

Master of Optometry

Master of Optometry

Eligibility for admission:

Bachelor of Optometry or equivalent from a recognized university with minimum 5.5 CGPA/ 50% Marks

Duration of the course

The M.Optom post graduate degree program is of two years duration.

Duration of the course: 2 years or 4 semesters.

Total hours –2310 (including clinical and research)

Medium of instruction:

English shall be the medium of instruction for all the subjects of study and for examination of the course.

Attendance:

A candidate has to secure minimum-

1. 75% attendance in theoretical
2. 80% in Skills training (practical) for qualifying to appear for the final examination.

Assessment:

Assessments should be completed by the academic staff, based on the compilation of the student's theoretical & clinical performance throughout the training programme. To achieve this, all assessment forms and feedback should be included and evaluated.

Credit details:

1 hour lecture per week	1 credit
2 hours of tutorials per week	1 credit
2 hours of clinics per week	1 credit

Curriculum Outline

First Semester-

Sl. No.	Course Titles	Hours/week			IA*	UE**	Total marks (IA+UE)	Total Credits
		L	P/C/R	Total contact hours				
MOP101	Epidemiology & Community eye care	30		30	50	50	100	2
MOP102	Research Methodology & Biostatistics	45		45	50	50	100	3
MOP103	Ocular Diseases and Diagnostics I	75		75	50	50	100	5
MOP104	Research Project-I		12		50	50	100	6
MOP105	Clinic-1 (General)		16		50	50	100	8
TOTAL		10	28	150	250	250	500	24
Total clinical+ Research hours: 420 hours								
Total Hours for First semester: 420 + 150 = 570 hours								

Second Semester

Sl. No.	Course Titles	Hours/week			IA*	UE**	Total marks (IA+UE)	Total Credits
		L	P/C	Total contact hours				
MOP201	Ocular Diseases and Diagnostics II	45		45	50	50	100	3
MOP202	Advanced Contact lens I	30		30	50	50	100	2
MOP203	Pediatric Optometry & Binocular vision	45		45	50	50	100	3
MOP204	Low Vision and Geriatric optometry	30		30	50	50	100	2
MOP205	Research Project-II		12		50	50	100	6
MOP206	Clinics-2 (General)		6		50	50	100	3
MOP207	Clinics-1 (Specialty)		10		50	50	100	5
TOTAL			28	150	350	350	700	24
Total Clinical+ Research hours: 420 hours								
Total Hours for First semester: 420 + 150 = 570 hours								

Third Semester

Sl. No.	Course Titles	Hours/week			IA*	UE**	Total marks (IA+UE)	Total Credits
		L	P/C	Total contact hours				
MOP301	Advanced contact lens II	30		30	50	50	100	2
MOP302	Low vision care and rehabilitation	30		30	50	50	100	2
MOP303	Vision Therapy	30		30	50	50	100	2
MOP304	Research Project-III		12		50	50	100	6
MOP305	Clinics-3 (general)		6		50	50	100	3
MOP306	Clinics-2 (Specialty)		12		50	50	100	6
TOTAL			30	90	300	300	600	21
Total clinical+ Research hours: 450 hours								
Total Hours for First semester: 450 + 90= 540 hours								

Fourth Semester

Sl. No.	Course Titles	Hours/week			IA*	UE**	Total marks (IA+UE)	Total Credits
		L	P/C	Total contact hours				
MOP401	Clinics-4 (General)		8		50	50	100	4
MOP402	Clinics-3 (Specialty)		20		50	50	100	10
MOP403	Research Project (Dissertation)		14		50	50	100	7
TOTAL			42		150	150	300	21
Total clinical+ Research hours: 630 hours								

First Semester

EPIDEMIOLOGY AND COMMUNITY EYE CARE

INSTRUCTOR INCHARGE: Public Health professional / Optometrist with higher degree and experience in teaching the course on epidemiology

COURSE OBJECTIVES: This course deals with the basics of ocular epidemiology and presents details on various eye diseases. It also introduces the students to the concepts of preventive measures and to inculcate the theoretical knowledge and clinical exposure of community optometry.

COURSE OUTCOMES:

1. Thorough understanding of epidemiological concepts.
2. Thorough understanding of conducting of screening for specific eye conditions, and resultant implications through theoretical and practical exposure.

