

GURU KASHI UNIVERSITY



Master of Optometry (MOP)

Session: 2026-27

Faculty of Allied & Healthcare

Graduate Attributes of the Program:

Master of Optometry (MOP) program are expected to develop highly skilled, competent, and ethically responsible eye care professionals who can contribute effectively to clinical practice, research, and community eye health. Graduates of this program are expected to possess advanced knowledge of ocular anatomy, physiology, pathology, and modern diagnostic and therapeutic techniques in optometry. They should demonstrate strong clinical reasoning and decision-making skills in the assessment, diagnosis, and management of a wide range of visual and ocular conditions. The program also aims to cultivate proficiency in the use of advanced ophthalmic instruments and technologies, along with the ability to interpret clinical findings accurately.

The objectives of the program are to:

- To provide advanced knowledge in ocular anatomy, physiology, pathology, pharmacology, and vision science.
- To develop clinical competence in the examination, diagnosis, and management of visual and ocular disorders.
- To train students in the use of modern optometric instruments and advanced diagnostic techniques.
- To enhance skills in contact lens practice, binocular vision assessment, low vision care, and rehabilitation.
- To promote evidence-based practice through critical appraisal and application of current research.
- To develop research aptitude, including study design, data analysis, and scientific writing.
- To strengthen clinical decision-making and problem-solving abilities in diverse patient care settings.
- To improve communication skills for effective patient counseling and interdisciplinary collaboration.
- To instill professional ethics, responsibility, and adherence to legal and regulatory standards in healthcare.
- To prepare graduates for roles in academics, clinical practice, research, and leadership in optometry.

Element of the Descriptor	Program learning outcomes relating to Master's Degree
The graduates should be able to demonstrate the acquisition of:	
Knowledge and understanding	Advanced understanding of visual optics, refraction, and optical instruments
	Comprehensive knowledge of ocular diseases, diagnosis, and management

	Understanding of contact lens practice and low vision rehabilitation
	Knowledge of clinical optometry procedures and patient evaluation techniques
	Understanding of public health optometry and community eye care
	Familiarity with research methodology, biostatistics, and evidence-based practice
	Awareness of ethical, legal, and professional standards in optometry
General, technical and professional skills required to perform and accomplish tasks	Skills in diagnostic procedures such as slit lamp examination, tonometry, and visual field analysis
	Competence in contact lens fitting and management
	Ability to identify and manage ocular abnormalities and diseases
	Skills in low vision assessment and rehabilitation
	Competence in handling modern ophthalmic instruments and equipment
	Ability to maintain clinical records and documentation
	Development of communication and patient counseling skills
	Ability to work effectively in clinical and interdisciplinary healthcare teams
	Skills in research design, data collection, analysis, and interpretation
	Proficiency in objective and subjective refraction techniques
Application of knowledge and skills	Apply theoretical knowledge in clinical diagnosis and patient management
	Provide evidence-based optometric care in hospital and community settings
	Conduct and interpret diagnostic tests for visual and ocular disorders
	Implement preventive and promotive eye care programs
	Apply knowledge in contact lens practice and vision therapy
	Utilize research skills to conduct independent studies and clinical audits
	Integrate clinical findings to make appropriate referrals to ophthalmologists

	Practice ethical and professional standards in patient care
	Contribute to community eye health services and awareness programs
	Adapt clinical skills to emerging technologies and advancements in optometry
Generic learning outcomes	Demonstrate effective communication with patients and healthcare teams
	Perform independent research and data analysis
	Enhance critical thinking and problem-solving abilities
	Apply evidence-based practice in patient care
	Refraction, diagnosis, and management of ocular conditions
	Ocular anatomy, physiology, and pathology
	Clinical optometry and visual sciences
Constitutional, humanistic, ethical, and moral values	Practice in accordance with professional ethics and standards
	Respect patient dignity, confidentiality, and rights
	Deliver patient-centered and compassionate care
	Promote equality and non-discrimination in healthcare delivery
	Uphold values of integrity, honesty, and accountability
	Contribute to community health and social responsibility
Employability and job-ready skills, and entrepreneurship skills and capabilities/qualities and mindset	Clinical examination and diagnostic procedures
	Use of advanced optometric instruments
	Patient management and clinical decision-making
	Communication and interpersonal interaction
	Documentation and record keeping
	Adapt to multidisciplinary healthcare environments
	Prepare for roles in: Hospitals; Eye care centers; Academic institutions; Research organizations

Credit requirements	Total credits required for programme completion: 102.5 credits
	Credit Distribution (Semester-wise) • Semester 1: 24.5 credits • Semester 2: 22 credits • Semester 3: 28 credits • Semester 4: 28 credits
	Each semester consists of 15 weeks • 1 credit = 15 lecture hours per semester • 3 credits = 45 lecture hours per semester • 0.5 credit = 15 practical/laboratory hours
Entry requirements	Candidates must have passed Higher Secondary Examina Candidate must have: • Bachelor of Optometry (B.Optom) or equivalent degree • Degree must be from a recognized university/institution Minimum academic requirement: • 5.5 CGPA or equivalent grade Candidate should have: • Basic knowledge of ocular sciences • Fundamental clinical optometry skill stion (10+2) or equivalent from a recognized board/university.

SEMESTER: 1st											
S.No.	Course Code	Course Title	L	T	P	No. of Credits	Internal Examination		External Examination		Total Marks
							Theory	Practical	Theory	Practical	
1.	MOPT101	Applied ocular biology	3	0	0	3	30	-	70	-	100
2.	MOPT102	Advanced Ocular Diagnostics & Management	3	0	0	3	30	-	70	-	100
3.	MOPT103	Research Methodology and Biostatistics	2	0	0	2	30	-	70	-	100
4.	MOPT104	Intellectual property rights #	2	0	0	2	100	-	-	-	100
5.	MOPT105	Research Project-1 #	3	0	0	3	50	-	-	-	50
6.	MOPT106	Digital pedagogy and learning management #	1	0	0.5	1.5	100	-	-	-	100
7.	MOPT107	General Clinics 1	0	0	4	4	-	30	-	70	100
8.	MOPT108	Specialty Optometry Clinics 1	0	0	4	4	-	30	-	70	100
9.	MOP109	Community Outreach 1	0	0	2	2	-	30	-	70	100
	Grand Total		14	0	10.5	24.5	340	90	210	210	850

NOTE: Distribution of marks for Internal and External assessments will be based on the credit distribution of the theory and practical for the courses. For eg. If a course has 3 credits for Lecture and 0.5 credits for Practicals, 25 marks for theory and 5 marks for practical will be considered for internal assessments out of the 30 marks. Similar ratios will be followed for External assessments.

SEMESTER: 2nd											
S.No.	Course Code	Course Title	L	T	P	No. of Credits	Internal Examination		External Examination		Total Marks
							Theory	Practical	Theory	Practical	
1.	MOPT201	Specialized clinical optometry- CL-1	2	0	0	2	30	-	70	-	100
2.	MOPT202	Specialized clinical optometry-LVC	2	0	0	2	30	-	70	-	100
Elective Course (Choose any one)											
3.	MOPT203	Low Vision Rehabilitation and Assistive Technology (Elective 1) #	2	0	0	2	100	-	-	-	100
4.	MOPT204	Advanced Contact Lens Practice (Elective 1) #									
5.	MOPT205	Research Project-2 #	4	0	0	4	50	-	-	-	50
6.	MOPT206	General Clinics 2	0	0	6	6	-	30	-	70	100
7.	MOPT207	Specialty Optometry Clinics-2	0	0	4	4	-	30	-	70	100
8.	MOPT208	Community Outreach-2	0	0	2	2	-	30	-	70	100
		Grand Total	10	0	12	22	210	90	140	210	650

SEMESTER: 3rd											
S.No.	Course Code	Course Title	L	T	P	No. of Credits	Internal Examination		External Examination		Total Marks
							Theory	Practical	Theory	Practical	
1.	MOPT301	Specialized clinical optometry- CL 2	2	0	0	2	30	-	70	-	100
2.	MOPT302	Specialized clinical optometry- BV	2	0	0	2	30	-	70	-	100
3.	MOPT303	Specialized clinical optometry Rehabilitation	2	0	0	2	30	-	70	-	100
Elective Course (Choose any one)											
4.	MOPT304	Ocular Imaging and Advanced Diagnostic Techniques (Elective 2) #	2	0	0	2	100	-	-	-	100
5.	MOPT305	Pediatric Optometry and Vision Development (Elective 2) #									
6.	MOPT306	Scientific communication #	2	0	0	2	100	-	-	-	100
7.	MOPT307	Research Project-3	4	0	0	4	30	-	70	-	100
8.	MOPT308	General Clinics 3	0	0	6	6	-	30	-	70	100
9.	MOPT309	Specialty Optometry Clinics-3	0	0	6	6	-	30	-	70	100
10.	MOPT310	Community Outreach-3	0	0	2	2	-	30	-	70	100
	Grand Total		14	0	14	28	320	90	270	210	900

SEMESTER: 4th											
S.No.	Course Code	Course Title	L	T	P	No. of Credits	Internal Examination		External Examination		Total Marks
							Theory	Practical	Theory	Practical	
1.	MOPT401	Specialized Clinical Optometry Vision Therapy, Neuro Optometry	2	0	0	2	30	-	70	-	100
Elective Course (Choose any one)											
2.	MOPT402	Advanced Binocular Vision and Vision Therapy (Elective 3) #	2	0	0	2	100	-	-	-	100
3.	MOPT403	Ocular Disease Management and Clinical Optometry (Elective 3) #									
4.	MOPT404	Research Project 4	6	0	0	6	30	-	70	-	100
5.	MOPT405	General Clinics 4	0	0	8	8	-	30	-	70	100
6.	MOPT406	Specialty Optometry Clinics 4	0	0	8	8	-	30	-	70	100
7.	MOPT407	Community Outreach 4	0	0	2	2	-	30	-	70	100
	Grand Total		10	0	18	28	160	90	140	210	600

1ST SEMESTER

Course Title: Applied Ocular Biology	L	T	P	Cr.
Course Code: MOPT101	3	0	0	3

Total Hours 45 hrs**Course Outcomes:** At the end of the course students will be able to...

