DPU

Dr. D. Y. PATIL VIDYAPEETH, PUNE

(Deemed to be University)

Revised Syllabus of First Year of

Master of Clinical Optometry (M. Optom.)

Programme (August, 2022)

Academic Year 2022-23 & onwards

Revised as per Ministry of Health and Family Welfare
Model Curriculum Handbook-Optometry

DPU

Dr. D. Y. PATIL VIDYAPEETH, PUNE
(Deemed to be University)
(Accredited (3rd Cycle) by NAAC with a CGPA of 3.64 on four point scale at 'A++' Grade)
(Declared as Category - I University by UGC Under Graded Autonomy Regulations, 2018)
(An ISO 9001:2015 and 14001:2015 Certified University and Green Education Campus)

Dr. A. N. Suryakar
Registrar

Ref. No. : DPU/ 960-DC)/22
Date : 20.08.2022

NOTIFICATION

Whereas in pursuance of the various decisions taken by the Board of Management regarding **"Syllabus for Master of Clinical Optometry (M. Optom.) – 2015-16 onwards".** This syllabus is hereby repealed for the students admitted to the **First Year of Master of Clinical Optometry (M. Optom.) Programme** from **Academic Year 2022-2023 and onwards**, however, the same will be **continued for the repeater students**, till the last student clears his/her First Year of the Programme.

Further, for the **students in the Second Year**, the earlier syllabus **"Syllabus for Master of Clinical Optometry (M. Optom.) – 2015-16 onwards"** will be **continued,** till the last student clears his/her Second Year of the Programme.

And whereas in pursuance of the resolution passed by the **Academic Council** at its meeting held on **29th July, 2022** vide **Resolution No. AC-22(ii)-22** regarding the **revision in the syllabus of First Year of Master of Clinical Optometry (M. Optom.) Programme** as per Ministry of Health and Family Welfare Model Curriculum Handbook-Optometry for implementation.

And whereas in pursuance of the resolution passed by the **Board of Management** at its meeting held on **10th August, 2022 vide Resolution No. BM-33(ii)-22** regarding the **revision in the syllabus of First Year of Master of Clinical Optometry (M. Optom.) Programme** as per Ministry of Health and Family Welfare Model Curriculum Handbook-Optometry for implementation.

The **Revised Syllabus of First Year of Master of Clinical Optometry (M. Optom.) Programme (August 2022),** as per Ministry of Health and Family Welfare Model Curriculum Handbook-Optometry, applicable for the following specialties:

1. **Cornea & Contact Lens**
2. **Low Vision and Rehabilitation**

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The **Revised Syllabus of First Year (Semester – I & Semester – II) of Master of Clinical Optometry (M. Optom.) Programme (August, 2022)** as per Ministry of Health and Family Welfare Model Curriculum Handbook-Optometry consist for following courses:

Semester - I		Semester – II	
MOPT 101	Ocular Disease and Diagnostics-I	MOPT 201	Ocular Disease and Diagnostics-2
MOPT 102	Advance Dispensing Optics	MOPT 202	Binocular Vision & Advanced Orthoptics
MOPT 103	Epidemiology & Community eyecare	MOPT 203	Neuro optometry
MOPT 104	Research Methodology	MOPT 204	Business and Clinical aspects in Optometry
MOPT 105 A	Elective 1 Pediatric Optometry	MOPT 205 A	Elective 1 Eye banking
MOPT 105 B	Elective 2 Advance glaucoma	MOPT 205 B	Elective 2 Clinical Psychology
MOPT 106	Research Project - I	MOPT 206	Research Project - II

The syllabus will be useful to all the concerned. This will come into force with immediate effect.

Dr. D. Y. PATIL VIDYAPEETH PIMPRI, PUNE-18. Deemed to be University

Suryakar

(Dr. A. N. Suryakar)
Registrar
REGISTRAR
DR. D. Y. PATIL VIDYAPEETH, PUNE.

Copy to:

1. PS to Chancellor for kind information of Hon'ble Chancellor, Dr. D. Y. Patil Vidyapeeth, Pune.
2. PS to Vice Chancellor for kind information of Hon'ble Vice Chancellor, Dr. D. Y. Patil Vidyapeeth, Pune.
3. The Dean, Faculty of Allied Medical Sciences, Dr. D. Y. Patil Vidyapeeth, Pune
4. The Director, Dr. D. Y. Patil Institute of Optometry & Visual Sciences, Pimpri, Pune
5. The Controller of Examinations, Dr. D. Y. Patil Vidyapeeth, Pune.
6. Director (IQAC), Dr. D. Y. Patil Vidyapeeth, Pune.
7. Web Master for uploading on Website.

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REGULATION FOR THE POST GRADUATE DEGREE PROGRAMME IN OPTOMETRY: MASTER OF CLINICAL OPTOMETRY (M. OPTOM.)

1. Duration of the M. Optom. Program:

This is a two-year (total four semesters) program which involves course work, assignments, patient care in clinics and research through dissertation projects. Educative seminars, hand-on training sessions, workshops and special lectures will be conducted by the Institute of Optometry.

