



**Department of Paramedical Sciences**  
**Faculty of Allied Health Sciences**  
**SGT UNIVERSITY**

Shree Guru Gobind Singh Tricentenary University

**Gurgaon-122505**

Syllabus

**Master of Optometry (M.OPT)**

**Duration: 2 years (4 Semester)**

W.e.f. Academic Session 2021-22

**Master of Optometry, 1<sup>st</sup> Year  
Semester-I**

**Epidemiology, Public health and Community Optometry**

**L T P Credits**  
**3 1 - 4**

**Examination: 60 Marks**  
**Int. Assessment: 40 Marks**  
**Total: 100 Marks**  
**Duration of Examination: 3 hours**

Course Objective: This course deals with knowledge, sensitivity and clinical exposure of community Optometry.

Course outcomes: Thorough understanding of epidemiology concepts and conducting screening eye conditions. Students will be able to use the knowledge of skills gained in promotion and preventive measures of community Optometry.

Course Outlines:

**Unit I-** public health concepts

History of public health, History of public health optometry, organization of health services, health care delivery systems in India and determinants of health and care delivery system as well as planning of health services. Health manpower protection and in the practice of Optometry, multidisciplinary and institutional practices modes, global medicine and evolution of public health in India, public health optometry: concepts and implementation.

**Unit II-** Levels of prevention –Optometrists role in community

Optometry's role as a primary eye care professional

**Unit III-** Health systems

Concepts of health systems, National health programs, and effective delivery of eye care services

**Unit IV-** Vision 2020: The Right To Sight

Public health and epidemiology, National and International agencies in eye care, NPCB, DBCS

**Unit V-** Global Blindness and visual impairment

Refractive errors and low vision as public health issues, socioeconomic implications of blindness and visual impairment, vision screening, organizing eye camps, eye donation and eye banking, Role of civil societies in blindness prevention.

**Unit VI-** Epidemiology

Prevalence, incidence and distribution of visual impairment, basic of epidemiology study methods, incidence, prevalence risk factors and odd ratio, childhood blindness, refractive errors and presbyopia, Age related cataract, Low vision, Diabetic retinopathy, glaucoma, Age related macular degeneration, Trachoma, corneal blindness

**Master of Optometry, 1<sup>st</sup> Year  
Semester-I**

**Binocular Vision & Pediatric Optometry-I**

**L T P Credits**  
**3 1 - 4**

**Examination: 60 Marks**  
**Int. Assessment: 40 Marks**  
**Total: 100 Marks**  
**Duration of Examination: 3 hours**

Course Objectives: This course gives both in depth theoretical knowledge and clinical exposure in binocular vision.

Course outcomes: Thorough understanding of visual development issues, evaluation of pediatric subjects, non-surgical management of the pediatric binocular and refractive problems, amblyopia and strabismus.

Course Outlines:

**Unit I-** Refractive development and oculomotor function

Revision of anatomy and physiology of EOM and binocular vision, refractive development, visually guided control of refractive state: Animal studies, infant accommodation and convergence, conjugate eye movement of infants,

**Unit II –** Spatial Sense, Chromatic vision and binocular vision

Front –end limitations to infant spatial vision: Examination of two analyses, development of the human visual field, Development of Scotopic retinal sensitivity, infant color vision, orientation and motion selective mechanisms in infants, intrinsic noise and infant performance, development of interocular vision in infants, Stereopsis in infant and its development relation to visual acuity, sensorimotor adaptation and development of the Horopter, two stages in the development of binocular vision and eye alignment, retinal and cortical and abnormal visual development

**Unit III-** Clinical application

Assessment of child vision and refractive error, refractive routine in the examination of children, cycloplegic refraction, color vision assessment in children, Dispensing for the child patients, common genetic problems in pediatric Optometry, Pediatric ocular diseases, Ocular trauma in children, myopia control, Pediatric contact lens practice, Clinical uses of prism

**Unit IV –**Clinical management

Dyslexia and optometry management, Electrodiagnostic needs of multiple handicapped children, management guideline – Ametropia, constant strabismus, Amblyopia, Nystagmus. Accommodation and vergence anomalies, ocular motility procedure

**Master of Optometry, 1<sup>st</sup> Year  
Semester-I**

**Ocular Diseases and Diagnostic procedure-I**

**L T P Credits**  
**3 1 - 4**

**Examination: 60 Marks**  
**Int. Assessment: 40 Marks**  
**Total: 100 Marks**  
**Duration of Examination: 3 hours**

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 journal for evidence based management with recent understanding of diseases.

