MGM INSTITUTE OF HEALTH SCIENCES

(Deemed to be University u/s 3 of UGC Act, 1956)
Grade 'A' Accredited by NAAC
Sector-01, Kamothe, Navi Mumbai -410 209
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CHOICE BASED CREDIT SYSTEM

(CBCS)

(with effect from 2025-26 Batches)

Curriculum for

M. Optometry

Amended as per AC-52/2025, Dated 28/11/2025

Amended History

1. Amended as per AC-51/2025, [Resolution No.3.1(Annexure-3.11)], [Resolution No.3.5, (Annexure-7); Dated 29/04/2025.

2. Amended as per AC-52/2025, [Resolution No. 5.1 (Annexure-17K)]; [Resolution No. 5.8 (Annexure-24J)]; Dated 28/11/2025.

Resolution No. 3.1 of Academic Council (AC-51/2025):

Resolved to approve the CBCS syllabus, including Program Outcomes (POs), Course Outcomes (COs), and PO-CO Mapping for 15 two-year postgraduate programs under MGMSBS for Semesters I and II. These include: M.Sc . Medical Biotechnology , M.Sc. Medical Genetics , M.Sc. Clinical Embryology , M.Sc. Clinical Nutrition , M.Sc. Medical Dialysis Technology , M.Sc. Molecular Biology , M.Sc. Medical Radiology & Imaging Technology , M.Sc. Cardiac Care Technology, M.Sc. Operation Theatre and Anaesthesia Technology, M.Sc. Emergency and Trauma Care, **M. Optometry**, Master in Hospital Administration, Master of Public Health, M.Sc. Health Informatics & M.Sc. Clinical Research to be effective from batch admitted in Academic Year 2025-26 onwards [ANNEXURE-3.1 to 3. 30].

Annexure-3.11 of AC-51/2025

MGM SCHOOL OF BIOMEDICAL SCIENCES

(A constituent unit of MGM INSTITUTE OF HEALTH SCIENCES)

(Deemed to be University u/s 3 of UGC Act 1956)

Grade "A^{++}" Accredited by NAAC

Sector 1, Kamothe, Navi Mumbai-410209, Tel.No.: 022-2743763, 27437632, 27432890

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CHOICE BASED CREDIT SYSTEM (CBCS)

(Academic Year 2025 - 26)

Curriculum for

M.Sc. Allied Health Sciences

M. Optometry

Semester I & II

DIRECTOR'S MESSAGE

Welcome Message from the Director

Dear Postgraduate Students,

Welcome to **MGM School of Biomedical Sciences (MGMSBS), MGMIHS**, a premier institution dedicated to advancing allied and health sciences education. As you embark on this transformative academic journey, you are joining a community that fosters excellence in research, clinical expertise, and innovation**.**

MGMIHS, accredited with **NAAC 'A^{++}' Grade (CGPA 3.55, 2022)** and recognized as a **Category I Institution by UGC**, offers an ecosystem that nurtures both academic and professional growth. With **NIRF (151-200 rank band) recognition, NABH-accredited hospitals, NABL-accredited diagnostic labs, and JCI accreditation for MGM New Bombay Hospital**, we uphold global benchmarks in education and healthcare.

At MGMSBS, our **15 postgraduate programs** are meticulously designed to align with the National Commission for Allied and Healthcare Professionals **(NCAHP)** standards**,** National Education Policy **(NEP)** 2020**,** and the National Credit Framework **(NCrF).** We have implemented the **Choice-Based Credit System (CBCS)** to provide academic flexibility while ensuring rigorous training in clinical and technical skills**.** Our state-of-the-art research laboratories, digital classrooms, and the Central Research Laboratory (CRL) foster an environment that encourages innovation and evidence-based learning**.**

Postgraduate education at MGMSBS goes beyond theoretical learning—our curriculum integrates **hands-on clinical training, interdisciplinary collaboration, and exposure to real-world healthcare challenges**. We emphasize **research-driven education**, encouraging students to actively participate in **scientific discoveries, publications, and international collaborations**.

Beyond academics, we believe in **holistic development**, with initiatives such as the **AARAMBH Science and Wellness Club**, which promotes **mental well-being, leadership, and professional networking**.

As you step into this **next phase of academic and professional growth**, we encourage you to explore new ideas, engage in impactful research, and contribute meaningfully to the **healthcare ecosystem**. We are confident that your journey at MGMSBS will shape you into **skilled, compassionate, and visionary professionals**, ready to lead in the ever-evolving healthcare landscape.

We look forward to witnessing your achievements and contributions!

Dr. Mansee Thakur
Director, MGM School of Biomedical Sciences
MGM Institute of Health Sciences, Navi Mumbai

ABOUT MGM SCHOOL OF BIOMEDICAL SCIENCES

Mission

To improve the quality of life, both at individual and community levels by imparting quality medical education to tomorrow's doctors and medical scientists and by advancing knowledge in all fields of health sciences though meaningful and ethical research.

Vision

By the year 2020, MGM Institute of Health Sciences aims to be top-ranking Centre of Excellence in Medical Education and Research. Students graduating from the Institute will have the required skills to deliver quality health care to all sections of the society with compassion and benevolence, without prejudice or discrimination, at an affordable cost. As a research Centre, it shall focus on finding better, safer and affordable ways of diagnosing, treating and preventing diseases. In doing so, it will maintain the highest ethical standards.