The medium of instruction for this post graduate program in Optometry will be English.

The admission procedure of M. Optom. and the date of commencement of the new academic year will be revised every year accordingly.

2. Specializations:

1. Cornea & Contact Lens
2. Low Vision & Rehabilitation

3. Eligibility for Admission to First Year M. Optom.

1. Candidates should have completed Bachelor's Degree in Optometry or equivalent course with minimum of 50% marks from any Indian University, which is member of Association of Schools and Colleges of Optometry India (ASCO) & Optometry Council of India (OCI)
2. Candidates belonging to foreign student's category should have completed Bachelor's Degree in Optometry [B.Optom.], or equivalent course from any University, which is affiliate member of World Council of Optometry (WCO) and / or is recognized by a competent educational body like a national council / association of the country of origin of the candidate / AIU (All India Universities).
3. Candidates should have completed 22 years of age as on 31st December of the year of admission.

4. Scheme of Examination

a) Internal Examinations (Theory + Practical + Viva)

1. There shall be two internal examinations (also called internal assessment tests I and II) of one hour duration for each course to be held as per the schedule fixed in the Academic Calendar.

2. A student can take for supplementary re-internal exam of a specific subject or all the subjects for the betterment of performance in case of scoring of less mark in previous internal assessment exams only after successful submission of an application to the class teacher which will be approved by Director/Principal of the institute.

b) University Examinations:
The External Exams, Viva and practical examinations for first year & second year for both semesters of M. Optom. will be conducted on bi annual basis in the month of June/July/August and December/January end of every year as per the time table to be prepared from time to time. External viva and practical examinations will be conducted by a panel of two examiners for every subject and they will be responsible for checking the theory examination papers for that subject.

- **Examination & Rules of passing for First and Second Year M. Optom.**

Format for term end examination Theory papers **-**

Each theory examination will be of 100 marks with breakup of 40+40+20 Pattern and 2 Hours duration,

40 Marks University Theory Exam
10 Marks University Practical Exam } **Total 100 Marks**
50 Marks Internal Assessment Exam

40 Marks Theory University Examinations
Each theory examination paper will have total two Sections
Section A of total 20 marks
Section B of total 20 marks
Total (**A+B**) = **40 marks**

Section A of total 20 marks. Will have three long answer questions [10 mark each] out of which any two to be answered.

Section B of total 20 marks will have Five short questions out of which any four questions have to be answered.

10 Marks Practical Examinations

50 Marks Internal Assessment Examination

5. Standard of Passing:

First Year (I, II, & III Semester) M. Optom. Passing

- The standard of passing shall be minimum 50% in each subject.
- The marks of all heads combined (University Theory Exam + Internal Assessment Theory + Practicals/Viva) shall be considered together for Passing of the candidate.

Second Year IV Semester M. Optom. passing:

The internal and external examination marks will be added as the final marks of that subject for each year. Only when the student secures minimum 50% marks (Internal + External = Combined) in all subjects of both the years and has completed the project work and dissertation thesis in all respects, he/she will be declared to have completed the M. Optom. course and will be eligible for post graduate degree of Master in Optometry (M.Optom.)

6. Grading System

- **UGC 10-point Grading Scale**

Marks	Letter Grade	Grade Point
90 To 100	**O** : Outstanding	10
80 To 89	**A+** : Excellent	9
70 To 79	**A** : Very Good	8
60 To 69	**B+** : Good	7
55 To 59	**B** : Average	6
50 To 54	**P** : Pass	5
00 To 49	**F** : Fail	0
-	**AB** : Absent	0

Computation of SGPA and CGPA

The UGC recommends the following procedure to compute the Semester Grade Point Average (SGPA) and Cumulative Grade Point Average (CGPA):

i. The SGPA is the ratio of sum of the product of the number of credits with the grade points scored by a student in all the courses taken by a student and the sum of the number of credits of all the courses undergone by a student, i.e.

SGPA (Si) = Σ(Ci x Gi) / ΣCi

where Ci is the number of credits of the course and Gi is the grade point scored by the student in the course.

ii. The CGPA is also calculated in the same manner taking into account all the courses undergone by a student over all the semesters of a programme, i.e.

CGPA = $\Sigma(Ci \times Si) / \Sigma Ci$

where Si is the SGPA of the semester and Ci is the total number of credits in that semester.

iii. The SGPA and CGPA shall be rounded off to 2 decimal points and reported in the transcripts.

