GURU KASHI UNIVERSITY

Master of Optometry (MOP)

PG Curriculum (Appendix-III)

Session: 2025-26

Faculty of Health & Allied Sciences

Graduate Attributes of the Programme: - Master of Optometry (MOP)

Type of learning outcomes	**The Learning Outcomes Descriptors**
Graduates should be able to demonstrate the acquisition of:	
Learning outcomes that are specific to disciplinary/interdisciplinary areas of learning	High level of expertise in examining, diagnosing, and managing complex and specialized ocular conditions.
	Deep and integrated understanding of the relationship between ocular health and systemic diseases.
	Able to critically appraise scientific literature, design and conduct original research, and apply evidence-based principles to clinical practice.
	Equipped to work effectively as part of a multidisciplinary healthcare team.
	Demonstrate a commitment to lifelong learning, professional leadership, and ethical conduct.
Generic learning outcomes	A comprehensive understanding of advanced diagnostic and management techniques for a wide range of ocular conditions and systemic diseases that affect the eye.
	Possess in-depth, specialized knowledge in specific areas of optometry, such as pediatric optometry, binocular vision, advanced contact lenses, ocular diseases, or low vision rehabilitation.
	Critically evaluate scientific literature and apply evidence-based principles to their clinical practice.
	Understand the principles of public health and community optometry, and be able to identify and address eye health issues within populations.
	The highest standards of professional and ethical conduct, demonstrating compassion, integrity, and respect for patients from diverse backgrounds.
	Demonstrating the ability to constantly inquire, participate in knowledge sharing, and engage in active learning.

Programme learning outcomes: A post graduate degree is awarded to students who have demonstrated the achievement of the outcomes located at level 6:

Element of the Descriptor	**Programme learning out comes relating to Post graduate degree (2years)**
The Post graduates should be able to demonstrate the acquisition of:	
Knowledge and understanding	An advanced understanding of the scientific principles, clinical procedures, and public health aspects of optometry, including the diagnosis and management of complex ocular and systemic conditions.
General, technical and professional skills required to perform and accomplish tasks	Acquire advanced clinical, technical, and professional skills to perform comprehensive eye examinations, utilize specialized diagnostic equipment, manage diverse patient populations, and collaborate effectively within a healthcare team.
Application of knowledge and skills	Apply their in-depth knowledge and advanced clinical skills to solve complex patient problems, formulate evidence-based treatment plans, and provide specialized optometric care in various clinical settings.
Generic learning outcomes	Able to critically analyze scientific literature, conduct independent research, and communicate complex information effectively to patients, colleagues, and the wider community.
Constitutional, humanistic, ethical, and moral values	Practice optometry with integrity, adhering to the highest ethical and moral standards, and demonstrating empathy and respect for the diverse needs and cultural backgrounds of their patients.
Employability and job-ready skills, and entrepreneurs hip skills and capabilities/qu alities and mindset	Equipped with the professional, entrepreneurial, and leadership skills necessary to excel in a wide range of career paths, including specialized clinical practice, research, academia, and business ownership, while maintaining a commitment to lifelong learning and professional development.
Credit requirements	First 2 semesters of 2-year PG programme and earns 44 credits, and then a Post Graduate Diploma in Public Health will be awarded.
Entry requirements	4-year Bachelor's Degree Optometry

Program Structure

SEMESTER: 1st									
Course Code	**Course Title**	**Type of Courses**	**L**	**T**	**P**	**No. of Credits**	**Int.**	**Ext.**	**Total Marks**
MOP1400	Basic Sciences And Clinical Optometry	Core Course	4	0	0	4	30	70	100
MOP1401	Visual And Applied Optics	Core Course	4	0	0	4	30	70	100
MOP1402	Ocular Diseases And Diagnostics-I	Core Course	4	0	0	4	30	70	100
MOP1403	Research Methodology And Biostatistics	Skill Based	4	0	0	4	30	70	100
IKS0022	Indian Cultural Studies	IKS	2	0	0	2	30	70	100
Discipline Elective (Any one of the following)									
MOP1404	Advanced Glaucoma	Disciplinary Elective	4	0	0	4	30	70	100
MOP1405	Pediatric Optometry								
Total			**22**	**0**	**0**	**22**	**180**	**420**	**600**

SEMESTER: 2nd									
Course Code	**Course Title**	**Type of Courses**	**L**	**T**	**P**	**No. of Credits**	**Int.**	**Ext.**	**Total Marks**
MOP2450	Epidemiology And Community Eye Care	Core Course	4	0	0	4	30	70	100
MOP2451	Ocular Diseases And Diagnostics-II	Core Course	4	0	0	4	30	70	100
MOP2452	Advanced Contact Lens Studies-I	Core Course	4	0	0	4	30	70	100
MOP2453	Low Vision And Geriatric Optometry	Skill Based	4	0	0	4	30	70	100
MOP2454	Project I	Skill Based	0	0	4	2	30	70	100
Discipline Elective (Any one of the following)									
MOP2455	Eye Banking	Disciplinary Elective	4	0	0	4	30	70	100
MOP2456	Clinical Psychology								
Total			**20**	**0**	**04**	**22**	**180**	**420**	**600**

Programme learning outcomes: A post graduate degree is awarded to students who have demonstrated the achievement of the outcomes located at level 6.5:

Element of the Descriptor	**Programme learning out comes relating to Post graduate degree (2years)**
The Post graduates should be able to demonstrate the acquisition of:	
Knowledge and understanding	Comprehensive understanding of public health principles, theories, and practices, including epidemiology, biostatistics, environmental health, health policy, social and behavioral sciences, and global health and able to critically analyze public health issues and evidence.
General, technical and professional skills required to perform and accomplish tasks	proficient in a range of general, technical, and professional skills, including data analysis and interpretation, program planning and evaluation, communication (written and oral), leadership, teamwork, advocacy, and the use of relevant public health technologies and software.
Application of knowledge and skills	Effectively apply their knowledge and skills to design, implement, manage, and evaluate public health interventions and policies aimed at improving population health outcomes, addressing health disparities, and preventing disease.
Generic learning outcomes	Demonstrate advanced critical thinking, problem-solving, research, and self-directed learning abilities, enabling them to adapt to evolving public health challenges and contribute to evidence-based practice.
Constitutional, humanistic, ethical, and moral values	Committed to upholding constitutional principles, humanistic values, and high ethical and moral standards in all aspects of public health practice, ensuring equitable access to health, respect for diverse populations, and protection of human rights.
Employability and job-ready skills, and entrepreneurship skills and capabilities/qualities and mindset	Possess strong employability and job-ready skills, including professionalism, adaptability, resilience, and the ability to work effectively in diverse public health settings. They will also cultivate an entrepreneurial mindset, demonstrating initiative, innovation, and the capacity to identify and pursue opportunities for public health improvement.