About – School of Biomedical Sciences

MGM School of Biomedical Sciences is formed under the aegis of MGM IHS with the vision of offering basic Allied Science and Medical courses for students who aspire to pursue their career in the Allied Health Sciences, teaching as well as research.

School of Biomedical Sciences is dedicated to the providing the highest quality education in basic medical sciences by offering a dynamic study environment with well-equipped labs. The school encompasses 23 courses each with its own distinct, specialized body of knowledge and skill. This includes 8 UG courses and 15 PG courses. The college at its growing years started with mere 100 students has recorded exponential growth and is now a full-fledged educational and research institution with the student strength reaching approximately **800** at present.

Our consistent theme throughout is to encourage students to become engaged, be active learners and to promote medical research so that ultimately they acquire knowledge, skills, and understanding so as to provide well qualified and trained professionals in Allied Health Sciences to improve the quality of life.

As there is increased need to deliver high quality, timely and easily accessible patient care system the collaborative efforts among physicians, nurses and allied health providers become ever more essential for an effective patient care. Thus the role of allied health professionals in ever-evolving medical system is very important in providing high-quality patient care.

Last but by no means least, School of Biomedical Sciences envisions to continuously grow and reform. Reformations are essential to any growing institution as it fulfills our bold aspirations of providing the best for the students, for us to serve long into the future and to get ourselves updated to changing and evolving trends in the health care systems.

Name of the Degree: M. Optometry

Duration of Study:

The duration of the study for M. Optometry will be of 2 years.

Program pattern:

- First Semester: July
- Second Semester: January
- Third Semester: July
- Fourth Semester: January

Eligibility Criteria:

Bachelor of Optometry or equivalent from a recognized university with minimum 5.5 CGPA

For any query visit the website: www.mgmsbsnm.edu.in

M.OPOMETRY

Program Outcomes

Program Code	M.Optometry
PO1	Knowledge Enhancement: A keen understanding of vision sciences and should demonstrate proficiency in advanced optometric management .
PO2	Skill Enhancement: Master the practical skill set required for optometric screening, diagnosis, management, and rehabilitation of various ocular conditions
PO3	Communication Skills: Develop Interpersonal competence in eye care services with patients and other professionals.
PO4	Critical Thinking & Trouble Shooting: Identify and analyze the complexity of a problem and use knowledge and skill to solve it.
PO5	Patient Care: Demonstrate proficiency in understanding and catering dedicated optometric eye care services to patients.
PO6	Community Eyecare: Organize and Participate in various outreach activities (Camps & Awareness Program) for providing optometric eye care services to the community.
PO7	Optometry Speciality & Entrepreneurship: Update clinical knowledge and develop specialized skill sets across various disciples of optometry with an entrepreneurial approach to start and manage a successful optometry practice.
PO8	Entusiasm for Research: Demonstrate a through understanding of research techniques analysis of scientific literature, able to conduct quality research work in order to contribute significantly in evidence-based practices of optometry.
PO9	Professional Ethics: Adhere to the ethical guidelines of integrity, objectivity, confidentiality, competency, behavior, and accountability in optometric clinical practice and research work.
PO10	Leadership & Team Work: Effectively manage clinical situations and exhibit visionary goal setting, conflict resolution, decision-making, problem-solving, and fostering Interdisciplinary collaborative practice.
PO11	Collaboration with Different Healthcare Professionals: Crucial for delivering high-quality patient care which includes enhanced communication, better resource utilization, innovation, problem-solving & communicating with different healthcare professionals for improved patient outcomes.
PO12	Holistic Development: Comprehensive development in the areas of self-awareness, Emotional intelligence, stress management, and Time management.

Course Outcomes
Semester I

MOPTOM 101 T & MOPTOM 103 P	Epidemiology Public Health & Community Eye Health	Mapped PO	Teaching-Learning Methodology	Assessment Tools
CO1	Develop a thorough understanding of epidemiological concepts, study design and its implications in research and to know the Concept of Health and Disease	**PO1, PO4, PO6, PO7, PO8, PO9**	Lecture, Group Discussion, E-learning	Internal Assessment, Seminar University Exam (Theory)
CO2	Demonstrate a better understanding of Health Information and Basic Medical Statistics, Communication for Health Education, Health Planning and Management, Health care of community	**PO1, PO3, PO4, PO5, PO6, PO7, PO8, PO9, PO11**	Lecture, Practical, Role play, Problem-Based Learning (PBL)	Internal Assessment, University Exam (Practical: Viva-Voce, Station Exercise)
CO3	Well-versed with the concept of visual impairment, its causes, national and global burden, Preventive strategies, screening program, Regulatory international and national bodies and their initiative.	**PO1, PO2, PO3, PO4, PO5, PO6, PO7, PO8 PO9, PO11**	Lecture, Industrial Visit, Group Discussion,	Internal Assessment, University Exam (Practical: Viva-Voce,)
CO4	Able to comprehend epidemiological research article and exhibit practical skills for organizing community outreach program.	**PO1, PO2, PO3, PO4, PO5, PO6, PO7, PO8 PO9, PO10, PO11**	Case-Study, Experimental	Internal Assessment, University Exam (Practical: Viva-Voce, Station Exercise)
MOPTOM 102 T & MOPTOM 104 P	**Anterior Segment Diseases & Diagnostic**	**Mapped PO**	**Teaching-Learning Methodology**	**Assessment Tools**
CO1	Develop a thorough understanding of anatomical considerations of anterior segment structures.	**PO1, PO4, PO7, PO8**	Lecture, Group Discussion, Assignment, videos	Internal Assessment, Seminar University Exam (Theory)
CO2	Able to understand the clinical presentation, formulate differential diagnosis of anterior segment anomalies	**PO1, PO2, PO4, PO5, PO6, PO7, PO8 PO9, PO10, PO11**	Quiz, Group Discussion, Flip Classroom	Internal Assessment, University Exam (Practical: Viva-Voce,)
CO3	Demonstrate competent skills in anterior segment evaluation.	**PO1, PO2, PO3, PO4,**	Practical, Demonstration, Problem Based	Internal Assessment, University Exam

