

THE TAMIL NADU Dr. M.G.R. MEDICAL UNIVERSITY, CHENNAI-32

REGULATIONS OF THE UNIVERSITY

In exercise of the powers conferred by Section 44 of the Tamil Nadu Dr.M.G.R.Medical University, Chennai Act 1987 (Tamil Nadu Act 37 of 1987) the Standing Academic Board of the Tamil Nadu Dr.M.G.R.Medical University, Chennai hereby makes the following regulations:-

1. SHORT TITLE AND COMMENCEMENT:-

These regulations shall be called as “THE REGULATIONS FOR THE M.OPTOM. OF THE TAMIL NADU Dr. MGR MEDICAL UNIVERSITY, CHENNAI”.

They shall come into force from the academic year 2018-2019 onwards.

The Regulations and the Syllabus framed are subject to modification by the Standing Academic Board from time to time.

2. OBJECTIVES: -

Optometry is a discipline concerned with

- (a) Application of physical concepts and methods to the understanding of human field vision in health and disease
- (b) Introduction of new and more precise techniques into the investigation and correction of vision treatment of the individual patient and
- (c) Ensuring the availability and use of resources of Optometry in day –to –day practice.
- (d) At the end of the course the student must have an in depth knowledge in the field of Optometry.
- (e) Have an understanding about the radiation applications in diagnosis correction of vision and treatment and its impact on health care and health care delivery.

3. ELIGIBILITY CRITERIA:-

Candidates who have passed B.Sc. ,(Optometry) degree of this University or any

other University recognized as equivalent thereto by the authority of this University.

4. ELIGIBILITY CERTIFICATE:

Candidates who have passed any qualifying examination, as specified in Regulation No.3 above from any other Universities other than the Tamil Nadu Dr.M.G.R. Medical University before seeking admission to the affiliated institutions shall obtain an Eligibility Certificate from the University by remitting the prescribed fees along with the application form which shall be downloaded from the University website (www.tnmgrmu.ac.in).

5. DURATION OF THE COURSE:- Two years

Each academic year shall consist of not less than 270 working days.

6. AGE LIMIT FOR ADMISSION :-

No upper age limit.

7. PHYSICAL FITNESS CERTIFICATE:

Every candidate before admission to the course shall submit to the Director of the Institution a certificate of medical fitness from an authorized medical officer that the candidate is physically fit and mentally sound to undergo the academic course and does not suffer from any disability or contagious disease.

8. CUT OFF DATES FOR ADMISSION TO THE COURSE

Candidates admitted up to **30th September** shall be registered to take up their first year examination from October / May of the next year, after fulfilment of the regulations.

All kinds of admissions shall be completed on or before **30th September** of the academic year. There shall not be any admissions after **30th September** , even if seats are vacant.

* It was resolved 48th S.A.B. Dated 02.07.2014

9. REGISTRATION:

A candidate admitted to the Post Graduate Degree in Optometry shall register his/ her name by submitting the prescribed application form for registration duly filled in by remitting the prescribed fee to the Tamil Nadu Dr. M.G.R. Medical University within 30 days from the cut off date prescribed for Post Graduate Degree in Optometry.

10. COMMENCEMENT OF THE COURSE:

1st September

• It was resolved 48th S.A.B. Dated 02.07.2014

11. MIGRATION/TRANSFER OF CANDIDATES

Request for Migration/Transfer of candidates during the course of study from one recognized Institution to another recognized Institution of this University or from other University shall not be granted under any circumstances.

12. RE-ADMISSION AFTER BREAK OF STUDY

As per the procedure laid down in a common regulation for all the courses of the Tamil Nadu Dr. M.G.R. Medical University.

13. POSTING AND TRAINING IN OUTSIDE CENTRES:

It is mandatory the M.Optom. student should undergo fifteen days of posting in each Speciality Departments like Contact Lenses, Cornea, Paediatric, Ophthalmology, Glaucoma, Low Vision and Retina (3 months).

14. MAINTENANCE OF LOG BOOK:-

- a) Every Post Graduate Degree candidate shall maintain a record of skills (Log Book) he / she has acquired during the two years training period, certified by the various Heads of Department, where he / she undergone training including outside the institution.
- b) The candidate should also be required to participate in the teaching and training programme of post-graduate and intern-students.
- c) In addition, the Head of the Department shall involve their Post-graduate Degree course candidates in Seminars, Journal Clubs, Group Discussions and participation in clinical.