Credit requirements	A 1 year / 2 semesters Master's programme builds on a bachelor's with Honors/ Honors with research and requires 44 credits for individuals who have complete a Bachelor's degree (Honors/ Honors with research). A 2-year/4-semester Master's Programme builds on a 3-year/6 semester Bachelor's degree and requires a total of 88 credits from the first and second years of the Programme, with 44 credits in the first year and 44 credits in the second year of the Programme at level 6.5 on the NHEQF.
Entry requirements	A 1 year / 2 semesters Master's programme builds on a bachelor's with Honors/ Honors with research and requires 44 credits

SEMESTER: 3rd									
Course Code	**Course Title**	**Type of Courses**	**L**	**T**	**P**	**No. of Credits**	**Int.**	**Ext.**	**Total Marks**
MOP3500	Pediatric Optometry And Binocular Vision	Core Course	4	0	0	4	30	70	100
MOP3501	Low Vision Care And Rehabilitation	Core Course	4	0	0	4	30	70	100
MOP3502	Advanced Contact Lens –Ii	Core Course	4	0	0	4	30	70	100
MOP3503	Dissertation I	Research Skill Based	0	0	0	12	30	70	100
MOP3504	Project II	Skill Based	0	0	4	2	30	70	100
Total			**12**	**0**	**4**	**26**	**150**	**350**	**500**

Semester: 4th									
Course Code	**Course Title**	**Type Of Courses**	**L**	**T**	**P**	**No. Of Credits**	**Int.**	**Ext.**	**Total Marks**
MOP4550	Recent Advancements In Optometry	Core Course	4	0	0	4	30	70	100
MOP4551	Vision Therapy	Skill Based	4	0	0	4	30	70	100
MOP4552	Dissertation II	Research Skill Based	0	0	0	12	30	70	100
MOP4553	Business And Clinical Aspects In Optometry	EEC	2	0	0	2	30	70	100
Discipline Elective (Any One Of The Following)									
MOP4554	Occupational Optometry	Disciplinary Elective	4	0	0	4	30	70	100
MOP4555	Neuro Optometry								
Total			**14**	**0**	**0**	**26**	**150**	**350**	**500**
Grand Total			**52**	**0**	**24**	**88**			

1st SEMESTER

Course Title: Basic Sciences and Clinical Optometry-I	L	T	P	Cr.
Course Code: MOP1400	4	0	0	4

Total Hours 60

Learning Outcomes: On completion of this course, the successful students will be able to:

1. The general structure and morphology of eye - physiology and anatomy of eye
2. Ocular pathology
3. Refractive errors
4. Role of Central Visual Pathways
5. Learn to solve problems related to various ocular pathological conditions and infections.

Course Contents

UNIT-I **15 Hours**

Development of eye ball, blood supply of orbit, nerve supply of eye ball, Optic nerve, Oculomotor and Trochlear nerve, Trigeminal and Abducent nerve, Facial nerve, Ocular Adnexa, Lacrimal apparatus Eye ball (Sclera, uveal tract, retina), Angle of anterior chamber, Crystalline lens. Movement of eyeball and extra ocular muscles, Autonomic Nervous System, Visual Pathway.

UNIT-II **20 Hours**

Intra-ocular Pressure- Intra-ocular pressure: a dynamic equilibrium Tonography, Visual Adaptation:- Mechanisms of visual adaptation, Dark adaptation and regeneration of rhodopsin, Adaptation of photoreceptors, Visual Acuity:- Specifications of the stimulus (physical basis), Retinal anatomy, Physiologic factors, Acuity criteria, Measurement of ordinary visual acuity (minimum angle of resolution), Factors influencing visual acuity, Sinusoidal grating targets Color Vision:- Color and the visible spectrum, Color mixing, metameric matches and complementary wavelengths, Neural encoding of color, Congenital & Acquired dyschromatopsia, The Central Visual Pathways:- The retino – geniculo-cortical pathway, visual field examination, structure and functions of lateral geniculate body, the primary visual cortex, extrastriate visual cortex, visual deprivation Binocular Vision:- Normal adult psychophysics, Normal development of binocular vision, Mal development of binocular vision, Strabismus and amblyopia, Binocular vision in other animals

UNIT-III **15 Hours**

Ocular pathology, microbiology and pharmacology Infections, Inflammation and repair mechanisms, Allergic reactions in ocular tissues, Bacteria, Virus, Fungus and their features for differentiation, Common bacterial infections of the eye, Common fungal infections of the eye, Common viral infections of eye Classification of Ophthalmic drugs, Sympathomimetics & Sympatholytics. Parasympathomimetics & Parasympatholytics, Diagnostic drugs used in optometry – Dyes and stains, Antibacterial, Antifungal agents, Steroid and Non-steroidal anti-inflammatory drugs.

UNIT-IV **10 Hours**

Clinical optometry Diseases of lids, diseases of adnexa, diseases of orbit, diseases of lachrymal apparatus, diseases of conjunctiva, Refractive errors

Transactional modes: Video based teaching, Collaborative teaching, Case based teaching, Question-Answer

Suggested Readings

- Stephen J. Miller: Parsons Diseases of the Eye, 18th edition, Churchill Livingstone, 1990
- Jack J. Kanski Clinical Ophthalmology: A Systematic Approach, 6th edition, Butterworth - Heinemann, 2007
- Myron Yanoff and Jays Duker : Ophthalmology

Course Title: VISUAL AND APPLIED OPTICS	L	T	P	Cr.
Course Code: MOP1401	4	0	0	4

Total Hours: 60

Learning Outcomes: On completion of this course, the successful students will be able to:

1. Understand the concept emmetropia & ametropia
2. Applying the various concepts of ophthalmic lens dispensing
3. Applying the concept of spectacle frame selection
4. Understanding basic and advanced techniques of pediatric dispensing
5. Applying the concept of dispensing spectacle in special children.

Course Contents

UNIT-I **14 Hours**

Schematic and reduced eyes and their properties; Optical constants of the eye and their measurement. Purkinje images. Corneal curvature and thickness. Keratometry and pachymetry. Indices of aqueous and vitreous; Optical Defects of the Eye- Shape of Cornea, Shape & RI of the lens, Optical axis, Visual axis (angle alpha, Fixation axis (angle gamma), Aberration of the Optical system of eye, Depth of focus, Diffraction & resolving power.

UNIT-II **14 Hours**

Emmetropia, Emmetropization and ametropia, Axial versus spherical ametropia, Theories of Myopia, Myopia control Program Accommodation- possible mechanism of accommodation-Schiener disc experiment- theories of accommodation- modern theory- changes in the lens during accommodation- the amplitude of accommodation- the measurement of the amplitude n of accommodation- depth of field, luminance and blur tolerance- amplitude of accommodation versus age, Accommodative and vergence disorder. Presbyopia-near vision addition- estimate of addition- unequal near vision addition- effect of changing the spectacle distance – hypermetropia and accommodation.

UNIT-III **16 Hours**

Spectacle frame: Current frame materials- a) Plastics b) Metals Frame types: Combination of frames-Half-eye frames, Mounts, Nylon-cord frame, Special purpose frames. Frame measurements: The boxing system, The datum system, Comparison of the two systems, Lens position, Segment specification Frame Selection: Fashion, Function, Feel, Conflicting needs, Price, Standard alignment, Frame availability in Indian market Lens Selection: Ground rule for selection, Selection criteria, Facial Measurement,

The PD, Visual axes, Measuring inter papillary distance using PD ruler, Common difficulties in measuring PDs, measuring monocular PD, Measuring near PD, Lenticular, Atoric, HI Index, Aspherical, Absorptive lenses, Coating Measuring heights: Single vision, Multi focal, bi-focal, Progressive

UNIT-IV **16 Hours**

Pediatric Dispensing: The changing image of spectacle, Age differences. Frame Selection- Technical Criteria, Fashion criteria, some tips on selection Lens Selection Technical Criteria Communicating with kids, kids' corner, Facial measurement of the kids-PDs, Centers, Bi-focals, Dealing with problems: Dealing with clients, Common client problems, dealing with professional colleagues, Dealing with the laboratories, Soft skills and professional communication with Patient and Customers. Special needs dispensing: Occupational dispensing, Hazards in the work place, Occupational health safety legislation, Visual Ergonomics, Visual hygiene Sports and Industrial eye protection: Standards covering eye protection, Lens materials & impact resistance, Frame & eye protection.