Illustration of Computation of SGPA and CGPA and Format for Transcripts

i. Computation of **SGPA** and **CGPA**

Illustration for **SGPA**

Course	Credit	Grade letter	Grade point	Credit Point **(Credit x Grade**
Course 1	**3**	**A**	8	3 X 8 = 24
Course 2	**4**	B+	7	4 X 7 = 28
Course 3	**3**	B	6	3 X 6 = 18
Course 4	**3**	O	10	3 X 10 = 30
Course 5	**3**	C	5	3 X 5 = 15
Course 6	**4**	B	6	4 X 6 = 24
	20			**139**

Thus, **SGPA** =139/20 =**6.95**

Illustration for **CGPA**

Semester 1	**Semester 2**	**Semester 3**	**Semester 4**	**Semester 5**	**Semester 6**
Credit : 20 SGPA : 6.9	Credit : 22 SGPA : 7.8	Credit : 25 SGPA : 5.6	Credit : 26 SGPA : 6.0	Credit : 26 SGPA : 6.3	Credit : 25 SGPA : 8.0

Thus, **CGPA =** $\frac{20 \times 6.9 + 22 \times 7.8 + 25 \times 5.6 + 26 \times 6.0 + 26 \times 6.3 + 25 \times 8.0}{144} = 6.73$

ii. **Transcript (Format):** Based on the above recommendations on Letter grades, grade points and SGPA and CCPA, the Institute may issue the transcript for each semester and a consolidated transcript indicating the performance in all semesters.

7. Grace Marks

The grace marks up to a maximum of **Five (5)** marks may be awarded only for theory papers to a student who has failed in not more than two subjects in the respective semester. Provided that these grace marks shall be awarded only if the student passes after awarding these marks.

8. Award of the degree:

A student, who has secured not less than 50%, marks in every subject of all semesters of M. Optom. Examination, will be eligible for the conferment of the "Master of Clinical Optometry (M. Optom.)" post graduate degree by the Dr. D.Y. Patil Vidyapeeth, Pune.

9. ATKT (Allowed-To-Keep-Terms)

A Student can take 2 backlog courses/Subjects/Papers combined for the promotion or Admission in next Semester/ Academic Year. The Details are as Follows:

1. A Student who has failed in 2 subjects or courses in Semester I, & II combined shall be allowed to keep term for Semester III & IV respectively.

2. A student who failed more than two subjects or courses in whole academic year (Both Semesters Combined) cannot be promoted to next academic year.

10. Dissertation work:

1. A candidate is required to carry out a research study in select area of his subject, under the supervision of a faculty guide. The results of such a study shall be submitted to the College/University in the form a dissertation as per the prescribed format and within the date stipulated by the University.

2. The dissertation work is aimed at training a postgraduate candidate in research methodology and techniques. It includes identification of the problem, formulation of a hypothesis, review of literature, getting acquainted with recent advances, designing of a research study, collection of data, critical analysis, and comparison of results and drawing conclusions.

3. Every candidate shall submit to the Department in the prescribed Performa, a synopsis containing particulars of proposed dissertation/ research project work within six to ten months from the date of commencement of the course on or before the date notified by the University. The synopsis shall be sent through the proper channel.

4. Such synopsis will be reviewed and the College will register the dissertation/ research project topic. No change in the dissertation topic/ research project or guide shall be made without prior approval of the College.

5. **Guide:** A Guide is appointed on the basis of 3 years teaching experience. However, a co-guide can be opted wherever required with prior permission of the Institute and University. The co guide shall also be appointed on the basis of experience recognized by the University.

6. In the event of registered Guide leaving the Institute a change of Guide shall be permitted by the University, on the specific recommendation of the Institute.

7. Ethical clearance: Ethical Clearance should be obtained for a study involving any procedure on human subject. The candidate should apply for the certificate to the Ethics Committee of the Institute/University, through the Guide and present the study before the Committee for clearance. A copy of the certificate should be attached along with the synopsis forwarded at the time of submission of synopsis. All such clearance should be sought before submission of final report.

8. A Research & Recognition Committee shall be constituted by the University for approving the title of PG program.

9. **Submission of synopsis:** The student has to submit the Synopsis to the guide and HOI which will need further approval of Institutional ethical clearance committee. The synopsis should be submitted as per the format on or before one month of starting of second semester, or within the date notified by the college, whichever is earlier. Once the synopsis is approved no change in the topic or Guide shall be made without the prior approval of the University.

10. **Preparation of dissertation:** The written text of dissertation shall be as per the format. It should be neatly typed with 1.5 line spacing on one side of the paper (A4 size: 8.27” x 11.69”) and properly bound. Spiral binding should be avoided. E-submission of the dissertation is mandatory.

11. **Final submission of the dissertation:** The dissertation complete in all respects and duly certified by the Guide/Co-guide, Course Co-coordinator/ HOD/ Director should be submitted it to the Controller of Examinations/ College Examination Committee as per the date specified by the University, generally two months before commencement of University examinations. Plagiarism of final submitted report should be checked. One research paper be published in Scopus/ Web of Science/ UGC Care Journal.

12. **Dissertation Assessment:** The dissertation shall be evaluated by two external and one internal examiners appointed by the university. Approval of dissertation work is an essential precondition for a candidate to appear for the final examination. The dissertation shall be accepted only after approval of the two examiners out of three examiners appointed by the university.

    If the dissertation is not accepted by two examiners, the same shall be returned to the student with the remarks of the examiners and the student can resubmit the dissertation after making the necessary improvement in the light of examiners report to the university within a further period of six months or next semester examination.