Course Outcomes: Ability to perform clinical decision making skills, interpretation, management and co management of ocular diseases.

Course Outlines:

The following common conditions will be covered in this semester

1. Diseases of eye lid and Adnexa
2. Diseases of conjunctiva and sclera
3. Diseases of cornea
4. Interpretation and management of dry eye
5. Lens and its abnormalities
6. Diseases of Uvea

**Unit I- Basic Review**

Review of basic sciences

- Optometric preliminary examination
- Ocular health examination
- Objective and subjective refraction
- Binocular vision examination

**Unit II – Ophthalmic instrument**

Slit-Lamp, specular microscopy, Topography, corneal hysteresis, Orbscan, Pentacam, Pachymetry, Abberometry, AS OCT, HRT, GDx, ONH evaluation, Gonioscopy, Fluorescein angiography, Refractive surgery, cataract

**Master of Optometry, 1<sup>st</sup> Year**  
**Semester-I**  
**Low Vision Eye Care-I**

**L T P Credits**  
**3 1 - 4**

**Examination: 60 Marks**  
**Int. Assessment: 40 Marks**  
**Total: 100 Marks**  
**Duration of Examination: 3 hours**

Course Objectives: This course gives both in-depth theoretical knowledge and clinical exposure in low vision care.

Course Outcomes: Thorough understanding of the causes of the low vision, its functional and psychosocial consequences, and rehabilitation measures through didactic lectures and clinical postings.

Course Outlines:

**Unit I-** Introduction to low vision

Definition of low vision, impact of low vision, Prevalence of low vision, Different levels of low vision services, psychosocial implication of low vision services

**Unit II-** Causes and symptoms of low vision

Common causes of low vision, Low vision symptoms and condition, functional implication of diseases causing visual impairment.

**Unit III-** Clinical assessment of low vision patient Purpose of

low vision assessment, steps of low vision assessment

**Unit IV-** Magnification

Different types of magnification, different methods and formulae for calculating, how to determine resolution ability, Predict distance required to meet resolution goal, measure lens power, measure equivalent viewing distance, calculate equivalent viewing distance for different devices.

**Unit V-** Optical low vision devices

What are optical devices? Definition of various low vision devices, different type of optical low vision devices and their uses

**Master of Optometry, 1<sup>st</sup> Year  
Semester-I**

**Research Methodology, Biostatistics & Hospital Management**

**L T P Credits**  
**3 1 - 4**

**Examination: 60 Marks**  
**Int. Assessment: 40 Marks**  
**Total: 100 Marks**  
**Duration of Examination: 3 hours**

Course objective: This course is designed to provide about research design that is intended to cover the basics of designing and implementing a scientific study. Introduction to biostatistics and implementing statistical test and procedures.

Course Outcome: Students will have knowledge to write research proposal/ grant application /research article and to do statistical analysis.

Course outline:

**Unit I**

Introduction to research methods, variable in research, Reliability and validity in research, conducting a literature review, Formulation of research problems and writing research questions, Hypothesis, Null and research Hypothesis, Type I and type II errors in Hypothesis testing.

