School of Health Sciences

CSJM University, Kanpur

Ordinance & Syllabus
for
Master in Optometry (M.Optom.)
Academic Programme

Ordinance according to
NEP-2020

Duration: 2 Years (04 Semesters)

Master in Optometry (M.Optom.)

ORDINANCE
Chapter
"A"

Program Objectives:

- Develop expertise in refractive surgery, orthokeratology, and contact lens practice.
- Provide advanced low vision and rehabilitation services.
- Develop skills in pediatric optometry and binocular vision assessment.
- Conduct comprehensive optometric examinations.
- Design and conduct research studies in optometry.
- Analyze and interpret research data.
- Apply evidence-based practice in clinical decision-making.
- Critically evaluate optometric literature.
- Develop research proposals and manuscripts.
- Develop teaching and mentoring skills.
- Design and implement optometry curricula.
- Evaluate student learning outcomes.
- Create educational materials and resources.
- Develop assessment and evaluation tools.
- Demonstrate leadership and teamwork skills.
- Apply optometric business management principles.
- Develop effective communication and patient counseling skills.
- Participate in professional organizations and networking.
- Stay updated with industry developments and advancements.
- Collaborate with healthcare professionals.
- Participate in multidisciplinary research teams.
- Develop cultural competence and sensitivity.
- Understand the role of optometry in healthcare systems.
- Communicate effectively with healthcare professionals.
- Patient assessment and management.
- Refractive management.
- Pre and post-surgical optometric management.
- Research and evidence-based practice.
- Communication and interpersonal skills.

Program Specific Outcomes :

The learning and abilities or skills that a student would have developed by the end of Two-year Master in Optometry programme

- Understanding the basic as well as advance concepts & theories related to applied science, ocular anatomy & physiology, Contact lens, Binocular vision, Low vision
- Applying the concepts & theories, techniques & Procedures used in optometry.
- Applying quality assurance, safety measures and maintenance of ophthalmic instruments
- Analyzing eye environmental factors & selecting the relevant optical mode of correction &Evaluating different optical correction technique

- Evaluating & determining tools, technique, methods, tests used in optometry
- Designing & planning of new techniques, procedure for patient and clinic management.
- Designing & planning the latest mode of educating the optometry students
- Demonstrate advanced knowledge in optometry.
- Apply critical thinking and problem-solving skills.
- Provide high-quality patient care.
- Conduct research and analyze data.
- Communicate effectively with patients and professionals.
- Conduct comprehensive optometric examinations.
- Diagnose and manage ocular diseases.
- Prescribe medications and treatments.
- Design and implement treatment plans.
- Evaluate patient outcomes.

Master in Optometry (M.Optom.)

1. The M.Optom. degree will be offered under the Faculty of Medicine at C.S.J.M. University, Kanpur, in the Department of Optometry

2. Duration of the course:

- The M.Optom. program will be a full-time course.
- The duration of the course will be two years, divided into four semesters.
- 2 years or 4 semesters. (4th Semester is internship for 6 months)

3. Seats

30 (Thirty)

4. Admission:

Eligibility:

Candidates must have passed the Bachelor's in Optometry (B.Optom.) or equivalent course from any recognized institution/university with a minimum of 50% marks (45% for SC/ST candidates).

Mode of Admission:

As per the University norms.

5. Medium of Instruction:

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

6. Method of Teaching:

The method of teaching adopted shall be a combination of lectures, demonstrations and practicals by the full time faculty, visiting or part time or guest faculty.

7. Examination:

As per the University norms.

Duration of Examination:

As per the University norms.

8. Attendance to Appear in the End Semester Examination:

The permission to appear in end semester examination shall be granted to such candidate only who have fulfill the condition of 75% attendance in each subject separately in theory and practical as per the university rule.

Regarding attendance requirements students will have to fulfill the condition of 75% attendance. 15% relaxation in attendance, in exceptional circumstances can be made by the Vice Chancellor on the recommendation of the Director/Coordinator/Head of the Institute/Department.

CHHATRAPATI SHAHU JI MAHARAJ UNIVERSITY, KANPUR

STRUCTURE OF SYLLABUS FOR THE

PROGRAM: Master in Optometry (M.Optom.)

Syllabus Developed by			
Name of BoS Convenors / BoS Members	**Designation**	**Department**	**College/University**
Prof. Sanjay Kala	Principal	Dean, Faculty of Medicine	GSVM. Medical College, Kanpur
Prof. Dolly Rastogi	Professor	Physiology	GSVM Medical College, Kanpur
Prof. Parvez Khan	Head	Ophthalmology	GSVM Medical College, Kanpur
Prof. Sanjay Kumar	Head	Orthopaedics	GSVM Medical College, Kanpur
Prof. MP Mishra	Ex. Director	JK Cancer Institute	GSVM Medical College, Kanpur
Dr. Chayanika Kala	Associate Professor	Pathology	GSVM Medical College, Kanpur
Dr. Ashok Verma	Head & Associate Professor	Radiology	GSVM Medical College, Kanpur
Dr. Digvijay Sharma	Director	School of Health Sciences	CSJM University, Kanpur
Dr. Munish Rastogi	Assistant Director	School of Health Sciences	CSJM University, Kanpur
Dr. Versha Prasad	Assistant Professor	School of Health Sciences	CSJM University, Kanpur
Dr. Ram Kishor	Assistant Professor	School of Health Sciences	CSJM University, Kanpur

Master in Optometry (M.Optom.)

	I YEAR / I SEM					
COURSE CODE	**TYPE**	**COURSE TITLE**	**CREDITS**	**CIA**	**ESE**	**MAX. MARKS**
MOP25101	CORE	Epidemiology & Community Eye care	4	25	75	100
MOP25102	CORE	Research Methodology	4	25	75	100
MOP25103	CORE	Ocular Diseases and Diagnostics-I	4	25	75	100
MOP25104	CORE	Paediatric Optometry & Binocular vision-I	4	25	75	100
MOP25105	PRACTICAL	Clinics (General)	4	25	75	100
MOP25106	PRACTICAL	Clinics (specialty)	4	25	75	100
	DISSERTATION	Dissertation/Project Work	0			
	TOTAL		**24**			**500**
I YEAR / II SEM						
MOP25201	CORE	Ocular Diseases and Diagnostics-II	4	25	75	100
MOP25202	CORE	Advanced Contact lens-I	4	25	75	100
MOP25203	CORE	Biostatistics	4	25	75	100
MOP25204	MINOR ELECTIVE	Low Vision and Geriatric optometry	4	25	75	100
MOP25205		Neuro Optometry				
MOP25206	PRACTICAL	Clinics (General)	4	25	75	100
MOP25207	PRACTICAL	Clinics (specialty)	4	25	75	100
MOP25208	DISSERTATION	Dissertation	8	25	75	100
	TOTAL		**32**			**700**

II YEAR / III SEM						
COURSE CODE	**TYPE**	**COURSE TITLE**	**CREDITS**	**CIA**	**ESE**	**MAX. MARKS**
MOP25301	CORE	Advanced contact lens- II	4	25	75	100
MOP25302	CORE	Low vision care and rehabilitation	4	25	75	100
MOP25303	CORE	Binocular vision-II & Vision Therapy	4	25	75	100
MOP25304	ELECTIVE	Eye Banking	4	25	75	100
MOP25305		Pedagogy				
MOP25306	PRACTICAL	Clinics (General)	4	25	75	100
MOP25307	PRACTICAL	Clinics (specialty)	4	25	75	100
	DISSERTATION	Dissertation	0			
		Teaching Skills/Seminars/Symposia/ Journal Club Etc.	2			
	TOTAL		**26**			**600**
II YEAR / IV SEM						
MOP25401	PRACTICAL	Clinics (general)	8	25	75	100
MOP25402	PRACTICAL	Clinics (Specialty)	8	25	75	100
MOP25403	DISSERTATION	Dissertation	8	25	75	100
		Teaching Skills/Seminars/Symposia/ Journal Club Etc.	2			
	TOTAL		**26**			**300**
	Grand Total		**108**			**2100**

NOTE:

1. **Do not mark any Code/Information in Column-A, it will be endorsed by the University.**
2. **CIA** in Column-E stands for **'Continuous Internal Assessment'** and depicts the maximum internal marks. Respective examination will be conducted by subject teacher. **ESE** in Column F stands for **'End Sem Examination/Evaluation'** and depicts the maximum external marks. Respective examination will be conducted by the University.
3. Column-B defines the nature of course/paper. The word **CORE** herein stands for **Compulsory Subject Paper**.
4. Column-D depicts the credits assigned for the corresponding course/paper.
5. **Elective:** It will be a Subject Elective. Students may accordingly select one or more subject papers under this category.
6. **Amongst the electives, one or two electives may be declared as Open (Generic) electives that shall be open as Minor Elective to students of other faculty in 2nd or 3rd semester of a PG program.**
7. In both years of PG program, there will be a Research Project or equivalently a research-oriented Dissertation as per guidelines issued earlier.
8. Research project can be done in form of Internship/Survey/Field work/Research project/ Industrial training, for which report/dissertation shall have to be submitted. The evaluation for the same shall be done at the end of each year in form of seminar/presentation and viva voce.
9. The student straight away will be awarded 05 credits if he publishes a research paper on the topic of Research Project or Dissertation.