Transactional modes: Video based teaching, Collaborative teaching, Case based teaching, Question-Answer

Suggested Readings:

- System for Ophthalmic Dispensing -Irvin Borish
- M P Keating: Geometric, Physical and Visual optics, 2nd edition, Butterworth Heinemann, USA, 2002 HL Rubin: Optics for clinicians, 2nd edition, Triad publishing company. Florida, 1974.
- H Obstfeld: Optic in Vision- Foundations of visual optics & associated computations, 2nd edition, Butterworth, UK, 1982.
- WJ Benjamin: Borish's clinical refraction,2nd edition, Butterworth Heinemann, Missouri, USA,2006

Course Title: OCULAR DISEASES AND DIAGNOSTICS-I	L	T	P	Cr
Course Code: MOP1402	4	0	0	4

Total Hours: 60

Learning Outcomes: On completion of this course, the successful students will be able to:

1. Understand the concept of different Ocular diseases of anterior segment of Eye
2. Apply the concept of anatomy & Physiology of Eye while understanding the Pathology of different ocular diseases
3. Utilize the concept of clinical features of the diseases for the differential diagnosis of the anterior segment diseases
4. Analyze the concept of clinical features of disease for management of anterior segment diseases
5. Applying the concept of different Ocular diseases of anterior segment of Eye

Course Contents

UNIT-I **15 Hours**

Refresher of anterior segment ocular diseases; Congenital anomalies, Inflammatory disorders; Degenerative conditions; Dystrophies, Structural Deformities; Oedema, Cysts and Tumors

UNIT-II **15 Hours**

Pre- and Post-operative management of anterior segment diseases. Anterior segment diagnostics, Tonometry, HVF and Pentacam

UNIT-III **15 Hours**

Pre- and Post-operative management of anterior segment diseases. Anterior segment diagnostics, Tonometry, HVF and Pentacam

Unit-IV **15 Hours**

Pachymetry, OCT, Gonioscopy, Cataract evaluation, Slit Lamp

Transactional modes: Video based teaching, Collaborative teaching, Case based teaching, Question-Answer.

Suggested readings:

- Clinical Ophthalmology: Jack J Kanski
- Diagnostics and imaging techniques in Ophthalmology: Amar Agarwal

Course Title: RESEARCH METHODOLOGY AND BIOSTATISTICS	L	T	P	Cr.
Course Code: MOP1403	4	0	0	4

Total Hours 60

Learning Outcomes: On completion of this course, the successful students will be able to:

1. Understand the basics of research types and methods of research
2. Ability to write research proposal
3. Apply the concept for writing the research articles
4. Ability to apply the concepts for writing research articles
5. Ability to apply research in evaluating the research materials

Course content

UNIT-I **15 Hours**

Research Methodology – Definition of research, Characteristics of research, Steps involved in research process, Types of Research methods and methodology, Terminology used in quality control such as sensitivity, specificity, accuracy, precision, positive and negative predictive value.

UNIT-II **15 Hours**

Statistics, data, population, samples, parameters; Representation of Data: Tabular, Graphical, Measures of central tendency, Arithmetic mean, mode, median; Measures of dispersion, Range, mean deviation, variation, standard deviation, Standard error, Chi-square test

UNIT-III **15 Hours**

Introduction and significance of Student's t-distribution: test for single mean, difference of means and paired t- test, F-distribution, one-way and two-way analysis of variance (ANOVA). Small sample test based on t-test, Z-test and F test; Confidence Interval; Distribution-free test

UNIT-IV **15 Hours**

Total Quality Management System General Requirements for Standardization & Calibration of Clinical Laboratories: Introduction, Scope & Need of standardization, Quality Management requirement: testing & Calibration Procedures, Total Quality Assurance, Quality Control Charts & Systems. Quality Audit: Internal & External Audit, Accreditation & Certification NABL, ISO, CAP

Transactional modes: Video based teaching, Collaborative teaching, Case based teaching, Question Answer

Suggested Readings:

- Methods in Biostatistics by B.K Mahajan
- Probability and Statistics byMurray
- Epidemiology of Eye Diseases, by Gordon and Drawin
- Research Methodology by SMIsrani

Course Title: Indian Cultural Studies	L	T	P	Cr.
Course Code: IKS0022	2	0	0	2

Total Hours: 30

Learning Outcomes: On completion of this course, the successful students will be able to:

1. Understanding Modern Indian Thought: Students will gain a theoretical foundation to explore how Indian philosophical and cultural ideas since the early 20th century have shaped individual and collective experiences.
2. Analyzing Cultural Transformations: Learners will investigate the impact of modern Indian thought on personal identity and cultural context, understanding its role in shaping societal values and worldviews.
3. Developing Conceptual Vocabulary: Students will become familiar with key ideas and terminologies introduced in the course, enabling them to critically engage with and interpret modern Indian intellectual traditions.
4. Articulating Personal and Shared Experiences: Learners will cultivate the ability to express their own and others & experiences using the conceptual and philosophical frameworks discussed in the course.

Course Content

Unit 1 **7 Hours**

Introduction: (Orientalist, colonial and contemporary representation of India)

Unit 2 **8 Hours**

Indian difference: (Aurobindo, Ramanujan, Bankimchandra, Malhotra and others),
Self and subjectivity: (Gandhi, Upadhyay, M.N. Roy, Ashis Nandy, Dharmapal and others)

Unit 3 **7 Hours**

Home, Nation and the World: (Nehru, Tagore, Ambedkar, Savarkar, Mazumdar,
Malaviya and others)

Unit 4 **8 Hours**

Swaraj: (Lajpat Rai, Gandhi, Tilak, Rajaji, Alvares, Balagangadhar and others), Art and aesthetics: (Coomaraswamy, Hiriyana, Radhakrishnan,

Aurobindo, Naipaul, Devy and others)

Transactional Mode

Seminars, Group discussion, Team teaching, Focused group discussion, Assignments, Project-based learning, Simulations, reflection and Self-assessment

Suggested Readings

- Knut A. Jacobsen. Ed. Modern Indian Culture and Society. Routledge: London,
- 2009.
- Upadhyay, Deendayal. Integral Humanism. 1965. http://www.chitrakoot.org/download/IntegralHumanism.pdf
- Savarkar, V.D. The Essentials of Hindutva. http://savarkar.org/en/encyc/2017/5/23/2_12_12_04_essentials_of_hind tva.v001.pdf_1.pdf
- Vasudha Dalmia & Rashmi Sadana. Eds. The Cambridge Companion to Modern Indian Culture. Cambridge University Press: Cambridge, 2012.
- Alvares, Claude. “A Critique of the Eurocentric Social Science and the Question of Alternatives”. Economic and Political Weekly. 46. 22, 2011.
- Ambedkar, B.R. Pakistan or the Partition of India. Columbia University:
- http://www.columbia.edu/itc/mealac/pritchett/00ambedkar/ambedkar_partition
- Balagangadhara,S.N. Reconceptualizing India Studies. Oxford University Press: New Delhi, 2012.
- Chatterjee, Partha. Nationalist Thought and the Colonial World: A Derivative Discourse. Zed Books: London,1993.
- Chattopadhyay, Bankimchandra. “Is Nationalism a Good Thing?” and “Critics of Hinduism”. In Awakening Bharat Mata, ed. Swapan Dasgupta. Penguin: New Delhi,
- 2019.
- Coomaraswamy, A.K. “Indian Nationality”. Indian Philosophy in English: From Renaissance to Independence. Oxford University Press: New York, 2011.
- Gandhi, M.K. Hind Swaraj. Navjeevan Publishing: Ahmedabad, 1938.
- Ghosh, Aurobindo. “A Defence of Indian Culture”. The Renaissance in India and other Essays on Indian Culture. Sri Aurobindo Ashram: Pondicherry, 2002.