**Unit II**

Experimental and non experimental research designs, sampling methods, data collection, observation method, Interview method, questionnaires and schedules construction

**Unit III**

Ethical issues in research, principles and concepts in research ethics-confidentiality and privacy informed consent, writing research proposals, development of conceptual framework in research

**Unit IV-Introduction to statistics**

Introduction to statistics, Classification of data, source of data, method of scaling-nominal, ordinal, ratio and interval scale, measuring reliability and validity of scales

**Unit V**

Measures of central tendency, measures of dispersion, skewness and kurtosis, sampling, sample size determination, concept of probability and probability distributions- binomial probability distribution, poisson probability distribution and normal probability distribution

## **Unit VI**

Correlation-Karl person, spearman's rank correlation methods, regression analysis, testing hypothesis-chi square test, student's test, NOVA

## **Unit VII**

Health care- An overview, Functions of hospital administration, Modern techniques in hospital management, Challenges and strategies of Hospital management

### **Administrative functions:**

Planning, Organizing, Staffing, Leading and Controlling Organizational Structure, Motivation and Leadership, Designing health care organization

## **Unit VIII**

Medical record, House-keeping services, Laboratory performance, Management of Biomedical waste, Total patient care- Indoor and Outdoor, Nursing and ambulance resources, Evaluation of hospital services, Quality assurance, Record reviews and medical audit

**Master of Optometry, 1<sup>st</sup> Year**  
**Semester-I**  
**Evaluative Clinical Practice-I**

**L T P Credits**  
- - 8 4

**Examination: 60 Marks**  
**Int. Assessment: 40 Marks**  
**Total: 100 Marks**

Course Objectives: This course includes of 90 hours of supervised clinical training .The clinics involve primary care clinics and community work. The objective of clinics in this semester is to be able to examine the eye and understand the basic eye procedures with clinical management. A logbook is maintained and 30 case sheets with complete management and follow up are mandatory for submission.

Course Outlines:

- 1) Communication and personal conduct
- 2) Visual function and Ametropia
- 3) Ocular examination
- 4) Ocular abnormalities
- 5) Binocular vision
- 6) Visual impairment



**Master of Optometry, 1<sup>st</sup> Year**  
**Semester-II**  
**Binocular vision II & vision Therapy**

**L T P Credits**  
**3 1 - 4**

**Examination: 60 Marks**  
**Int. Assessment: 40 Marks**  
**Total: 100 Marks**  
**Duration of Examination: 3 hours**

Course Objectives: This course gives both in depth theoretical knowledge and clinical exposure in binocular vision

Course outcomes: Discussion focus on natural history, etiology, signs and symptoms, related characteristics, significance and practical management of course outlines.

Course Outlines:

**Unit I-** Strabismus

Diagnosis of strabismus anomalies, clinical model of visual processing, diagnostic evaluation of strabismus, diagnostic assessment and prognosis

**Unit II-** Management strategy and treatment options

Lens therapy, prism therapy, occlusion therapy, Active therapy, pharmacological therapy, surgical therapy

**Unit III-** Management of sensory anomalies

Treatment of suppression, treatment of functional amblyopia, treatment of anomalous correspondence

**Unit IV-** Strabismus management strategies

Management of Exotropia, management of esotropias, management of vertical strabismus

**Unit VI-** Nystagmus

Classification, types and management options

**Unit VII-** Vision therapy and vision therapy techniques

Introduction and general concepts, fusional vergence, voluntary convergence & antisuppression procedures, Accommodative procedures, ocular motility, procedures, binocular vision and accommodative problems associated with computer use, vision therapy software, patients management issues in vision therapy, vision therapy and optometry practice

**Unit VIII-** Dyslexia and optometry management

**Master of Optometry, 1<sup>st</sup> Year  
Semester-II**

## Low Vision Care-II

**L T P Credits**

**3 1 - 4**

**Examination: 60 Marks**

**Int. Assessment: 40 Marks**

**Total: 100 Marks**

**Duration of Examination: 3 hours**

Course Objectives: This course gives both in-depth theoretical knowledge and clinical exposure in low vision care.

Course Outcomes: Thorough understanding of the causes of the low vision, its functional and psychosocial consequences, and rehabilitation measures through didactic lectures and clinical postings. The course teaches the role of optometrists perform in treating the level 1 low vision patient who has moderate visual impairment. This course also addresses how to refer the level 2 patients who have advanced visual impairment to comprehensive low vision care.