The dissertation/ research project should be written under the following headings:

✓ Introduction
✓ Aims or objectives of study
✓ Review of literature
✓ Material and methods
✓ Results
✓ Discussion
✓ Conclusion
✓ Summary
✓ References
✓ Tables
✓ Annexure

CBCS Pattern Syllabus for M. Optometry

Paper	Course Code	Course Title	Theory/ Lecture (Hours)	Credits	Practicals/ Clinical Rotation (Hours)	Credits	Total Contact Hours	Total Credit Points
M. Optom. 1st Year – 1st SEM								
● 6 Hours Per Day, 6 Days in a Week, 16 Weeks Per Semester ● 6x6 – 36 Hours Per Week ● 36 Hours x 16 Weeks – 576 Hours								
1	MOPT 101	Ocular Disease and Diagnostics-I	45	3	0	0	45	3
2	MOPT 102	Advance Dispensing Optics	45	3	0	0	45	3
3	MOPT 103	Epidemiology & Community eyecare	30	2	0	0	30	2
4	MOPT 104	Research Methodology	30	2	0	0	30	2
5	MOPT 105 A	Elective 1 Pediatric Optometry	60	4	0	0	60	4
	MOPT 105 B	Elective 2 Advance glaucoma						
6	MOPT 106	Research Project - I	0	0	180	6	180	6
		Total	**210**	**14**	**180**	**6**	**390**	**20**

Examination					
Paper	**Course Code**	**Internal Assessment**	**University Exam**		**Total Marks**
			Theory	**Practical**	
1	MOPT 101	50	40	10	100
2	MOPT 102	50	40	10	100
3	MOPT 103	10	40	0	50
4	MOPT 104	10	40	0	50
5	MOPT 105 A	50	40	10	100
	MOPT 105 B				
6	MOPT 106	50	0	50	100
	Total	**220**	**200**	**80**	**500**

Paper	Course Code	Course Title	Theory/ Lecture (Hours)	Credits	Practicals / Clinical Rotation (Hours)	Credits	Total Contact Hours	Total Credit Points
M. Optom. 1st Year – 2nd SEM								
● 6 Hours Per Day, 6 Days in a Week, 16 Weeks Per Semester ● 6x6 – 36 Hours Per Week ● 36 Hours x 16 Weeks – 576 Hours								
1	MOPT 201	Ocular Disease and Diagnostics-2	45	3	0		45	3
2	MOPT 202	Binocular Vision & Advanced Orthoptics	45	3	0	0	45	3
	MOPT 203	Neuro optometry	30	2	0	0	30	2
3	MOPT 204	Business and Clinical aspects in Optometry	30	2	0	0	30	2
4	MOPT 205 A	Elective 1 Eye banking	60	4	0	0	60	4
	MOPT 205 B	Elective 2 Clinical Psychology						
6	MOPT 206	Research Project - II	0	0	180	6	180	6
		Total	**210**	**14**	**180**	**6**	**390**	**20**

Paper	Course Code	Examination			
		Internal Assessment	University Exam		Total Marks
			Theory	Practical	
1	MOPT 201	50	40	10	100
2	MOPT 202	50	40	10	100
	MOPT 203	50	40	10	100
3	MOPT 204	10	40	0	50
4	MOPT 205 A	10	40	0	50
	MOPT 205 B				
6	MOPT 206	50	0	50	100
	Total	**220**	**200**	**80**	**500**

M. Optom. 2nd Year – 3rd SEM								
● 6 Hours Per Day, 6 Days in a Week, 16 Weeks Per Semester ● 6x6 – 36 Hours Per Week ● 36 Hours x 16 Weeks – 576 Hours								
1	MOPT 301 A	Cornea and Contact Lens	60	4	0	0	60	4
	MOPT 301 B	Low Vision & Rehabilitation						
2	MOPT 302	Vision Therapy	60	4	0	0	60	4
3	MOPT 303	Special Clinics - I	0	0	180	6	180	6
4	MOPT 304	Research Project - III	0	0	180	6	180	6
		Total	**120**	**8**	**360**	**12**	**480**	**20**

Examination					
Paper	**Course Code**	**Internal Assessment**	**University Exam**		**Total Marks**
			Theory	**Practical**	
1	MOPT 301 A	50	40	10	100
	MOPT 301 B				
2	MOPT 302	50	40	10	100
3	MOPT 303	50	0	50	100
4	MOPT 304	50	0	50	100
	Total	**200**	**80**	**120**	**400**

Paper	Course Code	Course Title	Theory/ Lecture (Hours)	Credits	Practicals / Clinical Rotation (Hours)	Credits	Total Contact Hours	Total Credit Points
M. Optom. 2nd Year – 4th SEM								
● 8 Hours Per Day, 6 Days in a Week, 16 Weeks Per Semester ● 8 X 6 – 48 Hours Per Week ● 48 Hours x 16 Weeks – 768 Hours								
1	MOPT 401	Special Clinics - II	0	0	360	12	360	12
2	MOPT 402	Research project and Desertation	0	0	360	12	360	12
		Total	**0**	**0**	**720**	**24**	**720**	**24**
		Grand Total	**540**	**36**	**1440**	**48**	**1980**	**84**
● 1 Credit = 15 Hrs. of Theory Lectures **● 1 Credit = 30 Hrs. of Practical/ Clinical Postings/ OPD/ Research Work Sessions**								
M. Optom. - Total 84 Credits								