1. Explain ocular anatomy, and physiology of visual system relevant to eye and vision care
2. Demonstrate an understanding of genetics, microbial infections of the eye and ocular pathology relevant to ocular science
3. Gain knowledge about cell biology and ocular biochemistry, immunology, the basics of pharmacology and ocular pharmacology relevant to ocular science.

COURSE CONTENTS**UNIT-I****15 Hours**

Anatomy of Eye and Orbit: Osteology of orbit, Orbital contents Extra Ocular Muscles- Blood vessels of the orbit – Cranial Nerves associated with eye and orbit –Ocular Adnexa – Muscle of eye lids and adjacent face - Anatomy of the visual pathway. Physiology of Vision and the Visual System: Light detection and Dark adaptation – Visual acuity and contrast Sensitivity – Clinical Visual Electrophysiology – Color vision – Monocular versus Binocular vision – Ocular movement: Physiology – Psychophysical basis for clinical tests

UNIT-II**15 Hours**

Genetics: Chromosome and Cell division –Molecular genetics– Clinical Genetics –Population genetics–Gene cell differentiations and Cell based therapy: Molecular genetics and ophthalmology Microbial Infections of the Eye: Introduction: Microbes in the environment - Host defense at the ocular surface: Physical barriers – Adaptive immunity to microbial infection – Ocular infections worldwide: viral, Bacterial, fungal, protozoan infections of the eye – Ocular infections in developing countries.

Pathology: Introduction – Cell and Tissue damage, Mechanism of cell death – Inflammation –Neoplasia – Hamartomas – Choristomas – Teratoma –Tumors

UNIT-III**15 Hours**

Biochemistry: Biochemistry of the ocular surface, tear film, lacrimal gland sections, mucus layer, the conjunctiva, the lids, cornea and sclera, uveal tract- Inborn errors of metabolism and the eye, Metabolic diseases

General and Ocular Pharmacology: Introduction - Pharmacokinetics- Pharmacodynamics -Mechanism of ocular drug absorptions -Routes of administration - Delivery methods - Drug Vehicles - Advanced ocular delivery systems - Ocular toxicity from systemic administrations of drugs

Immunology: Innate and Acquired immunity - Initial response of the host to injury - Acute and Chronic Inflammation - Development of adaptive immunity and immunological memory - Organization of immune system - Antigen recognition - T cell activation - The eye and the immune system

TRANSACTIONAL MODES

Lecture; Tutorial; Problem based learning; Small group teaching and learning; Continuous interactive learning; Case-based; Project based; Seminars; Clinical conferences; E-learning; Skills laboratory; Industrial visit

SUGGESTED READINGS

- J. V. Forrester, A. D. Dick, P. G. Mcmenamin, Fiona Roberts, Eric Pearlman, *The Eye: Basic Science in Practice*, 4/e., Elsevier. 2016

Course Title: Advanced Ocular Diagnostics & Management	L	T	P	Cr.
Course Code: MOPT102	3	0	0	3

Total Hours 45 hrs

Course Outcomes: At the end of the course students will be able to...

1. Interpret the findings for diagnostics of ocular diagnostics
2. Demonstrate an understanding on management options for ocular diseases
3. Gain knowledge about management options for ocular diseases

COURSE CONTENTS

UNIT-I

10 Hours

Ocular photography: External, Anterior (Slit lamp and Gonio photography), Posterior (Fundus Photography, Fundus Autofluorescence, Fundus Fluorescein Angiography, Indocyanine Green Angiography)

Ultrasonography: (Ultrasound biomicroscopy, A-scan ultrasonography, B-scan ultrasonography, Pachymetry)

Ocular Surface: (Meibography, Keratography, Corneal Biomechanics)

UNIT-II

10 Hours

Anterior Segment Diagnostics: Confocal Microscopy, Specular microscopy, Corneal Topography, Corneal Tomography, Anterior Segment Optical Coherence Tomography, Pentacam, Aberrometry

UNIT-III

10 Hours

Posterior Segment Diagnostics: Posterior Segment Optical Coherence Tomography (Spectral Domain OCT, Swept Source OCT, OCT Angiography), Ocular Electrodiagnostics (ERG, MfERG, VEP, EOG), Dark Adaptometry

UNIT-IV

15 Hours

Clinical management of ocular conditions: Overview of drugs used in treatment of ocular disease, Overview of laser and surgical interventions for

ocular disease, Vertical Integration of all treatment options of ocular disease with special emphasis on optometric management

TRANSACTIONAL MODES

Lecture; Tutorial; Problem based learning; Small group teaching and learning; Continuous interactive learning; Case-based; Project based; Seminars; Clinical conferences; E-learning; Skills laboratory; Industrial visit

SUGGESTED READINGS

- *Nicholas R Galloway, Common Eye Diseases and their management 3rd Edition.*
- *Amar Agarwal. (2011) Diagnostic and Imaging techniques in Ophthalmology.*

Course Title: Research Methodology and Biostatistics	L	T	P	Cr.
Course Code: MOPT103	2	0	0	2

Total Hours 30 hrs

Course Outcomes: At the end of the course students will be able to...

1. Apply the basic concepts in research
2. Choose appropriate study designs based on the research question
3. Use statistical tools to test for normality, pair-wise, and multiple comparisons, correlations and non-parametric tests
4. Apply and demonstrate Regression analysis
5. Utilise the concepts on qualitative research and analyse questionnaire development

COURSE CONTENTS

UNIT-I

7 Hours

Introduction to research methods, research strategies, Clinical study designs, sampling methods and sample size, tests for significance, association and causation. Ethics in research, Critical review of literature and consolidation, writing a research question, Planning and implementing a research project, Data handling

UNIT-II

8 Hours

Sampling and sample size, Sampling distributions: t, chi-square, F distributions; Hypothesis testing: null and alternative hypotheses, decision criteria, critical values, type I and type II errors, Meaning of statistical significance; Power of a test; One sample hypothesis testing: Normally distributed data: z, t and chi-square tests; Binomial proportion testing. Tests for normality, comparison of 2 means, comparison of proportions – demonstration with statistical tools.

UNIT-III

8 Hours

Two sample hypothesis testing; Nonparametric methods: signed rank test, rank sum test; Kruskal-Wallis test; Analysis of variance. Comparison of multiple groups, ANOVA, multivariate modelling, Correlation - demonstration with statistical tools, Non-parametric tests, Mann-Whitney test, Kruskal

Wallis, Friedman, Wilcoxon signed rank test - demonstration with statistical tools

UNIT-IV

7 Hours

Confounding and Bias, Regression – simple linear, logistic regression, multiple regression – demonstration with statistical tools. Qualitative research and questionnaire development.

TRANSACTIONAL MODES

Lecture; Tutorial; Problem based learning; Small group teaching and learning; Continuous interactive learning; Case-based; Project based; Seminars; Clinical conferences; E-learning; Skills laboratory; Industrial visit

SUGGESTED READINGS

- *Research methodology: methods and techniques (C R Kothari), New age international publishers*
- *W. W. Daniel, C. L. Cross. Biostatistics: A Foundation for Analysis in the Health Science, 10/e., Wiley, 2013*
- *B. Rosner. Fundamentals of Biostatistics, 7/e, Duxbury Resource Center, 2010.*
- *R. F. Woolson, W. R. Clarke. Statistical Methods for the Analysis of Biomedical Data 2/e., John Wiley, New Jersey 2011.*

Course Title: Intellectual property rights #	L	T	P	Cr.
Course Code: MOPT104	2	0	0	2

Total Hours 30 hrs

Course Outcomes: At the end of the course students will be able to...

1. Analyse various aspects of copyrights and geographical indications
2. Analyse various aspects of patents and Infer aspects of industrial designs
3. Examine various aspects of trademark, and apply the knowledge about the enforcement of intellectual property rights

COURSE CONTENTS

UNIT-I

10 Hours

COPYRIGHT: What is copyright? What is covered by copyright? How long does copyright last? Why protect copyright? **RELATED RIGHTS:** What are related rights?, Distinction between related rights and copyright?, Rights covered by copyright?

GEOGRAPHICAL INDICATIONS: What is a geographical indication? How is a geographical indication protected? Why protect geographical indications?

UNIT-II

10 Hours

PATENTS: Patent and kind of inventions protected by a patent, Patent document, How to protect your inventions? Granting of patent, Rights of a patent, How extensive is patent protection?, Drafting and Filing of a patent.