- d) Every Post- graduate Degree course candidate should be encouraged to present short title papers in conferences and improve on it and submit them for publication in reputed medical journals. Motivation by the Heads of Departments is essential in this area to sharpen the research skills of the post-graduate candidates.
- e) The Head of the Department shall scrutinize the Log Book once in every three months.
- f) At the end of the course, the candidate should summaries the contents and get the Log Book certified by the Head of the Department.
- g) The Log Book for each years should be submitted 3 months prior to the final year examinations.

15. ATTENDANCE REQUIREMENT FOR ADMISSION TO EXAMINATION

- a) No candidate shall be permitted to appear in any one of the parts of M.Optom. Course Examinations, unless he / she has attended the course in all the subjects for the prescribed period in an affiliated Institution recognized by this U n i v e r s i t y a n d h a s t o p r o d u c e t h e necessary certificates of study, attendance, satisfactory conduct and progress from the Head of the Institution.
- b) A candidate is required to put in a minimum of 85% of attendance (of 270 days) each in theory and practical classes in each subject before admission to the examination.
- c) A candidate lacking in the prescribed attendance and progress in any one subject in theory and practical classes, wherever necessary in the first appearance, shall not be permitted for admission to the entire examination.

16. CONDONATION OF LACK OF ATTENDANCE:

There shall be no condonation of lack of attendance in Post Graduate degree programme.

17. COMMENCEMENT OF EXAMINATION:

15th October / 15th May

If the date of commencement of examinations falls on Saturdays / Sundays or declared Public Holidays, the examination shall begin on the next working day.

18. MEDIUM OF INSTRUCTION:

English shall be the medium of instruction for all the subjects of study and examination of the Post - graduate Degree in Optometry.

19. PASSING MINIMUM:

A candidate shall be declared to have passed in each paper/subject if he / she secures NOT LESS THAN 50% of the marks prescribed for the examinations.

20. REVALUATION / RETOTALLING OF ANSWER PAPERS:-

Re-totalling / Revaluation of answer paper is not permitted .

21. INTERNAL ASSESSMENT:

The Internal Assessment should consist of the following points for Evaluation:-

INTERNAL ASSESSMENT – SCHEME : 50 MARKS

Theory	Practical	Log Book
20 marks	20 marks	10 marks

The Internal Assessment of the candidate has to be assessed on the above points and a report has to be submitted by the institution as detailed below:-

The aggregate of Final Internal Assessment Marks should be submitted 2 months before the commencement of the exam as per scheme of examination shall be taken by the University as Internal Assessment Marks and minimum of 50% marks is mandatory for permitting the candidates to sit for the University examinations.

22. SCHEME OF EXAMINATION: FIRST YEAR

S.No	Subjects	Internal Assessment (IA)		Theory		Practical		Viva Voice	
		Max	Min	Max	Min	Max	Min	Max	Min
1.	Research Methodology and Bio-Statistics	50	25	100	50	--	--	-	-
2.	Ocular Diseases and Diagnostics - I	50	25	100	50	-	-	-	-
3.	Advanced Contact Lenses - I	50	25	100	50	100	50	-	-
4.	Paediatric Optometry and Binocular Vision	50	25	100	50	100	50	-	-
5.	Low Vision Care and Geriatric Optometry	50	25	100	50	100	50	-	-
6.	Clinics (General)	50	25	--	--	100	50	50	25

SECOND YEAR

S.No	Subjects	Internal Assessment (IA)		Theory		Practical		Viva Voice	
		Max	Min	Max	Min	Max	Min	Max	Min
1.	Ocular Diseases and Diagnostics - II	50	25	100	50	100	50	-	-
2.	Advanced Contact Lenses - II	50	25	100	50	100	50	-	-
3.	Low Vision Care and Rehabilitation	50	25	100	50	--	--	-	-
4.	Vision Therapy	50	25	100	50	--	--	-	-
5.	Sports Vision and Occupational Optometry	50	25	100	50	--	--	-	-

6.	Epidemiology and Community Eye Care	50	25	100	50	100	50		
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If a candidate fails in practical (or) theory he/she has to write BOTH the practical paper and the RELATED theory subject.

