

SGT UNIVERSITY

SHREE GURU GOBIND SINGH TRICENTENARY UNIVERSITY

GURGAON, DELHI-NCR (Established by the Haryana Act No.8 of 2013)

Faculty of Allied Health Sciences

Master of optometry

Syllabus 2017



Master of Optometry

SCHEME OF EXAMINATION

FIRST SEMESTER

S.No	Subject	Paper code	TheoryExa	mination	Practical E	xamination	Total mark s	Total credit s
		Un Ex	University Exam	Internal Assess.	University Exam	Internal Assess.		
1	Epidemiology, public health & Community Optometry		60	40			100	3
2	Binocular vision-I& Pediatric Optometry		60	40	60	40	200	3+1
3	Ocular Diseases & Diagnostic procedure-I		60	40	60	40	200	4+1
4	Low Vision Care-I		60	40	60	40	200	3+1
5	Sport Vision		60	40			100	3
6	Clinic-I	12.2			60	40	100	4
	Total		300	200	240	160	900	23

SECOND SEMESTER

S.No	Subject	Paper code	Theory Examinati	Cheory Examination		Practical Examination		Total credits	
			Universit y Exam	Internal Assess.	Universit y Exam	Internal Assess.			
1	Research Methodology, Biostatistics and Hospital Management		60	40			100	3	
2	Binocular vision-II & Vision Therapy		60	40	60	40	200	3+1	
3	Low Vision Care-II		60	40	60	40	200	3+1	-
4	Contact lens-I		60	40	60	40	200	3+1	
5	Ocular Diseases & Diagnostic procedure- II		60	40	60	40	200	3+1	
6	Clinic-II				60	40	100	4	1
· ·	Total		300	200	300	200	1000	23	

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THIRD SEMESTER

S.No	Subject	Paper code	Theory Examination		Practical Examination		Total mark	Total Credits
	ALL STREET	1.	Universit y Exam	Internal Assess.	Universit y Exam	Internal Assess.		
1	Contact lens-II	1.242	60	40	60	40	200	3+1
2	Dispensing Optics		60	40	60	40	200	3+1
3	Refractive Surgery		60	40	60	40	200	3+1
4	Environmental Optometry		60	40		5.4	100	3
5	Clinic-III				60	40	100	4
6	Clinical Dissertation	1.1.1.1						2
	Total	1.10	240	160	240	160	800	21

FOURTH SEMESTER

S.No	SubjectPaper codeTheory ExaminationUniversitIn y ExamIn A	on	Practical Examination			Total credits	
		Universit y Exam	Internal Assess.	Universit y Exam	Internal Assess.		
1	Specialty Clinic Posting	 		60	40	100	4
2	Clinical Dissertation			120	80	200	12
	Total			180	120	300	16

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Master of Optometry Semester-I Paper-I

EPIDEMIOLOGY, PUBLIC HEALTH AND COMMUNITY OPTOMETRY

S.No	Topic to be	Domain	Teachin
	covered		Hours
1	Public health concepts	 Must Know 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. Global medicine and evolution of public health in India Public health optometry: concepts and implementation. Desirable to Know Health man power protection in practice of Optometry Nice to Know Multidisplinary and institutional practices modes 	10
2	Levels of prevention	Must Know	5
	Production Southern	 Optometrists role in community Optometry role as a primary eye care professional 	
3	Health system	 Must Know Concepts of health systems National health programs and effective delivery of eve care services 	2
4	Vision2020: The Right to sight	 Public health and epidemiology National and International agencies in eye care, NPCB, DBCS 	3
5	Global blindness and visual impairment	 Must Know vision screening organizing eye camps Eye donation and eye banking Refractive errors and low vision as public health issues socioeconomic implications of blindness and visual impairment Desirable To know Role of civil societies in blindness prevention 	10
6	Epidemiology	Must Know	10