Internal Assessment

- It will be for theory and practical both.
- It will be done through the whole semester
- Candidate must obtain at least 40% marks in theory and practical's separately in internal assessment to be eligible for the semester university examination.

- Internal assessment (Theory) will be done as follows:

a)	Seminars/Symposia/Journal club/Assignment/ Clinical presentation	= 10 marks
b)	Mid-term examination	= 10 marks
c)	Attendance/Teaching Skills	= 05 marks
		Total = 25 marks

- Internal assessment (Practical) will be done as follows:

a)	Lab work Presentation /Clinical Lab Practices/Clinical Training	= 10 marks
b)	Practical Training Skills/ Continuous evaluation	= 10 marks
c)	Laboratory Manual/Attendance	= 05 marks
		Total = 25 marks

- Internal assessment of subjects without practical will be done as:

a)	Assignments/ Projects/ class test/ Presentations	= 10 marks
b)	Mid Term examination	= 10 marks
c)	Attendance/Teaching Skills	= 05 marks
		Total = 25 marks

Criteria for Passing

- As per University norms.

Maximum duration for completion for course

- A candidate shall complete the course within four years from date of admission failing which the candidate will be discharged.

Division:

- As per the University norms.

Degree:

- The degree of M.Optom. course of the University shall be conferred according to specialization/discipline on the candidates who have pursued the prescribed course of study for not less than two academic years and have passed examinations as prescribed under the relevant scheme.

Monitoring Progress of Studies

It is essential to monitor the learning progress of each candidate through continuous appraisal and regular internal assessment. It also helps teachers to evaluate students, but also students to evaluate themselves. The monitoring is done by the faculty members of the department based on participation of students in various teaching / learning activities.

(a) Seminar

- Seminars /recent advance presentation will be held every week; however, its timings are subject to clinical schedule. Topics must be well researched and must include common knowledge, recent advances, analysis and references.
- PG students should present minimum of two seminars (One in general and one in elective area) and Internal Assessment marks will depend on better topic selection and presentation.

(b) Case Presentation

- PG students are expected to do at least one case presentation per month. They can choose the patient depending on the availability of cases. However, appropriateness should be confirmed with concern teacher.
- If the first presentation is unsatisfactory, students can do one more case presentation in the same posting for the improvement of the internal assessment.

(c) Clinical Practices

Postgraduate students must demonstrate competence in:

- Assessment, evaluation, and diagnosis techniques.
- Practice and application of vision evaluation and optometric management in hospital/institutional settings.
- Application of advanced vision assessment, diagnostic methods.
- Clinical reasoning, decision-making Protocol, evidence-based practice, and maintaining a proper recording system.

(d) Teaching Skills

Candidates should be encouraged to teach undergraduate students if any. This performance will be based on assessment by the faculty members of the department and from feedback from the undergraduate students.

(e) Journal Review Meeting (Journal Club):

The ability to do literature search, in depth study, presentation skills, and use of audio- visual aids are to be assessed. The assessment is made by faculty members and peers attending the meeting.

(f) Work diary / Log Book

Every student shall maintain a work diary and record his/her participation in the training programmes conducted by the department such as journal reviews, seminars, etc. Special mention may be made of the presentations by the candidate as well as details of clinical practice, if any conducted by the candidate by the student.

(g) Mid Term Examination/Class Test/Assignments

There will be mid-term examination/class tests/ assignments in every semester. Various class test may be taken by the department and assignments may be given to students on various topics. Marks of these will be included in every semester.

(h) Records

Records, log books and marks obtained in mid-term examination/class tests/ assignments will be maintained by the Head of the Department/Teacher of the concerned subject.

Dissertation

Every candidate pursing M.Optom. degree course is required to carry out research work on a selected research project under the guidance of a recognized postgraduate teacher. The results of such a work shall be submitted in the form of dissertation. Topic for dissertation shall be assigned by the guide.
If the subject of Thesis entails collaboration with other departments or specialties, the collaborative portion of the work will be supervised by Co-Guide, designated by the School of Health Sciences in consultation with the Guide. Where a Co-Guide is involved, the Thesis will be certified jointly by the Guide & Co-guide.

Every candidate shall submit synopsis to the University in the prescribed Performa containing particulars of proposed dissertation work, within 6 months from the date of commencement of the course on or before the dates notified by the university. The synopsis shall be sent through the proper channel. Such synopsis will be reviewed and the university will register the dissertation topic.
No change in the dissertation topic or guide shall be made without prior approval of the university. Guide will be only a facilitator, advisor of the concept and hold responsible in correctly directing the candidate in the methodology and not responsible for the outcome and results.

The dissertation should be written under the following headings.

1. Introduction
2. Aims or objectives of study
3. Review of literature
4. Material and methods
5. Results
6. Discussion
7. Conclusion
8. References
9. Master and Chart & Table (If Applicable)
10. Annexure (If Applicable)

The written text of dissertation/ research project shall not be less than 50 pages and shall not exceed 120 pages excluding references, tables, questionnaires and other annexure. It should be neatly typed in double line spacing on one side of bond paper (A4 size, 8.27" x 11.69") and bound properly. Spiral binding should be avoided. A declaration by the candidate for having done the work himself should also be included, and the guide, head of the department and Director/Coordinator of the institute shall certify the dissertation/ research project.
Every candidate is required to give power point presentation before final submission of dissertation. Four copies of Dissertation/research project shall be submitted to the university, through proper channel, along with a soft copy (CD), 2 months before the final examination. It shall be assessed by two examiners appointed by the university, one internal and one external. There will be a power point open presentation of the submitted dissertation as per the schedule given by the university. This presentation shall be jointly evaluated by external and internal examiner.
If the student failed to secure the minimum passing marks he will resubmit the dissertation.

Guide

I. Eligibility for guide for each specialty

(a) Full time faculty involved in teaching in the same department/institute.
(b) Minimum M.Optom. with 3 years teaching experience in related subject as a full time faculty.

The Director of the Institute can appoint a person as a guide whom he/she considers suitable.

II. Age of Guide

The age of guide should not exceed 62 years or as per university norms.

III. Guide student ratio

1: 10

A recognized guide shall supervise dissertation work of not more than 10 students per academic year.

IV. Change of Guide

In the event of registered guide leaving the department/institute or in the event of death of guide, guide may be change with prior permission from the university.