TEXT BOOKS: Epidemiology of eye diseases: Johnson and Gordon

COURSE PLAN (Total : 30 hours)

1. Prevalence, incidence and distribution of visual impairment
2. Methodology
 - 2.1 Basics of Epidemiology study methods
 - 2.2 Types of study designs
 - 2.3 Screening for visual disorders
3. Childhood blindness
4. Refractive errors and presbyopia
5. Age related cataract
6. Low Vision
7. Diabetic retinopathy
8. Glaucoma
9. Age related Macular Degeneration
10. Vitamin A deficiency
11. Corneal and external diseases
12. Prevention strategies
13. Concept of Health and Disease
14. Principles of Epidemiology and Epidemiological Methods
15. Screening for Eye Disease – Refractive errors, Low Vision, Cataract, Diabetic retinopathy, Glaucoma, Amblyopia, Squint.
16. Blindness
17. Health Information and Basic Medical Statistics
18. Communication for Health Education
19. Health Planning and Management
20. Health care of community
21. How to plan and implement Vision2020

RESEARCH METHODOLOGY

INSTRUCTOR IN CHARGE: M.Optom/PhD

COURSE OBJECTIVES: This course is designed to provide the students the basic knowledge in Bio-statistics. At the conclusion of the course, the students will have the knowledge of data collection, statistical application and finally, presentation of the statistical data.

COURSE OUTCOMES:

1. Ability to write research proposal/grant application
2. Ability to do statistical analysis
3. Ability to write research articles (Medical writing)
4. Ability to critically evaluate the research material

TEXT /REFERENCE BOOKS:

1. Methods in Biostatistics by B.K Mahajan
2. Probability and Statistics by Murray
3. Epidemiology of Eye Diseases, by Gordon and Drawin
4. Research Methodology by SM Israni

COURSE PLAN: (Total: 45 hours)

1. Need for Research in optometry
2. Introduction to research methods , Conducting a literature review , Research design ,Sampling methods , Data collection and data collection tools , Data analysis : Quantitative and Qualitatively ,Public health research , Issues in Research .Writing skills for students
3. Introduction and method of collecting and presenting of statistical data
4. Calculation and interpretation of various measures like mean, median, standard deviations, Skewness and Kurtosis
5. Probability distribution
6. Correlation and regression
7. Significance tests and confidence intervals
8. Parametric tests –
 - 8.1 Test for single proportion
 - 8.2 Test for Equality of proportions
 - 8.3 Test for single mean
 - 8.4 Test for equality of means
9. ANOVA:-
 - 9.1 One way
 - 9.2 Two way
10. Non parametric tests –
 - 10.1 Chi-square tests
 - 10.2 Fisher's exact test
 - 10.3 McNemar test
 - 10.4 Mann-whitney U-test
 - 10.5 Median test
 - 10.6 Sign test
 - 10.7 Wilcoxon test

OCULAR DISEASES AND DIAGNOSTICS - I

INSTRUCTOR IN CHARGE: Ophthalmologist/M. Optom

COURSE OBJECTIVES: Evidence based approach to Diagnosis, Clinical decision Making, Management and co management of anterior segment ocular diseases. Developing more readingability of scientific journals for more evidence based management with recent understanding of diseases.

COURSE COMPETENCIES:

1. Ability to perform clinical decision making for Ocular abnormalities
2. Ability to perform and interpret corneal diagnostics including
 - 2.1 Topography/Pentacam/Orbscan
 - 2.2 Specular microscopy
 - 2.3 Pachymetry
 - 2.4 Abberometry
 - 2.5 AS OCT UBM
3. Ability to perform pre and post Lasik evaluation
4. Ability to interpret glaucoma diagnostic reports
 - 4.1 OCT
 - 4.2 HRT
 - 4.3 GDx
 - 4.4 Gonioscopy
 - 4.5 ONH evaluation
5. Ability to perform anterior segment photography
6. Ability to manage and co-manage therapeutics for anterior segment
7. Referral criteria

TEXT/ REFERENCE BOOKS:

1. Clinical Ophthalmology: Jack J Kanski
2. Diagnostics and imaging techniques in Ophthalmology: Amar Agarwal

COURSE PLAN: Total : 80 Hours

1. Refresher of anterior segment ocular diseases, diagnosis and therapeutics
2. Refresher of glaucoma diagnosis and therapeutics
3. Surgical treatment of anterior segment diseases
4. Anterior segment Diagnostics
 - 4.1 Specular Microscopy
 - 4.2 Topography
 - 4.3 Corneal Hysteresis
 - 4.4 Orbscan, Pentacam
 - 4.5 Pachymetry
 - 4.6 Abberometry
 - 4.7 AS OCT
 - 4.8 HRT
 - 4.9 GDx
 - 4.10 ONH evaluation
 - 4.11 Gonioscopy
 - 4.12 Fluoresceinangiograohy
 - 4.13 Refractive surgery
 - 4.14 Cataract evaluation

RESEARCH PROJECT – Total: 180 hours

Students will prepare the protocol during this semester after doing extensive literature search. Each student will be reporting to guide/supervisor who helps the student to go about in systematically. Research proposal need to be presented in front of the experts before going ahead with data collection. In institute which has Institute research board and ethics committee student can be encouraged to present the proposal in it.

CLINICS: GENERAL: Total - 240 hours

OBJECTIVES: The objective of clinics in this semester is to be able to examine the eye and understand the all eye procedures with clinical management.

An approximate of guided 240 hours needs to be completed in this semester. The students will be by rotation go to community clinics, Campus clinics, and associated hospital and optical / optometric clinics.

The logbook has to be maintained and case sheets of each subject in the semester with complete management and follow up are mandatory for submission at the end of the semester

The log book needs to be signed by the supervisor during every visit. No case record will be considered without the supervisor's signature.

Second Semester

OCULAR DISEASES AND DIAGNOSTICS – II

INSTRUCTOR IN CHARGE: Ophthalmologist/M.Optom

COURSE OBJECTIVES: Evidence based approach to Diagnosis, Clinical decision Making, Management and co management of posterior segment diseases. Developing more reading ability of scientific journals for more evidence based management with recent understanding of diseases.

COURSE COMPETENCIES:

1. Ability to perform electro diagnostic procedures and interpret electro diagnostic reports
 - 1.1 ERG
 - 1.2 EOG
 - 1.3 VEP
2. Ability to perform stereoscopic fundus photography
3. Ability to use Ocular photography as tool for evidence based clinical decision making and progression analysis
4. Ability to perform posterior segment photography
5. Ability to manage and co-manage diseases and disorders of posterior segment

TEXT/ REFERENCE BOOKS:

1. Clinical Ophthalmology: Jack J Kanski
2. Diagnostics and imaging techniques in Ophthalmology: Amar Agarwal

COURSE PLAN: (Total: 45 Hours)

1. Refresher of posterior segment ocular diseases, diagnosis and therapeutics
2. Surgical treatment of posterior segment diseases
 - 2.1 Posterior segment Diagnostics
 - 2.2 ERG
 - 2.3 EOG
 - 2.4 VEP
 - 2.5 OCT
 - 2.6 Fundus photography
 - 2.7 Neuro optometric diseases and disorders

ADVANCED CONTACT LENSES – I

INSTRUCTOR IN CHARGE: M.OPTOM/PhD/FIACLE

COURSE OBJECTIVES: Upon completion of the course, the student should be able to understand the corneal oxygen requirements and recommend the best suitable contact lens for a particular condition. Management of ocular complications with contact lenses. Understand contact lens fitting for compromised corneas and keratoconus. The student should also be able to understand the fitting philosophy of orthokeratology and myopia control.

COURSE COMPETENCIES:

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
 - 3.1 Keratoconus
 - 3.2 Rose'Klenses
 - 3.3 Mini scleral lenses

TEXT/ REFERENCE BOOKS:

1. IACLE modules
2. Contact lenses – Stone and Philips

COURSE PLAN: (Total: 30 hours)

1. Anatomy and Physiology of the Cornea and related Structures
2. Contact Lens Materials
3. Microbiology, Lens Care and Maintenance
4. Tears and contact lenses
5. Optics and Lens Design
6. Clinical Instrumentation in contact lens practice
7. Rigid Gas Permeable corneal lens fitting
8. Soft contact lens fitting
9. Toric Contact lens fitting
10. Lens care regimen
11. Contact lens standards
12. Lens checking : Soft and Rigid
13. Contact lens complications
14. Special types of Contact lenses – diagnosis, surgery, protective, therapeutic, sports, partially sighted

PEDIATRIC OPTOMETRY AND BINOCULAR VISION

INSTRUCTOR IN CHARGE: M.Optom/FCOVD

COURSE OBJECTIVES: Upon completion of the course, the student should be able to understand the, basic concept behind visual perception, binocular vision anomalies and management and co- management of strabismic, non-strabismic binocular vision disorders and amblyopia.