 Refractive errors and presbyopia Age related cataract, Low vision, Diabetic retinopathy, glaucoma, Age related macular degeneration, Trachoma, corneal blindness 	
Desirable to know	
 Prevalence incidence and distribution of visual impairment Basic of epidemiology study methods Incidence, prevalence risk factors and odd ratio Childhood blindness 	



Master of Optometry Semester-I Paper-2 BINOCULAR VISION-I & PEDIATRIC OPTOMETRY

3

		Total hou				
S.No	Topic to be covered	Domain	Teaching Hours			
1	Refractive development and oculomotor function	 Must Know Revision of anatomy and physiology of EOM and binocular vision Desirable to know Refractive development, visually guided control of refractive state: Animal studies, infant accommodation and convergence, conjugate eye movement of infants, 	5			
2	Spatial, Chromatic and binocular vision	 Must Know 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 Desirable to know Frontend limitations to infant spatial vision: Examination of two analyses, development of the human visual field Development of Scotopic retinal sensitivity, infant color vision Nice to know Orientation and motion selective mechanisms in infants Intrinsic noise and infant performance 	15			
		 Development of interocular vision in infants Stereopsis in infant and its development relation to visual acuity 				
3	Clinical application of Binocular Anomalies	 Must Know Assessment of child vision and refractive error, cycloplegic refraction, color vision assessment in children Dispensing for the child patients, common genetic problems in pediatric Optometry Desirable to know Pediatric ocular diseases, Ocular trauma in children, 	10			
		myopia control, Pediatric contact lens practice, Clinical uses of prism				

4	Clinical management	Must know	10
	ofBinocular Anomalies	 Dyslexia and optometry management Electro-diagnostic needs of multiple handicapped children, management guideline – Ametropia, constant strabismus, Amblyopia Nystagmus. Accommodation and vergence anomalies, ocular motility procedure 	

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Master of Optometry Semester-I Paper -3 OCULAR DISEASES AND DIAGNOSTIC PROCEDURE-I

	1	lotal	Hours: 40
S.No	Topic to be covered	Domain	Teaching Hours
1	Basic review of clinical examination of visual system	 Desirable to know Review of basic science Optometric preliminary examination Ocular health examination Objective and subjective refraction Binocular vision examination 	10
2	Anterior segment	 Must Know Lens and its abnormalities Disease of conjunctiva and sclera Diseases of cornea Interpretation and management of dry eye Desirable to Know Diseases of Uvea Diseases of eye lid and adnexa 	15
3	Ophthalmic instrument	 Must Know Slit-Lamp, Specular microscopy, Corneal Topography, Cataract evaluation,Pentacam, Pachymetry, Abberometry, OCT, ONH evaluation, Desirable to know Gonioscopy, Fluoresceinangiography, Refractive surgery, Orbscan, HRT, GDx, corneal hysteresis, 	15

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Master of Optometry Semester-I Paper-4 LOW VISION CARE-I

Total hours: 40

S.No	Topic to be covered	Domain	Teaching Hours
1	Introduction to low vision	 Must know Definition of low vision Impact of low vision Prevalence of low vision Desirable to know Different levels of low vision services, psychosocial implication of low vision services 	10
2	Causes and symptoms of low vision	 Must Know Common causes of low vision Low vision symptoms and condition Functional implication of diseases causing visual impairment. 	10
3	Clinical assessment of low vision patient	 Must Know Purpose of low vision assessment Steps of low vision assessment 	5
4	Magnification	 Must know Different types of magnification Different methods and formulae for calculating magnification How to determine resolution ability of magnifying devices Desirable to know Predict distance required to meet resolution goal, measure lens power, measure equivalent viewing distance Calculate equivalent viewing distance for different devices. 	10
5	Optical low vision devices	 Must know What are optical devices? Definition of various low vision devices, different type of optical low vision devices and their uses 	5