COURSE OF STUDY

Master in Optometry (M.Optom.)
First Semester University Examination

COURSE CODE	TYPE	COURSE TITLE	TEACHING HOURS
MOP25101	CORE	Epidemiology & Community Eye care	80
MOP25102	CORE	Research Methodology	80
MOP25103	CORE	Ocular Diseases and Diagnostics-I	80
MOP25104	CORE	Paediatric Optometry & Binocular vision-I	80
MOP25105	PRACTICAL	Clinics (General)	80
MOP25106	PRACTICAL	Clinics (specialty)	80
	DISSERTATION	Dissertation/Project Work	40
		TOTAL	**520**

Second Semester University Examination

COURSE CODE	TYPE	COURSE TITLE	TEACHING HOURS
MOP25201	CORE	Ocular Diseases and Diagnostics-II	80
MOP25202	CORE	Advanced Contact lens-I	80
MOP25203	CORE	Biostatistics	80
MOP25204	MINOR ELECTIVE	Low Vision and Geriatric optometry	80
MOP25205		Neuro Optometry	
MOP25206	PRACTICAL	Clinics (General)	80
MOP25207	PRACTICAL	Clinics (specialty)	80
MOP25208	DISSERTATION	Dissertation	120
		TOTAL	**600**

Third Semester University Examination

COURSE CODE	TYPE	COURSE TITLE	TEACHING HOURS
MOP25301	CORE	Advanced contact lens- II	80
MOP25302	CORE	Low vision care and rehabilitation	80
MOP25303	CORE	Binocular vision-II & Vision Therapy	80
MOP25304	ELECTIVE	Eye Banking	80
MOP25305		Pedagogy	
MOP25306	PRACTICAL	Clinics (General)	80
MOP25307	PRACTICAL	Clinics (specialty)	80
	DISSERTATION	Dissertation	40
		Teaching skills/seminars/symposia/ journal club etc.	40
		TOTAL	**560**

Fourth Semester University Examination

COURSE CODE	TYPE	COURSE TITLE	TEACHING HOURS
MOP25401	PRACTICAL	Clinics (general)	160
MOP25402	PRACTICAL	Clinics (Specialty)	160
MOP25403	DISSERTATION	Dissertation	120
		Teaching skills/seminars/symposia/ journal club etc.	40
		TOTAL	**480**

MASTER IN OPTOMETRY (M.Optom.) Semester-I
EPIDEMIOLOGY & COMMUNITY EYECARE
Subject Code : MOP25101
Min. Hrs -: 80 Hrs.

COURSE OBJECTIVES:

a) This course deals with the basic s of ocular epidemiology and presents details on various eye diseases.
b) It also introduces the students to the concepts of preventive measures and to inculcate the theoretical knowledge and clinical exposure of community optometry.

COURSE OUTCOMES:

a) Thorough understanding of epidemiological concepts.
b) Thorough understanding of conducting of screening for specific eye conditions, and resultant implications through theoretical and practical exposure.

UNIT-1:

Prevalence, incidence and distribution of visual impairment;
Methodology: Basics of Epidemiology study methods,
Types of study designs; Screening for visual disorders; Childhood blindness Refractive errors and presbyopia.

UNIT-2:

- Age related cataract
- Low Vision
- Diabetic retinopathy Glaucoma

UNIT-3:

- Age related Macular Degeneration
- Vitamin A deficiency
- Corneal and external diseases; Prevention strategies.

UNIT-4:

- Concept of Health and Disease
- Principles of Epidemiology and Epidemiological Methods
- Screening for Eye Disease-
- Refractive errors
- Low Vision
- Cataract
- Diabetic retinopathy
- Glaucoma
- Amblyopia
- Squint.

UNIT-5:

- Health Information and Basic Medical Statistics
- Communication for Health Education
- Health Planning and Management; Health care of community
- How to plan and implementVision2020.

Text Books:

1. Epidemiology of eye diseases: Johnson and Gordon

Reference Books:

1. MC Gupta, Mahajan BK, Murthy GVS, 3rd edition. Text Book of Community Medicine, Jaypee Brothers, New Delhi, 2002.

MASTER IN OPTOMETRY (M.Optom.) Semester-I
RESEARCH METHODOLOGY
Subject Code : MOP25102
Min. Hrs -: 80 Hrs.

COURSE OBJECTIVE:

- To have a thorough understanding of presenting supporting evidences and how to conduct research.
- To have an understanding of model of research and biostatistics.
- To evaluate every procedure on the basis of evidences.
- To understand the data analysis procedure and their significance in research.

COURSE OUTCOMES:

- Students will be able to understand and apply concepts and terminology with in the area of Research.
- Students will be able to describe research design and application of different methods to analyze the data collected to conduct and complete the research.

RESEARCH METHODOLOGY

UNIT-1

- Research in Optometry-
- Introduction
- Research for Optometrist: Why? How? And When?
- Research – Definition, concept, purpose, approaches
- Internet sites for Optometrist.

UNIT-2

- Research Fundamentals-
- Define measurement
- Measurement framework
- Scales of measurement
- Pilot Study
- Types of variables
- Reliability & Validity
- Drawing Tables, graphs, master chart etc

UNIT-3

- Writing a Research Proposal, Critiquing a research article-
- Defining a problem
- Review of Literature
- Formulating a question, Operational Definition
- Inclusion & Exclusion criteria
- Forming groups
- Data collection & analysis
- Results, Interpretation, conclusion, discussion
- Informed Consent
- Limitations

UNIT-4

- Research Design-
- Principle of Designing
- Design, instrumentation & analysis for qualitative research
- Design, instrumentation & analysis for quantitative research
- Design, instrumentation & analysis for quasi-experimental research
- Design models utilized in Optometry

UNIT-5

- Research Ethics-
- Importance of Ethics in Research
- Main ethical issues in human subjects' research
- Main ethical principles that govern research with human subjects
- Components of an ethically valid informed consent for research

Text Book:

1. B.L Agarwal, Basic statistics , New Age International Publication.2012.

Reference Books:

1. Sundarrao, Introduction to biostatistics and Research Methodology, CBS, 1Ed, 2002.
2. C.R Kothari, Research methodology, New Age international publication, 3Ed, 2014.

MASTER IN OPTOMETRY (M.Optom.) Semester-I
OCULAR DISEASES AND DIAGNOSTICS-I
Subject Code : MOP25103
Min. Hrs -: 80 Hrs.

COURSE OBJECTIVES:

- Evidence based approach to Diagnosis, Clinical decision Making, Management and co management of anterior segment ocular diseases.
- Developing more reading ability of scientific journals for more evidence based management with recent understanding of diseases.

COURSE OUTCOME:

- Understanding the concept of different Ocular diseases of anterior segment of Eye
- Applying the concept of anatomy & Physiology of Eye while understanding the Pathology of different ocular diseases
- Utilizing the concept of clinical features of the diseases for the differential diagnosis of the anterior segment diseases
- Analyzing the concept of clinical features of the diseases for the management of anterior segment diseases
- Applying the concept of different Ocular diseases of anterior segment of Eye.

UNIT-1

Refresher of anterior segment ocular diseases:

- Congenital anomalies (Entropion, Ectropion, Epicanthus, Telecanthus, Cryptophthalmos, Ptosis Colobomas, Microcornea, Megalocorna, Cornea plana, Sclerocornea, Corectopia, Polycoria, Persistent puplillary membrane, Aniridia)
- Inflammatory disorders (Orbital cellulitis, Blepharitis, Dacryocystitis, Dacryoadenitis, Conjunctivitis, Keratitis, Scleritis and Episcleritis, Uveitis)
- Degeneration & dystrophies (Pterygium, Pinguecula, Keratoconus, Arcus senilis, spheroidal degeneration, Salzmann nodular degeneration, crocodile shagreen degeneration, Cataract, Fuch's dystrophy)
- Tumours(Uveal melanomas, metastatic tumours, benign tumours)
- Cysts (Uveal cyst, stromal cyst, ciliary cyst.

UNIT-2

Refresher of glaucoma diagnosis and management

- Definition,
- Pathogenesis,
- Classification (Congenital glaucoma, Primary open angle glaucoma, Primary angle closure glaucoma, Normal tension glaucoma, Ocular hypertension and Secondary glaucoma)
- and their Pharmacological and surgical management.

UNIT-3

Pre and Post-operative management of anterior segment diseases.

- Cataract
- Glaucoma
- DCR and DCT
- Pterygium
- Keratoplasty
- Refractive surgery.

UNIT-4

Anterior segment Diagnostics

- Keratometry
- Pachymetry
- Pentacam
- Tonometry
- Gonioscopy

UNIT-5

- Slit lamp
- A-Scan
- HVF
- Cataract evaluation
- Anterior segment OCT

Text Books:

1. Clinical Ophthalmology: Jack J Kanski
2. Parson's diseases of the eye by Ramanjit Sihota and Radhika Tandon

Reference Books:

1. Diagnostics and imaging techniques in Ophthalmology: Amar Agarwal

MASTER IN OPTOMETRY (M.Optom.) Semester-I
PEDIATRIC OPTOMETRY & BINOCULAR VISION-I
Subject Code : MOP25104
Min. Hrs -: 80 Hrs.