Examination					
Paper	Course Code	Internal Assessment	University Exam		Total Marks
			Theory	Practical	
1	MOPT 401	100	0	100	200
2	MOPT 402	100	0	100	200
	Total	**200**	**0**	**200**	**400**
	Grand Total	**840**	**480**	**480**	**1800**

FIRST YEAR
FIRST SEMESTER

M. Optom. Syllabus

First Semester

MOPT 101: Ocular Diseases and Diagnostics – I

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

- **Course Outcome:**
  1. Ability to perform clinical decision making for Ocular abnormalities
  2. Ability to perform and interpret corneal diagnostics includingTopography/Pentacam/Orbscan
     1.1 Specular microscopy
     1.2 Pachymetry
     1.3 Abberometry
     1.4 AS OCT UBM
  2. Ability to perform pre and post Lasik evaluation
  3. Ability to interpret glaucoma diagnostic reports
     3.1 OCT
     3.2 HRT
     3.3 GDx
     3.4 Gonioscopy
     3.5 ONH evaluation
  4. Ability to perform anterior segment photography
  5. Ability to manage and co-manage therapeutics for anterior segment
  6. Referral criteria

- **Text / Reference Books:**
  1. Clinical Ophthalmology: Jack J Kanski
  2. Diagnostics and imaging techniques in Ophthalmology: Amar Agarwal

- **Course Plan:**

1. Refresher of anterior segment ocular diseases, diagnosis and therapeutics
2. Refresher of glaucoma diagnosis and therapeutics
3. Surgical treatment of anterior segment diseases
4. Anterior segment Diagnostics
   - 4.1 Specular Microscopy
   - 4.2 Topography
   - 4.3 Corneal Hysteresis
   - 4.4 Orbscan, Pentacam
   - 4.5 Pachymetry
   - 4.6 Abberometry
   - 4.7 AS OCT
   - 4.8 HRT
   - 4.9 GDx
   - 4.10 ONH evaluation
   - 4.11 Gonioscopy
   - 4.12 Fluorosceinangiograohy
   - 4.13 Refractive surgery
   - 4.14 Cataract evaluation

MOPT 102 : Advance Dispensing Optics

- **Course Objectives:**
  1. To select the tool power for grinding process
  2. Different types of materials used to make lenses and its characteristics
  3. Lens designs–Bifocals, progressive lens
  4. Tinted, Protective & Special lenses
  5. Spectacle frames –manufacture process & materials
  6. Art and science of dispensing spectacle lens and frames based on the glass prescription.
  7. Reading of spectacle prescription. Counselling the patient
  8. Lens edge thickness calculation
  9. Frame & lens measurements and selection
  10. Writing spectacle lens order
  11. Facial measurements - Interpupillary distance measurement and measuring heights (single vision, multifocal, progressives)
  12. Lens verification and axis marking and fitting of all lens types
  13. Final checking of finished spectacle with frame adjustments
  14. Delivery and follow-up
  15. Troubleshooting complaints and handling patient's questions
- **Course Outcome:**
  At the end of the course: Skills/knowledge acquired are the understanding the theory behind spectacle lenses and frames, their materials, types, advantages and disadvantages, calculations involved, when and how to prescribe. It will impart construction, design application and development of lenses, particularly of the methods of calculating their power and effect. In addition deals with role of optometrists in optical set-up.

- **Text Book/Reference Books:**
  1. Jalie M. O.: Ophthalmic lens and Dispensing, 3rd edition, Butterworth –Heinemann, 2008
  2. Troy E. Fannin, Theodore Grosvenor: Clinical Optics, 2nd edition, Butterworth – Heinemann, 1996
  3. C. W. Brooks, I. M. Borish: System for Ophthalmic Dispensing, 3rd edition, Butterworth - Heinemann, 2007
  4. Michael P. Keating: Geometric, Physical & Visual Optics, 2nd edition, Butterworth – Heinemann, 2002

- **Course Plan:**

  1. Outline of lens surfacing and polishing, terminology used in Lens workshops:
     a) Ophthalmic raw materials – history and recent development
     b) Manufacturing of Ophthalmic lenses – Glass, Plastics and new generation materials.
     c) ISI Standards for ophthalmic lenses.
  2. Ophthalmic lens materials and designs types:
     a) Aspheric, atoric, High Index lenses and special purpose lenses.
     b) Absorptive and protective lenses.
        i) Theory and practical aspects.
        ii) Toughening – methods, uses and application
     c) Sunglasses – Tinted, Photochromic, Polaroid lenses
  3. Progressive and Varifocal lenses:
     a) Properties and Material
     b) Bifocal and multifocal lenses.
     c) Selecting appropriate progressive lens.
     d) Wavefront design and new types of progressive lens – market availability

- **Spectacle Frames:**
  1. Raw materials for spectacle frames and manufacturing methods.
  2. Spectacle frame measurements and markings.
  3. New trends – latest developments in spectacle frames.
  4. Spectacle Options for Patients-
     a) Photophobia and glare
     b) Presbyopia
     c) High refractive errors
     d) Squint and oculo-motor problems.
  5. Guidelines for safety standards for spectacles in –
     a) Children
     b) Sports
     c) Uniocular patient

MOPT 103 : Epidemiology and Community Eye Care

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

- **Course Outcomes:**
  1. Thorough understanding of epidemiological concepts.
  2. Thorough understanding of conducting of screening for specific eye conditions, and resultant implications through theoretical and practical exposure.