Master of Optometry Semester-I Paper- 5 SPORTS VISION

Total Hours:40

S.No	Topic To be covered	Domain	Teaching Hours
1	Introduction to sports and visual needs	 Must Know Definition Classification in to Dynamic and static sports Visual assessment Identifying the visual skills required Estimating the impact of vision training on sport condition 	10
2)	Identifying cases where special intervention is required	 Must Know Designing treatment plan: Therapy Goals, Skill Improving Techniques Desirable to know 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 	10
3	Skills to be improved	 Must Know 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 Desirable to know Depth perception Glare recovery 	(15)
	Preservation and protection of vision	 Must Know Hazards: Physical and radiation, preventive measures, managing sport eye Injuries 	5

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Master of Optometry Semester-I Paper -6 CLINICS -I

Total Hours-40

Course Objectives: This course includes minimum 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:

- □ Communication and personal conduct
- Visual function and Ametropia
- □ Ocular examination
- Ocular abnormalities
- □ Binocular vision
- □ Visual impairment

Master of Optometry Semester-II Paper-I Research methodology, Biostatistics and Hospital Management

	And the second	lotal	hours: 40
S.No	Topic to be covered	Domain	Teaching Hours
1	Introduction research methodology	 Must know Introduction to research methods, Variable in research Reliability and validity in research Conducting a literature review Formulation of research problems and writing research questions Desirable to know 	5
		• Hypothesis, Null and research Hypothesis, Type I and type II errors in Hypothesis testing.	
2	Data collection	 Must Know Experimental and non experimental research designs, Sampling methods, data collection, observation method, Interview method, questionnaires and schedules construction 	5
3	Research Frame work	 Desirable to know Ethical issues in research Principles and concepts in research ethics- confidentiality and privacy informed consent Writing research proposals Development of conceptual framework in research 	5
4	Introduction to statistics	 Must Know Introduction to statistics Classification of data, source of data, Method of scaling- nominal, ordinal, ratio and interval scale Nice to know Measuring reliability and validity of scales 	5
5	Data sampling	 Must Know Measures of central tendency, Measures of dispersion, skewness and kurtosis, sampling, sample size determination. Desirable to know Concept of probability and probability distributions-binomial probability distribution, poison probability distribution and normal probability distribution 	5
6	Data correlation	Desirable to know	5

	•	• Correlation-Karl person, spearman's rank correlation methods, regression analysis, testing hypothesis-chi square test, student's test, NOVA	
7	Health care- An Overview	Must Know • 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	
	Hospital Management	Must Know • Medical record, House-keeping services. • Laboratory performance. • Management of biomedical waste. • Total patient care – indoor and outdoor. Desirable to know • Nursing and ambulance resources. • Evaluation of hospital services. Nice To know • Quality assurance. • Record reviews and medical audit	5

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Master of Optometry Semester-II Paper-2 BINOCULAR VISION II & VISION THERAPY

		Total hou	ırs: 40		
S.No Topic To be covered		ered Domain			
1	Strabismus Must know • Diagnosis of strabismus anomalies, clinical model of visual processing, diagnostic evaluation of strabismus, diagnostic assessment and prognosis		5		
2	Management strategy and treatment options	 rategy Must know Lens therapy, prism therapy, occlusion therapy, Active therapy, pharmacological therapy Nice to Know surgical therapy 			
3	Management of sensory anomalies	 Must Know Treatment of suppression, treatment of functional Amblyopia, treatment of anomalous correspondence. 			
4	Strabismus management strategies	 Must Know Management of Exotropia, management of Esotropias, management of vertical strahismus 			
5	Nystagmus	Must know Classification, types and management options			
6	Vision therapy and vision therapy techniques	 Must Know Introduction and general concepts, fusional vergence, voluntary convergence & antisuppresion procedures, Accommodative procedures, ocular motility procedures, binocular vision and accommodative problems associated with computer use Desirable to know 	12		
	and the second	 vision therapy software, patients management issues in vision therapy, vision therapy and optometry practice 	-		