		PO5, PO6, PO7, PO8 PO9, PO10, PO11	Learning, Clinical Postings.	(Practical: Station Exercise)
CC 001 T & CC 001 P	**Research Methodology & Biostatistics (Core Course)**	**Mapped PO**	**Teaching-Learning Methodology**	**Assessment Tools**
CO1	Student will be able to understand develop statistical models, research designs with the understating of background theory of various commonly used statistical techniques as well as analysis, interpretation & reporting of results and use of statistical software.	**PO1, PO3, PO4, PO7, PO8, PO9, PO11**	Lecture, Group Discussion, E-learning	Internal Assessment, Seminar University Exam (Theory & Practical)
MOPTOM 105 CP	**MOPTOM Directed Clinical Education-I**	**Mapped PO**	**Teaching-Learning Methodology**	**Assessment Tools**
CO1	The primary focus is on developing students' clinical skills, diagnostic abilities, and patient care expertise through supervised training in the real-world clinical settings. Students should be able to demonstrate proficiency in comprehensive eye examinations, specialized optometric procedures, interpret clinical findings for formulating management strategies and to co-manage the conditions with a multidisciplinary approach utilizing critical discussion making and problem-solving skills while exhibiting professional and ethical behavior in clinical settings.	**PO1, PO2, PO3, PO4, PO5, PO6, PO7, PO9, PO10, PO11, PO12**	Practical, Experimental Problem Based Learning, Workshops, Clinical Postings.	Internal Assessment, University Exam (Practical: Viva-Voce, Station Exercise, Clinical Case Study)

Semester II

MOPTOM 106 T & MOPTOM 110 P	Posterior Segment Diseases & Diagnostic	Mapped PO	Teaching-Learning Methodology	Assessment Tools
CO1	Develop a thorough understanding of anatomical considerations of posterior segment structures.	PO1, PO4, PO7, PO8	Lecture, Group Discussion, Assignment, videos	Internal Assessment, Seminar University Exam (Theory)
CO2	Able to understand the clinical presentation, formulate differential diagnosis of posterior segment anomalies.	PO1, PO2, PO4, PO5, PO6, PO7, PO8 PO9, PO10, PO11	Quiz, Group Discussion, Flip Classroom	Internal Assessment, University Exam (Practical: Viva-Voce,)
CO3	Demonstrate competent skills in posterior segment evaluation.	PO1, PO2, PO3, PO4, PO5, PO6, PO7, PO8 PO9, PO10, PO11	Practical, Demonstration, Problem Based Learning, Clinical Postings.	Internal Assessment, University Exam (Practical: Station Exercise)
MOPTOM 107 T & MOPTOM 111 P	**Advanced Contact Lenses**	**Mapped PO**	**Teaching-Learning Methodology**	**Assessment Tools**
CO1	Have a thorough understanding of basic concepts of contact lenses and identify the potential contact lens patients	PO1, PO2, PO3, PO5, PO7, PO8 PO9, PO10, PO11	Lecture, Group Discussion, Assignment, Problem Based Learning	Internal Assessment, Seminar University Exam (Theory)
CO2	Demonstrate competent skills in RGP, Soft Contact Lens Fitting and Evaluation, Ordering, and verification of lenses.	PO1, PO2, PO3, PO4, PO5, PO6, PO7, PO8 PO9, PO10, PO11	Practical, Problem Based Learning, Workshops, Clinical Postings.	Internal Assessment, University Exam (Practical: Viva-Voce, Station Exercise)
CO3	Well-versed with the concept of contact lens care and maintenance and complications.	PO1, PO2, PO3, PO4, PO5, PO7, PO8, PO9, PO11	Lecture, Group Discussion, Assignment, video	Internal Assessment, University Exam (Practical: Viva-Voce,)
CO4	Able to train patients for contact lens use and have a thorough understanding of contact lens market availability	PO1, PO2, PO3, PO4, PO5, PO7, PO9, PO10, PO11	Practical, Problem Based Learning, Workshops, Clinical Postings.	Internal Assessment, University Exam (Practical: Viva-Voce.)