- **Text / Reference Books:**
  1. Epidemiology of eye diseases: Johnson and Gordon

- **Course Plan:**
  1. Prevalence, incidence and distribution of visual impairment
  2. Methodology
     2.1 Basics of Epidemiology study methods
     2.2 Types of study designs
     2.3 Screening for visual disorders
  3. Childhood blindness
  4. Refractive errors and presbyopia1.
  5. Age related cataract
  6. Low Vision
  7. Diabetic retinopathy
  8. Glaucoma
  9. Age related Macular Degeneration
  10. Vitamin A deficiency
  11. Corneal and external diseases
  12. Prevention strategies
  13. Concept of Health and Disease
  14. Principles of Epidemiology and Epidemiological Methods
  15. Screening for Eye Disease – Refractive errors, Low Vision, Cataract, Diabetic retinopathy, Glaucoma, Amblyopia, Squint.
  16. Blindness
  17. Health Information and Basic Medical Statistics
  18. Communication for Health Education
  19. Health Planning and Management
  20. Health care of community
  21. How to plan and implement Vision 2020

MOPT 104 : Research Methodology

- **Course Objectives:**
  This course is designed to provide the students the basic knowledge in Bio-statistics. At the conclusion of the course, the students will have the knowledge of data collection, statistical application and finally, presentation of the statistical data.

- **Course Outcomes:**
  1. Ability to write research proposal/grant application
  2. Ability to do statistical analysis
  3. Ability to write research articles (Medical writing)
  4. Ability to critically evaluate the research material

- **Text / Reference Books:**
  - Methods in Biostatistics by B. K. Mahajan
  - Probability and Statistics by Murray
  - Epidemiology of Eye Diseases, by Gordon and Drawin
  - Research Methodology by S. M. Israni

- **Course Plan:**
  1. Need for Research in optometry
  2. Introduction to research methods, Conducting a literature review, Research design, Sampling methods, Data collection and data collection tools, Data analysis: Quantitative and Qualitatively, Public health research, Issues in Research. Writing skills for students
  3. Introduction and method of collecting and presenting of statistical data
  4. Calculation and interpretation of various measures like mean, median, standard deviations, Skewness and Kurtosis
  5. Probability distribution
  6. Correlation and regression
  7. Significance tests and confidence intervals
  8. Parametric tests –
     8.1 Test for single proportion
     8.2 Test for Equality of proportions
     8.3 Test for single mean
     8.4 Test for equality of means
  9. ANOVA: -
     9.1 One way
     9.2 Two ways

10. Non parametric tests –
    - 10.1 Chi-square tests
    - 10.2 Fisher's exact test
    - 10.3 McNemar test
    - 10.4 Mann-whitney U-test
    - 10.5 Median test
    - 10.6 Sign test
    - 10.7 Wilcoxon test

ELLECTIVE

MOPT 105 A : Paediatric Optometry

- **Course Objectives:** Upon completion of the course, the student should be able to understand the, basic concept of visual development, visual perception, binocular vision anomalies and management. Co-management of strabismic, non-strabismic binocular vision disorders and amblyopia.

- **Course Outcome:**
  1. Ability to co-manage visual perceptual anomalies
  2. Ability to manage diplopia, suppression and ARC
  3. Ability to manage amblyopia

- **Text/ Reference Books:**
  1. Clinical management of binocular vision Mitchell Scheiman and Bruce Wick
  2. Applied concepts in vision therapy: Leonard Press
  3. Pediatric optometry: Jerome K. Rosner

- **Course Plan**:
  1. Abnormal Visual Development
  2. What next in Infant Research
  3. Clinical Applications:
     - 3.1 Assessment of Child Vision and Refractive Error
     - 3.2 Refractive Routines in the Examination of Children
     - 3.3 Cycloplegic Refraction
     - 3.4 Color Vision Assessment in Children
     - 3.5 Dispensing for the Child patient
     - 3.6 Pediatric Contact Lens Practice
     - 3.7 Dyslexia and Optometry Management
     - 3.8 Electrodiagnostic Needs of Multiple Handicapped Children
     - 3.9 Management Guidelines – Ametropia, Contant Strabismus
     - 3.10 Management Guidelines – Amblyopia
     - 3.11 Accommodation and Vergence anomalies
     - 3.12 Nystagmus
     - 3.13 Common genetic problems in Paediatric optometry
     - 3.14 Pediatric Ocular Diseases
     - 3.15 Ocular Trauma in Children
     - 3.16 Myopia control
     - 3.17 Clinical uses of prism

ELLECTIVE

MOPT 105 B : Advance Glaucoma

- **Course Objectives:** Upon completion of the course, the student should be able to understand different evaluation procedure of glaucoma, interpretation of the visual field defect ad associate the defect with the concerned nerve. Students shall be able to perform direct and indirect ophthalmoscope with the fundus drawings.