### Course Outlines:

#### **Unit I-** optical low vision devices

Relative size magnification, large- print clocks, timers, calculators, remote controls, watches, books, glare and contrast control, posture and comfort maintenance devices, hand writing and written communication devices, orientation and mobility devices, sensory substitution device, medical management device

#### **Unit II-** Computer assistive technology for low vision patient

CCTV, electronic magnifier, hand held electronic magnification, mobility devices

#### **Unit III-** Orientation and mobility

Orientation and mobility skills, pre cane skills, sighted guide technique, using a cane, using other senses of orientation, Do's and Don'ts for orientation and mobility, driving with low vision

#### **Unit IV-** using functional and residual vision to achieve independent living

Visual functioning, how to enhance visual functioning, residual vision, classification of activities of daily living, basic step towards independent living, how to achieve independent living

#### **Unit V-** Practice management

Planning, infrastructure needed to start, marketing, management of practice, financial planning and personnel management

#### **Unit VI-** The vision related rehabilitation network

Rehabilitation services network, state rehabilitation programs and services, private rehabilitation programs & services, low vision practitioner role in rehabilitation services network, building a referral network, ensuring accessibility to service, financial resources



**Master of Optometry, 1<sup>st</sup> Year**  
**Semester-II**

**Contact lens-I**

**L T P Credits**  
**3 1 - 4**

**Examination: 60 Marks**  
**Int. Assessment: 40 Marks**  
**Total: 100 Marks**  
**Duration of Examination: 3 hours**

Course Objective: This course introduces all aspect of contacts lens practice to optometry student. Contact lenses are an essential part of optometric practice; not only for practice success, but also in the management of certain ocular condition that require visual or therapeutic rehabilitation.

Course Outcomes: ability to understand contact lens fitting procedure and management contact lens related complication.

Course outlines:

**Unit I-** Introduction to contact lens

History of contact lenses, contact lens materials and manufacturing, Optics of contact lenses, soft contact lens design, rigid gas permeable contact lens design, contact lens verification

**Unit II-** contact lens fitting

Introduction to contact lens fitting, spherical SCL fitting and the effect of parameter changes, Astigmatism, Astigmatism and Toric SCL, Fitting Spherical RGP contact lenses, the effects of RGP contact lens parameter changes on lens fitting, Toric SCL types and designs, fitting toric soft contact lenses

**Unit III-** Examination procedures for contact lens patients

The routine preliminary examination, options for wear modality and lens replacement, lens dispensing and patient education, conducting the after- care visit, slit-lamp examination of the contact lens patient

**Unit IV –** Care and maintenance

Overview of care and maintenance, contact lens care products, care and maintenance of soft contact lenses, care and maintenance of RGP lenses, Contact lens deposits

**Unit V** Basic prosthesis and the various conditions where they are applied

Basics of prosthesis, Types of prosthesis ,Indication, Technique employed, complication Advancement and results

**Master of Optometry, 1<sup>st</sup> Year**  
**Semester-II**

**Ocular diseases and Diagnostic procedure-II**

**L T P Credits**  
**3 1 - 4**

**Examination: 60 Marks**

**Int. Assessment: 40 Marks**

**Total: 100 Marks**

**Duration of Examination: 3 hours**

Course objectives: Evidence based approach to diagnosis, Clinical decision making, management and co management of posterior segment ocular diseases. Developing more reading ability of scientific journal for evidence based management with recent understanding of diseases.

Course Outcomes: Ability to perform clinical decision making skills, interpretation, management and co management of ocular diseases.