Evaluation of Dissertation	200
Viva/Presentation	50
IA	50
Total	300
Passing Minimum	150

* It was resolved XXXX111 S.A.B. Dated 19.12.2011.

The candidates having arrear papers should complete and pass the first year papers before appearing for the final year examinations.

23. SUBMISSION OF PRACTICAL RECORD BOOKS :-

At the time of Practical Examination, each candidate shall submit to the Examiners his / her Practical Record Books duly certified by the Head of the Department as a bonafide record of the work done by the candidate.

The concerned Head of the Department shall evaluate the Practical Record (Internal Assessment) and the Practical Record shall be presented to the Examiner at the time of examinations at the end of each year.

24. QUESTION PAPER PATTERN:-

Theory

Essay - 2 x 20 Marks = 40 Marks

Short Notes - 10 x 6 Marks = 60 Marks

100 Marks

Requirement for pass: 50% in each paper

**TAMIL NADU DR. MGR MEDICAL UNIVERSITY
GUINDY, CHENNAI**

Master of Optometry (M.Optom)

**(M.Optom) DEGREE COURSE REGULATION &
SYLLABUS FROM THE A . Y. 2018-2019**

Master of Optometry

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

Duration of the course: 2 years

Medium of instruction:

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

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.

MOP101 Paper 1

RESEARCH METHODOLOGY AND

BIostatISTICS

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 :

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

MOP102 Paper 2

OCULAR DISEASES AND DIAGNOSTICS - I

COURSE OBJECTIVES: Evidence based approach to Diagnosis, Clinical decision Making, Management and co management of anterior segment ocular diseases. Developing more reading ability 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:

- 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 Fluoresceinangiography
 - 4.13 Refractive surgery
 - 4.14 Cataract evaluation

MOP103 Paper 3

ADVANCED CONTACT LENSES – I

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'K lenses
 - 3.3 Mini scleral lenses

TEXT/ REFERENCE BOOKS:

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

COURSE PLAN:

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

MOP104 Paper 4

PAEDIATRIC OPTOMETRY AND BINOCULAR

VISION

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:

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

MOP105 Paper 5

LOW VISION CARE AND GERIATRIC

OPTOMETRY

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

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

MOP106 Paper 6

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

M.Optom Year 2

MOP201 Paper 1

OCULAR DISEASES AND DIAGNOSTICS – II

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:

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

MOP202 Paper 2

ADVANCED CONTACT LENSES – II

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 fit specialized contact lenses
 - 1.1 Keratoconus
 - 1.2 Rose'Klenses
 - 1.3 Mini scleral lenses
 - 1.4 Hybrid lenses
 - 1.5 Orthokeratology
 - 1.6 Scleral lenses: Dry eyes, SJS, Post PK, Post C3R, Post LASIK ectasia
2. Ability to fit custom made ocular prosthesis
3. Ability to fit pediatric contact lenses

TEXT/ REFERENCE BOOKS:

1. IACLE MODULES
2. CONTACT LENSES – STONE AND PHILIPS

COURSE PLAN:

1. Extended and Continuous wear Lenses
2. Scleral Contact lenses
3. Bifocal and Multifocal contact lenses
4. Orthokeratology
5. Keratoconus
6. Post keratoplasty contact lens fitting
7. Post refractive surgery contact lens fitting
8. Pediatric contact lens fitting
9. Cosmetic and prosthetic contact lens fitting
10. Contact lens for abnormal ocular conditions
11. Contact lens and Myopia control
12. Legal issues and contact lenses
13. Contact lens manufacturing
14. Modifications procedures

MOP203 Paper 3

LOW VISION CARE AND

REHABILITATION

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
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:

1. Habilitation of Children and Youth with vision Impairment
2. Rehabilitation of working –age Adults with Vision Impairment
3. Rehabilitation of older Adults with Vision Impairment
4. Functional consequences of vision Impairment
5. Vision evaluation of Infants
6. Educational assessment of visual function in Infants and Children
7. Functional Evaluation of the Adult
8. Functional orientation and Mobility
9. Functional Assessment of Low Vision for Activities of Daily living
10. Psychosocial assessment of adults with vision impairment
11. Assistive Devices and Technology for Low Vision
12. Assistive Devices and Technology for Blind
13. Vision and Reading - Normal Vs Low Vision
14. Clinical Implications of color vision Deficiencies

MOP204 Paper 4

VISION THERAPY

COURSE OBJECTIVES: The course is designed to help expand the student’s knowledge base in all aspects of behavioural vision care. Advanced competency is expected in the following principles and procedures for each clinical condition.