COURSE COMPETENCIES:

1. Ability to diagnose and manage and co-manage binocular vision anomalies
2. Ability to co-manage visual perceptual anomalies
3. Ability to manage diplopia, suppression and ARC
4. Ability to manage amblyopia

TEXT/ REFERENCE BOOKS:

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

COURSE PLAN: (Total: 45 hours)

1. Refractive Development:
 - 1.1 Early Refractive Development
 - 1.2 Visually Guided control of Refractive State: Animal Studies
 - 1.3 Infant Accommodation and Convergence
2. Oculomotor Function:
 - 2.1 Conjugate Eye Movements of Infants
 - 2.2 Development of the Vestibuloocular and Optokinetic reflexes
3. Spatial and Chromatic Vision:
 - 3.1 Front-end Limitations to Infant Spatial vision: Examination of two analyses
 - 3.2 Development of the Human Visual Field
 - 3.3 Development of Scotopic Retinal Sensitivity
 - 3.4 Infant Color vision
 - 3.5 Orientation and Motion selective Mechanisms in Infants
 - 3.6 Intrinsic Noise and Infant performance
4. Binocular Vision:
 - 4.1 Development of interocular vision in Infants
 - 4.2 Stereopsis in Infants and its developmental relation to visual acuity

- 4.3 Sensorimotor Adaptation and Development of the Horopter
- 4.4 Two stages in the development of Binocular Vision and Eye Alignment
- 5. Retinal and cortical Development
- 6. Abnormal Visual Development
- 7. What next in Infant Research
- 8. Clinical Applications:
 - 8.1 Assessment of Child Vision and Refractive Error
 - 8.2 Refractive Routines in the Examination of Children
 - 8.3 Cycloplegic Refraction
 - 8.4 Color Vision Assessment in Children
 - 8.5 Dispensing for the Child patient
 - 8.6 Pediatric Contact Lens Practice
 - 8.7 Dyslexia and Optometry Management
 - 8.8 Electrodiagnostic Needs of Multiple Handicapped Children
 - 8.9 Management Guidelines – Ametropia, Constant Strabismus
 - 8.10 Management Guidelines – Amblyopia
 - 8.11 Accommodation and Vergence anomalies
 - 8.12 Nystagmus
 - 8.13 Common genetic problems in Paediatric optometry
 - 8.14 Pediatric Ocular Diseases
 - 8.15 Ocular Trauma in Children
 - 8.16 Myopia control
 - 8.17 Clinical uses of prism

LOW VISION CARE AND GERIATRIC OPTOMETRY

INSTRUCTOR INCHARGE: M.Optom/PhD

COURSE OBJECTIVES: Upon completion of the course, the student should be able to understand the best suitable low vision and functional assistive device for a particular condition and rehabilitation. This course gives both in-depth theoretical knowledge and clinical exposure in low vision care. The outcomes of this course are: Thorough understanding of the causes of the low vision, its functional and psychosocial consequences. Help visually impaired individuals to utilize their residual visual skills optimally and rehabilitate.

COURSE COMPETENCIES:

1. Ability to diagnose and manage patients with vision impairment
2. Ability to perform specialized diagnostics for patients with low vision with multiple disabilities
 - 2.1 Rudimentary vision
 - 2.2 Berkeley visual field test
 - 2.3 Hand disc perimetry
3. Ability to train for eccentric viewing and steady eye techniques
4. Ability to rehabilitate patients with VI with vocational counselling and activities of daily living

TEXT/ REFERENCE BOOKS: The lighthouse handbook on vision impairment and Vision rehabilitation: Barbara Silverstone, Mary Ann Lang, Bruce Rosenthal, Faye.