Course Outlines:

The following common conditions will be covered in this semester

1. Glaucoma- Basic aspect, evaluation, clinical profile, management and neuro-protection
2. Retina and Vitreous diseases
3. Orbit- Anophthalmic socket, eyelid anomalies
4. Ocular manifestation of systemic diseases
5. Neurophthalmology & electrophysiology, Optic nerve anomalies and neuropathy
6. Ocular trauma- injuries to eye and chemical injuries, ocular emergencies

**Unit I- Electroretinogram**

ERG recording and limitation, clinical protocol for ERG, flash ERG and pattern ERG , Full-Field Electroretinogram, Intensity response function and ERG components, Standardized ERGs with isolation and cone components, Short- wavelength cone ERGs multifocal ERGS , On and off response of multifocal ERGs.

**Unit II- EOG**

Basic science and procedure of EOG, Arden's ratio, common conditions where EOG are informative: retinitis pigmentosa, macular dystrophy, Stargardt's diseases , maculopathy

**Unit III- VEP**

Flash VEP, Pattern VEP, Common condition where VEP are informative: Cortical blindness, Optic neuritis, Optic atrophy, cranial inflammation or trauma

Practical- demonstration, observation and hands on electrophysiology imaging system.

**Master of Optometry, 1<sup>st</sup> Year**  
**Semester-II**  
**Evaluative Clinical Practice-II**

**L T P Credits**  
- - 8 4

**Examination: 60 Marks**  
**Int. Assessment: 40 Marks**  
**Total: 100 Marks**

Course Objectives: This course includes of 90 hours of supervised clinical training .The clinics involve primary care clinics and community work. The objective of clinics in this semester is to be able to examine the eye and understand the basic eye procedures with clinical management. A logbook is maintained and 30 case sheets with complete management and follow up are mandatory for submission.

Course Outlines:

- 1) Communication and personal conduct
- 2) Visual function and Ametropia
- 3) Ocular examination
- 4) Ocular abnormalities
- 5) Binocular vision
- 6) Visual impairment

**Master of Optometry, 2<sup>nd</sup> Year**  
**Semester-III**

**Contact lens-II**

**L T P Credits**  
**3 1 - 4**

**Examination: 60 Marks**  
**Int. Assessment: 40 Marks**  
**Total: 100 Marks**  
**Duration of Examination: 3 hours**

Course Objective: This course introduces in –depth theoretical knowledge and clinical exposure in contact lens at advanced level and in therapeutic condition

Course Outcomes: it prepares student to develop competency in handling all types of specialty lenses. This course also deals with all complications related to contact lenses and its management

Course outlines:

**Unit I-** The cornea in contact lens wear

Corneal oxygen requirements and the effect of hypoxia, corneal oxygenation with contact lenses, contact lens characteristics and oxygen transmission, Microbiology and contact lens wear, Ocular host defense systems and contact lens wear

**Unit II-** Contact lens related ocular complications

Patient symptoms & clinical signs, Soft contact lens complication and their management, RGP contact lens complications and their management, Diagnosis and management of dry in contact lens wear

**Unit III-** Special contact lens fitting

Keratoconus and contact lenses, presbyopia and contact lens, Children's and contact lens, Aphakia and contact lens, refitting PMMA lens wears, Refractive surgery and contact lens, Therapeutic contact lens , Tinted contact lens, Orthokeratology

**Unit IV-** Special topics

Advanced techniques and instrumentations, contact lens for sporting activities, the working environment and contact lenses, Fitting Scleral contact lens, Fitting an ocular prosthetics contact lens, Rose's –k contact lens Fitting, Hybrids contact lens fitting

**Unit V-** Business aspect of contact lens practice

Building a successful contact lens practice, marketing a contact lens practice, managing a contact lens practice, Standards of practice



**Master of Optometry, 2<sup>nd</sup> Year**  
**Semester-III**  
**Dispensing Optics**

**L T P Credits**  
**3 1 - 4**

**Examination: 60 Marks**

**Int. Assessment: 40 Marks**

**Total: 100 Marks**

**Duration of Examination: 3 hours**

Course objectives: This course mainly deals with optical management of refractive errors- new modalities the advanced techniques in subjective and objective refraction and spectacle dispensing. This course leads to a rewarding career as an Optometrist, a specialist trained to dispense and to recognize basic ocular disorders,

Course outcomes: This allows students to recommend the right spectacle lens based on the condition of eye.