Course Title: Advanced Glaucoma (OPEN ELECTIVE)	L	T	P	Cr.
Course Code: MOP1404	4	0	0	4

Total Hours: 60

Learning Outcomes: On completion of this course, the successful students will be able to:

1. Understand the basic concepts of environmental health and the role of professionals in this field.
2. Able to explain the impact of air quality, pollution, and climate change on human health.
3. Able to identify water quality issues, pollutants, and their effects on health.
4. Learn about the relationship between housing, sanitation, and solid waste management on a healthy environment.
5. Able to explain food safety issues, including contaminants, additives, and food borne diseases.

Course Content

UNIT-I **15 Hours**

Gonioscopy Ophthalmoscopic techniques for evaluation of the optic nerve head Optic disc drawings;

UNIT-II **15 Hours**

Optic disc photography; Flicker analysis;

UNIT-III **15 Hours**

Plaimetry; Sterophotogrammetry;

UNIT-IV **15 Hours**

Image analyzers,
Retinal nerve fiber layer evaluation.

Transactional modes: Video based teaching, Collaborative teaching, Case based teaching, Question Answer

Suggested Readings:

- Becker Shaffer's: Diagnosis and Therapy of the Glaucoma
- Schield's : Text book of glaucoma

Course Title: PEDIATRIC OPTOMETRY (OPEN ELECTIVE)	L	T	P	Cr.
Course Code: MOP1405	4	0	0	4

Total Hours 60

Learning Outcomes: On completion of this course, the successful students will be able to:

1. Understanding about human visual development.
2. Human visual defects and evaluation of Paediatric age groups.
3. Knowledge in evaluation and problem solving techniques of pediatric population.
4. Able to present their research findings effectively.
5. Gain an understanding of how to address and propose solutions for environmental challenges.

Course Content

UNIT-I **15 Hours**

Anatomical and functional aspects of visual development
Abnormal development of vision
Methods to assess the development of visual functions in infants

UNIT-II **15 Hours**

Methods to assess the development of visual functions in infants
Limitations of the currently available techniques
Common genetic problems in pediatric age group

UNIT-III **15 Hours**

Diseases of the orbit and anterior segment
Disease of the posterior segment and neuro- ophthalmological disorders
Ocular manifestation of systemic disorders

UNIT-IV **15 Hours**

Case history, Clinical examination and assessment formats of pediatric patients
Pediatric dispensing – Spectacles and contact lenses

Transactional modes: Video based teaching, Collaborative teaching, Case based teaching, Question Answer

Suggested Readings:

- Becker Shaffer's: Diagnosis and Therapy of the Glaucoma
- Schield's : Text book of glaucoma

2nd Semester

Course Title: EPIDEMIOLOGY AND COMMUNITY EYE CARE	L	T	P	Cr.
Course Code: MOP2450	4	0	0	4

Total Hours 60

Learning Outcomes: On completion of this course, the successful students will be able to:

1. Understand the concept of Epidemiology
2. Apply concept of optometric Evaluation procedure
3. Understand the concept of health planning management, policies and education
4. Utilize the concept of Community health care services and implementation of vision 2020.
5. Analyze the data as well as basic concept of evaluation of patient for clinical and research purposes

Course Contents

UNIT-I **15 Hours**

Prevalence, incidence and distribution of visual impairment Methodology: Basics of Epidemiology study methods, Types of study designs; Screening for visual disorders; Childhood blindness Refractive errors and presbyopia

UNIT-II **15 Hours**

Age-related cataract; Low Vision; Diabetic retinopathy Glaucoma Age-related Macular Degeneration; Vitamin A deficiency; Corneal and external diseases; Prevention strategies

UNIT-III **15 Hours**

Concept of Health and Disease; Principles of Epidemiology and Epidemiological Methods; Screening for Eye Disease, Refractive errors, Low Vision, Cataract, Diabetic retinopathy, Glaucoma, Amblyopia, Squint.

UNIT-IV **15 Hours**

Health Information and Basic Medical Statistics; Communication for Health Education; Health Planning and Management; Health care of community; How to plan and implementVision2020

Transactional modes: Video based teaching, Collaborative teaching, Case based teaching, Question-Answer.

Suggested readings:

- MC Gupta, Mahajan BK, Murthy GVS, 3rd edition. Text Book of Community Medicine, Jaypee Brothers, New Delhi, 2002.
- Epidemiology of eye disease: Johnson and Gordon

Course Title: OCULAR DISEASES AND DIAGNOSTICS-II	L	T	P	Cr.
Course Code: MOP2451	4	0	0	4

Total Hours 60

Learning Outcomes: On completion of this course, the successful students will be able to:

1. Understand the concept of different Ocular diseases of posterior segment of Eye.
2. Apply the concept of anatomy & Physiology of Eye while understanding the Pathology of different ocular diseases.
3. Utilize the concept of clinical features of the diseases for the differential diagnosis of the ocular diseases
4. Analyze the concept of clinical features of the diseases for the management of ocular diseases.
5. Apply the concept of different Ocular diseases of posterior segment of Eye

Course Contents

UNIT-I **15 Hours**

Refresher of posterior segment ocular diseases including; Congenital anomalies; Inflammatory disorders Degenerative conditions & Dystrophies; Structural Deformities; Oedema, Cysts and Tumors

UNIT-II **15 Hours**

Diagnosis and therapeutics for Posterior Segment disease

UNIT-III **15 Hours**

Surgical treatment of posterior segment diseases.

UNIT-IV **15 Hours**

Posterior segment Diagnostics: ERG, EOG, VEP, OCT, Fundus photography Neuro optometric diseases and disorders

Transactional modes: Video based teaching, Collaborative teaching, Case based teaching, Question Answer

Suggested Readings

- Clinical ophthalmology: Jack J Kanski
- Diagnostics and imaging techniques in Ophthalmology: Amar Agarwal

Course Title: ADVANCED CONTACT LENS STUDIES-I	L	T	P	Cr.
Course Code: MOP2452	4	0	0	4

Total Hours 60

Learning Outcomes: On completion of this course, the successful students will be able to:

1. Understand about contact lens history, introduction, design and relation with structure.
2. Understand about RGP contact lens material and their property, their parameter
3. Understand about RGP contact lens manufacturing techniques & fitting of RGP lenses
4. Understanding and know about care maintenance and do's & don't of RGP contact lens
5. Analyze the complication and their management of RGP contact lenses.

Course Contents

UNIT-I **15 Hours**

Anatomy and Physiology of the Cornea and related Structures; Contact Lens Material Microbiology, lens care and maintenance, tears and contact lenses, optics and lens designs

UNIT-II **15 Hours**

Clinical instrumentation in contact lens practice, Rigid gas permeable contact lens fitting

UNIT-III **15 Hours**

Soft contact lens fitting; Toric Contact lens fitting; Lens care regimen; Contact lens standards

UNIT-IV **15 Hours**

Lens checking: Soft and Rigid
Contact lens complications
Special types of Contact lenses – diagnosis, surgery, protective, therapeutic, sports, partially sighted

Transactional modes: Video based teaching, Collaborative teaching, Case based teaching, Question-Answer.