COURSE COMPETENCIES:

Principles and Procedures – The student should be able to define and explain:

1. The unique qualities, scientific, and clinical principles of each clinical condition.
2. The epidemiological and demographic characteristics of each clinical condition.
3. The characteristic history, signs and symptoms for each clinical condition.
4. How to assess each clinical condition, including specific test protocols and their interpretation.
5. The differential diagnosis for each clinical condition.
6. The specific treatment and management of each clinical condition

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|-----|--|
| 6.1 | Prognostic indicators |
| 6.2 | Treatment options |
| 6.3 | Duration and frequency of treatment |
| 6.4 | Treatment philosophy and goals |
| 6.5 | Specific lens treatment and therapy procedures including rationale for treatment |
| 6.6 | Ergonomics and visual hygiene |
| 6.7 | Outcomes to determine successful completion of treatment |
| 6.8 | Frequency of follow-up care and patient instructions |
| 6.9 | Referral criteria (medical, neurological, educational, etc.) |

TEXT/ REFERENCE BOOKS:

1. Clinical management of binocular vision Mitchell Scheiman and Bruce Wick
2. Applied concepts in vision therapy: Leonard Press

COURSE PLAN:

1. Clinical Conditions

1.1 Strabismus and Amblyopia

1.1.1

Amblyopia

- Anisometropic / Isometropic Refractive Amblyopia
- Strabismic Amblyopia
- Hysterical Amblyopia
- Form Deprivation Amblyopia
- Differential diagnoses in childhood visual acuity loss

1.1.2 Strabismus

- Esotropia

- Infantile
- Accommodative
- Acquired
- Microtropia
- Sensory
- Convergence Excess
- Divergence Insufficiency
- Non-accommodative
- Sensory Adaptations

- Exotropia

- Divergence Excess
- Convergence Insufficiency
- Basic Exotropia
- Congenital
- Sensory
- Vertical Deviations
- Noncomitant Deviations (AV Syndrome; Duane's Retraction Syndrome; Brown's Syndrome; III, IV, VI nerve palsy, etc.)
- Differential diagnoses in strabismus

- Special clinical considerations

- Anomalous Correspondence
- Eccentric Fixation
- Suppression
- Motor Ranges

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1.2 Perception and Information Processing

1.2.1 Neurological / Psychological

- Ambient / focal systems.
- Visual perceptual midline
- Parvo cellular / Magno cellular function
- Perceptual Style (central, peripheral)
- Impact of colored filters
- Attention

1.2.2 Intersensory and Sensorimotor Integration

- Visual-auditory
- Visual-vestibular
- Visual-oral
- Visual-motor
- Visual-tactual

1.2.3

Perform

ance indicators

- Laterality and directionality
- Visual requirements for academic success
- Bilaterality
- Gross and fine motor ability
- Form perception/visual analysis
- Spatial awareness
- Visualization
- Visual memory
- Visual sequential memory
- Form constancy
- Visual speed and visual span
- Visual sequencing

1.3 Refractive conditions and visual skills

1.3.1

Refract

ive Conditions

- Aniseikonia
- Myopia
- Astigmatism
- Hyperopia

1.3.2 Ocular Motor Function

- Eye movements and reading
- Pursuit dysfunctions
- Nystagmus
- Saccadic Dysfunctions