INDUSTRIAL DESIGNS: What is an industrial design? How can industrial designs be protected? What kind of protection is provided by industrial designs? How long does the protection last? Why protect industrial designs?
INDUSTRIAL DESIGNS: What is an industrial design? How can industrial designs be protected? What kind of protection is provided by industrial designs? How long does the protection last? Why protect industrial designs?

UNIT-III

10 Hours

TRADEMARKS: What is a trademark? Rights of trademark?, What kind of signs can be used as trademarks?, How is a trademark protected?, How is a

trademark registered?, How long is a registered trademark protected for?
Trade secrets and know-how agreements.

ENFORCEMENT OF INTELLECTUAL PROPERTY RIGHTS: Infringement of intellectual property rights, Enforcement Measures

TRANSACTIONAL MODES

Lecture; Tutorial; Problem based learning; Small group teaching and learning; Continuous interactive learning; Case-based; Project based; Seminars; Clinical conferences; E-learning; Skills laboratory; Industrial visit

SUGGESTED READINGS

- *T. M. Murray, M. J. Mehlman. Encyclopedia of Ethical, Legal and Policy Issues in Biotechnology, Vol 2, John Wiley & Sons, 2010.*
- *P. N. Cheremisinoff, R. P. Ouellette, R. M. Bartholomew, Biotechnology Applications and Research, Technomic Publishing Co., Inc. 1985.*
- *D. Balasubramaniam, C. F. A. Bryce, K. Dharmalingam, J. Green, K. Jayaraman, Concepts in Biotechnology, 3/e University Press. 2004.*
- *B. David, T. R. Jewell, R. G. Buiser, Biotechnology: Demystifying the Concepts 1/e., Wesley Longman, USA, 2000.*
- *Parulekar, S. D'Souza, Indian Patents Law – Legal & Business Implications, Macmillan India Ltd. 2006.*
- *L. Wadehra. Law Relating to Patents, Trademarks, Copyright, Designs & Geographical Indications, Universal law Publishing Pvt. Ltd., 2000.*
- *P. Narayanan, Law of Copyright and Industrial Designs, 4/e., Eastern law House, Delhi. 2010.*

Course Title: Research Project-1 #	L	T	P	Cr.
Course Code: MOPT105	3	0	0	3

Total Hours 45 hrs

Course Outcomes: At the end of the course students will be able to...

1. Critically review and summarize literature
2. Propose a work plan
3. Arrange for obtaining approvals from the IRB and Ethics committee

Course Title: Digital pedagogy and learning management #	L	T	P	Cr.
Course Code: MOPT106	1	0	0.5	1.5

Total Hours 15 hrs

Course Outcomes: At the end of the course students will be able to...

1. Demonstrate and understand the various learning techniques
2. Compare various teaching methods, Review teaching methods and feedback techniques.
3. Appreciate the potentials of instructional multimedia

COURSE CONTENTS

UNIT-I

4 Hours

Curriculum: Types of curricula- subject centered, learner centered curriculum, problem-based curriculum, competency/ outcome based curriculum and its importance

Learning and changing behaviour: Learning: nature, characteristics of learning -Theories of learning: classical and operant conditioning. System's Approach, Principles of adult learning, Learning process

Learning taxonomy- Bloom's taxonomy for cognitive domain, Krathwohl's affective domain taxonomy, Dave's Taxonomy for skill domain

Learning objectives: Program objectives, course and unit objectives, framework the learning objectives, SMART objectives, horizontal and vertical integration of objectives.

UNIT-II

5 Hours

Types of learners: Visual, auditory, Readers and kinaesthetic learners.

Designing of teaching learning activities- Use the system's approach for instructional design, Learner centric system, developing a lesson plan and material for using active learning methods for a course.

Teaching learning methods such as: a. Didactic lectures, b. Small group teaching methods, c. Large group teaching methods, d. Case based and problem-based learning, e. Simulations, f. Team based learning, g. Flipped

classroom, h. Use of technology/ multimedia in teaching, i. Bed side / chair side teaching, clinical rotations, j. Reflective practice, k. Inter-professional education, l. Skill development, m. Project based learning, n. Self-directed learning (SDL)

UNIT-III

6 Hours

Assessment in higher education: Principles of assessment, planning for assessment, summative and formative assessments, performance indicators, various assessment tools such as: a. Long answer questions, b. Short answer questions, c. Multiple choice questions, d. Objective Structured Clinical Examination (OSCE), e. Objective Structured practical Examination (OSPE), f. Direct Observation of Procedural Skills (DOPS), g. Mini-Clinical Evaluation Exercise (Mini-CEX), h. Long Case Examination, i. Portfolios, j. Assignments-written/ oral, k. Self-assessment and peer assessment.

Assessment reports and feedback: types of feedbacks, importance, reflective practice

Evidence based teaching.

ICT: Definition, Meaning, Scope, Trends and significance in the context of Education, ICT for Effective Teaching and Learning, ICT in classroom, ICT for Professional Development.

Role of AIR in Education, Gyanvani, Countrywide Classroom, EDUSAT: Implications, ETV, Network. Evaluation of multimedia learning materials.

SUGGESTED PRACTICAL'S / DEMONSTRATION (15 hours)

1. Frame the learning objectives course/program
2. Design an instructional module for given learning objective
3. Deliver teaching session using active learning methods
4. Mentor the undergraduates to develop their knowledge and clinical skills
5. Design a feedback questionnaire, collect and analyse the feedback for teaching conducted in classroom/clinics

TRANSACTIONAL MODES

Lecture; Tutorial; Problem based learning; Small group teaching and learning; Continuous interactive learning; Case-based; Project based; Seminars; Clinical conferences; E-learning; Skills laboratory; Industrial visit

SUGGESTED READINGS

- *J. A. Dent, R. M. Harden, A Practical Guide for Medical Teachers, 3/e., Churchill Livingstone, 2009.*
- *T. M. Srinivasan, Use of Computers and Multimedia in Education. Horton, 2002.*
- *M. D. Williams, Integrating Technology into Teaching and Learning: Concepts and Applications, Prentice Hall, 2000.*
- *S. K. Mangal, Advanced educational psychology PHI Learning private Ltd., 2006*

Course Title: General Clinics 1	L	T	P	Cr.
Course Code: MOPT107	0	0	4	4

Total Hours 120 hrs

Course Outcomes: At the end of the course students will be able to...

1. Appreciate the diversities pertaining to the ocular problems among patients presenting to the hospital
2. Handle the patients with their applied knowledge

POSTING

1. General OPD/ Emergency
2. Glaucoma OPD
3. Neuro OPD
4. Pediatric OPD
5. Uvea OPD
6. Vitreoretina OPD
7. Cornea OPD
8. Community OPD

Each learner is expected to maintain clinic logbook, submit one case report per specialty as mentioned above and compulsorily attend all the weekly and special seminars.

Course Title: Specialty Optometry Clinics-1	L	T	P	Cr.
Course Code: MOPT108	0	0	4	4

Total Hours 120 hrs

Course Outcomes: At the end of the course students will be able to...

1. Gain exposure to different optometric specialty clinics and diagnostic specialties and able to interpret the test results.
2. Utilize and translate the knowledge from these specialty clinics to their research avenues

POSTING

CLINICAL POSTINGS:

1. Binocular Vision / Vision therapy clinic
2. Low Vision Clinic
3. Contact lens Clinic
4. Refraction / Myopia control clinic
5. Occupational Optometry Clinic

DIAGNOSTIC POSTINGS:

1. Glaucoma Diagnostics (UBM, ASOCT, Visual Fields, OCT)
2. Retina Diagnostics (OCT, FFA, B Scan, Electro diagnostics)
3. Cornea Diagnostics (ASOCT, Pentacam, Topography, Abberometer)

Each learner is expected to maintain clinic logbook, submit one case report per specialty as mentioned above and compulsorily attend all the weekly and special seminars.

Course Title: Community Outreach-1	L	T	P	Cr.
Course Code: MOPT109	0	0	2	2

Total Hours 60 hrs

Course Outcomes: At the end of the course students will be able to...

1. The course aims to expose learners to community outreach activities.
2. It helps learners understand and appreciate the needs of society.
3. It encourages learners to be responsive to societal needs.
4. It promotes social accountability among learners.
5. Learners will participate in community outreach initiatives organized by the academic or clinical institution.
6. Participation is required for a specified number of hours during the semester.
7. Learners must maintain a logbook documenting the services they provide.

COMMUNITY OUTREACH POSTINGS

1. School Eye Screening
2. Screening for Adults (Comprehensive adults eye screening camps, Cataract screening camps, Camps for elderly, Camps for differently abled, etc.)

2nd SEMESTER

Course Title: Specialized clinical optometry- CL-1	L	T	P	Cr.
Course Code: MOPT201	2	0	0	2

Total Hours 30 hrs**Course Outcomes:** At the end of the course students will be able to...