Course Outlines:

**Unit I-** ophthalmic lens types

Lens materials properties of lens (Refractive index, base curve, specific gravity, Abbe value, UV cut off etc), Prism, Tints and coating

**Unit II-** Bifocal / Multifocal

**Unit III-** Progressive addition lenses

Dispensing PAL, PAL trouble shooting, PALs in detail lens

**Unit IV-** Spectacle frame

Facial fitting principles, Spectacle delivery, Dispensing problem prescriptions, frame types and parts, classification of spectacle frames- material, weight, temple position, coloration frame construction, frame measurement and markings, frame manipulation and repair, facial measurement and frame choice, measuring the interpupillary distance and pupilometer, special purpose frame ( Sports, Kids, reading)

**Unit V-** Lens ordering

Lens edge thickness calculation, writing spectacle lens order, facial measurement- IPD measurement and measuring height ( Single vision, multifocal , progressive), measurement of effective diameter minimum blank size, glazing and edging hand on

**Unit VI-** Lens verification

Lens verification and axis marking & fitting all lens types, facial checking of finished spectacle with frame adjustment, delivery and follow-up, Troubleshooting complaints and handling patients questions, optical centre marking, Axis marking, surface power measurement using Geneva lens measure, identify various types of frame and mounting

# Master of Optometry, 2<sup>nd</sup> Year

## Semester-III

### Refractive Surgery

**L T P Credits**

**3 1 - 4**

**Examination: 60 Marks**

**Int. Assessment: 40 Marks**

**Total: 100 Marks**

**Duration of Examination: 3 hours**

Course objectives: Recognize the most appropriate tests for investigating suitable candidates pre-operatively and assessing visual performance post-operatively

Course outcomes: ability to interpret test for refractive surgery, comprehensive eye examination for refractive surgery

Course outline:

#### **Unit I-** Background

History of refractive surgery, Radial keratotomy (RK), Photorefractive keratectomy (PRK), Laser InSitu Keratomileusis (LASIK) , Sub Bowman's Keratomileusis (SBK)

#### **Unit II-** Corneal management

Corneal topography report, corneal tomography report, Pentacam

Evaluation of videokeratography

#### **Unit III-** principle of microkeratomes

Types of microkeratomes, Achieving the optimal flap, Risk & complications, Flap creation using femtosecond laser, Advantages & Disadvantages of femtosecond laser customized ablation procedures- why use customized ablation?, Technology used for customized ablation, customized ablation methods.

#### **Unit IV-** Complication of refractive procedures

Microkeratome related complication, laser ablation related complication, postoperative complication, management

#### **Unit V-** Introduction to phakic IOLs and Type of corneal rings

Preoperative evaluation & Inclusion criteria, Surgical procedures, Overview of refractive lens exchange ( RLE), Deciding to perform RLE, Retinal risks of Rle, Avoiding retinal detachment, Informing patient of risks, Postoperative issues, Problems of phakic IOLs

## **Master of Optometry, 2<sup>nd</sup> Year Semester-III**

### **Environmental optometry**

**L T P Credits**  
**3 1 - 4**

**Examination: 60 Marks**  
**Int. Assessment: 40 Marks**  
**Total: 100 Marks**  
**Duration of Examination: 3 hours**

Course objective: Occupational optometry is the portion of optometric practice that is concerned with the efficient and safe visual functioning of an individual within the work environment. It encompasses more than just the prevention of occupational eye injuries, although that certainly is a major component. It also includes vision assessments of workers/patients, taking into account their specific vision requirements and the demands these requirements place upon them. Optometrists provide occupational vision services at three general areas or levels; primary care, eye safety consultation, vision consultation.