MOPTOM 108 T & MOPTOM 112 P	Binocular Vision and Pediatric Optometry	Mapped PO	Teaching-Learning Methodology	Assessment Tools
CO1	Develop a thorough understanding regarding anatomical and physiological aspect of visual development.	PO1, PO2, PO4, PO8	Group Discussion, Assignment, videos	Internal Assessment, Seminar University Exam (Theory)
CO2	Able to understand the clinical presentation, formulate differential diagnosis of Pediatric Ocular Diseases.	PO1, PO2, PO3, PO4, PO5, PO6, PO7, PO8 PO9, PO10, PO11	Practical, Demonstration, videos	Internal Assessment, University Exam (Practical: Viva-Voce, Station Exercise)
CO3	Demonstrate competent skills in evaluating binocular vision parameters and identifying its anomalies.	PO1, PO2, PO3, PO4, PO5, PO6, PO7, PO8 PO9, PO10, PO11	Practical, Problem Based Learning, Workshops, Clinical Postings.	Internal Assessment, University Exam (Practical: Viva-Voce)
CO4	Have a thorough understandings of Management guidelines for above anomalies.	PO1, PO2, PO3, PO4, PO5, PO6, PO7, PO8 PO9, PO10, PO11	Seminars, Workshops, Case Study,	Internal Assessment, University Exam (Practical: Viva-Voce,)
MOPTOM 109 T & MOPTOM 113 P	Low Vision and Rehabilitation	Mapped PO	Teaching-Learning Methodology	Assessment Tools
CO1	Have a thorough understanding of basic concepts of Low vision and identify the potential low vision patient.	PO1, PO2, PO4, PO5, PO6, PO7, PO8, PO9, PO10, PO11, PO12	Lecture, Group Discussion, Seminar	Internal Assessment, Seminar University Exam (Theory)
CO2	Well-versed with the legal aspect of Low Vision.	PO1, PO3, PO5, PO6, PO7, PO8, PO9, PO10, PO11, PO12	Lecture, Flip Classroom, Quiz, Seminar	Internal Assessment, University Exam (Practical: Viva-Voce)
CO3	Able to understand the clinical presentation and efficiently evaluate and analyze a Low vision case.	PO1, PO2, PO3, PO4, PO5, PO6, PO7, PO8 PO9, PO10, PO11	Lecture, Guest Lecture, Workshop, Case Study	Internal Assessment, University Exam (Practical: Viva-Voce)
CO4	Demonstrate competent skills in providing rehabilitation training.	PO1, PO2, PO3, PO4, PO5, PO6, PO7, PO8 PO9, PO10, PO11, PO12	Practical, Problem Based Learning, Workshops, Clinical Postings, Industrial visit	Internal Assessment, University Exam (Practical: Viva-Voce, Station Exercise, Clinical Case Study)

MOPTOM 114 CP	MOPTOM Directed Clinical Education-II	Mapped PO	Teaching-Learning Methodology	Assessment Tools
CO1	The primary focus is on developing students' clinical skills, diagnostic abilities, and patient care expertise through supervised training in the real-world clinical settings. Students should be able to demonstrate proficiency in comprehensive eye examinations, specialized optometric procedures, interpret clinical findings for formulating management strategies and to co-manage the conditions with a multidisciplinary approach utilizing critical decision making and problem-solving skills while exhibiting professional and ethical behavior in clinical settings.	**PO1, PO2, PO3, PO4, PO5, PO6, PO7, PO9, PO10, PO11, PO12**	Practical, Experimental Problem Based Learning, Workshops, Clinical Postings.	Internal Assessment, University Exam (Practical: Viva-Voce, Station Exercise, Clinical Case Study)
SEC 001 T	**Innovation and Entrepreneurship**	**Mapped PO**	**Teaching-Learning Methodology**	**Assessment Tools**
CO1	Students will grasp the concepts of innovation, its ecosystem, and the role of various stakeholders such as government policies, startups, and innovation hubs.	**PO1, PO3, PO4, PO5, PO7, PO8, PO9, PO10, PO11**	Lecture, Group Discussion, E-learning	Internal Assessment, Seminar University Exam (Theory)
CO2	Cultivating an entrepreneurial mindset and leadership qualities necessary for driving innovation and leading ventures.	**PO1, PO3, PO4, PO7, PO8, PO9, PO10, PO11, PO12**	Lecture, Group Discussion, E-learning	Internal Assessment, Seminar University Exam (Theory)
CO3	Understanding the intersection of technology and innovation and leveraging emerging technologies for entrepreneurial ventures.	**PO1, PO2, PO3, PO4, PO5, PO6, PO7, PO8, PO9, PO10, PO11, PO12**	Lecture, Group Discussion, E-learning	Internal Assessment, Seminar University Exam (Theory)