1. Ability to understand corneal physiology and oxygen needs
2. Ability to diagnose and manage complications due to contact lenses
3. Ability to fit specialized contact lenses like protective and therapeutic lenses

COURSE CONTENTS**UNIT-I** **4 Hours**

Anatomy and Physiology of the Cornea and related Structures

Tears and contact lenses

UNIT-II **4 Hours**

Optics and Lens Design

Contact Lens Materials

Clinical Instrumentation in contact lens practice

UNIT-III **4 Hours**

Soft contact lens fitting

Toric Contact lens fitting

UNIT-IV **4 Hours**

Rigid Gas Permeable corneal lens fitting

Microbiology, Lens Care and Maintenance

UNIT-V**4 Hours**

Contact lens standards

Lens checking: Soft and Rigid

UNIT-VI**4 Hours**

Contact lens complications

UNIT-VII**6 Hours**

Special types of Contact lenses – diagnosis, surgery, protective, therapeutic, sports, partially sighted

TRANSACTIONAL MODES

Lecture; Tutorial; Problem based learning; Small group teaching and learning; Continuous interactive learning; Case-based; Project based; Seminars; Clinical conferences; E-learning; Skills laboratory; Industrial visit

SUGGESTED READINGS

- *IACLE Modules*
- *Anthony J. Phillips: Contact Lenses, 5th edition, Butterworth-Heinemann, 2006*

Course Title: Specialized clinical optometry-LVC	L	T	P	Cr.
Course Code: MOPT202	2	0	0	2

Total Hours 30 hrs

Course Outcomes: At the end of the course students will be able to...

1. To understand the cause and needs of low vision patient
2. To suggest and guide patients with appropriate low vision devices (Optical/Non optical)
3. To understand basic rehabilitation and refer in case of further need

COURSE CONTENTS

UNIT-I

5 Hours

Visual Disorders – Medical Perspective

1. The Epidemiology of Vision Impairment
2. Vision Impairment in the pediatric population
3. Ocular Diseases: Age – Related Cataract, Glaucoma, ARMD, Diabetic retinopathy, Corneal Disorders, Ocular Trauma, Sensory Neuro-ophthalmology and Vision Impairment, Refractive Disorders

UNIT-II

5 Hours

Visual Disorders – The Functional Perspective

1. Low Vision and Psychophysics
2. Visual Functioning in Pediatric Populations with Low Vision
3. Perceptual correlates of Optical Disorders
4. Functional aspects of Neural Visual Disorders of the eye and Brain
5. Visual Disorders and Performance of specific Tasks requiring vision

UNIT-III

5 Hours

Optical and Non-Optical device

Field expanding systems and Assistive technology, Hand held minus lenses/reverse telescopes - optical principles, Reflecting mirrors, Use of Fresnel prisms, Peli lens model, Eccentric viewing training and Head Scanning Training, Computer software for visually impaired, Mobile software for visually impaired, Machines modified for helping visually impaired,

perform activities of daily living without help, Large print items, auditory cues, Contrast Enhancement and Environmental modification

UNIT-IV

5 Hours

Visual Disorders – The Psychosocial Perspective

1. Developmental perspectives – Youth
2. Vision Impairment and Cognition
3. Spatial orientation and Mobility of people with vision impairments
4. Social skills Issues in vision impairment
5. Communication and language: Issues and concerns
6. Developmental perspectives on Aging and vision loss
7. Vision and cognitive Functioning in old age

UNIT-V

5 Hours

Interactions of Vision Impairment with other Disabilities and sensory Impairments.

1. Children with Multiple Impairments
2. Dual Vision and Hearing Impairment
3. Diabetes Mellitus and Vision Impairment
4. Vision Problems associated with Multiple Sclerosis
5. Vision Impairment related to Acquired Brain Injury
6. Vision and Dementia
7. Low Vision and HIV infection

UNIT-VI

5 Hours

The Environment and Vision Impairment: Towards Universal Design

1. Indian Disabilities act
2. Children's Environments
3. Environments of Older people
4. Outdoor environments
5. Lighting to enhance visual capabilities
6. Signage and way finding
7. Accessible Environments through Technology

Vision Enhancement Techniques: Optical and non-optical Vision Enhancement techniques

TRANSACTIONAL MODES

Lecture; Tutorial; Problem based learning; Small group teaching and learning; Continuous interactive learning; Case-based; Project based; Seminars; Clinical conferences; E-learning; Skills laboratory; Industrial visit

SUGGESTED READINGS

- *B. Silverstone, Lighthouse Handbook on Vision Impairment and Vision Rehabilitation – Volume I and II. Oxford University press, 2000.*
- *Christine Dickinson: Low Vision: Principles and Practice Low vision care, 4th edition, Butterworth-Heinemann, 1998*
- *Sarika G, Sailaja MVS, E Vaithilingam: Practice of Low vision –A guide book, Medical Research Foundation, 2015.*
- *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 Heinemann, 2007*

Course Title: Low Vision Rehabilitation and Assistive Technology (Elective 1) #	L	T	P	Cr.
Course Code: MOPT203	2	0	0	2

Total Hours 30 hrs

Course Outcomes: At the end of the course students will be able to...

1. Explain the concepts, causes, classification, and functional implications of low vision.
2. Assess visual functions and determine the rehabilitation needs of patients with low vision.
3. Describe and differentiate optical, non-optical, and electronic low vision devices.
4. Develop individualized low vision rehabilitation plans based on patients' visual needs and daily activities.
5. Explain the role of assistive technology, environmental modifications, and multidisciplinary rehabilitation in improving the quality of life of individuals with visual impairment.

COURSE CONTENTS

UNIT-I

10 Hours

Fundamentals and Assessment of Low Vision

Definition and classification of low vision and visual impairment; causes and epidemiology of low vision; functional implications of visual impairment; common ocular conditions associated with low vision, including age-related macular degeneration, diabetic retinopathy, glaucoma, retinitis pigmentosa, and optic atrophy; principles of low vision assessment; assessment of visual acuity for distance and near; contrast sensitivity, visual fields, glare sensitivity, and colour vision; evaluation of residual vision; functional vision assessment and patient history.

UNIT-II

10 Hours

Low Vision Devices and Assistive Technology

Principles of low vision aids; optical devices, including hand-held magnifiers, stand magnifiers, spectacle magnifiers, high-add reading spectacles, telescopes, and prismatic devices; non-optical devices, including appropriate illumination, reading stands, typoscopes, large-print materials, and contrast enhancement; electronic low vision aids, including video magnifiers,

electronic magnification systems, screen magnification software, screen readers, and smartphone accessibility applications; selection, demonstration, and limitations of low vision devices; lighting conditions, glare control, and environmental modifications.

UNIT-III

10 Hours

Low Vision Rehabilitation and Patient Management

Principles and goals of low vision rehabilitation; individualized rehabilitation planning; counselling and patient education; training in the use of optical and electronic low vision devices; reading, writing, mobility, orientation, and activities of daily living; rehabilitation strategies for children, adults, and older people with low vision; educational and vocational rehabilitation; accessibility features and assistive technologies; multidisciplinary rehabilitation services; community-based rehabilitation; referral pathways and follow-up; ethical considerations and quality-of-life assessment in low vision care.

TRANSACTIONAL MODES

Lecture; Tutorial; Problem based learning; Small group teaching and learning; Continuous interactive learning; Case-based; Project based; Seminars; Clinical conferences; E-learning; Skills laboratory; Industrial visit

SUGGESTED READINGS

- WHO. *World Report on Vision*. Geneva: World Health Organization; 2019.
- Corn AL, Erin JN, editors. *Foundations of Low Vision: Clinical and Functional Perspectives*. 2nd ed. New York: AFB Press; 2010.
- Lueck AH, Dutton GN, editors. *Vision and the Brain: Understanding Cerebral Visual Impairment in Children*. New York: AFB Press; 2015.
- Jose RT, editor. *Understanding Low Vision*. 2nd ed. New York: AFB Press; 1983.
- World Health Organization. *Package of Eye Care Interventions*. Geneva: World Health Organization; 2022.

Course Title: Advanced Contact Lens Practice (Elective 1) #	L	T	P	Cr.
Course Code: MOPT204	2	0	0	2

Total Hours 30 hrs

Course Outcomes: At the end of the course students will be able to...

1. Explain the advanced principles of contact lens materials, design, optics, and fitting.
2. Evaluate patients for contact lens suitability through comprehensive ocular examination and diagnostic assessment.
3. Describe the fitting principles of specialty contact lenses, including toric, multifocal, rigid gas-permeable, and scleral lenses.
4. Identify contact lens complications and formulate appropriate management and referral strategies.
5. Develop patient-specific contact lens management plans, including patient education, follow-up, and safe lens-care practices.

COURSE CONTENTS

UNIT-I

10 Hours

Advanced Contact Lens Materials, Optics and Assessment

Classification of contact lenses based on materials, design, and replacement schedules; advanced properties of hydrogel and silicone hydrogel materials; rigid gas-permeable lens materials; oxygen transmissibility and permeability; wettability, surface properties, and deposit formation; contact lens optics, base curve, diameter, sagittal depth, and power; tear film and contact lens interaction; pre-fitting assessment, including case history, refraction, keratometry, corneal topography, slit-lamp examination, tear film evaluation, and ocular surface assessment; indications and contraindications for contact lens wear.

UNIT-II

10 Hours

Specialty Contact Lens Fitting and Clinical Applications

Principles of soft spherical and toric contact lens fitting; multifocal and bifocal contact lenses; rigid gas-permeable contact lens fitting; corneal and scleral lenses; contact lenses for irregular corneas and keratoconus; therapeutic and bandage contact lenses; contact lenses following corneal surgery and ocular trauma; specialty lens options for post-refractive surgery patients; principles

of orthokeratology and myopia management; diagnostic lens fitting, assessment of centration and movement, fluorescein pattern evaluation, over-refraction, and lens parameter modification; indications for specialty lens referral.