Faculty of Allied Health Sciences SGT University, Gurugram

Master of Optometry Semester-II Paper-3 Low Vision Care-II

Total marks: 200

Total hours:40

S.No	Topic to be covered	Domain	
1 Optical low vision devices		Must Know • 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	10
2	Computer assistive technology for low vision patient	Must Know • CCTV Electronic magnifier • Hand held electronic magnification Nice to know mobility devices	5
3	Orientation and mobility	Must Know • Orientation and mobility skills, pre cane skills, sighted guide technique, using a cane, using other senses of orientation Desirable to know • Do's and Don'ts for orientation and mobility, driving with levelation	
4	Using functional and residual vision to achieve independent living	 Desirable to know 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 	5
5	Practice management	 Must Know Planning, infrastructure needed to start, marketing, management of practice Desirable to know financial planning and personnel management 	5
6	The vision related rehabilitation network	Must know • Rehabilitation services network • state rehabilitation programs and services • Private rehabilitation programs & services Nice to Know • Low vision practitioner role in rehabilitation services network, building a referral network • Ensuring accessibility to service, financial resources	10

Master of Optometry Semester –II Paper-4 CONTACT LENS-I

S.No Topic to be covered Domain Teaching Hours 1 Introduction to contact Must know lens Contact lens verification Contact lens materials and 8 manufacturing Optics of contact lenses Soft contact lens design, rigid gas permeable contact lens design Desirable to know History of contact lenses 2 Contact lens fitting Must Know Introduction to contact lens fitting • 8 Spherical SCL fitting and the effect of parameter changes, Astigmatism, Astigmatism and Toric SCL **Desirable to Know** Fitting Spherical RGP contact lenses . The effects of RGP contact lens parameter changes on lens fitting Must know Toric SCL types and designs . Fitting Toric soft contact lenses • 3 Examination Must Know The routine preliminary examination procedures for contact 8 . Options for wear modality and lens replacement . lens patients Lens dispensing and patient education Slit-lamp examination of the contact lens patient . Desirable to know Conducting the after- care visit • 4 Care and maintenance Must know Overview of care and maintenance • 8 Contact lens care products Care and maintenance of soft contact lenses, care and maintenance of RGP lenses Contact lens deposits . 5 Basic prosthesis and Must Know the various conditions □ Basics of prosthesis 8 where they are applied □ Types of prosthesis □ Indication Desirable to know □ Technique employed, complications Advancement and results

Total hours: 40

Master of Optometry Semester-II Paper -5

OCULAR DISEASES AND DIAGNOSTIC PROCEDURES-II

Total hours: 40

S.No	Topic to be covered Domain		Teaching Hours	
1	Posterior segment	Must Know		
		Glaucoma- Basic aspect, evaluation, clinical profile, management and neuro-protection		
		Retina and Vitreous diseases		
		• Orbit- Anopthalmic socket, eyelid anomalies		
		• Ocular manifestation of systemic diseases Desirable to know		
		• Neoropthalmology& electrophysiology, Optic nerve anomalies and neuropathy		
		• Ocular trauma- injuries to eye and chemical injuries, ocular emergencies	20	
2	Electroretinogram	Must know		
100		FRG recording and limitation		
1.		Clinical protocol for ERG flash ERG and pattern ERG		
		Desirable to Know	10	
	Me Share Share	Full-Field Electroretinogram	and the second	
16 14	all a color all in	 Intensity response function and ERG components 		
10		 Standardized ERGs with isolation and cone components 		
		Nice to know		
		 Short- wavelength cone ERGs multifocal ERGS 		
		 On and off response of multifocal ERGs. 	De la contra	
3	EOG	Must Know	5	
		Basic science and procedure of EOG		
		Nice To Know		
		Arden's ratio		
		Desirable to Know		
		Common conditions where EOG are informative: retinitis		
		pigmentosa, macular dystrophy, Stargardt's diseases,		
		maculopathy		
4	VEP	Must Know	5	
		Flash VEP. Pattern VEP		
		Common condition where VEP are informative: Cortical		
		blindness, Optic neuritis, Optic atrophy, cranial inflammation	1 martin	
1		or trauma		

Master of Optometry Semester –II Paper-6 Clinic-II

Total Hours-40

Course Objectives: This course includes minimum 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.