Course outcomes: After the completion of the course the student should be able to

1. Complete an occupational history on each adult patient
2. Diagnosis and manage occupationally induced conditions
3. Assess his or her patients occupational vision demands and provide appropriate treatments as necessary
4. Educate patients on the need to incorporate eye safety principle into their daily activities
5. Overseeing the procurement of eye protection devices

Course outlines:

#### **Unit I -Introduction**

- Environmental optometry & Occupational Optometry
- History taking in detail.
- Definition of accident, Hazards,
- Type of hazard

#### **Unit II Injury to worker consequence / Hazards and their consequences**

- Employees, employer and community aspects
- Scope of prevention
- Indian scenario causes and techniques to prevent accident (PPE Strategies)

#### **Unit III -Types of Hazards/ Optical Hazards**

- Physical, Chemical, Heat thermal, electrical and biological.
- Radiation, Electromagnetic spectrum, UV & IR hazards and consequences on visual system

#### **Unit IV Safety organization / Recognition of hazards in the work place**

##### **Visual standards; Clinical evaluation; Personal protective strategies**

- Introduction to ANSI, BSI, OSHA, ILO, CLC-DGFASLI
- Factory Visit

#### **Unit IV Role of ergonomics/ Lighting of work place**

- Factors: Posture, Position of visual attention, Head movement and eye movement, Indoors/ outdoors , Sound and temperature
- Significant , factors to be considered, normative data of illumination levels , calculating ambient illumination in the work place

#### **Unit V Review of test and matching the standards/Types of personal protective equipment /Visual Health in selected industries**

- Visual acuity, color Vision , Contrast, Steropsis, Glare testing and light and dark adaption assessment , standards for various occupation
- Chemical goggles, Face shield, Welding Goggle, Impact goggle, safety spectacles. Plastic face shield methods to incorporate optical correction in them.

#### **Unit VI Standards of vision and values to be required for occupational workers**

- Estimating required visual acuity using nomogram and formula
- Drivers of various countries: Minimum vision requirement for distance, Near, Field, Color Vision and steropsis.
- Indian Railways: A, B , C grades
- Indian Navy
- National defense academy

**Master of Optometry, 2<sup>nd</sup> Year**  
**Semester-III**  
**Evaluative Clinical Practice-III**

**L T P Credits**  
- - 8 4

**Examination: 60 Marks**  
**Int. Assessment: 40 Marks**  
**Total: 100 Marks**

Course Objectives: This course includes of 40 hours of supervised clinical training .The clinics involve primary care clinics and community work. The objective of clinics in this semester is to be able to examine the eye and understand the basic eye procedures with clinical management. A logbook is maintained and 30 case sheets with complete management and follow up are mandatory for submission.

Course Outlines:

- 1) Communication and personal conduct
- 2) Visual function and Ametropia
- 3) Ocular examination
- 4) Ocular abnormalities
- 5) Binocular vision
- 6) Visual impairment

**Master of Optometry, 2nd Year  
Semester-IV**

**Evaluative Clinical Practice-IV (Binocular Vision)**

**L T P Credits**  
- - 16 8

**Examination: 40 Marks**  
**Int. Assessment: 60 Marks**  
**Total: 100 Marks**

Course code:

Course objectives: The student will be able to carry out the standard clinical procedures, evaluation and dispensing of contact lens safely and efficiently after completion of the program  
Note: The student may choose any one elective subject for their specialty in Master of Optometry

**Unit I:**

Cover Test,  
Ocular motility demonstration and hands-on various orthoptic instruments and procedures  
Measurement of NPA, NPC  
Management of anomalies of convergence

**Unit II:**

Accommodative facility exercise such as Flippers, Hart chart exercise  
Vergence exercises such as Brock string, Pencil push up test, Barrel card, cat card exercises,  
Large eccentric circle, Opaque eccentric circle  
Stereopsis test such as Titmus Fly Test, TNO Test etc  
Management of anomalies of accommodation

**Unit III:**

Orthoptic exercises, Investigations like PBCT, Hirschberg Corneal Reflex test, Angle kappa test,  
Maddox rod, Maddox wing, Krimsky reflex test  
Pleoptics Therapy, Software based therapies  
Synaptophore