1.3.3 Accommodation

- Role in myopia development
- Role in computer-related asthenopia

1.3.4 Fusion in Non-Strabismic Conditions

- Fixation disparity
- Motor fusion
- Sensory fusion

1.4 Special clinical conditions

1.4.1 Acquired brain injury (traumatic brain injury {TBI} and stroke)

1.4.2 Developmental disabilities (Down Syndrome, Developmental delay, etc.)

1.4.3 Visually induced balance disorders

1.4.4 Motor disabilities (Cerebral Palsy, ataxia, etc.)

1.4.5 Behavioral disorders

1.4.6 Autism spectrum disorders

1.4.7 ADD / ADHD

1.4.8 Dyslexia and specific reading disabilities

1.4.9 Learning Disabilities

1.4.10 Computer Vision Syndrome

2. Vision Therapy Concepts to Consider

2.1 Peripheral awareness:

2.1.1 focal / ambient roles

2.1.2 Significant findings which are good or poor prognostic indicators of vision therapy and lens application

2.1.3 Development, rehabilitation, prevention, enhancement

2.1.4 Behavioral lens application

2.1.5 Yoked prism rationale for treatment and application

2.1.6 The relationship between the visual and vestibular systems

2.1.7 SILO/SOLI

2.1.8 Visual stress and its impact on the visual system

2.1.9 Role of posture in vision development, comfort and performance

2.1.10 Disruptive therapy: Discuss this type of therapy and how it can be used as a clinical therapeutic tool.

2.1.11 Relationship of speech-auditory to vision

2.1.12 How television, reading, video gaming might restrict movement,

computer work, nutrition, etc., impact vision?

MOP205 Paper 5

SPORTS VISION AND OCCUPATIONAL OPTOMETRY

SPORTS VISION

1. Introduction to Sports Vision
2. Visual Task Analysis in Sports
3. Visual Information processing in Sports
4. Visual Performance Evaluation
5. Sports Vision Screening & Report Strategies
6. Prescribing for the Athletes
7. Ocular Injuries in Sports : Assessment & Management
8. Enhancement of Visual skills in sports
9. Sports Vision Practice Development

Reference Books:

1. Sports Vision- Vision Care for the Enhancement of the Sports Performance by Graham Erikson
- Butterworth Heinemann Elsevier.

OCCUPATIONAL OPTOMETRY

1. Introduction to occupational health, hygiene and safety International Bodies like ILO. WHO, National bodies like Labor institutes, National institute of occupational health, National Safety Council etc.
2. Acts and Rules
Factories Act, and Rules
Workmen's compensation
ESI Act, etc.
3. Occupational diseases/occupational related diseases caused by-physical agents, chemical agents and biological agents
4. Occupational hygiene, environmental monitoring, Recognition, evaluation, control of hazards.
Illumination – definition, measurements, standards.
5. Occupational safety.
Causes of accidents. Vision, Lighting, color and their role.
Accident analysis. Accident prevention
6. Ocular and visual problems of occupation
Electromagnetic radiation
Ionising Non-ionising-infrared, Ultra violet , Microwave laser
Injuries-mechanical, chemical
Toxicology – metals, chemicals
7. Prevention of occupational diseases
Medical examination / medical monitoring
Pre-employment / pre placement
Periodic
8. Personal protective equipment

General

Goggles, face shields etc.

Selection and use

Testing for standards

9. Standards

Visual standards for jobs.

10. Problems of special occupational groups

Drivers, pilots and others

11. Field work – submission of reports

Visits to: Regional Labour Institute selected industries

12. Visual display units (terminals) VDU/VDT

Contact lens and work

Pesticides - general and visual and ocular defects

Text and reference books

- a. Encyclopedia of Occupational Health and Safety, ILO Publication, 1983, Vol. I & II.
- b. IES Lighting Handbook (LH) 1984, IES Publication, NY 1985.
- c. IES Lighting Education introductory lighting (LE) 1985, IES Publication N.Y. 1985
- d. Guide to Occupational and other Visual needs – HOLMES C. JOLLIES H. & GREGG J. 1958.
- e. Occupational eye diseases and injuries – JOSEPH MINTON, William Heinemann Medical Book Ltd., 1949.
- f. Environmental Vision – Donald Pitts - Butterworth Heinemann
- g. Work and the eye – Rachel North - Butterworth Heinemann
- h. Ophthalmic research and epidemiology – Stanley Hatch - Butterworth Heinemann
- i. Professional communication in eye care – Carolyn Begley - Butterworth Heinemann

MOP206 Paper 6

EPIDEMIOLOGY AND COMMUNITY EYE CARE

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

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
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