COURSE OBJECTIVES:

- Upon completion of the course, the student should be able to understand the, basic concept behind visual perception,
- Binocular vision anomalies and management and co- management of strabismic, non-strabismic binocular vision disorders and amblyopia.

COURSE OUTCOME:

- Understanding the classification of strabismus
- Understanding the concept of recording history in strabismus patients
- Understanding the clinical features of convergent & divergent Strabismus, vertical & paralytic Strabismus
- Applying the concept of pediatric refraction
- Applying the concepts of diagnosis of pediatric anomalies

UNIT-1

Revision:

- Applied anatomy and physiology of extraocular muscle and Oculomotor Function.
- Retinal and cortical development, refractive development, Development of vision Binocular Vision and related aspects, Development of binocular vision, Physiology of binocular vision.
- Development of ocular deviation and its adaptation.

UNIT-2:

- Binocular Vision and Space perception.
- Relative subjective visual direction.
- Retino motor value, Grades of BSV, SMP, Fusion, Stereopsis and Cyclopean Eye Correspondence, Fusion, Diplopia, Retinal rivalry Horopter, Physiological Diplopia and Suppression, Stereopsis, Panum's area, Stereopsis and monocular clues– significance, Egocentric location, clinical applications.
- Theories of Binocular vision, Clinical uses of prism.

UNIT-3:

- Accommodation: definition and mechanism of accommodation, measurement, Anomalies of accommodation (aetiology and management),
- AC/A Ratio Convergence: definition and mechanism, methods of measurement, types (tonic, accommodative, proximal, fusional) and anomalies of convergence.

UNIT-4:

Clinical Applications:

- Assessment of Child Vision and Refractive Error
- Refractive Routines in the Examination of Children
- Cycloplegic Refraction
- Color Vision Assessment in Children
- Dispensing for the Child patient
- Pediatric Contact Lens Practice
- Dyslexia and Optometry Management
- Electrodiagnostic Needs of Multiple Handicapped Children
- Management Guidelines – Ametropia, Constant Strabismus.

UNIT-5:

- Management Guidelines –Amblyopia
- Accommodation and Vergence anomalies
- Nystagmus
- Common genetic problems in Pediatric optometry
- Pediatric Ocular Diseases

- Ocular Trauma in Children
- Myopia control
- Clinical uses of prism

Text Books:

1. Clinical management of binocular vision Mitchell Scheiman and Bruce Wick
2. Clinical Orthoptics by Fiona J. Rowe

Reference Books:

1. Binocular vision and ocular motility by Gunter K. von Noorden
2. Applied concepts in vision therapy: Leonard Press
3. Pediatric optometry: Jerome K Rosner

MASTER IN OPTOMETRY (M.Optom.) Semester-I
CLINICS (GENERAL)
Subject Code : MOP25105
Min. Hrs -: 80 Hrs.

Post graduate students must know:

- The objective of clinics in this semester is to be able to examine the eye and understand the all eye procedures with clinical management.
- An approximate of guided 80 hours needs to be completed in this semester.
- The students will be by rotation go to community clinics, Campus clinics, and associated hospital and optical / optometric clinics.
- The logbook has to be maintained and case sheets of each subject in the semester with complete

MASTER IN OPTOMETRY (M.Optom.) Semester-I
CLINICS (SPECIALITY)
Subject Code : MOP25106
Min. Hrs -: 80 Hrs.

Post graduate students must know:

- The objective of clinics in this semester is to be able to gets hand-on experience related to diagnosis, interpretation of the reports/findings and management.
- An approximate of guided 80 hours needs to be completed in this semester.
- The students will be by rotation go to community clinics, Campus clinics, and associated hospital and optical / optometric clinics.
- The focus will be on the specialized subjects studies in this semester.
- The logbook has to be maintained and case sheets of each subject in the semester with complete management and follow up are mandatory for submission at the end of the semester The log book needs to be signed by the supervisor during every visit.
- No case record will be considered without the supervisor's signature

MASTER IN OPTOMETRY (M.Optom.) Semester-I
DISSERTATION/PROJECT WORK
Min. Hrs -: 40 Hrs.

- Every candidate pursing Master in Optometry (M.Optom.) degree course is required to carry out research work on a selected research project under the guidance of a recognized postgraduate teacher. The results of such a work shall be submitted in the form of dissertation. Topic for dissertation shall be assigned by the guide.
- If the subject of thesis requires collaboration with other departments or specialties, the collaborative portion of the work will be supervised by Co-Guide, designated by the School of Health Sciences in consultation with the Guide. Where a Co-Guide is involved, the thesis will be certified jointly by the Guide & Co-guide.
- The students will select various topics concerned with day to day recent trends in Optometry.
- Before selection of the topic the student must go through various Optometry journals and study them elaborately to understand the recent trends and scientific research.
- A minimum of at least 5 topics must be scrolled by each student and out of this the most appropriate topic may be selected for his further synopsis preparation with the consent of guide.
- After selection of topic the student has to discuss the various aspects of the selected topic with his guide and strategically plan how he will proceed in his research work.
- Importance should be given to legitimate data collection and handling, sample size and the recent trends in the field of Optometry.

MASTER IN OPTOMETRY (M.Optom.) Semester-II
OCULAR DISEASES AND DIAGNOSTICS-II
Subject Code : MOP25201
Min. Hrs -: 80 Hrs.

COURSE OBJECTIVES:

- Evidence based approach to Diagnosis, Clinical decision Making, Management and co management of posterior segment diseases.
- Developing more reading ability of scientific journals for more evidence based management with recent understanding of diseases.

COURSE OUTCOME-

- Understanding the concept of different Ocular diseases of posterior segment of Eye
- Applying the concept of anatomy & Physiology of Eye while understanding the Pathology of different ocular diseases
- Utilizing the concept of clinical features of the diseases for the differential diagnosis of the ocular diseases
- Analyzing the concept of clinical features of the diseases for the management of ocular diseases
- Applying the concept of different Ocular diseases of posterior segment of Eye

UNIT-1-
Refresher of Posterior segment ocular diseases:
- Congenital anomalies (PHPV, congenital hypertrophy of the RPE, Coloboma)
- Inflammatory disorders (Vitritis, Retinitis, Retinal vasculitis, Chorioretinitis,)
- Degeneration & dystrophies (ARMD, Retinitis pigmentosa)

Unit-2:
- **Vascular disease** (CRAO, BRAO, CRVO, BRVO, Hypertensive retinopathy, Diabetic retinopathy, Retinopathy of prematurity)
- **Detachments** (RD, PVD, CSCR)
- **Tumors** (Retinoblastoma, choroidal melanoma, cavernous hemangioma)
- **Edema** (DME, CME

Unit-3:
Surgical treatment of posterior segment diseases
- Vitrectomy
- Scleral Buckling
- Pneumatic retinopexy
- Internal Tamponade

Unit-4:
Posterior segment Diagnostics
- ERG
- EOG
- VEP
- OCT
- Fundus photography
- FFA

Unit-5:
Neuro optometric diseases and disorders:
Pupillary defects, Optic Neuritis, papilledema, Optic atrophy, Lesions of visual pathway

Text Books:
1. Clinical Ophthalmology: Jack J Kanski
2. Parson's diseases of the eye by Ramanjit Sihota and Radhika Tandon

Reference Books:
1. Diagnostics and imaging techniques in Ophthalmology: Amar Agarwal

MASTER IN OPTOMETRY (M.Optom.) Semester-II
ADVANCED CONTACT LENS-I
Subject Code : MOP25202
Min. Hrs -: 80 Hrs.

COURSE OBJECTIVES:

- Upon completion of the course, the student should be able to understand the corneal oxygen requirements and recommend the best suitable contact lens for a particular condition.
- Management of ocular complications with contact lenses. Understand contact lens fitting for compromised corneas and keratoconus.
- The student should also be able to understand the fitting philosophy of orthokeratology and myopia control.