OUTLINE OF COURSE CURRICULUM

M.Optometry

Semester I

Code No.	Core Course	Credits/Week					Hrs/Semester					Marks		
		Lecture (L)	Tutorial (T)	Practical (P)	Clinical Posing/ Rotation (CP)	Total Credits (C)	Lecture (L)	Tutorial (T)	Practical (P)	Clinical Posing/ Rotation (CP)	Total (hrs.)	Internal Assement (IA)	Semester End Exam (SEE)	Total
Discipiline Specific Core Theory														
MOPTOM 101 T	Epidemiology Public Health & Community Eye Health	2	-	-	-	**2**	30	-	-	-	**30**	**20**	**80**	**100**
MOPTOM 102 T	Anterior Segment Diseases & Diagnostic	4	-	-	-	**4**	60	-	-	-	**60**	**20**	**80**	**100**
CC 001 T	Research Methodology & Biostatistics (Core Course)	3	-	-	-	**3**	45	-	-	-	**45**	**.**	**50**	**50**
Discipiline Specific Core Practical														
MOPTOM 103 P	Epidemiology Public Health & Community Eye Health	-	-	4	-	**2**	-	-	60	-	**60**	**10**	**40**	**50**
MOPTOM 104 P	Anterior Segment Diseases & Diagnostic	-	-	4	-	**2**	-	-	60	-	**60**	**10**	**40**	**50**
MOPTOM 105 CP	MOPTOM Directed Clinical Education-I	-	-	-	15	**5**	-	-	-	225	**225**	**-**	**50**	**50**
CC 001 P	Research Methodology & Biostatistics (Core Course)	-	-	4	-	**2**	-	-	60	-	**60**	**.**	**50**	**50**
Total		**9**	**0**	**12**	**15**	**20**	**135**	**0**	**180**	**225**	**540**	**60**	**390**	**450**

Resolution No. 5.8 of Academic Council (AC-52/2025)

The Academic Council resolved to approve the continuation of SWAYAM/NPTEL elective courses for postgraduate students, wherever applicable to their respective programmes. Accordingly, students admitted from the Academic Year 2025–26 onwards shall be permitted to choose any one approved elective course. The Council further approved the inclusion of 2 and 3 credit courses in the index. This approach is in alignment with the current NCAHP curriculum guidelines, which recommend flexibility for open electives through recognized national platforms.

Accordingly, the names of individual elective courses shall be removed from the existing syllabi. The links of SWAYAM/NPTEL courses (https://swayam.gov.in/nc_details/NPTEL) shall be incorporated in the syllabus index under the existing course code SEC-002 T, titled: “NPTEL/SWAYAM (Name of the Course Chosen by the Student)”

In alignment with Resolution No. 3.1 of the Academic Council (AC-51/2025), the detailed syllabi of individual courses shall be removed and replaced with the approved links of SWAYAM/NPTEL or common reference pool courses. The complete course content shall remain accessible on the official SWAYAM/NPTEL portals. Students may select any one course from the provided links, in alignment with the credit requirements mentioned in their respective syllabi, as per Annexures 24A, 24B, 24C, 24D, 24E , 24F, 24G, 24H, 24I, 24J, 24K, 24L, 24M, 24N, and 24O.

OUTLINE OF COURSE CURRICULUM

M.Optometry

Semester II

Code No.	Core Course	Credits/Week					Hrs/Semester					Marks		
		Lecture (L)	Tutorial (T)	Practical (P)	Clinical Posing/ Rotation (CP)	Total Credits (C)	Lecture (L)	Tutorial (T)	Practical (P)	Clinical Posing/ Rotation (CP)	Total (hrs.)	Internal Assement (IA)	Semester End Exam (SEE)	Total
Discipiline Specific Core Theory														
MOPTOM 106 T	Posterior Segment Diseases & Diagnostic	3	-	-	-	**3**	45	-	-	-	**45**	**20**	**80**	**100**
MOPTOM 107 T	Advanced Contact Lenses	2	-	-	-	**2**	30	-	-	-	**30**	**20**	**80**	**100**
MOPTOM 108 T	Binocular Vision and Pediatric Optometry	2	-	-	-	**2**	30	-	-	-	**30**	**20**	**80**	**100**
MOPTOM 109 T	Low Vision and Rehabilitation	2	-	-	-	**2**	30	-	-	-	**30**	**20**	**80**	**100**
Discipiline Specific Core Practical														
MOPTOM 110 P	Posterior Segment Diseases & Diagnostic	-	-	2	-	**1**	-	-	30	-	**30**	**10**	**40**	**50**
MOPTOM 111 P	Advanced Contact Lenses	-	-	2	-	**1**	-	-	30	-	**30**	**10**	**40**	**50**
MOPTOM 112 P	Binocular Vision and Pediatric Optometry	-	-	2	-	**1**	-	-	30	-	**30**	**10**	**40**	**50**
MOPTOM 113 P	Low Vision and Rehabilitation	-	-	2	-	**1**	-	-	30	-	**30**	**10**	**40**	**50**
MOPTOM 114 CP	MOPTOM Directed Clinical Education-II	-	-	-	15	**5**	-	-	-	225	**225**	-	**50**	**50**
Skill Ehancement Course														
SEC 001 T	Innovation and Entrepreneurship	3	-	-	-	**3**	45	-	-	-	**45**	-	**100**	**100**
SEC 002 T	Science Communication: Research Productivity and Data Analytics using Open Source Software (NPTEL)													
Total		**12**	**0**	**8**	**15**	**21**	**180**	**0**	**120**	**225**	**525**	**120**	**630**	**750**

Common Pool of Swayam/NPTEL Coureses offered as elective option (SEC 002)