UNIT-III

10 Hours

Contact Lens Complications, Patient Management and Recent Advances

Contact lens-related complications, including microbial keratitis, corneal infiltrates, corneal neovascularization, hypoxia, giant papillary conjunctivitis, dry eye, and solution-related reactions; recognition of warning signs and appropriate referral; contact lens hygiene, disinfection systems, storage, and replacement schedules; management of lens discomfort and poor tolerance; patient counselling and compliance; follow-up protocols and documentation; contact lens fitting in special populations; advances in silicone hydrogel technology, scleral lenses, myopia-control lenses, and smart contact lens research; ethical and professional considerations in contact lens practice.

TRANSACTIONAL MODES

Lecture; Tutorial; Problem based learning; Small group teaching and learning; Continuous interactive learning; Case-based; Project based; Seminars; Clinical conferences; E-learning; Skills laboratory; Industrial visit

SUGGESTED READINGS

- Efron N, editor. *Contact Lens Practice*. 3rd ed. Edinburgh: Elsevier; 2018.
- Phillips AJ, Speedwell L, editors. *Contact Lenses*. 5th ed. Edinburgh: Butterworth-Heinemann; 2007.
- Bennett ES, Henry VA, editors. *Clinical Manual of Contact Lenses*. 4th ed. Philadelphia: Wolters Kluwer; 2014.
- Hom MM, Bruce AS. *Manual of Contact Lens Prescribing and Fitting*. 3rd ed. St. Louis: Elsevier Butterworth-Heinemann; 2006.
- American Academy of Ophthalmology. *Basic and Clinical Science Course: External Disease and Cornea*. San Francisco: American Academy of Ophthalmology. Latest available edition.

Course Title: Research Project-2 #	L	T	P	Cr.
Course Code: MOPT205	4	0	0	4

Total Hours 60 hrs

Course Outcomes: At the end of the course students will be able to...

1. To enable learners to independently carry out data collection.
2. To develop skills for critical analysis of collected data.
3. To train learners in the application of statistical methods.
4. To prepare and submit a structured and well-documented report.

Course Title: General Clinics 2	L	T	P	Cr.
Course Code: MOPT206	0	0	6	6

Total Hours 180 hrs

Course Outcomes: At the end of the course students will be able to...

1. Upon completion of this course, the learners will be able to:
2. Appreciate the diversities pertaining to the ocular problems among patients presenting to the hospital
3. Handle the patients with their applied knowledge

POSTINGS

1. General OPD/ Emergency
2. Glaucoma OPD
3. Neuro OPD
4. Pediatric OPD
5. Uvea OPD
6. Vitreoretina OPD
7. Cornea OPD
8. Community OPD

Course Title: Specialty Optometry Clinics-2	L	T	P	Cr.
Course Code: MOPT207	0	0	4	4

Total Hours 120 hrs

Course Outcomes: At the end of the course students will be able to...

1. Gain exposure to different optometric specialty clinics and diagnostic specialties and able to interpret the test results
2. Utilize and translate the knowledge from these specialty clinics to their research avenues

POSTING

- **CLINICAL POSTINGS:**
 1. Binocular Vision / Vision therapy clinic
 2. Low Vision Clinic
 3. Contact lens Clinic
 4. Refraction / Myopia control clinic
 5. Occupational Optometry Clinic
- **DIAGNOSTIC POSTINGS:**
 1. Glaucoma Diagnostics (UBM, ASOCT, Visual Fields, OCT)
 2. Retina Diagnostics (OCT, FFA, B Scan, Electro diagnostics)
 3. Cornea Diagnostics (ASOCT, Pentacam, Topography, Abberometer)

Course Title: Community Outreach-2	L	T	P	Cr.
Course Code: MOPT208	0	0	2	2

Total Hours 60 hrs

Course Outcomes: At the end of the course students will be able to...

1. The course aims to expose learners to community outreach activities.
2. It helps learners understand and appreciate the needs of society.
3. It encourages responsiveness to societal needs.
4. It promotes social accountability among learners.
5. Learners will participate in outreach initiatives organized by the academic or clinical institution.
6. Participation is required for a specified number of hours during the semester.
7. Learners will provide services as part of these community activities.
8. They must maintain a logbook documenting the services rendered.
9. Learners are required to submit case reports of cases encountered during outreach.
10. Case reports must follow a prescribed format.

COMMUNITY OUTREACH POSTINGS

1. School Eye Screening
2. Screening for Adults (Comprehensive adults eye screening camps, Cataract screening camps, Camps for elderly, Camps for differently abled, etc.)

3rd SEMESTER

Course Title: Specialized clinical optometry- CL 2	L	T	P	Cr.
Course Code: MOPT301	2	0	0	2

Total Hours 30 hrs

Course Outcomes: At the end of the course students will be able to...

1. Fit contacts lenses with all specialized contact lenses
2. Fit prosthetic contact lenses
3. Fit contact lens for paediatric group
4. Fit occupational contact lenses
5. Troubleshoot contact lenses related queries
6. Outline the available products available in the market and the sources
7. Understand the legalities to dispense contact lenses

COURSE CONTENTS

UNIT-I

2 Hours

Introduction to advanced contact lens Microbiology and immunology in relation to contact lens wear, Pharmacology of contact lens solution; review of contact lens solution contents. Contact lens complications; causes and management and patho physiology. Identification of lens deposits. Trouble shooting in CL related problems

UNIT-II

12 Hours

Ability to fit specialized contact lenses: Keratoconus, Rose-K lenses, Mini scleral lenses, Hybrid lenses, Orthokeratology, Scleral lenses: Dry eyes, SJS, Post PK, Post C3R, Post LASIK ectasia

UNIT-III

8 Hours

Contact lens prescription in different scenarios: Bifocal and Multifocal contact lenses, Ability to fit custom made ocular prosthesis, Cosmetic and prosthetic contact lens fitting, Ability to fit paediatric contact lenses, Ability to fit contact lens post PK and refractive surgery

UNIT-IV**8 Hours**

Ability in fitting contact lenses in different occupations and Practice Management Fitting considerations for sports and special situations. Contact lens in different occupation. Advancements in contact lens industry, contact lens instrumentation and techniques, Products oriented design and material characteristics, setting up your practice - Law and Practice Management.

TRANSACTIONAL MODES

Lecture; Tutorial; Problem based learning; Small group teaching and learning; Continuous interactive learning; Case-based; Project based; Seminars; Clinical conferences; E-learning; Skills laboratory; Industrial visit

SUGGESTED READINGS

- *IACLE Modules*
- *Anthony J. Phillips: Contact Lenses, 5th edition, Butterworth-Heinemann, 2006*

Course Title: Specialized clinical optometry- BV	L	T	P	Cr.
Course Code: MOPT302	2	0	0	2

Total Hours 30 hrs

Course Outcomes: At the end of the course students will be able to...

1. Define the concept related to basics of binocular vision, and interactions between accommodation and Vergence through clinical testing
2. Relate the development of the eye and visual system, and its implications to binocular vision anomalies; Perform a comprehensive Binocular vision assessment and arrive at appropriate diagnosis
3. Define and analyze various types of strabismus, clinical characteristics, effects of visual deprivation, amblyopia, oculomotor control and disruptions, nystagmus and perform appropriate clinical testing for the same
4. Explain the relationship between vision and learning and relate it to visual perceptual assessment, and acquired brain injury
5. Formulate a hierarchical vision therapy protocol for non-strabismic binocular vision dysfunctions and amblyopia

COURSE CONTENTS

UNIT-I

8 Hours

Introduction

1. Basics concepts related to binocular vision – brief refreshment
2. Normal development of visual system
3. Interaction between accommodation and vergence
4. Understanding binocular vision anomalies
5. Clinical assessments involved in identifying binocular vision anomalies

UNIT-II

8 Hours

Strabismus, Esodeviations, Exodeviations, Vertical deviations, types and clinical characteristics, accommodative and non-accommodative etiologies, oculomotor signs of disorders of the central nervous system, Assessment of optical and visual function in human infants. Refraction and refractive error in infants and children, Effects of visual deprivation. Amblyopia, types and clinical features of Nystagmus.