COURSE OUTCOME

- Understanding about contact lens history, introduction, design & relation with structure of eye
- Understanding about RGP contact lens material & their property their parameter
- Understanding about RGP contact lens manufacturing techniques & fitting of RGP lenses
- Understanding and know about care maintenance and do's & don't of RGP contact lens
- Analyzing the complication and their management of RGP contact lenses

Unit-1:
Anatomy and Physiology of the Cornea and related Structures; Contact Lens Materials
Unit-2
Microbiology, Lens Care and Maintenance; Tears and contact lenses; Optics and Lens Design
Unit-3:
Clinical Instrumentation in contact lens practice; Rigid Gas Permeable corneal lens fitting
Unit-4:
Soft contact lens fitting; Toric Contact lens fitting; Lens care regimen; Contact lens standards
Unit-5:
Lens checking: Soft and Rigid Contact lens complications
Special types of Contact lenses – diagnosis, surgery, protective, therapeutic, sports, partially sighted

Text Books:

1. Contact lenses – Stone and Philips
2. Contact lens practice by Nathan Efron

Reference Books:

1. IACLE modules

MASTER IN OPTOMETRY (M.Optom.) Semester-II
BIOSTATISTICS
Subject Code : MOP25203
Min. Hrs -: 80 Hrs.

COURSE OBJECTIVES:

a) To have a thorough understanding of presenting supporting evidences and how to conduct statistical analysis.
b) To have an understanding of model of biostatistics.
c) To evaluate every procedure on the basis of evidences.
d) To understand the data analysis procedure and their significance in research.

COURSE OUTCOMES:

a) Students will be able to understand and apply concepts and terminology with in the area of biostatistics.
b) Students will be able to describe research design and application of different methods to analyze the data collected to conduct and complete the research. .
c) Record, extract and analyze key information about human and object.

UNIT-1

Biostatistics

- Introduction
- Definition
- Types
- Application in Optometry

UNIT-2

Data

- Definition
- Types
- Presentation
- Collection methods

Measures of central value

- Arithmetic mean, median, mode. Relationship between them
- Partitioned values- Quartiles, Deciles, Percentiles
- Graphical determination

UNIT-3

Measures of Dispersion

- Range
- Mean Deviation
- Standard Deviation

Normal Distribution Curve

- Properties of normal distribution
- Standard normal distribution
- Transformation of normal random variables.
- Inverse transformation
- Normal approximation of Bioaxial distribution.

UNIT-4

Correlation analysis

- Bivariate distribution:
- Scatter Diagram
- Coefficient of correlation
- Calculation & interpretation of correlational coefficient
- T-test, Z-test, P-value

Regression analysis

- Lines of regression
- Calculation of Regression coefficient
- Sampling distribution

- Standard error
- Types I & II error

UNIT-5

Probability (in Brief)

Hypothesis Testing

- Null Hypothesis
- Alternative hypothesis
- Acceptance & rejection of null Hypothesis
- Level of significance

Parametric & non parametric tests

- Chi square test
- Mann-Whitney U test
- Wilcoxon Signed test
- Kruskal-Wallis test
- Friednam test
- T-test/student T test
- Analysis of variance

Text Book:

1. B.L Agarwal, Basic statistics , New Age International Publication.2012.

Reference Books:

1. Sundarrao, Introduction to biostatistics and Research Methodology, CBS, 1Ed, 2002.
2. C.R Kothari, Research methodology, New Age international publication, 3Ed, 2014.

MASTER IN OPTOMETRY (M.Optom.) Semester-II
LOW VISION AND GERIATRIC OPTOMETRY
Subject Code : MOP25204
Min. Hrs -: 80 Hrs.

COURSE OBJECTIVES:

- Upon completion of the course, the student should be able to understand the best suitable low vision and functional assistive device for a particular condition and rehabilitation.
- This course gives both in-depth theoretical knowledge and clinical exposure in low vision care. The outcomes of this course are: Thorough understanding of the causes of the low vision, its functional and psychosocial consequences.
- Help visually impaired individuals to utilize their residual visual skills optimally and rehabilitate.

COURSE OUTCOMES:

- Understanding the basic definition and classification of Low Vision
- Analyzing the various causes of Low Vision
- Understanding how to do examination of a low vision Patient,
- Applying various optical and non-optical devices for visual rehabilitation of a low vision Patient.
- Understanding the legal aspects of Low Vision in India, as well as applying case studies to for visual rehabilitation of a low vision Patient

Unit-1:

- Visual Disorders – Medical Perspective
- The Epidemiology of Vision Impairment
- Vision Impairment in the pediatric population
- Ocular Diseases: Age – Related Cataract, Glaucoma, ARMD, Diabetic retinopathy,
- Corneal Disorders, Ocular Trauma
- Sensory Neuro-ophthalmology and Vision Impairment
- Refractive Disorders
- Visual Disorders – The Functional Perspective
- Low Vision and Psychophysics
- Perceptual correlates of Optical Disorders
- Functional aspects of Neural Visual Disorders of the eye and Brain
- Visual Disorders and Performance of specific Tasks requiring vision

Unit-2:

- Visual Disorders – The Psychosocial Perspective
- Developmental perspectives –Youth
- Vision Impairment and Cognition
- Spatial orientation and Mobility of people with vision impairments
- Social skills Issues in vision impairment
- Communication and language: Issues and concerns
- Developmental perspectives on Aging and vision loss
- Vision and cognitive Functioning in old age
- Interactions of Vision Impairment with other Disabilities and sensory Impairments.
- Children with Multiple Impairments
- Dual Vision and Hearing Impairment
- Diabetes Mellitus and Vision Impairment
- Vision Problems associated with Multiple Sclerosis
- Vision Impairment related to Acquired Brain Injury
- Vision and Dementia Low Vision and HIV infection

Unit-3

- The Environment and Vision Impairment: Towards Universal Design
- Indian Disabilities act
- Children's Environments
- Environments of Older people

- Outdoor environments
- Lighting to enhance visual capabilities
- Signage and way finding
- Accessible Environments through Technology

Unit-4:

- Vision Rehabilitation: In Western Countries, In Asia
- Personnel preparation in Vision Rehabilitation
- Psychological and social factors in visual Adaptation and Rehabilitation
- The Role of psychosocial Factors in adaptation to vision Impairment and Habilitation outcomes for Children and Youth

Unit-5:

- The Role of psychosocial Factors in adaptation to vision Impairment and Habilitation outcomes for Adults and Older adults
- Social support and adjustment to vision Impairment across the lifespan
- The person – Environment perspective of vision impairment Associated Depression, Disability and rehabilitation
- Methodological strategies and issues in social research on vision
- Impairment and rehabilitation

Text Books:

1. Richard L. Brilliant: Essentials of Low Vision Practice, Butterworth-Heinemann,1999

Reference Books:

1. Helen Farral: optometric Management ofVisual Handicap, Blackwell Scientific publications,1991
2. A J Jackson, J S Wolffsohn: Low Vision Manual, Butterworth Heinnemann,2007

MASTER IN OPTOMETRY (M.Optom.) Semester-II
NEURO OPTOMETRY
Subject Code : MOP25205
Min. Hrs -: 80 Hrs.

COURSE OBJECTIVES:

- This course provides understanding of the issues of visual functioning which will also be related to clinical assessment issues.
- Topics covered include: processing of visual information in mammals, repair in the nervous system of vertebrates, objective assessment of visual pathway, review of brainstem and brainstem anatomy, review of amino acid chemistry related to brain neurochemistry, glutamate and neurotoxicity in glaucoma, visual attention and arousal systems, brainstem mechanisms in the control of eye movements, visually directed activities-reading.
- Parietal factors in vision, frontal factors in vision, after effects and inter-ovular transfers.

COURSE OUTCOMES:

- Understand neuroanatomy and neurophysiology relevant to optometry.
- Recognize signs and symptoms of neuro-optometric disorders.
- Describe the role of optometry in neurologic rehabilitation.
- Identify appropriate diagnostic tests for neuro-optometric conditions.
- Interpret test results and develop treatment plans.