Course ID	Discipline	Course Name	Institute	Duration	Start date	End date	Exam date	Enrollment End date	Exam Registration End date	UG/PG	Click here to Join the course	NPTEL URL	NPTEL ID
noc25-bt06	Biotechnology and Bioengineering	BioInformatics: Algorithms and Applications	IIT Madras	12 Weeks	20-01-2025	11-04-2025	26-04-2025	27-01-2025	28-02-2025	UG/PG	https://onlinecourses.nptel.ac.in/noc25_bt06/preview	https://nptel.ac.in/courses/102106065	https://nptel.ac.in/courses/102106065
noc25-bt13	Biotechnology and Bioengineering	Computational Genomics	IISER Bhopal	12 Weeks	20-01-2025	11-04-2025	27-04-2025	27-01-2025	28-02-2025	PG	https://onlinecourses.nptel.ac.in/noc25_bt13/preview	https://nptel.ac.in/courses/102106339	https://nptel.ac.in/courses/102106339
noc25-bt29	Biotechnology and Bioengineering	Maternal Infant Young Child Nutrition	IIT Bombay	12 Weeks	20-01-2025	11-04-2025	26-04-2025	27-01-2025	28-02-2025	UG/PG	https://onlinecourses.nptel.ac.in/noc25_bt29/preview	https://nptel.ac.in/courses/102101091	https://nptel.ac.in/courses/102101091
noc25-ge05	Multidisciplinary	Biophotonics	IIT Kharagpur	12 Weeks	20-01-2025	11-04-2025	03-05-2025	27-01-2025	28-02-2025	PG	https://onlinecourses.nptel.ac.in/noc25_ge05/preview	https://nptel.ac.in/courses/127105225	https://nptel.ac.in/courses/127105225
noc25-ge07	Multidisciplinary	Comprehensive Molecular Diagnostics and Advanced Gene Expression Analysis	IIT Kharagpur	12 Weeks	20-01-2025	11-04-2025	03-05-2025	27-01-2025	28-02-2025	UG/PG	https://onlinecourses.nptel.ac.in/noc25_ge07/preview	https://nptel.ac.in/courses/127105391	https://nptel.ac.in/courses/127105391
noc25-ge25	Multidisciplinary	One Health	ICMR - Regional Medical Research Centre, Bhubaneswar	12 Weeks	20-01-2025	11-04-2025	03-05-2025	27-01-2025	28-02-2025	PG	https://onlinecourses.nptel.ac.in/noc25_ge25/preview	https://nptel.ac.in/courses/127106233	https://nptel.ac.in/courses/127106233
noc25-ge27	Multidisciplinary	Qualitative Research Methods and Research Writing	IIT Kharagpur	12 Weeks	20-01-2025	11-04-2025	27-04-2025	27-01-2025	28-02-2025	PG	https://onlinecourses.nptel.ac.in/noc25_ge27/preview	https://nptel.ac.in/courses/109105115	https://nptel.ac.in/courses/109105115
noc25-bt21	Biotechnology and Bioengineering	Host-Pathogen Interaction (Immunology)	IISER Bhopal	12 Weeks	20-01-2025	11-04-2025	04-05-2025	27-01-2025	28-02-2025	PG	https://onlinecourses.nptel.ac.in/noc25_bt21/preview	https://onlinecourses.nptel.ac.in/noc24_bt24/preview	https://onlinecourses.nptel.ac.in/noc24_bt24/preview
noc25-bt22	Biotechnology and Bioengineering	Human Physiology	IISER Pune	12 Weeks	20-01-2025	11-04-2025	26-04-2025	27-01-2025	28-02-2025	PG	https://onlinecourses.nptel.ac.in/noc25_bt22/preview	https://onlinecourses.nptel.ac.in/noc24_bt05/preview	https://onlinecourses.nptel.ac.in/noc24_bt05/preview
noc25-hs61	Humanities and Social Sciences	Patent Law for Engineers and Scientists	IIT Madras	12 Weeks	20-01-2025	11-04-2025	03-05-2025	27-01-2025	28-02-2025	UG/PG	https://onlinecourses.nptel.ac.in/noc25_hs61/preview	https://onlinecourses.nptel.ac.in/noc24_hs155/preview	https://onlinecourses.nptel.ac.in/noc24_hs155/preview
noc25-mg05	Management	AI in Human Resource Management	IIT Guwahati	12 Weeks	20-01-2025	11-04-2025	04-05-2025	27-01-2025	28-02-2025	PG	https://onlinecourses.nptel.ac.in/noc25_mg05/preview	https://nptel.ac.in/courses/110103626	https://nptel.ac.in/courses/110103626
noc25-hs70	Humanities and Social Sciences	Science Communication: Research Productivity and Data Analytics using Open Source Software	IIT Delhi	12 Weeks	20-01-2025	11-04-2025	03-05-2025	27-01-2025	28-02-2025	PG	https://onlinecourses.nptel.ac.in/noc25_hs70/preview	https://nptel.ac.in/courses/109102392	https://nptel.ac.in/courses/109102392
noc25-ag04	Agricultural and Food Engineering	Food Science and Technology	IIT Kharagpur	12 Weeks	20-01-2025	11-04-2025	26-04-2025	27-01-2025	28-02-2025	UG/PG	https://onlinecourses.nptel.ac.in/noc25_ag04/preview		