Suggested readings:

- Contact lenses – Stone and Philips.
- IACLE modules

Course Title: LOW VISION AND GERIATRIC OPTOMETRY	L	T	P	Cr.
Course Code: MOP2453	4	0	0	4

Total Hours 60

Learning Outcomes: On completion of this course, the successful students will be able to:

1. Understand the basic definition and classification of Low Vision.
2. Analyze the various causes of Low Vision.
3. Understand how to do examination of a low vision Patient
4. Apply various optical and non-optical devices for visual rehabilitation of a low vision Patient.
5. Understand the legal aspects of Low Vision in India, as well as applying case studies to for visual rehabilitation of a low vision Patient.

Course Contents

UNIT-I **15 Hours**

Elements Visual Disorders – Medical Perspective
The Epidemiology of Vision Impairment and Vision Impairment in the pediatric population
Ocular Diseases: Age – Related Cataract, Glaucoma, ARMD, Diabetic retinopathy, Corneal Disorders, Ocular Trauma Sensory Neuro-ophthalmology and Vision Impairment
Refractive Disorders and Visual Disorders – The Functional Perspective
Low Vision and Psychophysics, Visual Functioning in Pediatric Populations with Low Vision Perceptual correlates of Optical Disorders, Functional aspects of Neural Visual Disorders of the eye and Brain Visual Disorders and Performance of specific Tasks requiring vision

UNIT-II **15 Hours**

Visual Disorders – The Psychosocial Perspective Developmental perspectives –Youth Vision, Impairment and Cognition Spatial orientation and Mobility of people with vision impairments Social skills Issues in vision impairment, Communication and language: Issues and concerns Developmental perspectives on Aging and vision loss, Vision and cognitive Functioning in old age Interactions of Vision Impairment with other Disabilities and sensory Impairments. Children with Multiple Impairments

UNIT-III **15 Hours**

The Environment and Vision Impairment: Towards Universal Design Indian Disabilities act, Children's Environments, Environments of Older people Outdoor environments, Lighting to enhance visual capabilities Signage and way finding, Accessible Environments through Technology Vision

Rehabilitation: In Western Countries, In Asia Personnel preparation in Vision Rehabilitation Psychological and social factors in visual Adaptation and Rehabilitation The Role of psychosocial Factors in adaptation to vision Impairment and Habilitation outcomes for Children and Youth

UNIT-IV **15 Hours**

The Role of psychosocial Factors in adaptation to vision Impairment and Habilitation outcomes for Adults and Older adults Social support and adjustment to vision Impairment across the lifespan The person – Environment perspective of vision impairment Associated Depression, Disability and rehabilitation Methodological strategies and issues in social research on vision Impairment and rehabilitation

Transactional modes: Video based teaching, Collaborative teaching, Case based teaching, Question Answer

Suggested Readings

- Richard L. Brilliant: Essentials of Low Vision Practice, Butterworth-Heinemann,1999
- Helen Farral: optometric Management of Visual Handicap, Blackwell Scientific publications,1991
- A J Jackson, J S Wolffsohn: Low Vision Manual, Butterworth Heinnemann, 2007.

Course Title: Project I	L	T	P	Cr.
Course Code: MOP2454	0	0	4	2

Total Hours 30

Learning Outcomes: On completion of this course, the successful students will be able to:

1. Independently research a specific topic related to the field of study, identify key questions or problems, and gather relevant information from reliable sources.
2. Design a clear and feasible project plan, including objectives, methodology, timeline, and resource management.
3. Demonstrate the ability to collaborate effectively within a team, contributing to group discussions, decision-making, and the completion of the project.
4. Reflect on their learning experiences throughout the project, evaluating their strengths and areas for improvement, and setting goals for future projects.
5. Use foundational concepts and techniques relevant to the discipline to inform project planning and execution.

List of Project I **30 Hours**

1. **Clinical Research on Myopia Control:** A comparative study on the efficacy of different treatments (e.g., orthokeratology, multifocal contact lenses, low-dose atropine) for controlling myopia progression in pediatric patients.
2. **Ocular Surface Disease and Dry Eye Syndrome:** Investigating the impact of digital screen use on the tear film stability and the prevalence of dry eye syndrome among different age groups.
3. **Advanced Contact Lens Technologies:** An evaluation of the visual and physiological performance of scleral lenses in managing irregular astigmatism and corneal ectasia.
4. **Low Vision Rehabilitation:** Developing a comprehensive visual function assessment and training program for patients with age-related macular degeneration (ARMD).
5. **Pediatric Optometry:** A study on the early detection and management of amblyopia and strabismus in preschool children.
6. **Glaucoma Management:** The role of optical coherence tomography (OCT) in monitoring retinal nerve fiber layer thickness for early detection of glaucoma progression.
7. **Neuro-Optometry:** Investigating the effects of traumatic brain injury (TBI) on visual processing and developing a vision therapy protocol for post-concussion syndrome.
8. **Binocular Vision Disorders:** A clinical trial evaluating the effectiveness of home-based vision therapy exercises for treating convergence insufficiency.

9. **Ocular Pharmacology:** A review of new drug delivery systems for treating anterior segment ocular infections.
10. **Public Health Optometry:** Assessing the prevalence of uncorrected refractive errors and barriers to eye care access in a rural community.
11. **Retinal Imaging and Analysis:** Developing an automated system for the detection of diabetic retinopathy using fundus photography and deep learning.
12. **Keratoconus:** A long-term study on the corneal stability and visual acuity outcomes after corneal cross-linking (CXL) in patients with keratoconus.

Course Title: EYE BANKING (OPEN ELECTIVE)	**L**	**T**	**P**	**Cr.**
Course Code: MOP2455	**4**	**0**	**0**	**4**

Total Hours 60

Learning Outcomes: On completion of this course, the successful students will be able to:

1. Gain practical experience in conducting research for vulnerable populations.
2. Learn to identify and address the unique challenges faced by marginalized groups.
3. Acquire skills in data collection, analysis, and report writing for a specific social issue.
4. Develop proficiency in presenting research findings to an audience.
5. Understand the ethical considerations and protocols involved in working with special populations.

Course Contents

UNIT-I **15 Hours**

Introduction to Eye Banking, History & milestones, Requirements in eye bank,

UNIT-II **15 Hours**

Duties and responsibilities of eye bank personals, Indications and contra indications, Instruments,

UNIT-III **15 Hours**

Tissue retrieval, Handling of tissue, preservation techniques,

UNIT-IV **15 Hours**

Evaluation techniques, specular microscopy, Documentation
Legal aspects, keratoplasties, Advanced keratoplasties

Transactional modes: Video based teaching, Collaborative teaching, Case based teaching, Question-Answer

Suggested Readings

- Dean Vavra: Eye Banking
- Smolin and thoft,s :The Cornea Scintific foundation and clinical practice ,fourth edition
- T.Bredehorn Mayr : Eye Banking ,Karge

Course Title: CLINICAL PSYCHOLOGY (OPEN ELECTIVE)	**L**	**T**	**P**	**Cr.**
Course Code: MOP2456	**4**	**0**	**0**	**4**

Total Hours 60

Learning Outcomes: On completion of this course, the successful students will be able to:

1. Understand the core concepts of global health, including its determinants, priorities, and key indicators.
2. Analyze the relationship between global health, equity, economics, and development.
3. Able to describe and compare different global health systems and the role of various sectors.
4. Understand the impact of natural disasters and complex humanitarian emergencies on global health and the strategies for addressing them.
5. Recognize the importance of collaboration and the roles of various organizations and partnerships in improving global health.