Unit-I

- Pupils
- CN III disorders
- CN II disorders
- CN IV disorders
- CN V disorders
- CN VI disorders

Unit-II

- 7. Papilledema
- 8. AAION
- CVD – CAD
- Migraine

Unit-III

- NAION
- Optic neuritis
- Neuro imaging

Unit-IV

- 14. Nystagmus
- 15. Brainstem motility
- 16. Myasthenia

References:

1 .Jack J. Kanski Clinical Ophthalmology: A Systematic Approach, 8th edition, Butterworth - Heinemann
2. Stephen J. Miller : Parsons Diseases of the Eye, 18th edition, Churchill Livingstone,

MASTER IN OPTOMETRY (M.Optom.) Semester-II
CLINICS (GENERAL)
Subject Code : MOP25206
Min. Hrs -: 80 Hrs.

Post graduate students must know:

- The objective of clinics in this semester is to be able to gets hand-on experience related to diagnosis, interpretation of the reports/findings and management.
- An approximate of guided 80 hours needs to be completed in this semester.
- The students will be by rotation go to community clinics, Campus clinics, and associated hospital and optical / optometric clinics.
- The focus will be on the specialized subjects studies in this semester. The logbook has to be maintained and case sheets of each subject in the semester with complete management and follow up are mandatory for submission at the end of the semester
- The log book needs to be signed by the supervisor during every visit. No case record will be considered without the supervisor's signature

MASTER IN OPTOMETRY (M.Optom.) Semester-II
CLINICS (SPECIALTY)
Subject Code : MOP25207
Min. Hrs -: 80 Hrs.

Post graduate students must know:

- The objective of clinics in this semester is to be able to gets hand-on experience related to diagnosis, interpretation of the reports/findings and management.
- An approximate of guided 80 hours needs to be completed in this semester.
- The students will be by rotation go to community clinics, Campus clinics, and associated hospital and optical / optometric clinics.
- The focus will be on the specialized subjects studies in this semester.
- The logbook has to be maintained and case sheets of each subject in the semester with complete management and follow up are mandatory for submission at the end of the semester The log book needs to be signed by the supervisor during every visit.
- No case record will be considered without the supervisor's signature

MASTER IN OPTOMETRY (M.Optom.) Semester-II
DISSERTATION
Course Code: MOP25208
Min. Hrs -: 120 Hrs.

- Every candidate shall submit synopsis to the University in the prescribed Performa containing particulars of proposed dissertation work, within 6 months from the date of commencement of the course on or before the dates notified by the university.
- The synopsis shall be sent through the proper channel. Such synopsis will be reviewed and the university will register the dissertation topic.

Students will prepare their synopsis for dissertation in consultation with their guides.

Performa for synopsis:

1. Introduction
2. Aims and Objectives
3. Review of Literature
4. Methodology or Material and Methods
5. References

Note:

1. The copies of synopsis must be in bound properly.
2. The candidate have to submit 4 copies of synopsis.
3. Colour scheme for synopsis will be white.
4. Text writing
   Paper to be used – A4 size (Bond Paper)
   Printing – One side
   Font - Title – 18 Pt. Bold
   Heading – 16 Pt. Bold.
   Sub Heading – 14 Pt. Bold
   Running text (English) -12 Pt. – Times New Roman
   Running Text (Hindi) 14 Pt. (CG12, Krutidev 10)
   Spacing : Double
   Margin : Left – 4 Cm, Top, Bottom, Right – 2.5 Cm.
   Page Numbering– Properly numbered

5. Writing Reference

Should be numbered consecutively in the order in which they are first mentioned in the text (not in alphabetic order). Identify references in text, tables and legends by Arabic numerals in superscript. References cited only in tables or figure legends should be numbered in accordance with the sequence established by the first identification in the text of the particular table or figure.

Journal Articles
Shashi A, Jain SK and Pandey M: *In-vitro* evaluation of anti lthiatic activity of seeds of *Dolichos biflorus* and roots of *Asparagus racemosus* . International Journal of Plant Sciences 2008; 1:67-71.

A Book
Kalia AN: A Text Book of Industrial Pharmacognosy. CBS Publishers & Distributors, First Edition 2005.

A Chapter in a Book
Nadkarni KM: Indian Materia Medica. Popular Prakashan, Mumbai, Edition 3, Vol. I, 2000: 242-246.

MASTER IN OPTOMETRY (M.Optom.) Semester-III
ADVANCED CONTACT LENS- II
Subject Code : MOP25301
Min. Hrs -: 80 Hrs.

COURSE OBJECTIVES:

- Upon completion of the course, the student should be able to understand the corneal oxygen requirements and recommend the best suitable contact lens for a particular condition.
- Management of ocular complications with contact lenses.
- Understand contact lens fitting for compromised corneas and keratoconus.
- The student should also be able to understand the fitting philosophy of orthokeratology and myopia control.

COURSE OUTCOMES:

- Understanding the corneal oxygen requirements and recommend the best suitable contact lens for a particular condition.
- Understanding ocular complications with contact lenses.
- Understanding contact lens fitting for compromised corneas and keratoconus
- Understanding the fitting philosophy of orthokeratology
- Understanding the fitting philosophy of myopia control.

UNIT-1:

- Extended and Continuous wear Lenses
- Scleral Contact lenses
- Bifocal and multifocal contact lenses
- Orthokeratology
- Keratoconus
- Post keratoplasty contact lens fitting

UNIT-2

- Post refractive surgery contact lens fitting
- Pediatric contact lens fitting
- Cosmetic and prosthetic contact lens fitting
- Contact lens for abnormal ocular conditions

UNIT-3

- Contact lens and Myopia control

UNIT-4

- Legal issues and contact lenses
- Contact lens manufacturing

UNIT-5:

- Modifications procedures Impairment and rehabilitation

Text Books:

1. Contact Lenses – Stone and Philips
2. Contact lens practice by Nathan Efron

Reference Books:

1. IACLE modules

MASTER IN OPTOMETRY (M.Optom.) Semester-III
LOW VISION CARE AND REHABILITATION
Subject Code : MOP25302
Min. Hrs -: 80 Hrs.

COURSE OBJECTIVES:

- Upon completion of the course, the student should be able to understand the best suitable low vision and functional assistive device for a particular condition and rehabilitation.
- This course gives both in-depth theoretical knowledge and clinical exposure in low vision care. The outcomes of this course are: Thorough understanding of the causes of the low vision, its functional and psychosocial consequences.
- Help visually impaired individuals to utilize their residual visual skills optimally and rehabilitate.

COURSE OUTCOMES:

- Understanding the rehabilitation process of children and adults with vision impairment
- Understanding the educational needs of school going children with vision impairment
- Utilizing assistive devices for low vision patients
- Utilizing assistive devices for low vision patients

Unit-1:

- Rehabilitation of Children and Youth with vision Impairment
- Rehabilitation of working –age Adults with Vision Impairment
- Rehabilitation of older Adults with Vision Impairment
- Functional consequences of vision Impairment
- Vision evaluation of Infants

Unit-2:

- Educational assessment of visual function in Infants and Children
- Functional Evaluation of the Adult
- Functional orientation and Mobility
- Functional Assessment of Low Vision for Activities of Daily living

Unit-3:

- Psychosocial assessment of adults with vision impairment
- Assistive Devices and Technology for Low Vision

Unit-4:

- Assistive Devices and Technology for Blind
- Vision and Reading - Normal Vs Low Vision

Unit-5:

- Clinical Implications of color vision Deficiencies in low vision patients

Text Books:

1. The lighthouse handbook on vision impairment and Vision rehabilitation: Barbara Silverstone, Mary Ann Lang, Bruce Rosenthal, Faye
2. . 2. A J Jackson, J S Wolffsohn: Low Vision Manual, Butterworth Heinnemann,2007

Reference Books:

1. ICEE Modules

MASTER IN OPTOMETRY (M.Optom.) Semester-III
BINOCULAR VISION-II & VISION THERAPY
Subject Code : MOP25303
Min. Hrs -: 80 Hrs

COURSE OBJECTIVES:

- Understand binocular vision anatomy and physiology.
- Recognize signs and symptoms of binocular vision disorders.
- Describe vision therapy techniques and protocols.
- Identify appropriate diagnostic tests for binocular vision conditions.
- Interpret test results and develop treatment plans.