- **COURSE OUTCOME:** students shall be able to
  1. Take the fundus photography
  2. Perform ophthalmoscope (direct and indirect)
  3. Interpret the field charts
  4. Perform OCT

- **Reference books:**
  1. Becker Shaffer's: Diagnosis and Therapy of the Glaucoma
  2. Schield's : Text book of glaucoma

- **Course Plan**:
  1. Galucoma
     Definition, Types, Clinical Presentation, Evaluation Techniques, Management.
  2. Special Investigations
     2.1 Gonioscopy
     Ophthalmoscopic techniques for evaluation of the optic nerve head Optic disc drawings;
     2.2 Optic disc photography;
     Flicker analysis;
     Perimetry
     Stereophotogrammetry;
     2.3 Image analyzers,
     2.4 Retinal nerve fiber layer evaluation.

MOPT : 106 Research Project – 1

Students will prepare the protocol during this semester after doing extensive literature search. Each student will be reporting to guide/supervisor who helps the student to go about in systematically. Research proposal need to be presented in front of the experts before going ahead with data collection. In institute which has Institute research board and ethics committee student can be encouraged to present the proposal in it.

FIRST YEAR
SECOND SEMESTER

Second Semester

MOPT 201 : Ocular Diseases and Diagnostics – 2

- **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:**
  1. Ability to perform electro diagnostic procedures and interpret electro diagnostic reports
     1.1 ERG
     1.2 EOG
     1.3 VEP
  2. Ability to perform stereoscopic fundus photography
  3. Ability to use Ocular photography as tool for evidence based clinical decision making and progression analysis
  4. Ability to perform posterior segment photography
  5. Ability to manage and co-manage diseases and disorders of posterior segment

- **Text/ Reference Books:**
  1. Clinical Ophthalmology: Jack J. Kanski
  2. Diagnostics and imaging techniques in Ophthalmology: Amar Agarwal

- **Course Plan**:
  1. Refresher of posterior segment ocular diseases, diagnosis and therapeutics
  2. Surgical treatment of posterior segment diseases
     2.1 Posterior segment Diagnostics
     2.2 ERG
     2.3 EOG
     2.4 VEP
     2.5 OCT
     2.6 Fundus photography
     2.7 Neuro optometric diseases and disorders

MOPT 202 : Binocular Vision and Advanced Orthoptics

- **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:**
  1. Ability to diagnose and manage and co-manage binocular vision anomalies
  2. Ability to co-manage visual perceptual anomalies
  3. Ability to manage diplopia, suppression and ARC
  4. Ability to manage amblyopia

- **Text/ Reference Books:**
  1. Clinical management of binocular vision Mitchell Scheiman and Bruce Wick
  2. Applied concepts in vision therapy: Leonard Press
  3. Pediatric optometry: Jerome K. Rosner

- **Course Plan**:
  1. Refractive Development:
     1.1 Early Refractive Development
     1.2 Visually Guided control of Refractive State: Animal Studies
     1.3 Infant Accommodation and Convergence

  2. Oculomotor Function:
     2.1 Conjugate Eye Movements of Infants
     2.2 Development of the Vestibuloocular and Optokinetic reflexes

  3. Spatial and Chromatic Vision:
     3.1 Front-end Limitations to Infant Spatial vision: Examination of two analyses
     3.2 Development of the Human Visual Field
     3.3 Development of Scotopic Retinal Sensitivity
     3.4 Infant Color vision
     3.5 Orientation and Motion selective Mechanisms in Infants
     3.6 Intrinsic Noise and Infant performance

4. Binocular Vision:
   - 4.1 Development of interocular vision in Infants
   - 4.2 Stereopsis in Infants and its developmental relation to visual acuity
   - 4.3 Sensorimotor Adaptation and Development of the Horopter
   - 4.4 Two stages in the development of Binocular Vision and Eye Alignment
5. Retinal and cortical Development
6. Abnormal Visual Development
7. What next in Infant Research
8. Clinical Applications:
   - 8.1 Assessment of Child Vision and Refractive Error
   - 8.2 Refractive Routines in the Examination of Children
   - 8.3 Cycloplegic Refraction
   - 8.4 Color Vision Assessment in Children
   - 8.5 Dispensing for the Child patient
   - 8.6 Pediatric Contact Lens Practice
   - 8.7 Dyslexia and Optometry Management
   - 8.8 Electrodiagnostic Needs of Multiple Handicapped Children
   - 8.9 Management Guidelines – Ametropia, Contant Strabismus
   - 8.10 Management Guidelines – Amblyopia
   - 8.11 Accommodation and Vergence anomalies
   - 8.12 Nystagmus
   - 8.13 Common genetic problems in Paediatric optometry
   - 8.14 Pediatric Ocular Diseases
   - 8.15 Ocular Trauma in Children
   - 8.16 Myopia control
   - 8.17 Clinical uses of prism