Course Contents

Unit-I **15 Hours**

Mental health criterion, Mental Health and Illness, concept of Positive mental health, Psychological well being, attitude towards mental illness, epidemiological studies and socio- demographic correlates of mental illness in India
Social class, Social Change, Cultural shock, Migration, Religion and gender related issues with special reference to India.

Unit-II **15 Hours**

Psychological aspects of disability and rehabilitation in India context, the role of family and society in the education, training and rehabilitation of disabled, Behavioral Model, Evaluation of behavioral modal, Psychodynamic model, Evaluation of psychodynamic model, Cognitive model, Evaluation

Unit-III **15 Hours**

Case history and Interviewing, Psychopathology of personality and Behaviors disorder, Specific personality disorders, Habit and Impulse disorders, Mental and behavior disorder, psycho somatic disorder,

Unit-IV **15 Hours**

Psychopathology of childhood and adolescence disorders, Anxiety disorders, Schizophrenia, Psychopathology of emotional, behavioural and developmental disorders of childhood and adolescence Mental retardation, Classification, Etiology and management /rehabilitation

Transactional modes: Video based teaching, Collaborative teaching, Case based teaching, Question-Answer

Suggested Readings

- David R.Shaffer, Katherine KIPP: Developmental psychology childhood and Adolescence
- Kevin Brewer: Clinical Psychology.
- Niraj Ahuja: A Short Textbook of Psychiatry
- Margaret Harris and George Butterworth: Developmental Psychology: A Student's Handbook

3rd Semester

Course Title: PEDIATRIC OPTOMETRY AND BINOCULAR VISION	L	T	P	Cr.
Course Code: MOP3500	4	0	0	4

Total Hours 60

Learning Outcomes: On completion of this course, the successful students will be able to:

1. Understand the classification of strabismus
2. Understand the concept of recording history in strabismus patients.
3. Understand the clinical features of convergent & divergent Strabismus, vertical & paralytic Strabismus
4. Apply the concept of pediatric refraction.
5. Apply the concepts of diagnosis of pediatric anomalies

Course Contents

Unit-I **16 Hours**

Refractive Development: Early Refractive Development Visually Guided control of Refractive State: Animal Studies Infant Accommodation and Convergence, Oculomotor Function: Conjugate Eye Movements of Infants Development of the Vestibuloocular and Optokinetic reflexes

Unit-II **14 Hours**

Spatial and Chromatic Vision, Front-end Limitations to Infant Spatial vision, Examination of two analyses Development of the Human Visual Field, Development of Scotopic Retinal Sensitivity Infant Color vision, Orientation and Motion selective Mechanisms in Infants, Intrinsic Noise and Infant performance

Unit-III **16 Hours**

Binocular Vision: Development of interocular vision in Infants Stereopsis in Infants and its developmental relation to visual acuity Sensorimotor Adaptation and Development of the Horopter Two stages in the development of Binocular Vision and Eye Alignment Retinal and cortical Development Abnormal Visual Development Recent advancements in Infant Research

Unit-IV **14 Hours**

Clinical Applications: Assessment of Child Vision and Refractive Error Refractive Routines in the Examination of Children, Cycloplegic Refraction Color Vision Assessment in Children, Dispensing for the Child patient Pediatric Contact Lens Practice, Dyslexia and Optometry Management Electrodiagnostic Needs of Multiple Handicapped Children, Management Guidelines – Ametropia, Contant Strabismus Management Guidelines – Amblyopia, Accommodation and Vergence anomalies Nystagmus, Common genetic problems in Paediatric optometry Pediatric Ocular Diseases and Ocular Trauma in Children Myopia control, Clinical uses of prism

Transaction Modes: Video based teaching, Collaborative teaching, Case based teaching, Question-Answer

Suggested Readings

- Clinical management of binocular vision Mitchell Scheiman and Bruce Wick.
- Applied concepts in vision therapy: Leonard Press
- Pediatric optometry: Jerome K Rosner

Course Title: LOW VISION CARE AND REHABILITATION	L	T	P	Cr.
Course Code: MOP3501	4	0	0	4

Total Hours 60

Learning Outcomes: On completion of this course, the successful students will be able to:

1. Understand the rehabilitation process of children and adults with vision impairment.
2. Understand the educational needs of school going children with vision impairment.
3. Utilize assistive devices for low vision patients
4. Analyze the importance of color vision in low vision patients.
5. Analyze the demand and supply dynamics of health and medical care, including health insurance and financing.

Course Contents

UNIT-I **15 Hours**

Habilitation of Children and Youth with vision Impairment Rehabilitation of working –age Adults with Vision Impairment Rehabilitation of older Adults with Vision Impairment Functional consequences of vision Impairment Vision evaluation of Infants.

UNIT-II **15 Hours**

Educational assessment of visual function in Infants and Children Functional Evaluation of the Adult Functional orientation and Mobility Functional Assessment of Low Vision for Activities of Daily living

UNIT-III **15 Hours**

Psychosocial assessment of adults with vision impairment Assistive Devices and Technology for Low Vision

UNIT-IV **15 Hours**

Devices and Technology for Blind Vision and Reading - Normal Vs Low Vision Clinical Implications of color vision Deficiencies

Transactional modes: Video based teaching, Collaborative teaching, Case based teaching, Question-Answer.

Suggested readings:

The lighthouse handbook on vision impairment and Vision rehabilitation: Barbara Silverstone, Mary Ann Lang, Bruce Rosenthal, Fay

Course Title: ADVANCED CONTACT LENS -II	L	T	P	Cr.
Course Code: MOP3502	4	0	0	4

Total Hours 60

Learning Outcomes: On completion of this course, the successful students will be able to:

1. To know advancements in field of contact lenses
2. To know about various procedures for insertion of lenses
3. Keep abreast of latest developments in the field of contact lenses
4. Understand the Indications of these special types of contact lens
5. Learn about the contact lenses which will helps to treat the patient's conditions

Course Contents

UNIT-I **15 Hours**

Advanced contact lens Extended and Continuous wear Lenses, Scleral Contact lenses, Bifocal and Multifocal contact lenses, Contact lens for abnormal ocular conditions, Contact lenses and Myopia control

UNIT-II **15 Hours**

Eye disorders and Surgical/ non-surgical procedures
Orthokeratology, Keratoconus, Post keratoplasty contact lens fitting, Post refractive surgery contact lens fitting, Pediatric contact lens fitting

UNIT-III **15 Hours**

Contact lenses for cosmetic purposes
Cosmetic and prosthetic contact lens fitting, ocular prosthesis

UNIT-IV **15 Hours**

Legal issues and contact lenses
Legal issues related to surgical procedures of inserting contact lenses

Transactional modes: Video based teaching, Collaborative teaching, Case based teaching, Question-Answer.