COURSE OUTCOMES:

- Applying the concepts to classify different types of strabismus
- Applying the concepts to diagnosed the different neurological disorder leading to the visual disorder
- Applying the appropriate method to diagnosed the visual disorders
- Applying the concepts for proper management of visual disorders
- Creating & panning the proper vision therapy session as per needs

Unit-1

Neuro-muscular anomalies

- Classification and etiological factors ,History–
- Recording and significance

Unit-2:

Convergent strabismus

- Accommodative convergent squint- definition, Investigation, clinical feature, and Management Non accommodative Convergent squint- definition, Investigation, clinical feature and Management,

Divergent Strabismus-

- Classification, A& V pattern, Investigation and Management.

Vertical strabismus-

- Definition, Investigation, clinical feature, and Management

Unit-3:

Paralytic Strabismus:

- Definition, types, Investigation and Management Distinction from comitant and restrictive Squint.

Investigations:

- History and symptoms, DiplopiaCharting, Hess chart, Park 3 Steps test PBCT
- Restrictive Strabismus: DRS, Brown Syndrome, Strabismus Fixus, FDT

Unit-4:

Special clinical conditions:

- Acquired brain injury (traumatic brain injury {TBI} and stroke), Developmental disabilities (Down Syndrome, Developmental delay, etc.), Motor disabilities (Cerebral Palsy, ataxia, etc.), ADHD ,Autism, Dyslexia Computer Vision Syndrome, Vision Yoked prism rationale for treatment and application, SILO/SOLI

Unit-5:

Vision Therapy Procedures and Instrumentation

- Introduction and General Concepts Vision Therapy: Functional Amblyopia, Fusional Vergence Dysfunction, Anti-suppression. Accommodative Dysfunction, Eye Movement Disorders, strabismus (Exotropia, Esotropia, vertical strabismus)

Text Books:

1. Clinical management of binocular vision Mitchell Scheiman and Bruce Wick

2. Clinical Orthoptics by Fiona J. Rowe

Reference Books:

1. Binocular vision and ocular motility by Gunter K. von Noorden

2. Applied concepts in vision therapy: Leonard Press

3. Pediatric optometry: Jerome K Rosner

MASTER IN OPTOMETRY (M.Optom.) Semester-III
EYE BANKING
Subject Code : MOP25304
Min. Hrs -: 80 Hrs

COURSE OBJECTIVES:

- Understand the principles and procedures of eye banking.
- Learn about the importance of eye donation and transplantation.
- Familiarize with the role of optometrists in eye banking and corneal transplantation.
- Understand the criteria for donor selection and tissue evaluation.
- Appreciate the ethical and legal aspects of eye banking.

COURSE OUTCOMES:

- Define eye banking and its significance.
- Explain the process of eye donation and retrieval.
- Describe the types of corneal transplantation (e.g., PK, DALK, DSEK).
- Identify the indications and contraindications for corneal transplantation.
- Understand the role of optometrists in pre- and post-operative care.

Unit-I
- Introduction to Eye Banking
- History & milestones
- Requirements in eye bank

Unit-II
- Duties and responsibilities of eye bank personals
- Indications and contra indications
- Instruments

Unit-III
- Tissue retrieval
- Handling of tissue
- preservation techniques,

Unit-IV
- Evaluation techniques
- specular microscopy
- Documentation

Unit-V
- Legal aspects
- keratoplasties
- Advanced keratoplasties

Text Book:
1. Dean Vavra: Eye Banking
2. Smolin and thoft,s :The Cornea Scintific foundation and clinical practice ,fourth edition
3. T.Bredehorn Mayr : Eye Banking ,Karger

MASTER IN OPTOMETRY (M.Optom.) Semester-III
Pedagogy
Subject Code : MOP25305
Min. Hrs -: 80 Hrs

COURSE OBJECTIVES:

- On completion of the study of this subject the student should be able to understand the dynamics of teaching & learning.
- Plan effective teaching sessions in Optometry

COURSE OUTCOMES:

On completion of this subject students should have the opportunity to:

- Strengthen the basic fundamental basis of assessment and diagnosis and postulate this knowledge in clinical practice.
- Analyses critical evaluate the patient conditions and formulation of accurate diagnosis.
- Acquire a thorough understanding of management and educational methodology in optometry which can be applied in clinical practice.

Following are the topics to be included but not limited to:

1. **Education**
    - Introduction
    - Educational Philosophy- Idealism Naturalism, Pragmatism
    - Aims of Education
    - Functions of Education
    - Formal, informal and non-formal Education
    - Agencies of Education
    - Current issues and Trends in Higher Education
    - Issue of quality in Higher Education
    - Autonomy and Accountability
    - Privatization of Education

2. Concept of Teaching and Learning

- Meaning and scope of Educational Psychology
- Meaning and Relationship between teaching and learning
- Learning Theories
- Dynamics of behavior
- Individual differences

3. Curriculum

- Meaning and concept
- Basis of curriculum formulation
- Framing objectives for curriculum
- Process of curriculum development and factors involved.
- Evaluation of curriculum

4. Method and techniques of teaching

- Lecture
- Demonstration
- Discussion
- Seminar
- Assignment
- Project
- Case Study

5. Planning for teaching

- Bloom's taxonomy of instructional objectives
- Writing instructional objectives in behavioural terms
- Unit planning
- Lesson planning

6. Teaching aids

- Types of teaching aids
- Principles of selection, preparation and use of audio-visual aides

7. Measurement and Evaluation

- Nature of educational measurement: meaning, process, types of tests
- Construction of an achievement test and its analysis
- Standardized test
- Introduction of some standardized tools, important tests of intelligence,
- aptitude, and personality.
- Continuous and comprehensive evaluation

8. Guidance and counseling

- Meaning & concepts of guidance and counseling
- Principles of guidance and counseling

9. Awareness Programme

- Awareness and guidance to the common people about health and disease

Text Books

1. Armour, K. (2014). Pedagogical Cases in Physical Education and Youth Sport. Routledge
2. Higgs, J., Smith, M., Webb, G., & Skinner, M. (2017). Contexts of Physiotherapy Practice. Churchill Livingstone.

Reference Books

1. Shepard, K. F., & Jensen, G. M. (2011). Handbook of Teaching for Physical Therapists: Pageburst Retail. Butterworth-Heinemann Medical.
2. Perselli, V. (2016). Education, Theory and Pedagogies of Change in a Global Landscape: Interdisciplinary Perspectives on the Role of Theory in Doctoral Research. Springer.

MASTER IN OPTOMETRY (M.Optom.) Semester-III
CLINICS (GENERAL)
Subject Code : MOP25306
Min. Hrs -: 80 Hrs

Post graduate students must know:

- The objective of clinics in this semester is to be able to examine the eye and understand the all eye procedures with clinical management.
- An approximate of guided 80 hours needs to be completed in this semester.
- The students will be by rotation go to community clinics, Campus clinics, and associated hospital and optical / optometric clinics.
- The logbook has to be maintained and case sheets of each subject in the semester with complete management and follow up are mandatory for submission at the end of the semester The log book needs to be signed by the supervisor during every visit.
- No case record will be considered without the supervisor's signature

MASTER IN OPTOMETRY (M.Optom.) Semester-III
CLINICS (SPECIALTY)
Subject Code : MOP25307
Min. Hrs -: 80 Hrs

Post graduate students must know:

- The objective of clinics in this semester is to be able to gets hand-on experience related to diagnosis, interpretation of the reports/findings and management.
- An approximate of guided 80 hours needs to be completed in this semester.
- The students will be by rotation go to community clinics, Campus clinics, and associated hospital and optical / optometric clinics.
- The focus will be on the specialized subjects studies in this semester.
- The logbook has to be maintained and case sheets of each subject in the semester with complete management and follow up are mandatory for submission at the end of the semester
- The log book needs to be signed by the supervisor during every visit.
- No case record will be considered without the supervisor's signature

MASTER IN OPTOMETRY (M.Optom.) Semester-III
DISSERTATION
Min. Hrs: 40 Hrs.