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- Ocular abnormalities
- □ Binocular vision
- □ Visual impairment

Faculty of Allied Health Sciences SGT University, Gurugram

Master of Optometry Semester-III Paper-I Contact lens-II

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		Total hours: 40	
S.No	Topic to be covered	Domain	Teaching Hours
	Cornea in contact lens wear	 Must know Corneal oxygen requirements and the effect of hypoxia, corneal oxygenation with contact lenses contact lens characteristics and oxygen transmission Desirable to know Microbiology and contact lens wear Ocular host defense systems and contact lens wear 	5
2	Contact lens related ocular complications	 Must know Patient symptoms & clinical signs Soft contact lens complication and their management RGP contact lens complications and their management Desirable to know Diagnosis and management of dry in contact lens wear 	5
3	Special contact lens fitting	Must know • Keratoconus and contact lenses • Presbyopia and contact lens • Children's and contact lens • Aphakia and contact lens • Refitting PMMA lens wears • Therapeutic contact lens • Tinted contact lens • Orthokeratology Nice to Know • Refractive surgery and contact lens	10
4	Special topics	 Fitting Scleral contact lens Fitting an ocular prosthetics contact lens Rose's -k contact lens Fitting Hybrids contact lens fitting Advanced techniques and instrumentations, Contact lens for sporting activities The working environment and contact lenses 	15
5	Business aspect of contact lens practice	 Desirable to know Building a successful contact lens practice, Marketing a contact lens practice Managing a contact lens practice Standards of practice 	5

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Master of Optometry Semester-III Paper-2 DISPENSING OPTICS

Total hours: 40

S.No Units 1 Ophthalmic lens types Must		Contents	Teaching Hours	
		 Must know Lens materials properties of lens (Refractive index Base curve, specific gravity, Abbe value, UV cut off etc) Prism. Tints and coating 	5	
2	Bifocal / Multifocal Progressive addition lenses	 Must know Dispensing PAL, PAL trouble shooting 	5	
3	Spectacle frame	 Must Know Facial fitting principles Spectacle delivery Dispensing problem prescriptions Frame types and parts Measuring the interpupillary distance and pupilometer special purpose frame (Sports, Kids, reading) Desirable to know Classification of spectacle frames- material, weight, temple position, coloration frame construction, frame measurement and markings Frame manipulation and repair facial measurement and frame choice 	10	
4	Lens ordering	 Must Know Lens edge thickness calculation Writing spectacle lens order Facial measurement- IPD measurement and measuring height (Single vision, multifocal, progressive) Desirable to know Measurement of effective diameter minimum blank size, glazing and edging hand on 	10	
5	Lens verification	 Must know Lens verification and axis marking & fitting all lens types facial checking of finished spectacle with frame adjustment, delivery and follow-up Desirable to know 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 	10 R	