Suggested readings:

- IACLE Modules- 1- 10
- Contact Lens Practice- Nathan Efron. Elsevier Sciences. Third Edition.
- Contact Lenses- Philips Stone
- Fitting guide for Rigid & soft contact lens: A practical Approach: Slatt & Stein

Course Title: Dissertation I	L	T	P	Cr.
Course Code: MOP3503	0	0	24	12

Total Hours 180

Learning Outcomes: On completion of this course, the successful students will be able to:

1. Demonstrate an understanding of research methodologies used in radiology and imaging technology, including qualitative and quantitative research methods, study designs, and data collection techniques.
2. Conduct a comprehensive literature review on a relevant research topic in radiology and imaging technology, synthesizing current knowledge and identifying gaps or areas requiring further research.
3. Develop a well-structured research proposal, including a clear statement of the research problem, objectives, hypotheses, and methodologies.
4. Understand and apply ethical principles in research, including obtaining informed consent, ensuring patient confidentiality, and following ethical guidelines for research involving human subjects or animal models.
5. Apply principles of research ethics by obtaining necessary approvals and understanding confidentiality, informed consent, and data protection.

Course Content

Dissertation (Phase) I will include Synopsis approval from Doctoral Advisory Committee (DAC) will be taken by the student and after that it will send to Institutional Research Committee (IRC), followed by Institutional Ethical Committee (IEC) for final approval.

Course Title: Project II	L	T	P	Cr.
Course Code: MOP3504	0	0	4	2

Total Hours 30

Learning Outcomes: On completion of this course, the successful students will be able to:

1. Analyze complex research data using appropriate statistical tools and techniques, ensuring accurate interpretation of the findings.
2. Demonstrate advanced skills in conducting research within radiology and imaging technology, including refining research methods and overcoming challenges that arose during Project I.
3. Demonstrate proficiency in scientific writing, ensuring clarity, conciseness, and logical flow of ideas, with proper referencing and adherence to ethical writing standards.
4. Ensure that the research adheres to ethical standards, including respect for participant confidentiality, informed consent, and compliance with regulations governing human subjects or animal research.
5. Demonstrate in-depth understanding of the selected radiological topic, including relevant anatomy, pathology, and imaging principles.

List of Project II **30 Hours**

1. **Ocular Prosthetics:** The use of 3D printing technology for creating custom-fit ocular prostheses.
2. **Sports Vision:** An analysis of visual skills (e.g., dynamic visual acuity, peripheral awareness) and their relationship to athletic performance in a specific sport.
3. **Geriatric Optometry:** The impact of visual impairment on the risk of falls and quality of life in elderly patients.
4. **Tele-Optometry:** Evaluating the accuracy and patient satisfaction of remote eye examinations for managing stable chronic conditions like glaucoma and diabetic retinopathy.
5. **Refractive Surgery Outcomes:** A retrospective study on the long-term visual outcomes and patient satisfaction following LASIK surgery.
6. **Environmental Optometry:** The effects of different types of lighting (e.g., LED, fluorescent) on visual fatigue and color perception.
7. **Ocular Genetics:** Investigating the genetic markers associated with familial primary open-angle glaucoma.
8. **Nutritional Optometry:** A study on the role of specific dietary supplements (e.g., Lutein, Zeaxanthin, Omega-3s) in preventing or slowing the progression of ARMD.

9. **Artificial Intelligence in Optometry:** Developing an AI model for the automated classification of optic disc morphology to aid in glaucoma screening.
10. **Pediatric Dispensing:** A survey on the challenges and solutions for dispensing spectacles to children with special needs.
11. **Occupational Optometry:** A study on the visual demands and ergonomic considerations for professions with intensive computer use.
12. **Eye Care in Underserved Populations:** Establishing and evaluating a sustainable eye care delivery model for a refugee community.

4th Semester

Course Title: RECENT ADVANCEMENTS IN OPTOMETRY	L	T	P	Cr.
Course Code: MOP4550	4	0	0	4

Total Hours 60

Learning Outcomes: On completion of this course, the successful students will be able to:

1. Know latest advancements in the field of optometry.
2. Understand how to use special types of contact lens
3. Explain the importance of standards and regulations, and the principles of Evidence-Based Medicine (EBM).
4. Understand the Indications of these special types of contact lens
5. Understand the concepts and applications of imaging informatics and telemedicine in healthcare

Course Contents

UNIT-I **15 Hours**

Orthokeratology lenses, Rose k lenses

UNIT-II **15 Hours**

Keratoprosthesis

UNIT-III **15 Hours**

Amblyopic therapies, LVA, Lazy glasses for paralysis patients

UNIT-IV **15 Hours**

Latest articles published in Optometry and vision science journals will be discussed.

Transactional modes: Video based teaching, Collaborative teaching, Case based teaching, Question-Answer.

Suggested readings:

- ICALE Module, A k Jain, Monica choudhary (optics and refraction)
- Recent research papers.

Course Title: VISION THERAPY	L	T	P	Cr.
Course Code: MOP4551	4	0	0	4

Total Hours 60

Learning Outcomes: On completion of this course, the successful students will be able to:

1. Apply the concepts to classify different types of strabismus
2. Apply the concepts to diagnosed the different neurological disorder leading to the visual disorder
3. Apply the appropriate method to diagnosed the visual disorders
4. Achieve knowledge about the vision therapy in various disorders and misalignments in eyes.
5. Apply the concept for proper management of visual disorders

Course Contents

Unit-I **15 Hours**

Clinical Conditions; Strabismus and Amblyopia; Anisometropic / Isometropic, Refractive Amblyopia, Strabismic Amblyopia Hysterical Amblyopia, Form Deprivation Amblyopia; Differential diagnoses in childhood visual acuity loss; Strabismus, Esotropia- Infantile, Accommodative, Acquired, Microtropia, Sensory Convergence Excess, Divergence Insufficiency, Non-accommodative, Sensory Adaptations

Unit-II **15 Hours**

Exotropia: Divergence Excess, Convergence Insufficiency, Basic Exotropia, Congenital, Sensory, Vertical Deviations, Non comitant Deviations (AV Syndrome; Duane's Retraction Syndrome; Brown's Syndrome; III, IV, VI nerve palsy,etc.) Differential diagnoses in strabismus Special clinical considerations, Anomalous Correspondence, Eccentric Fixation, Suppression, Motor Ranges, Stereopsis, Horror fusionalis /intractable diplopia

Unit-III **15 Hours**

Perception and Information Processing, Neurological /Psychological Ambient / focal systems, Visual perceptual midline, Parvo cellular / Magno cellular function, Perceptual Style (central, peripheral), Impact of colored filters, Attention, Intersensory and Sensorimotor Integration, Visual-auditory, Visual-vestibular, Visual-oral, Visual-motor, Visual-tactual, Performance indicators, Laterality and directionality, Visual requirements for academic success, Bilaterality, Gross and fine motor ability, Form perception/visual analysis, Spatial awareness, Visualization, Visual memory, Visual sequential memory, Form constancy, Visual speed and visual span, Visual sequencing

Refractive conditions and visual skills, Refractive Conditions, Developmental influence on refraction & emmetropization, Aniseikonia, Myopia, Astigmatism, Hyperopia, Ocular Motor Function, Eye movements and reading, Pursuit dysfunctions, Nystagmus, Saccadic Dysfunctions, Accommodation, Role in myopia development, Role in computer-related asthenopia, Fusion in Non-Strabismic Conditions, Fixation disparity, Motor fusion, Sensory fusion