FIRST YEAR

M. Optometry

SEMESTER-I

Code No.	Core Subjects
Discipline Specific Core Theory	
MOPTOM 101 T	Epidemiology Public Health & Community Eye Health
MOPTOM 102 T	Anterior Segment Diseases & Diagnostics
CC 001 T	Research Methodology & Biostatistics (Core Course)
Discipline Specific Core Practical	
MOPTOM 103 P	Epidemiology Public Health & Community Eye Health
MOPTOM 104 P	Anterior Segment Diseases & Diagnostic
MOPTOM 105 CP	MOPTOM Directed Clinical Education-I
CC 001 P	Research Methodology & Biostatistics (Core Course)

Name of the Program	M. Optometry
Semester	Semester I
Name of the Subject	Epidemiology Public Health & Community Eye Health
Subject Code	MOPTOM 101 T

Teaching Objective	• To get post graduate students to with the basics of Ocular Epidemiology and 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.
Learning Outcomes	• To have a thorough understanding of epidemiological concepts. • To have a thorough understanding of conducting of screening for specific eye conditions, and resultant implications through theoretical and practical exposure • To understand role of optometrists in community eye health

Sr. No.	Topics	No. of Hrs.
1	**Epidemiology-**Basics of Epidemiology study methods, Types of study designs, Concept of Health and Disease ,Principles of Epidemiology and Epidemiological Methods	**5**
2	**Public Health**: Health Information and Basic Medical Statistics, Communication for Health Education , Health Planning and Management, Health care of community	**7**
3	**Community Eye Health**: Prevalence, incidence and distribution of visual impairment, Regulatory international and national bodies and their initiatives to reduce the burden of visual impairment. **Causes and prevention for vision Impairment-** Blindness**,** Childhood blindness, Refractive errors and presbyopia, Age related cataract, Low Vision, Diabetic retinopathy, Glaucoma, Age related Macular Degeneration, Vitamin A deficiency, Corneal and external diseases **Prevention strategies-** Screening for Eye Disease, Refractive errors, Low Vision, Cataract, Diabetic retinopathy, Glaucoma, Amblyopia, Squint etc. Telehealth.	**18**
Total		**30 hrs**

MOPTOM 103 P - Epidemiology Public Health &Community Eye Health

Sr. No.	Topics	No. of Hrs.
1	Reading of review papers on epidemiology	60
2	To organize an eye camp for screening for all leading causes of blindness	
Total		**60 hrs**

Reference books:

- Epidemiology of eye diseases: Johnson and Gordon
- Website: www.vision2020india.org and www.npcb.nic.in

Name of the Program	**M. Optometry**
Semester	**Semester I**
Name of the Course	**Anterior Segment Diseases & Diagnostics**
Course Code	**MOPTOM 102 T**

Teaching objective	• To develop an understanding of 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.
Learning outcomes	• To be able to perform clinical decision making for Ocular abnormalities • To be able to perform and interpret corneal diagnostics including, Topography/Pentacam/Orbscan, Secular microscopy, Pachymetry, Abberometry, UBM • To be able to perform anterior segment photography and ophthalmic imaging • To be able to manage and co-manage therapeutics for anterior segment

Sr. No.	Topics	No. of Hrs.
1	**Orbit:** Applied anatomy, Orbital Inflammation (Periostitis, Orbital cellulitis, Thrombosis of the cavernous sinus), Thyroid eye disease, Orbital blowout fractures.	8
2	**Lids:** Applied anatomy, Anomaly, clinical features, investigations & management, Chalazion, Other eyelid cyst, Basal cell carcinoma, Squamous cell carcinoma, External hordeolum, Herpes zoster ophthalmicus, Herpes simplex, Blepharitis, Ectropion, Entropion, Trichiasis, Blepharospasm, Symblepharon, Distichiasis, Ptosis.	8
3	**Lacrimal System:** Applied anatomy, Anomaly, clinical features, investigations & management. Dacryoadenitis, Dry eye (Sjogren's Syndrome), Dacryocystitis, Epiphora	8
4	**Conjunctiva:** Applied anatomy, Bacterial conjunctivitis, Viral conjunctivitis, Allergic conjunctivitis, Degenerative conditions(Pinguecula, Pterygium, Concretions) , Symptomatic conditions(Hyperaemia, Chemosis, Ecchymosis, Xerosis, Discoloration)	8
5	**Cornea:** Applied anatomy, Degenerative Changes(Arcus senilis, Arcus juvenilis, Band-shaped keratopathy), Inflammation (keratitis), Infections Affecting the Cornea (Bacterial ulcers and purulent keratitis, Fungal corneal ulcers, Viral infections of the cornea, Parasitic infestations) Ectatic Conditions, Corneal Dystrophies (Epithelial and subepithelial dystrophies, Bowman layer dystrophies, Stromal corneal dystrophies, Endothelial corneal dystrophies)	8
6	**Uveal Tract and Sclera:** Applied anatomy, Classification of uveitis, Episcleritis and scleritis, Clinical examination of Uveitis and Scleritis	8
7	**Anterior segment Diagnostics-**Specular Microscopy, Topography, Corneal Hysteresis, Orbscan, Pentacam, Pachymetry, Abberometry. UBM	12
Total		**60 hrs**