Master of Optometry Semester-III Paper -3 REFRACTIVE SURGERY

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Total hours: 40

S.No	Topic to be covered	Domain	Teaching Hours
1	Background	Must Know Image: History of refractive surgery Image: Radial keratotomy (RK) Image: Photorefractive keratectomy (PRK) Image: Laser InSituKeratomileusis (LASIK) Image: Sub Bowman's Keratomileusis (SBK)	5
2	Corneal management	Must Know Corneal topography report, Pentacam Evaluation of videokeratography	10
3	Microkeratomes	Desirable to Know Types of microkeratomes Flaps of different thickness - when, why and How Risk & complications Flap creation using femtosecond laser Femtosecond LASIK vs Conventional LASIK Customized ablation- why use customized ablation Nice to know Technology used for customized ablation, customized ablation methods	10
4	Complications of refractive procedures	Must Know Microkeratome related complications laser ablation related complication, postoperative complication, management	5
5	Introduction to phakic IOLs and corneal rings	Must Know Preoperative evaluation & Inclusion criteria Surgical procedures Retinal risks of RLE, Avoiding retinal detachment, Informing patient of risks, Postoperative issues, Problems of phakic IOLs Nice to know Overview of refractive lens exchange(RLE), Deciding to perform RL	10

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Master of Optometry Semester-III Paper -4 Environmental Optometry

Total hours: 40 S.N Topic to be covered Domain Teaching Hours 0 1 Introduction **Must Know** Environmental optometry& Occupational Optometry History taking in detail. Definition of accident, Hazards, Type of hazard 5 Significance or important of hazards 2 Injury to worker Must Know consequence / Employees, employer and community aspects . Hazards and their Scope of prevention . consequences 5 Indiana scenario causes and techniques to prevent accident (PPE Strategies) • 3 Types of Hazards/ **Must Know Optical Hazards** Physical, Chemical, Heat thermal, electrical and biological. 5 Radiation ,Electromagnetic spectrum ,UV & IR hazards and consequences on visual system 4 Safety organization / Must Know Recogization of Introduction to ANSI, BSI, OSHA, ILO, CLI-DGFASLI 5 . hazards in the work Factory Visit place 5 Role of ergonomics/ Must Know Lighting of work Factors: Posture, Position of visual attention, Head movement . 5 place and eye movement, Indoors/ outdoors, Sound and temperature Desirable to know Significant, factors to be considered, normative data of illumination levels, calculating ambient illumination in the work place 6 Review of test and Must Know matching the Visual acuity, color Vision, Contrast, Steropsis, Glare testing • 10 standards/ and light and dark adaption assessment, standards for various occupation Types of personal Chemical goggles, Face shield, Welding Goggle, Impact protective equipment goggle, safety spectacles. Plastic face shield methods to incorporate optical correction in them.

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7	Standards of vision	Must Know	5
	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 Factory Acts 	

Master of Optometry Semester -III CLINIC-III Paper-5

Total hours: 40

Course Objectives: This course includes minimum 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.

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- Ocular abnormalities
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- □ Visual impairment

Master of Optometry Semester-IV Specialty clinical Posting Paper-I

Total Hours-180

Course objectives: It is expected that upon completion the student will be able to carry out the standard clinical procedures safely and efficiently.

All students will have to choose any one elective subject for their specialty in master of Optometry. Students will be post in internship as their specialty.

Paper code	Subject	Posting hours	Total credits
MOPT	Retina & Low Vision	120 hours /Semester	4
MOPT	Glaucoma & Low Vision		
MOPT	Pediatric, Binocular Vision & Vision Therapy		
MOPT	Cornea and Contact lens		

Master of Optometry Semester-IV CLINICAL DISSERTATION Paper -2

The research project is to be carried out over a period of approximately 6 months and will be carried out in the hospitals, subject to approval by all concerned. Each student will select research project 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 of, presenting and analyzing data.

Unit I- Thesis Proposal Development is an independent tutorial conducted by the student's advisor, and involves a comprehensive literature survey of the chosen research area. Through regular meetings, the student and advisor 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 for completion, the progress to date and plans for completion in the third semester.

Unit III – Thesis preparation: This is involving preparation of the thesis. The thesis must include a cover page, abstract, table of contents, introduction of the thesis topic with a comprehensive review of literature, appropriately organized methods, results and discussion section for the experiment performed and final conclusions section summarizing the outcome of the project. The student should submit a draft of the thesis to the advisor by the end of the fourth semester.