Unit-IV **15 Hours**

Special clinical conditions, Acquired brain injury (traumatic brain injury {TBI} and stroke), Developmental disabilities (Down Syndrome, Developmental delay, etc.), Visually induced balance disorders, Motor disabilities (Cerebral Palsy, ataxia, etc.), Behavioral disorders, Autism spectrum disorders, ADD /ADHD ,Autism, Dyslexia and specific reading disabilities, Learning Disabilities, Computer Vision Syndrome, Vision Therapy Concepts to Consider, Peripheral awareness: focal / ambient roles, Significant findings which are good or poor prognostic indicators of vision therapy and lens application, Development, rehabilitation, prevention, enhancement, Behavioral lens application, Yoked prism rationale for treatment and application, The relationship between the visual and vestibular systems, SILO/SOLI, Visual stress and its impact on the visual system, Role of posture in vision development, comfort and performance, Disruptive therapy: Discuss this type of therapy and how it can be used as a clinical therapeutic tool., Relationship of speech-auditory to vision, How television, reading, video gaming might restrict movement, computer work, nutrition, etc., impact vision?, Perceptual Style, e.g., spatial/temporal, central/peripheral

Transaction Modes: Video based teaching, Collaborative teaching, Case based teaching, Question-Answer

Suggested Readings

- Clinical management of binocular vision Mitchell Scheiman and Bruce Wick
- Applied concepts in vision therapy: Leonard Press
- Pediatric optometry: Jerome K Rosner

Course Title: Dissertation II	L	T	P	Cr.
Course Code: MOP4552	0	0	24	12

Total Hours 180

Learning Outcomes: On completion of this course, the successful students will be able to:

1. Utilize advanced research methods and tools to analyze and interpret complex data, showing an understanding of the latest developments and trends in the field.
2. Synthesize and integrate findings from primary research with existing literature to provide a coherent discussion on the topic.
3. Structure the dissertation in a logical manner, including introduction, literature review, research methodology, results, discussion, conclusion, and recommendations.
4. Adhere to ethical guidelines in the execution and reporting of research, ensuring that research involving human subjects or clinical data complies with ethical standards (e.g., informed consent, confidentiality, data protection).
5. Demonstrate academic writing skills appropriate for scholarly work, including correct referencing and adherence to academic integrity standards.

Course Content

Dissertation (Phase) II - Dissertation will be evaluated for **300 marks** on the parameter laid down in the proforma for the evaluation in which the students will give a presentation on the dissertation and an open viva-exam examination will be conducted by the external examiner. Student will submit three hard copies of her/his dissertation along with soft copy as PDF file to the Department and 1 Review & Research paper based on his/her research work.

Course Title: BUSINESS AND CLINICAL ASECTS IN OPTOMETRY	L	T	P	Cr.
Course Code: MOP4553	2	0	0	2

Total Hours 30

Learning Outcomes: On completion of this course, the successful students will be able to:

1. To develop employability skills required for a successful career in Optometry.
2. To equip students with entrepreneurship skills for setting up and managing practice of Optometry and biotech startups.
3. Understanding financial management in clinical as well optical set up
4. Identifying potential target markets
5. Identify and evaluate career pathways within clinical optometry.

Course Contents

Unit-I **10 Hours**

The Legal Environment
Taxation and Insurance

Unit-II **5 Hours**

Planning
Marketing

Unit-III **10 Hours**

Management Theory
Management of medical record system(Needs and importance)

Unit-IV **5 Hours**

Prescription format (General clinics and specialty clinics)
Set- up of an optometry clinic with and without optical outlet.

Transaction Modes: Video based teaching, Collaborative teaching, Case based teaching, Question-Answer

Suggested Readings

- *"The 7 Habits of Highly Effective People" by Stephen R. Covey*
- *"Crucial Conversations: Tools for Talking When Stakes Are High" by Kerry Patterson, Joseph Grenny, Ron McMillan, Al Switzler*
- *"The Power of Habit: Why We Do What We Do in Life and Business" by Charles Duhigg*
- *"The Hard Thing About Hard Things: Building a Business When There Are No Easy Answers" by Ben Horowitz*

- *"Good to Great: Why Some Companies Make the Leap... and Others Don't" by Jim Collins*
- *"Grit: The Power of Passion and Perseverance" by Angela Duckworth*

Course Title: OCCUPATIONAL OPTOMETRY (ELECTIVE)	L	T	P	Cr.
Course Code: MPH4554	4	0	0	4

Total Hours 60

Learning Outcomes: On completion of this course, the successful students will be able to:

1. In visual requirements of jobs
2. In effects of physical, chemical and other hazards on eye and vision;
3. To identify occupational causes of vision and eye problems;
4. To be able to prescribe suitable corrective lenses and eye-protective wear and
5. To set visual requirements, standards for different jobs.

Course Contents

Unit-I **15 Hours**

Introduction to Occupational health, hygiene and safety, international bodies like ILO, WHO, National bodies etc.
Acts and Rules - Factories Act, WCA, ESI Act

Unit-II **15 Hours**

Electromagnetic Radiation and its effects on Eye
Light – Definitions and units, Sources, advantages and disadvantages, standards colour – Definition, Colour theory, colour coding, colour defects, colour Vision tests

Unit-III **15 Hours**

Occupational hazards and preventive/protective methods
Task Analysis
Industrial Vision Screening – Modified clinical method and Industrial Vision test
Vision Standards – Railways, Roadways, Airlines

Unit-IV **15 Hours**

Occupational ocular Problems, Occupational hazards: Mechanical, chemical and radiations Occupational ocular problems in sports, driving, agriculture and industries, and their management

Transaction Modes: Video based teaching, Collaborative teaching, Case based teaching, Question-Answer

Suggested Readings

- R V North: Work and the eye, Second edition, Butterworth Heinemann, 2001 Sports Vision – D.F.C. Loran, C.J. Mac Eween, Butterworth Heinemann.
- G Carson, S Doshi, W Harvey: Eye Essentials: Environmental & Occupational Optometry, Butterworth-Heinemann, 2008.

Course Title: NEURO OPTOMETRY (ELECTIVE)	L	T	P	Cr.
Course Code: MOP4555	4	0	0	4

Total Hours 60

Learning Outcomes: On completion of this course, the successful students will be able to:

1. Perform and interpret a comprehensive neuro-ophthalmic examination.
2. Demonstrate a deep understanding of the anatomy and physiology of the central nervous system as it relates to vision.
3. Proficient in recognizing signs and symptoms that require immediate referral to other healthcare specialists, such as neurologists, neuro-radiologists, or neuro-ophthalmologists.
4. Design and implement a tailored vision rehabilitation plan for patients with visual dysfunction resulting from acquired brain injuries (e.g., stroke, traumatic brain injury) or other neurological conditions.
5. Critically evaluate and apply current scientific literature and research findings in the field of neuro-optometry.

Course Contents

Unit-I **15 Hours**

1. Pupils 2. CN III disorders 3. CN II disorders 4. CN IV disorders

Unit-II **15 Hours**

5. CN V disorders 6. CN VI disorders 7. Papilledema 8. AAION

Unit-III **15 Hours**

9. CVD – CAD 10. Migraine 11. NAION 12. Optic neuritis

Unit-IV **15 Hours**

13. Neuro imaging 14. Nystagmus 15. Brainstem motility 16. Myasthenia

Transaction Modes: Video based teaching, Collaborative teaching, Case based teaching, Question-Answer

Suggested Readings

- Jack J. Kanski Clinical Ophthalmology: A Systematic Approach, 8th edition, Butterworth - Heinemann
- Stephen J. Miller : Parsons Diseases of the Eye, 18th edition, Churchill Livingstone,