
		CD	Case Diagnosis		
		LRI	Lab Report Interpretation		

		DA	Drug Analysis		
		D	Demonstration		
		D-BED	Demonstration Bedside		
		DL	Demonstration Lab		
		DG	Demonstration Garden		
		FV	Field Visit		
		JC	Journal Club		
		Mnt	Mentoring		
		PAL	Peer Assisted Learning		
		C_L	Co Learning		
		DSN	Dissection		
		PSN	Prosection		

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