**Unit IV:**

Clinical Observation and Report writing of Amblyopia, Abnormal Retinal Correspondance (ARC), Suppression etc  
Clinical observation and Report writing of different types of strabismus  
Hess chart  
Diplopia charting

## **Evaluative Clinical Practice-IV (Contact Lens)**

**L T P Credits**  
**- - 16 8**

**Examination:40 Marks**  
**Int. Assessment:60 Marks**

**Total: 100 marks**

Course code:

Course objectives: The student will be able to carry out the standard clinical procedures, evaluation and dispensing of contact lens safely and efficiently after completion of the program

Note: The student may choose any one elective subject for their specialty in Master of Optometry.

### **Unit- I**

Placido disc, Keratometry (Manual & Automated)

Instruments for evaluation of topography of cornea i.e. Pentacam & Orbscan

Understanding of different topographical patterns in various types of irregular corneas

### **Unit-2**

Tear film anatomy & physiology, evaluation of dry eye

Design of various contact lenses

Relation of cornea and contact lenses

Classification of Hydrogels & Silicone hydrogels

### **Unit-3**

Basic understanding of speciality contact lenses i.e. Hybrid, Piggy back, Rose-K, Scleral, Ortho-K, Prosthetic & Therapeutic contact lenses

Perform necessary evaluation for soft, semi-soft and hard contact lenses

Selection of contact lenses taking case based approach

Availability of range of various types of contact lenses

### **Unit-4**

Dispensing of contact lenses

After care, Lens Care Products, Multipurpose Solutions & it's chemical composition

Troubleshooting of contact lenses

## **Evaluative Clinical Practice- IV (Comprehensive)**

**L T P Credits**  
**- - 16 8**

**Examination: 40 marks**  
**Int. Assessment: 60 marks**  
**Total: 100 marks**

Course code:

Course Objectives: The student will be able to carry out standard clinical procedures, safely and efficiently after completion of the program

Note: The student may choose any one elective subject for their speciality in Master of Optometry.

### **Unit I:**

History taking in different age groups, relation of various systemic diseases to eye, visual acuity assessment in all age groups, objective and subjective refraction techniques, slit lamp techniques

### **Unit II:**

Investigations of ocular examination like A- Scan, B-Scan, OCT & FFA, Lensometry, Keratometry, Worth-4 Dot test, Duochrome test

### **Unit III:**

Assessment for binocular vision related anomalies, handling of visually impairment patients, malingering, refraction techniques for cases like glaucoma, retinal detachment

### **Unit IV:**

Counselling of patients, appropriate referral of patients



**Master of Optometry, 2<sup>nd</sup> Year**  
**Semester-IV**  
**Dissertation**

**L T P Credits**  
- - - 12

**Examination: 40 Marks**  
**Int. Assessment: 60 Marks**  
**Total: 100 Marks**

The research project is to be carried out over a period of approximately 5 to 6 months. Each student will select research project in consultation with their respective supervisors. The projects will be selected such that a student can reasonably be expected to make an original contribution to the chosen area of research within the time period allotted. The purpose of the project is to provide the student with training in academic research and acquisition of practical skills, including the design of a research project, planning of experiments, dealing with practical problems, recording, presenting and analyzing the data.

**Unit I- Thesis Proposal Development**

Through regular meetings, the student and advisor will discuss this literature in detail and the topic for research project will be finalized in the third semester.

**Unit II- Thesis proposal**

Each student must submit to the university with the signed approval of the advisor, a thesis proposal defining the thesis project, the methods and design of the experiments needed and plans for completion of the project in the third semester.

**Unit III – Thesis preparation**

This is involving preparation of the thesis. The thesis must include a cover page, table of contents, introduction, review of literature, materials and methods, observations, results and discussion and final conclusions section summarizing the outcome of the project. The master chart comprising the details of experiments performed will be attached. The student should submit a draft of the thesis to the advisor by the end of the fourth semester. Four copies of the completed thesis duly certified by the supervisor will be submitted to the controller of examinations as per ordinance of Faculty of Allied Health Sciences.