UNIT-III**6 Hours**

Concepts of Binocular Vision and neural systems: Relationship between vision and learning, visual processing development, Visual information processing and visual perceptual disorders. Parallel pathways for vision, dorsal, ventral streams, mirror neuron system, cerebral vision impairment, acquired brain injury, learning related vision problems, tests for visual perception, Test of Developmental Eye Movements, Test of Visual Perceptual Skills, Beery-Buktenica Visual Motor Integration, Wold Sentence Copy, Piaget Left-Right, Gardner Reversal Frequency, Birch-Belmont Auditory-Visual Integration, binocular vision assessment in sports vision

UNIT-IV**07 Hours**

Introduction to vision therapy concepts

1. Vision therapy equipment
2. Formulating a Vision Therapy Protocol – Hierarchical sequencing
3. Vision therapy: In-office and Home
4. Accommodation,
5. Vergence
6. Oculomotor dysfunctions
7. Amblyopia
8. Recent advancements in vision therapy
9. Use of Optical aids in Vision Therapy
10. Lenses, prisms, and mirrors,
11. Free space and instrument training,
12. Paper and pencil techniques

TRANSACTIONAL MODES

Lecture; Tutorial; Problem based learning; Small group teaching and learning; Continuous interactive learning; Case-based; Project based; Seminars; Clinical conferences; E-learning; Skills laboratory; Industrial visit

SUGGESTED READINGS

- *M. Scheiman, B. Wick, Optometric Management of Learning Related Vision Problems, 2/e., Mosby Inc, 2006.*
- *L. J. Press, Applied Concepts in Vision Therapy, St. Louis: Mosby. 2008.*

- *M. Scheiman, B. Wick, Clinical Management of Binocular Vision – Heterophoric, Accommodative, and eye movement disorders, 4/e., Lippincott Williams & Wilkins 2014.*
- *S. Cotter, Clinical Uses of Prism: A Spectrum of Applications, 1/e., Mosby. 1995.*
- *E. Ong, K. J. Ciuffreda, Accommodation, Nearwork, and Myopia. Optometric Extension Program. 1997.*
- *G. B. Erickson, Sports Vision: Vision Care for the Enhancement of Sports Performance Butterworth-Heinemann, 2007.*

Course Title: Specialized clinical optometry Rehabilitation	L	T	P	Cr.
Course Code: MOPT303	2	0	0	2

Total Hours 30 hrs

Course Outcomes: At the end of the course students will be able to...

1. Define different approaches to rehabilitation and can able to recite the available laws in relation to rehabilitation
2. Assess the psychology of the patients and understand the social and psychological limitations in relation with the rehabilitation approach
3. Outline various available rehabilitation methods and resources for children
4. Outline various available rehabilitation methods and resources for adults and elderly

COURSE CONTENTS

UNIT-I

5 Hours

Introduction and Legal aspects in Rehabilitation

1. Introduction to Rehabilitation: In western, in Asia and Personnel preparation for rehabilitations
2. Concept of Rehabilitation
3. Availability and Limitations in current medical treatments and the need for visual rehabilitation with respect to Indian Scenario,
4. Legal aspects of rehabilitation: Right to Persons with Disabilities act (2016), other related legal aspects and amendments towards betterment of visual challenged

UNIT-II

5 Hours

Psychological and social factors in visual Adaptation and Rehabilitation

1. The Role of psychosocial Factors in adaptation to vision Impairment and rehabilitation outcomes for Children and Youth
2. The Role of psychosocial Factors in adaptation to vision Impairment and rehabilitation outcomes for Adults and Older adults
3. Social support and adjustment to vision Impairment across the life span
4. The person – Environment perspective of vision impairment
5. Associated Depression, Disability and rehabilitation

6. Methodological strategies and issues in social research on vision Impairment and rehabilitation

UNIT-III

10 Hours

Rehabilitation for children

Functional Vision evaluation of Infants, Educational assessment of visual function in Children, Classroom environment and academic activities, Support as an Optometrist, Early intervention in infants with low vision / Vision stimulation, Different types of schooling, Mainstreaming the child with visual impairment, Integrated/Inclusive modes of education, Holistic approach in visual Rehabilitation, Environmental modification at home and office, Performing basic activities of daily living, Available vocations / Vocational training / Independent living skills, Disability concessions for the visually impaired / Social security

UNIT-IV

10 Hours

Rehabilitation for adults:

Holistic approach in visual Rehabilitation, Environmental modification at home and office, Performing basic activities of daily living, Available vocations / Vocational training / Independent living skills, Disability concessions for the visually impaired / Social security, Job placement according to the educational qualification, Orientation and Mobility training, Independent living skills including cooking, cleaning, sweeping, ADL

Rehabilitation of older Adults with Vision Impairment:

Environmental modification at home, Performing basic activities of daily living, Disability concessions for the visually impaired, social and financial security

TRANSACTIONAL MODES

Lecture; Tutorial; Problem based learning; Small group teaching and learning; Continuous interactive learning; Case-based; Project based; Seminars; Clinical conferences; E-learning; Skills laboratory; Industrial visit

SUGGESTED READINGS

- *Silverstone, Lighthouse Handbook on Vision Impairment and Vision Rehabilitation – Volume I and II. Oxford University press, 2000.*
- *Dickinson. Low Vision – Principles and Practice, Butterworth Heinemann, 2002.*
- *M. V. S. Sailaja, G. Sarika, E. Vaithilingam, Practice of Low Vision Care Guide for Eye Care Professionals, 2/e., Sankara Nethralaya, 2015.*
- *R. T. Jose, Understanding Low Vision, American Foundation for the Blind, 1994.*
- *A. H. Lueck, Functional Vision: A Practitioner's Guide to Evaluation and Intervention, AFB Press, 2004*

Course Title: Ocular Imaging and Advanced Diagnostic Techniques (Elective 2) #	L	T	P	Cr.
Course Code: MOPT304	2	0	0	2

Total Hours 30 hrs

Course Outcomes: At the end of the course students will be able to...

1. Explain the principles and clinical applications of advanced ocular imaging and diagnostic technologies.
2. Describe the procedures and interpretation of retinal, optic nerve, corneal, and anterior segment imaging.
3. Differentiate the clinical applications of optical coherence tomography, fundus photography, fluorescein angiography, and corneal topography.
4. Interpret basic ocular imaging findings and correlate them with common ocular diseases.
5. Apply appropriate patient preparation, safety, documentation, and referral protocols during ocular diagnostic procedures.

COURSE CONTENTS

UNIT-I

10 Hours

Fundamentals of Ocular Imaging and Retinal Diagnostics

Principles of ocular imaging and diagnostic instrumentation; fundus photography and digital retinal imaging; optical coherence tomography (OCT), including retinal layers, macular imaging, and optic nerve head analysis; OCT angiography (OCTA); fluorescein angiography and indocyanine green angiography; retinal imaging in diabetic retinopathy, age-related macular degeneration, retinal vascular disorders, and glaucoma; image acquisition, quality assessment, and basic interpretation.

UNIT-II

10 Hours

Anterior Segment Imaging and Functional Diagnostics

Corneal topography and tomography; keratometry and corneal pachymetry; anterior segment optical coherence tomography; specular microscopy and endothelial cell analysis; slit-lamp photography; gonioscopy and anterior chamber angle assessment; ocular surface imaging; tear film assessment and meibography; visual field analysis using automated perimetry; optical biometry and intraocular lens power measurement; principles and clinical applications of ultrasound biomicroscopy and B-scan ultrasonography.

UNIT-III**10 Hours****Advanced Diagnostic Applications and Clinical Interpretation**

Imaging-based assessment of glaucoma, corneal ectasia, keratoconus, retinal diseases, and optic nerve disorders; multimodal imaging and clinical correlation; interpretation of common abnormalities in OCT, fundus photographs, visual fields, and corneal maps; diagnostic limitations and common imaging artifacts; patient preparation, informed consent, infection control, and safety during diagnostic procedures; image documentation and electronic record management; artificial intelligence applications in ocular imaging; ethical considerations, interdisciplinary communication, and referral for further ophthalmic evaluation.

TRANSACTIONAL MODES

Lecture; Tutorial; Problem based learning; Small group teaching and learning; Continuous interactive learning; Case-based; Project based; Seminars; Clinical conferences; E-learning; Skills laboratory; Industrial visit

SUGGESTED READINGS

- *American Academy of Ophthalmology. Basic and Clinical Science Course: Clinical Optics. San Francisco: American Academy of Ophthalmology. Latest available edition.*
- *American Academy of Ophthalmology. Basic and Clinical Science Course: Retina and Vitreous. San Francisco: American Academy of Ophthalmology. Latest available edition.*
- *Kanski JJ, Bowling B. Clinical Ophthalmology: A Systematic Approach. 8th ed. Edinburgh: Elsevier; 2016.*
- *Yanoff M, Duker JS, editors. Ophthalmology. 5th ed. Edinburgh: Elsevier; 2019.*
- *Huang D, Swanson EA, Lin CP, Schuman JS, Stinson WG, Chang W, et al. Optical coherence tomography. Science. 1991;254(5035):1178-81.*

Course Title: Pediatric Optometry and Vision Development (Elective 2) #	L	T	P	Cr.
Course Code: MOPT305	2	0	0	2

Total Hours 30 hrs

Course Outcomes: At the end of the course students will be able to...

1. Explain the anatomical, physiological, and developmental aspects of vision from infancy through adolescence.
2. Describe age-appropriate methods for assessing visual acuity, refractive status, ocular alignment, and binocular vision in children.
3. Identify common pediatric refractive errors, amblyopia, strabismus, and ocular disorders.
4. Explain evidence-based approaches to pediatric refractive error management, amblyopia treatment, and myopia control.
5. Develop appropriate pediatric eye-care plans, including parent counselling, school vision screening, follow-up, and referral.

COURSE CONTENTS

UNIT-I

10 Hours

Vision Development and Pediatric Visual Assessment

Anatomy and physiology of the developing visual system; development of visual acuity, contrast sensitivity, colour vision, accommodation, and binocular vision; critical periods of visual development; age-related milestones of vision; pediatric case history and communication techniques; age-appropriate visual acuity testing; objective and subjective refraction in children; retinoscopy techniques; cycloplegic refraction and its clinical indications; assessment of ocular motility, accommodation, convergence, and stereopsis; pediatric ocular examination and vision screening protocols.