MOPT 203 : Neuro optometry

- **Course Objectives:** Students will have the understanding of the issues of visual functioning which will also be related to clinical assessment issues. 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 outcome:** Students will be able to:
  1. Perform swinging flash light test and detect pupillary abnormalities
  2. Ophthalmoscopy evaluation of the disc
  3. Ditinguish sign and symptoms of migraine from other headache
  4. MG and can manage

- **TEXT/ REFERENCE BOOKS:**
  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,

- **Course Plan**
  1. Pupils
  2. CN III disorders
  3. CN II disorders
  4. CN IV disorders
  5. CN V disorders
  6. CN VI disorders
  7. Papilledema
  8. AAION
  9. CVD – CAD
  10. Migraine
  11. NAION
  12. Optic neuritis
  13. Neuro imaging
  14. Nystagmus
  15. Brainstem motility
  16. Myasthenia

MOPT 204 : Business and Clinical Aspects in Optometry

- **Course Objectives:** Learning business skills with respect to clinical setup. course provides Understanding Marketing and financial management in a clinical set up as well as in optical set up; Identifying potential target markets; Evaluating markets; Reviewing existing product mix; Optimizing product / service mix for target markets; Business set-up; Retail sales; Product development; Marketing; Systems and procedures and human resources.

- **Course Outcome:** The students will be able to manage their own business set up; Business set-up; Retail sales; Product development; Marketing; Systems and procedures and human resources

- **Text/ Reference Books:**
  1. ICEE Modules
  2. Business Aspects of Optometry: Association of Practice Management Educators 3rd Edition Publisher : Butterworth-Heinemann; 3rd edition (19 February 2004)
  3. Association of Practice Management Educators of Practice Management Educators eBook : APME, Classe, John G., Thal, Lawrence S., Kamen, Roger D.
  4. Practice Management in Optometry: A. Blueprint for Success Based on the Optometric Management, Neil Gailmard

- **Course Plan**:
  1. The Legal Environment
  2. Taxation and Insurance
  3. Planning
  4. Marketing
  5. Management Theory
  6. Management of medical record system (Needs and importance)
  7. Prescription format (General clinics and specialty clinics)
  8. Set- up of an optometry clinic with and without optical outlet.

ELLECTIVE
MOPT 205 A : Eye Banking

- **Course Objectives:** To understand the structure and function of eye bank with the importance of documentation, and its legal boundaries.
- **Course Outcome :** Upon completion of the course, the student should be able to Understand the basic concept of eye banking. Its design, and function.
- **Text/ Reference Books:**
  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
- **Course Plan:**
  1. Introduction to Eye Banking,
     History & milestones,
     Requirements in eye bank,
  2. Duties and responsibilities of eye bank personals,
     Indications and contra indications,
     Instruments,
  3. Tissue retrieval,
     Handling of tissue,
     preservation techniques,
  4. Evaluation techniques,
     specular microscopy,
     Documentation,
  5. Legal aspects,
     keratoplasties,
     Advanced keratoplasties

ELLECTIVE
MOPT 205 B : Clinical Psychology

- **Course objective:** Students should understand the importance of Mental health, certain terminologies like Social class, Social Change, Cultural shock, Migration, Psychopathology of personality and behaviour disorder.

- **Course outcome:** Students shall be humble and will take up the cases with patience. Understanding the psychology of patient will bring the optimum result.

- **Reference books**
  1. David R.Shaffer, Katherine KIPP: Developmental psychology childhood and Adolescence
  2. Kevin Brewer: Clinical Psychology
  3. Niraj Ahuja: A Short Textbook of Psychiatry
  4. Margaret Harris and George Butterworth: Developmental Psychology: A Student's Handbook

- **Course Plan:**
  1. Mental health criterion, Mental Health and Illness, concept of Positive mental health, Psychological well being, attitude towards mental illness, epidemiological studies and socio- demographic correlates of mental illness in India.
  2. Social class, Social Change, Cultural shock, Migration, Religion and gender related issues with Special reference to India.
  3. Psychological aspects of disability and rehabilitation in India context, the role of family and society in the education, training and rehabilitation of disabled, Behavioural Model, Evaluation of behavioural modal, Psychodynamic model, Evaluation of psychodynamic model, Cognitive model, Evaluation.
  4. Case history and Interviewing, Psychopathology of personality and Behaviours disorder, Specific personality disorders, Habit and Impulse disorders, Mental and behaviour disorder, psycho somatic disorder.

5. Psychopathology of childhood and adolescence disorders, Anxiety disorders, Schizophrenia, Psychopathology of emotional, behavioural and developmental disorders of childhood and adolescence Mental retardation, Classification, Aetiology and management /rehabilitation.

MOPT 206 : Research Project -2

Students will prepare the protocol during this semester after doing extensive literature search. Each student will be reporting to guide/supervisor who helps the student to go about in systematically. Research proposal need to be presented in front of the experts before going ahead with data collection. In institute which has Institute research board and ethics committee student can be encouraged to present the proposal in it.

- **Course Objectives**
  Data Collection and submit the progress of the research at the end of the semester.

- **Course Outcome**
  At the end of the semester the student will be able to understand the various methods of data collection, data formatting and presentation of data according to their own research.