# Master of Optometry (M.Optom)

## Syllabus

## FIRST YEAR

**Paper : 1: Principles of Epidemiology, Research Methodology, Biostatistics and Medical Ethics :-**

### UNIT I: EPIDEMIOLOGY

Introduction: Historical aspects and evolution of epidemiology, definitions and concepts in Epidemiology. Natural history of disease. Approaches in Epidemiology. Descriptive and Analytical Epidemiology, Disease burden and Measures of risk and death. Epidemiological Investigations.

### UNIT-II – RESEARCH METHODOLOGY

Principles of Research study designs, Sampling Methods, Sample size Estimation, Protocol writing and Measures of Association. Introduction to Operations Research.

### UNIT III: BIOSTATISTICS

Fundamentals of Biostatistics: Introduction, Types of data, Tabular and graphical presentation of data. Measures of location, dispersion and correlation: Measures of central tendency. Mean, mode, median, GM, HM, quartiles Measures of dispersion— Range, Standard Deviation, Variance, Coefficient of Variation.

Probability and statistical inference: Concept and probability distribution. Normal distribution— density curves, applications and statistical tables. Concept of significance tests, parametric and nonparametric tests, standard error and confidence intervals.

Inferential statistics: Probability and distributions – Poisson, Binomial and Normal distribution – Chi-square test – Hypothesis test - Student's t-test – Correlation and Regression – ANOVA.

### UNIT IV: MEDICAL ETHICS

Bioethics and Medical ethics: Historical perspectives & Introduction to Bioethics, Nuremberg Code, Declaration of Helsinki, Principle of essentiality, informed consent, confidentiality, minimisation of risk, accountability and responsibility. Ethics of clinical trials: Drug trials, vaccine trials, Clinical Trials with medical devices/surgical procedures/radioactive materials, Research in transplantation and stem cell therapy. Regulatory framework and guidelines for conduction of human research: Review processes, Institutional ethical committees, composition of committees, review procedures, WHO, UNESCO and ICMR guidelines.

**References :**


1. Epidemiology: An Introduction. Kenneth J. J. Rothman. Latest edition / Pub. Date: May 2002. Publisher: Oxford University Press.
2. Epidemiology. Leon Gordis. Latest edition / Pub. Date: November 2004. Publisher: Elsevier Health Sciences.
3. Diseases and Human Evolution. Ethne Barnes. Latest edition / Latest edition / Pub. Date: March 2005. Publisher: University of New Mexico Press.
4. Epidemiology: Beyond the Basics. F. Javier Nieto, Moyses Szklo. Latest edition / Pub. Date: November 2003. Publisher: Jones & Bartlett Publishers, Inc.
5. Basic and Clinical Biostatistics. Beth Dawson, Robert G. Trapp, Robert Trapp. Latest edition / Pub. Date: March 2004.
6. Discovering Statistics Using SPSS. Andy Field. Latest edition / Pub. Date: April 2005. Publisher: SAGE Publications.
7. Arora PN & Malhon PK (1996). Biostatistics Imalaya Publishing House, Mumbai.
8. Sokal & Rohif (1973). Introduction to Biostatistics, Toppan Co. Japan.
9. Stanton A & Clantz, Primer of Biostatistics — The McGraw Hill Inc., New York.
10. Government of India. Good Clinical Practices for Clinical Research in India. New Delhi: 2001
11. Indian Council of Medical Research. Ethical Guidelines for Biomedical Research on Human Subjects. New Delhi: 2000
12. United Nations Educational, Scientific and Cultural Organisation (UNESCO). Universal Declaration on Bioethics and Human Rights. Paris; 2005


**MOP102 Paper II : 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 HRT
   - 4.2 GDx

4.3 Gonioscopy
4.4 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
    1. Specular Microscopy
    2. Topography
    3. Corneal Hysteresis
    4. Orbscan, Pentacam
    5. Pachymetry
    6. Abberometry
    7. AS OCT
    8. HRT
    9. GDx
    10. ONH evaluation
    11. Gonioscopy
    12. Fluorosceinangiograohy
    13. Refractive surgery
    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:**

**Ability to diagnose and manage and co-manage binocular vision anomalies**

1. Ability to co-manage visual perceptual anomalies
2. Ability to manage diplopia, suppression and ARC
3. 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, Contant 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

# Second Year

**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:**

**Habilitation of Children and Youth with vision Impairment**

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

| | |
|---|---|
| 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
  - Stereops is Horror fusionalis/intractable diplopia

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 Performance indicators

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

1.3 Refractive conditions and visual skills

1.3.1 Refractive 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, colorand 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 examinational / 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 Publicantion, 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 Heineann Medical Book Ltd., 1949.
f. Environmental Vision – Donald Pits - 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 COMMUNITY EYE CARE

**COURSE OBJECTIVES**: This course deals with the basic s 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 Vision 2020