UNIT-II

10 Hours

Pediatric Refractive Errors and Ocular Disorders

Classification and management principles of pediatric myopia, hyperopia, astigmatism, and anisometropia; emmetropization and refractive development; amblyopia, including its types, risk factors, diagnosis, and treatment principles; strabismus and ocular alignment assessment; congenital and developmental cataract; congenital glaucoma; retinopathy of prematurity; pediatric retinal and optic nerve disorders; ocular manifestations

of systemic and genetic diseases; accommodative and non-strabismic binocular vision disorders; indications for ophthalmology referral and multidisciplinary management.

UNIT-III

10 Hours

Pediatric Optometric Management and Recent Advances

Pediatric spectacle prescribing and frame selection; contact lens considerations in children; amblyopia management, including refractive correction, occlusion therapy, and pharmacological penalization; principles of myopia control, including increased outdoor activity, optical interventions, and pharmacological approaches; patient selection, counselling, monitoring, and limitations of myopia-control interventions; pediatric vision therapy and binocular vision rehabilitation; digital eye strain and visual hygiene in children; school vision screening and community eye-care programmes; management of children with special needs and developmental disabilities; parent education, adherence, follow-up, and documentation; ethical considerations in pediatric optometric practice.

TRANSACTIONAL MODES

Lecture; Tutorial; Problem based learning; Small group teaching and learning; Continuous interactive learning; Case-based; Project based; Seminars; Clinical conferences; E-learning; Skills laboratory; Industrial visit

SUGGESTED READINGS

- *Wright KW, Spiegel PH, Thompson LS. Handbook of Pediatric Strabismus and Amblyopia. New York: Springer; 2006.*
- *Cotter SA, editor. Clinical Pediatric Optometry. 2nd ed. Boston: Butterworth-Heinemann; 1996.*
- *American Academy of Ophthalmology. Basic and Clinical Science Course: Pediatric Ophthalmology and Strabismus. San Francisco: American Academy of Ophthalmology. Latest available edition.*
- *American Optometric Association. Evidence-Based Clinical Practice Guideline: Comprehensive Pediatric Eye and Vision Examination. St. Louis: American Optometric Association; 2023.*

Course Title: Scientific communication #	L	T	P	Cr.
Course Code: MOPT306	2	0	0	2

Total Hours 30 hrs

Course Outcomes: At the end of the course students will be able to...

1. Relate to the purpose and infer about an audience, and show ethical issues of technical communication, Outline key aspects, build on conducting interviews and surveys
2. Plan and compose a technical proposal, approach to review board and ethics committee
3. Identify important aspects of visual technical communication and utilize it
4. Determine significant aspects of oral technical communication and plan for giving effective oral presentations
5. Identifying and effectively choosing the mode of communication to communicating with peers

COURSE CONTENTS

UNIT-I

10 Hours

Audience, purpose and Genre – technical communication, linking purpose and audience, Ethical issues of technical communication – Ethical writing and its relation to technical communication, Interviewing and conducting surveys – Preparation and reporting the outcomes, Visual technical communication - Visuals for effective communication, guidelines for preparing and giving presentations

UNIT-II

10 Hours

Proposal Writing: Research Proposals, Grant Proposals, Approvals from Review Boards and Ethics Committee, Dissertation writing and Manuscript writing: Consolidating the literature, addressing reviewer comments

UNIT-III

10 Hours

Oral technical communication - Common speaking occasions, formal and informal presentations, guidelines for preparing and giving presentations, communicating to peers: Defense/ VIVA voce, Letter to editors, view point

articles, guest editorials, Media and social network - Communicating scientific content to the public

TRANSACTIONAL MODES

Lecture; Tutorial; Problem based learning; Small group teaching and learning; Continuous interactive learning; Case-based; Project based; Seminars; Clinical conferences; E-learning; Skills laboratory; Industrial visit

SUGGESTED READINGS

- *H. Graves, R. Graves, A Strategic Guide to Technical Communication, 2/e, Broad view press, 2012.*

Course Title: Research Project-3	L	T	P	Cr.
Course Code: MOPT307	4	0	0	4

Total Hours 60 hrs

Course Outcomes: At the end of the course students will be able to...

1. Collect data and analyse
2. Present the results in relevant formats like tables and figures
3. Write the dissertation report
4. Plan for a manuscript writing

Course Title: General Clinics 3	L	T	P	Cr.
Course Code: MOPT308	0	0	6	6

Total Hours 180 hrs

Course Outcomes: At the end of the course students will be able to...

1. Appreciate the diversities pertaining to the ocular problems among patients presenting to the hospital
2. Handle the patients with their applied knowledge

POSTINGS

1. General OPD/ Emergency
2. Glaucoma OPD
3. Neuro OPD
4. Pediatric OPD
5. Uvea OPD
6. Vitreoretina OPD
7. Cornea OPD
8. Community OPD

Each learner is expected to maintain clinic logbook, submit one case report per specialty as mentioned above and compulsorily attend all the weekly and special seminars.

Course Title: Specialty Optometry Clinics-3	L	T	P	Cr.
Course Code: MOPT309	0	0	6	6

Total Hours 180 hrs

Course Outcomes: At the end of the course students will be able to...

1. Gain exposure to different optometric specialty clinics and diagnostic specialties and able to interpret the test results
2. Utilize and translate the knowledge from these specialty clinics to their research avenues

POSTING

CLINICAL POSTINGS:

1. Binocular Vision / Vision therapy clinic
2. Low Vision Clinic
3. Contact lens Clinic
4. Refraction / Myopia control clinic
5. Occupational Optometry Clinic

DIAGNOSTIC POSTINGS:

1. Glaucoma Diagnostics (UBM, ASOCT, Visual Fields, OCT)
2. Retina Diagnostics (OCT, FFA, B Scan, Electro diagnostics)
3. Cornea Diagnostics (ASOCT, Pentacam, Topography, Abberometer)

Course Title: Community Outreach-3	L	T	P	Cr.
Course Code: MOPT310	0	0	2	2

Total Hours 60 hrs

Course Outcomes: At the end of the course students will be able to...

1. The course is designed to expose learners to community outreach activities.
2. It helps learners understand and appreciate societal needs.
3. It encourages learners to respond effectively to community needs.
4. It promotes a sense of social responsibility and accountability.
5. Learners will participate in outreach programs organized by the academic or clinical institution.

COMMUNITY OUTREACH POSTINGS:

1. School Eye Screening
2. Screening for Adults (Comprehensive adults eye screening camps, Cataract screening camps, Camps for elderly, Camps for differently abled, etc.)

4th SEMESTER

Course Title: Specialized clinical optometry Vision Therapy, Neuro optometry	L	T	P	Cr.
Course Code: MOPT401	2	0	0	2

Total Hours 30 hrs

Course Outcomes: At the end of the course students will be able to...

1. To formulate a hierarchical vision therapy protocol for non-strabismic binocular vision dysfunctions, amblyopia
2. To apply the knowledge of Neuro-anatomical pathways for the control of eye position and movement
3. To discuss the evaluation and treatment of Visual field loss and visual spatial neglect, evaluation of Visual and vestibular system in Traumatic brain injury, Egocentric localization, management for altered visual adaptation in ABI
4. To discuss the various vision rehabilitation techniques in Brain Injury.

COURSE CONTENTS

UNIT-I

15 Hours

Vision therapy equipment, formulating a Vision Therapy Protocol – Hierarchical sequencing, vision therapy for accommodation, vergence and oculomotor dysfunctions, lenses, prisms, and mirrors, free space and instrument training, paper and pencil techniques, vision therapy for amblyopia, recent advancements in Vision Therapy

UNIT-II

6 Hours

Anatomy of the visual cortex, pathway for vision, pupils, and eye movements, Structure and function of the early visual pathway including retinal ganglion cells, optic nerves, lateral geniculate nucleus and visual cortex.

Taking history and understanding neuro-ophthalmic emergencies, visual loss of uncertain origin, Neuro-optometric assessment

UNIT-III**9 Hours**

Neuro-anatomical pathways for the control of eye position and movement; gaze holding, image stabilization and tracking eye movement systems; oculomotor signs of disorders of the central nervous system (palsies, nystagmus, ophthalmoplegia, cog-wheel pursuits, saccadic dysmetria); the near visual-motor response and the synergistic coupling of accommodation and convergence; binocular misalignment (heterophoria and fixation disparity, Visual and vestibular system in Traumatic brain injury (TBI), diplopia assessment, Hess, Diplopia charting, assessment of reading, Readalyzer, Vision rehabilitation in brain injury, training in compensatory scanning, Prisms and its applications. Interdisciplinary management and rehabilitation

TRANSACTIONAL MODES

Lecture; Tutorial; Problem based learning; Small group teaching and learning; Continuous interactive learning; Case-based; Project based; Seminars; Clinical conferences; E-learning; Skills laboratory; Industrial visit

SUGGESTED READINGS

- *Clinical management of binocular vision Mitchell Scheiman and Bruce Wick*
- *Applied concepts in vision therapy: Leonard Press*

Course Title: Advanced Binocular Vision and Vision Therapy (Elective 3) #	L	T	P	Cr.
Course Code: MOPT402	2	0	0	2

Total Hours 30 hrs

Course Outcomes: At the end of the course students will be able to...

