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.

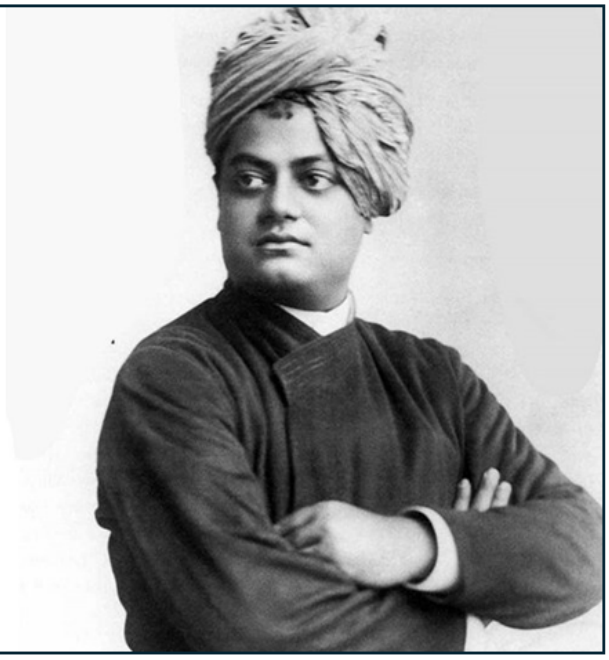
The National Commission for Indian System of Medicine (NCISM) thus places before the academic community a framework by integrating ancient Ayurvedic and modern Biomedical teaching and training considering the current needs of education, clinical service, and research in Netra Tantra (Ophthalmology).

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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&PPT ,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-BED,ECE,IBL,PAL,PBL,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		

For Postgraduation: NETRA

Shalakya Tantra (UG & PG)

Consultant Experts

1.Dr Kartar Singh Dhiman, Vice Chancellor, Shri Krishna Ayush University, Kurukshetra, Haryana,

2. Dr Manjusha Rajagopal, Professor, AIIA New Delhi,

3. Dr Sarbeswar Kar, Professor, JSS Ayurvedic Medical College, Mysuru, Karnataka,

4. Dr. Sreeja Sukesan , Professor & HOD, Govt. Ayurveda College , Tripunithura, Ernakulam,

5. Dr. Manjiri Keskar, Professor, Parul Institute of Ayurved, Parul University, Limda Vadodara, Gujarat

6. Dr. Sudhir Purakkot Apparambath, Professor, Sri Sairam Ayurveda Medical College and Research Centre, Chennai-600044

7. Dr. Haridra Dave, Professor, G-1102, Astha Onyx Opp B.D. Rao Hall Near Bhuyangdev char Rasta, Ahmedabad -3800528.

8. Dr Nisar Ali Khan, Professor & HOD, Govt. Ayurved College, Nanded Maharashtra

Chairman: Dr. Sangeeta Salvi, Professor, Tilak Ayurved Mahavidyalaya

For Postgraduation: NETRA

1	**Co-chairman: Dr Hemanth Baviskar**, Netrayu Eyeurvedics Hospital, Jalgaon, Maharashtra -425002
2	**Dr. Manoj Kumar**, Professor, Faculty of Ayurveda Institute Of Medical Science Banaras Hindu University
3	**Dr. Gunjan Sharma**, Professor, Rishikul Govt. Ayurvedic College, Haridwar
4	**Dr Ashwini MJ**, Professor, SDM College of Ayurveda, Thanniruhalla, Hassan
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6	**Prof. Dr Ganga Hadimani**, Professor and Head, Department of Shalakyatantra, J.S.Ayurveda mahavidyalaya, Nadiad-387001, Gujarat
7	**Dr Praveen Bhat**, Associate Professor, Maharashtra Arogya Mandals Sumatibhai Shah Ayurved Mahavidyalaya,
8	**Dr SreeKumar** , Associate Professor, Government Ayurved College, Dhanwanthari Nagar Kanayannur Thaluk Tripunithura Ernakulam Kerla- 682301
9	**Dr Ruby Kumar**, Associate Professor, Government Ayurvedic College & Hospital Kadamkuan Patna,
10	**Dr. Ganesh Tejashvi S**, Associate Professor, Parul Institute of Ayurveda & Research, Parul University Campus, Vadodara-391760, Gujarat

11	**Dr. Arun Kumar Biradar**, Associate Professor, KLE University Shri.BM Kankanawadi Ayurveda Mahavidyalaya Post Graduate Studies and Research Centre Belgaum
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14.	Prof. (Hakim) Mohammed Mazahir Alam, Member, BERISM, NCISM
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