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 2020-21

Master of Optometry

Scheme of Examination

First Semester

	Paper Code	Theory Examination		Practical Examination		Total Marks	Credits
		Univ. Exam.	Internal Assessment	Univ. Exam.	Internal Assessment		
Epidemiology, Public health & Community Optometry		60	40	------	------	100	4
Binocular Vision-1 & Paediatric Optometry		60	40	60	40	200	4+2
Ocular Diseases & Diagnostic procedure-1		60	40	60	40	200	4+2
Low Vision Care-1		60	40	60	40	200	4+2
Research Methodology, Biostatistics		60	40	------	------	100	4
Critical Research Appraisal, Presentation & Evaluation		-	-	-	50	50	2
Evaluative clinical Practice-I		-	-	60	40	100	4
Total		**300**	**200**	**240**	**210**	**950**	**32**

Second Semester

	Paper Code	Theory Examination		Practical Examination		Total Marks	Credits
		Univ. Exam.	Internal Assessment	Univ. Exam.	Internal Assessment		
Sport Vision		60	40	-	-	100	4
Binocular Vision-II & Vision Therapy		60	40	60	40	200	4+2
Low Vision Care-II		60	40	60	40	200	4+2
Contact Lens-I		60	40	60	40	200	4+2
Ocular Diseases & Diagnostic Procedure- II		60	40	60	40	200	4+2
Project Development & Synopsis Submission		-	-	-	50	50	2
Evaluative Clinical Practice-II		-	-	60	40	100	4
Total		**300**	**200**	**300**	**250**	**1050**	**34**

Third Semester

	Paper Code	Theory Examination		Practical Examination		Total Marks	Credits
		Univ. Exam.	Internal Assessment	Univ. Exam.	Internal Assessment		
Contact Lens-II		60	40	60	40	200	4+2
Dispensing Optics		60	40	60	40	200	4+2
Refractive Surgery		60	40	60	40	200	4+2
Environmental Optometry		60	40	-	-	100	4
Evaluative Clinical Practice-III		-	-	60	40	100	4
Technical Writing of Dissertation & Evaluation		-	-	60	40	100	4
Total		**240**	**160**	**300**	**200**	**900**	**30**

Fourth Semester

	Paper Code	Theory Examination		Practical Examination		Total Marks	Credits
		Univ. Exam.	Internal Assessment	Univ. Exam.	Internal Assessment		
Speciality Clinic Posting		------	------	60	40	100	4
Dissertation		------	------	120	80	200	12
Total		------	------	**180**	**120**	**300**	**16**

L T P Credits
3 1 - 4

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

L T P Credits
- - 4 2

Examination: 30 Marks
Int. Assessment:20 Marks
Total: 50 Marks

Master of Optometry, 1st 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 ofcommunity Optometry.

Course outcomes:Thorough understanding of epidemiology concepts and conductingscreening 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, multidisplinary 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, 1st 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, 1st 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, Fluorosceinangiography, Refractive surgery, cataract

Master of Optometry, 1st 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 clinicalexposure in low vision care.

Course Outcomes:Thorough understanding of the causes of the low vision, its functional andpsychosocial consequences, and rehabilitation measures thought 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, 1st Year
Semester-I
Research Methodology & Biostatistics

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 biostatics 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, poison 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

Master of Optometry, 1st 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, 1st Year
Semester-II
Sports Vision

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 brief theoretical knowledge of vision when dealing with sport activities and ways to improve coordination of eye.

Course outcomes:

Course Outlines:

Unit I- Introduction to sports and visual needs

Definition, Classification in to Dynamic and static sports, Visual assessment, Identifying the visual skills required, Estimating the impact of vision training on sport condition

Unit II- Identifying cases where special intervention is required

Psychology of completion, considerable factors, Dominant eye identification, choosing the skill with the sports they play, common visual needs required, deficits in the person to be addressed , player's expectations and preferences, Designing treatment plan: Therapy Goals, Skill Improving
Techniques

Unit III- Skills to be improved

Dynamic visual acuity, visual concentration, Eye tracking: Fixation , saccades, Pursuits, Vestibular and optokinetic movement , Eye- hand – Body Coordination, Visual memory, Visualization, Peripheral vision awareness, Accommodation , Vergence facility, Visual reaction time, Depth perception, Glare recovery

Unit IV- Preservation and protection of vision

Hazards: Physical and radiation, preventive measures, managing sport eye Injury

Master of Optometry, 1st 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, relatedcharacteristics, significance and practical management of course outlines.

Course Outlines:

Unitl I- Strabismus

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

Unitl 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 Extropia, 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 &antisuppresion 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, 1st 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 clinicalexposure in low vision care.

Course Outcomes: Thorough understanding of the causes of the low vision, its functional and psychosocial consequences, and rehabilitation measures thought 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 level2 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, 1st 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, complicationAdvancement and results

Master of Optometry, 1st 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'sdiseases , 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, 1st 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, 2nd Year
Semester-III
Advanced 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, 2nd 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, 2nd 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, 2nd 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 isconcerned 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 to able to

1. Complete an occupational history on each adult patient
2. Diagnosis and manage occupationally induced conditions
3. Asses 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
- Indiana 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 / Recogization of hazards in the work place
Visual standards; Clinical evaluation; Personal protective strategies

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

Unit IVRole 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 VReview 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 VIStandards 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, 2nd 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
Speciality Clinic Posting

L T P Credits
- - 12 6

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

Course code:

Course objectives: The student will be able to carry out the standard clinical procedures safely and efficiently after completion of the program
The student may choose any one elective subject for their specialty in master of Optometry.

S No	Subject	Paper Code	Hours	Credits
1	Cornea and Contact Lens		120 hours	4 credits
2	Low Vision Aids and Glaucoma			
3	Retina and Low Vision Aids			
4	Binocular Vision and Vision Therapy			
5	Dispensing			

	Optics			

Master of Optometry, 2nd Year
Semester-IV
Dissertation

L	T	P	Credits	
-	-	-	12	

Examination: 120 Marks
Int. Assessment:80 Marks
Total: 200 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.