- Students will continue research work as per the synopsis.
- Data should be collected as per the ethical norms and the sample size.
- Day to day discussions and presentation of the collected data before the guide needs to be done periodically.
- After discussion the concerned changes may be made in the research work to improve its quality.

Care should be taken to avoid plagiarism and the research work should be genuine.

MASTER IN OPTOMETRY (M.Optom.) Semester-III
TEACHING SKILLS/ SEMINARS/SYMPOSIA/JOURNAL CLUB ETC.
Min. Hrs -: 40 Hrs.

(a) Teaching Skills

Candidates should be encouraged to teach undergraduate students if any. This performance will be based on assessment by the faculty members of the department and from feedback from the undergraduate students.

(b) Seminar/Symposia

- Seminars /recent advance presentation will be held every week, however, its timings are subject to clinical schedule. Topics must be well researched and must include common knowledge, recent advances, analysis and references.
- PG students should present minimum of two seminars (One in general and one in elective area) and Internal Assessment marks with depend on better topic selection and presentation.

(c) Journal Review Meeting (Journal Club):

The ability to do literature search, in depth study, presentation skills, and use of audio- visual aids are to be assessed. The assessment is made by faculty members and peers attending the meeting.

(d) Work diary / Log Book

Every student shall maintain a work diary and record his/her participation in the training programmes conducted by the department such as journal reviews, seminars, etc. Special mention may be made of the presentations by the candidate as well as details of clinical practice, if any conducted by the candidate by the student.

MASTER IN OPTOMETRY (M.Optom.) Semester- IV
CLINICS (GENERAL)
Subject Code : MOP25401
Min. Hrs -: 160 Hrs

Post graduate students must know:

- It is expected that upon completion the student will be able to carry out the standard clinical procedures safely and efficiently
- Upon completion of the course the student must be able to Take down a comprehensive history Do a complete and proper refraction
- Do a torch light examination
- Do a binocular vision assessment
- Use a slit lamp to do a complete anterior segment examination and posterior segment as required
- Must be able to take the decision to dilate the eye as per need
- Must be able to give a preliminary diagnosis
- Each student must be able to complete 20 such examinations under supervision and maintain verified case records for the same.
- Tutorial (Presentations) – Each student must also make 1 presentation on instruments and present it atthe study center.
- Case Presentation: Each student must do two case discussions during the semester and of the patients. Thus each student presents 2 case discussions at a time and presents it at the study centre.
- The hard copy of the presentations will have to be submitted for the term end exam.

MASTER IN OPTOMETRY (M.Optom.) Semester- IV
CLINICS (SPECIALITY)
Subject Code : MOP25402
Min. Hrs -: 160 Hrs

ADVANCE CLINICAL RETINA, GLAUCOMA-

- Retinal evaluation, diagnostics & optometric management
- Glaucoma investigation diagnostics and optometric management
- Low vision Evaluation, deciding diagnosis & management plan
- Visual Rehabilitation for visually impaired person

ADVANCE PEDIATRIC, BINOCULAR VISION & VISION THERAPY-

- To assess and manage patients with anomalies of binocular vision
- To Assess binocular status using objective and subjective tests
- To Understanding of the management of a patient with an anomaly of binocular vision.
- To Investigate and manage adult patients presenting with heterophoria.
- To Manage an adult patient with heterotropia
- To Manage children at risk of developing an anomaly of binocular vision
- To Manage children presenting with an anomaly of binocular vision
- To Manage a patient presenting with an incomitant deviation.

ADVANCE CORNEA & CONTACT LENS-

- Insert and remove contact lenses and instruct patients in these procedures.
- Fit soft contact lenses
- Manage the aftercare of patients wearing soft contact lenses
- Advise on contact lens materials and care regimes
- - Manage the aftercare of patients wearing rigid gas permeable contact lens.
- Fit rigid gas permeable contact lenses.
- Fit contact lenses to patients with astigmatism.
- Techniques used in fitting contact lenses and to advise patients requiring complex visualcorrection.
- Fit multifocal, contact Lenses
- Fit special contact lenses e.g Rose K, Orthokeratology, Scleral
- Dispensing, ordering &verification of spectacle

ADVANCE LOW VISION PRACTICE-

- Conduct comprehensive low vision assessments.
- Diagnose and manage low vision conditions (e.g., macular degeneration, diabetic retinopathy)
- Prescribe and fit low vision devices (e.g., telescopes, microscopes)
- Evaluate and train patients on assistive technology (e.g., software, apps)
- Develop rehabilitation plans for daily living activities.
- Provide visual therapy and training.
- Counsel patients and families on adaptation and coping strategies.
- Orientation and mobility training.
- Activities of daily living (ADL) training
- Visual skills training (e.g., visual attention, visual memory)
- Assistive technology training
- Home modification assessments.

MASTER IN OPTOMETRY (M.Optom.) Semester- IV
RESEARCH PROJECT (DISSERTATION)
Subject Code : MOP25403
Min. Hrs -: 120 Hrs

Every candidate pursing M.Optom. degree course is required to carry out research work on a selected research project under the guidance of a recognized postgraduate teacher. The results of such a work shall be submitted in the form of dissertation. Topic for dissertation shall be assigned by the guide.
If the subject of Thesis entails collaboration with other departments or specialties, the collaborative portion of the work will be supervised by Co-Guide, designated by the School of Health Sciences in consultation with the Guide. Where a Co-Guide is involved, the Thesis will be certified jointly by the Guide & Co-guide.

Every candidate shall submit synopsis to the University in the prescribed Performa containing particulars of proposed dissertation work, within 6 months from the date of commencement of the course on or before the dates notified by the university. The synopsis shall be sent through the proper channel. Such synopsis will be reviewed and the university will register the dissertation topic.
No change in the dissertation topic or guide shall be made without prior approval of the university. Guide will be only a facilitator, advisor of the concept and hold responsible in correctly directing the candidate in the methodology and not responsible for the outcome and results.

The dissertation should be written under the following headings.

1. Introduction
2. Aims or objectives of study
3. Review of literature
4. Material and methods
5. Results
6. Discussion
7. Conclusion
8. References
9. Master and Chart & Table (If Applicable)
10. Annexure (If Applicable)

The written text of dissertation/ research project shall not be less than 50 pages and shall not exceed 120 pages excluding references, tables, questionnaires and other annexure. It should be neatly typed in double line spacing on one side of bond paper (A4 size, 8.27" x 11.69") and bound properly. Spiral binding should be avoided. A declaration by the candidate for having done the work himself should also be included, and the guide, head of the department and Director/Coordinator of the institute shall certify the dissertation/ research project.
Every candidate is required to give power point presentation before final submission of dissertation. Four copies of Dissertation/research project shall be submitted to the university, through proper channel, along with a soft copy (CD), 2 months before the final examination. It shall be assessed by two examiners appointed by the university, one internal and one external. There will be a power point open presentation of the submitted dissertation as per the schedule given by the university. This presentation shall be jointly evaluated by external and internal examiner.
If the student failed to secure the minimum passing marks he will resubmit the dissertation.

MASTER IN OPTOMETRY (M.Optom.) Semester-IV
TEACHING SKILLS/ SEMINARS/SYMPOSIA/JOURNAL CLUB ETC.
Min. Hrs -: 40 Hrs.

(e) Teaching Skills

Candidates should be encouraged to teach undergraduate students if any. This performance will be based on assessment by the faculty members of the department and from feedback from the undergraduate students.

(f) Seminar/Symposia

- Seminars /recent advance presentation will be held every week, however, its timings are subject to clinical schedule. Topics must be well researched and must include common knowledge, recent advances, analysis and references.
- PG students should present minimum of two seminars (One in general and one in elective area) and Internal Assessment marks with depend on better topic selection and presentation.

(g) Journal Review Meeting (Journal Club):

The ability to do literature search, in depth study, presentation skills, and use of audio- visual aids are to be assessed. The assessment is made by faculty members and peers attending the meeting.

(h) Work diary / Log Book

Every student shall maintain a work diary and record his/her participation in the training programmes conducted by the department such as journal reviews, seminars, etc. Special mention may be made of the presentations by the candidate as well as details of clinical practice, if any conducted by the candidate by the student.