1. Explain advanced concepts of binocular vision, sensory and motor fusion, accommodation, and vergence mechanisms.
2. Perform and interpret clinical tests for binocular vision and accommodative disorders.
3. Identify and classify common binocular vision anomalies and their functional implications.
4. Describe evidence-based principles and applications of vision therapy and orthoptic rehabilitation.
5. Develop individualized management plans for binocular vision disorders, including appropriate referral and follow-up.

COURSE CONTENTS

UNIT-I

10 Hours

Advanced Binocular Vision and Clinical Assessment

Physiological and neurological basis of binocular vision; development of binocular vision and stereopsis; sensory and motor fusion; retinal correspondence and suppression; diplopia and anomalous retinal correspondence; accommodation and vergence interactions; accommodative convergence/accommodation ratio (AC/A); fusional vergence and vergence facility; assessment of near point of convergence, near point of accommodation, accommodative amplitude, and accommodative facility; cover tests, prism bar testing, Maddox rod, Worth four-dot test, Bagolini striated glasses, stereopsis tests, and fixation disparity assessment.

UNIT-II

10 Hours

Binocular Vision Anomalies and Differential Assessment

Classification and clinical features of convergence insufficiency, convergence excess, divergence insufficiency, divergence excess, accommodative insufficiency, accommodative excess, accommodative infacility, and fusional vergence dysfunction; heterophoria and heterotropia; intermittent strabismus; suppression and anomalous retinal correspondence; non-

strabismic binocular vision disorders; relationship between binocular vision and reading-related symptoms; differential assessment of asthenopia, headaches, blur, and diplopia; interpretation of clinical findings; indications for ophthalmological assessment and referral.

UNIT-III

10 Hours

Vision Therapy and Orthoptic Rehabilitation

Principles, indications, limitations, and goals of vision therapy; vergence and accommodation training; anti-suppression and sensory fusion procedures; stereopsis training; accommodative facility exercises; pencil push-ups, Brock string, prism-based exercises, vectograms, stereoscopes, and computer-based vision therapy tools; office-based and home-based therapy approaches; orthoptic management of selected binocular vision disorders; monitoring treatment response and adherence; clinical documentation and outcome measures; evidence-based practice, patient counselling, and referral criteria; distinction between evidence-supported vision therapy and interventions without established efficacy.

TRANSACTIONAL MODES

Lecture; Tutorial; Problem based learning; Small group teaching and learning; Continuous interactive learning; Case-based; Project based; Seminars; Clinical conferences; E-learning; Skills laboratory; Industrial visit

SUGGESTED READINGS

- Scheiman M, Wick B. *Clinical Management of Binocular Vision: Heterophoric, Accommodative, and Eye Movement Disorders*. 4th ed. Philadelphia: Lippincott Williams & Wilkins; 2014.
- Evans BJW. *Pickwell's Binocular Vision Anomalies*. 5th ed. Edinburgh: Butterworth-Heinemann; 2007.
- Griffin JR, Grisham JD. *Binocular Anomalies: Diagnosis and Vision Therapy*. 4th ed. Boston: Butterworth-Heinemann; 2002.
- American Academy of Ophthalmology. *Basic and Clinical Science Course: Pediatric Ophthalmology and Strabismus*. San Francisco: American Academy of Ophthalmology. Latest available edition.

Course Title: Ocular Disease Management and Clinical Optometry (Elective 3) #	L	T	P	Cr.
Course Code: MOPT403	2	0	0	2

Total Hours 30 hrs

Course Outcomes: At the end of the course students will be able to...

1. Explain the etiology, pathophysiology, clinical features, and progression of common ocular diseases.
2. Differentiate common anterior segment, posterior segment, and neuro-ophthalmic conditions using clinical findings.
3. Interpret basic clinical examination findings and diagnostic investigations relevant to ocular disease assessment.
4. Formulate appropriate optometric management, counselling, monitoring, and referral plans within the professional scope of practice.
5. Apply evidence-based clinical decision-making, documentation, infection control, and patient safety principles in ocular disease management.

COURSE CONTENTS

UNIT-I

10 Hours

Anterior Segment Diseases and Clinical Assessment

Clinical assessment of ocular diseases; comprehensive case history and symptom analysis; slit-lamp examination and anterior segment evaluation; dry eye disease and ocular surface disorders; blepharitis, meibomian gland dysfunction, and conjunctivitis; allergic and infectious ocular conditions; keratitis and corneal ulceration; corneal dystrophies and ectatic disorders; cataract and lens abnormalities; glaucoma, including risk factors, classification, intraocular pressure assessment, optic nerve evaluation, and visual field changes; recognition of ocular emergencies, red-eye presentations, and urgent referral indications.

UNIT-II

10 Hours

Posterior Segment Diseases and Systemic Associations

Retinal anatomy and clinical examination; diabetic retinopathy and diabetic macular edema; age-related macular degeneration; retinal vascular occlusions; hypertensive retinopathy; retinal detachment and peripheral retinal degeneration; inherited retinal disorders; optic neuritis, optic atrophy,

and papilledema; ocular manifestations of neurological and systemic diseases; interpretation of fundus photographs, optical coherence tomography, visual field reports, and other relevant diagnostic investigations; recognition of sight-threatening conditions and referral pathways.

UNIT-III

10 Hours

Clinical Optometry, Disease Management and Patient Care

Evidence-based optometric management of common ocular conditions; clinical decision-making and differential diagnosis; indications and principles of pharmacological treatment, including ocular lubricants, antiallergic agents, antimicrobials, and anti-inflammatory medications, with emphasis on contraindications, adverse effects, and professional prescribing regulations; monitoring of chronic ocular diseases; glaucoma and diabetic eye disease follow-up; postoperative optometric assessment and referral; contact lens-related ocular complications; patient education, medication adherence, lifestyle modification, and preventive eye care; clinical record keeping, informed consent, infection control, ethics, interprofessional communication, and referral coordination.

TRANSACTIONAL MODES

Lecture; Tutorial; Problem based learning; Small group teaching and learning; Continuous interactive learning; Case-based; Project based; Seminars; Clinical conferences; E-learning; Skills laboratory; Industrial visit

SUGGESTED READINGS

- *Bowling B. Kanski's Clinical Ophthalmology: A Systematic Approach. 8th ed. Edinburgh: Elsevier; 2016.*
- *Yanoff M, Duker JS, editors. Ophthalmology. 5th ed. Edinburgh: Elsevier; 2019.*
- *American Academy of Ophthalmology. Basic and Clinical Science Course: External Disease and Cornea. San Francisco: American Academy of Ophthalmology. Latest available edition.*
- *American Academy of Ophthalmology. Basic and Clinical Science Course: Glaucoma. San Francisco: American Academy of Ophthalmology. Latest available edition.*

Course Title: Research Project-4	L	T	P	Cr.
Course Code: MOPT404	6	0	0	6

Total Hours 90 hrs

Course Outcomes: At the end of the course students will be able to...

1. To use appropriate strategy to clean and code the collected data
2. To use suitable statistical methods to present results
3. To complete research from the initial steps of problem identification to the final outcome
4. To submit a dissertation on their relevant research interest area
5. To defend the work to vision scientists, clinicians and public
6. To submit a manuscript in indexed journal.

Course Title: General Clinics 4	L	T	P	Cr.
Course Code: MOPT405	0	0	8	8

Total Hours 240 hrs

Course Outcomes: At the end of the course students will be able to...

1. Appreciate the diversities pertaining to the ocular problems among patients presenting to the hospital
2. Handle the patients with their applied knowledge.

POSTINGS

1. General OPD/ Emergency
2. Glaucoma OPD
3. Neuro OPD
4. Pediatric OPD
5. Uvea OPD
6. Vitreoretina OPD
7. Cornea OPD
8. Community OPD

Course Title: Specialty Optometry Clinics-4	L	T	P	Cr.
Course Code: MOPT406	0	0	8	8

Total Hours 240 hrs

Course Outcomes: At the end of the course students will be able to...

1. Gain exposure to different optometric specialty clinics and diagnostic specialties and able to interpret the test results
2. Utilize and translate the knowledge from these specialty clinics to their research avenues

POSTINGS

CLINICAL POSTINGS:

1. Binocular Vision / Vision therapy clinic
2. Low Vision Clinic
3. Contact lens Clinic
4. Refraction / Myopia control clinic
5. Occupational Optometry Clinic

DIAGNOSTIC POSTINGS:

1. Glaucoma Diagnostics (UBM, ASOCT, Visual Fields, OCT)
2. Retina Diagnostics (OCT, FFA, B Scan, Electro diagnostics)
3. Cornea Diagnostics (ASOCT, Pentacam, Topography, Abberometer)

Course Title: Community Outreach-4	L	T	P	Cr.
Course Code: MOPT407	0	0	2	2

Total Hours 60 hrs

Course Outcomes: At the end of the course students will be able to...

1. The course aims to expose learners to community outreach activities.
2. It enables learners to understand and appreciate the needs of society.
3. It encourages responsiveness to community needs.
4. It promotes social accountability among learners.
5. Learners will participate in outreach initiatives organized by the academic or clinical institution.

COMMUNITY OUTREACH POSTINGS

1. School Eye Screening
2. Screening for Adults (Comprehensive adults eye screening camps, Cataract screening camps, Camps for elderly, Camps for differently abled, etc.)