COURSE PLAN (Total: 30 hours)

1. Visual Disorders – Medical Perspective
 - 1.1 The Epidemiology of Vision Impairment
 - 1.2 Vision Impairment in the pediatric population
 - 1.3 Ocular Diseases :
 - 1.3.1 Age – Related Cataract,
 - 1.3.2 Glaucoma
 - 1.3.3 ARMD
 - 1.3.4 Diabetic retinopathy
 - 1.3.5 Corneal Disorders
 - 1.3.6 Ocular Trauma
 - 1.3.7 Sensory Neuro-ophthalmology and Vision Impairment
 - 1.3.8 Refractive Disorders
2. Visual Disorders – The Functional Perspective
 - 2.1 Low Vision and Psychophysics
 - 2.2 Visual Functioning in Pediatric Populations with Low Vision
 - 2.3 Perceptual correlates of Optical Disorders
 - 2.4 Functional aspects of Neural Visual Disorders of the eye and Brain
 - 2.5 Visual Disorders and Performance of specific Tasks requiring vision

3. Visual Disorders – The Psychosocial Perspective
 - 3.1 Developmental perspectives – Youth
 - 3.2 Vision Impairment and Cognition
 - 3.3 Spatial orientation and Mobility of people with vision impairments
 - 3.4 Social skills Issues in vision impairment
 - 3.5 Communication and language: Issues and concerns
 - 3.6 Developmental perspectives on Aging and vision loss
 - 3.7 Vision and cognitive Functioning in old age
4. Interactions of Vision Impairment with other Disabilities and sensory Impairments.
 - 4.1 Children with Multiple Impairments
 - 4.2 Dual Vision and Hearing Impairment
 - 4.3 Diabetes Mellitus and Vision Impairment
 - 4.4 Vision Problems associated with Multiple Sclerosis
 - 4.5 Vision Impairment related to Acquired Brain Injury
 - 4.6 Vision and Dementia
 - 4.7 Low Vision and HIV infection
5. The Environment and Vision Impairment: Towards Universal Design
 - 5.1 Indian Disabilities act
 - 5.2 Children’s Environments
 - 5.3 Environments of Older people
 - 5.4 Outdoor environments
 - 5.5 Lighting to enhance visual capabilities
 - 5.6 Signage and way finding
 - 5.7 Accessible Environments through Technology
6. Vision Rehabilitation:
 - 6.1 In Western Countries
 - 6.2 In Asia
 - 6.3 Personnel preparation in Vision Rehabilitation
7. Psychological and social factors in visual Adaptation and Rehabilitation
 - 7.1 The Role of psychosocial Factors in adaptation to vision Impairment and Habilitation outcomes for Children and Youth
 - 7.2 The Role of psychosocial Factors in adaptation to vision Impairment and Habilitation outcomes for Adults and Older adults
 - 7.3 Social support and adjustment to vision Impairment across the life span
 - 7.4 The person – Environment perspective of vision impairment
 - 7.5 Associated Depression, Disability and rehabilitation
 - 7.6 Methodological strategies and issues in social research on vision Impairment and rehabilitation

RESEARCH PROJECT:

Data Collection and submit the progress of the research at the end of the semester.

CLINIC: GENERAL OBJECTIVES:

The objective of clinics in this semester is to be able to examine the eye and understand the all eye procedures with clinical management.

An approximate of guided 240 hours needs to be completed in this semester. The students will be by rotation go to community clinics, Campus clinics, and associated hospital and optical / optometric clinics.

The logbook has to be maintained and case sheets of each subject in the semester with complete management and follow up are mandatory for submission at the end of the semester

The log book needs to be signed by the supervisor during every visit. No case record will be considered without the supervisor's signature

CLINIC: SPECIALITY

OBJECTIVES: The objective of clinics in this semester is to be able to gets hand-on experience related to diagnosis, interpretation of the reports/findings and management.

An approximate of guided 240 hours needs to be completed in this semester. The students will be by rotation go to community clinics, Campus clinics, and associated hospital and optical / optometric clinics.

The focus will be on the specialized subjects studies in this semester.

The logbook has to be maintained and case sheets of each subject in the semester with complete management and follow up are mandatory for submission at the end of the semester

The log book needs to be signed by the supervisor during every visit. No case record will be considered without the supervisor's signature