MOPTOM 104 P - Anterior Segment Diseases & Diagnostics

Sr. No.	Topics	No. of Hrs.
1	Hands on training and Interpretation of all the above listed tests	**60**
Total		**60 hrs**

Books:

Text book:

- A K Khurana: Comprehensive Ophthalmology, 4th edition, New age international (p) Ltd. Publishers, New Delhi, 2007

Reference books:

- Stephen J. Miller : Parsons Diseases of the Eye, 18th edition, Churchill Livingstone, 1990
- Jack J. Kanski Clinical Ophthalmology: A Systematic Approach, 6th edition, Butterworth - Heinemann, 2007

Name of the Program	**M. Optometry**
Semester	**Semester I**
Name of the Subject	**Research Methodology & Biostatistics (Core Course)**
Subject Code	**CC 001 T**

Teaching Objective	• The course is intended to give an overview of research and statistical models commonly used in medical and bio-medical sciences. The goal is to impart an intuitive, understanding and working knowledge of research designs and statistical analysis. The strategy would be to simplify, analyze the treatment of statistical inference and to focus primarily on how to specify and interpret the outcome of research.
Learning Outcomes	• Student will be able to understand develop statistical models, research designs with the understating of background theory of various commonly used statistical techniques as well as analysis, interpretation & reporting of results and use of statistical software.

Sr. No	Topic	No. of Hrs.
A	**Research Methodology:**	**23**
1	**Scientific Methods of Research**: Definition of Research, Assumptions, Operations and Aims of Scientific Research. Research Process, Significance and Criteria of Good Research, Research Methods versus Methodology	4
2	**Research Designs**: Observational Studies: Descriptive, explanatory, and exploratory, Experimental Studies: Pre-test design, post-test design, Follow-up or longitudinal design, Cohort Studies, Case – Control Studies, Cross-sectional studies, Intervention studies.	5
3	**Sampling Designs**: Census and Sample Survey, Need and importance for Sampling, Implications of a Sample Design, Different Types of Sample Designs (Probability sampling and non-probability sampling), Systematic sampling, Stratified sampling, Cluster sampling, Multi-stage sampling, Sampling with probability proportional to size, Sequential sampling.	5
4	**Measurement in research**: Measurement Scales, Sources of Error in Measurement,	3
5	**Methods of Data Collection**: Types of data, Collection of Primary Data, Observation Method, Interview Method	4
6	Research Ethics and plagiarism	2
B	**Biostatistics**	**22**
7	**Data Presentation**: Types of numerical data: Nominal, Ordinal, Ranked, Discrete and continuous. Tables: Frequency distributions, Relative frequency, Graph: Bar charts, Histograms, Frequency polygons, scatter plots, line graphs	3
8	**Measures of Central Tendency and Dispersion**: Mean, Median, Mode, Range, Inter quartile range, variance and Standard Deviation, Coefficient of variation, grouped mean and grouped standard deviation (including merits and demerits).	3
9	**Testing of Hypotheses**: Definition, Basic Concepts, Procedure for Hypothesis Testing, power of test, Normal distribution, Parametric Tests including Z-test, t-test, and ANOVA	4
10	**Chi-square Test**: Chi-square as a Non-parametric Test, Applications.	2

11	**Measures of Relationship**: Correlation and Simple Regression Analysis	3
12	**Non-parametric test**: Sign test, Wilcoxon signed-Rank Test, Wilcoxon Rank Sum Test: Mann-Whitney U test, Kruskal Walli's test, Friedman's test, and Spearman Rank correlation test.	3
13	**Vital Health Statistics**: rate, crude rate, age specific rate, Measurement of fertility, Rate, Measures of mortality.	4
Total		**45 hrs**

CC 001 P–Research Methodology & Biostatistics

Sr. No.	Topics	No. of Hrs.
A	**Research Methodology**	
1	Research Article Presentation (Seminar)	5
B	**Biostatistics**	
2	Data Presentation	4
3	Measures of Central Tendency and Dispersion	6
4	Testing of Hypotheses	16
5	Chi-square Test	4
6	Measures of Relationship	6
7	Analysis of Variance	5
8	Non parametricor Distribution-free Tests	8
9	Computer Application Using Statistical Software including SPSS	6
Total		**60 hrs**

Reference Books:

1. Daniel WW. Biostatistics: A foundation for analysis in the health sciences. 10th ed. Wiley; 2013.
2. Gupta SC, Kapoor VK. Fundamentals of mathematical statistics. Sultan Chand & Sons; 2020 Sep.
3. Kothari CR, Garg G. Research methodology: Methods and techniques.2019.
4. Mahajan BK. Methods in biostatistics for medical students and research workers. 7th ed. Jaypee Brothers Medical Publishers; 2010.
5. Murthy MN. Sampling theory and methods. Statistical Publishing Society; 1967.
6. Singh YK. Fundamental of research methodology and statistics. New Age International; 2006.

Resolution No. 3.5 of Academic Council (AC-51/2025):

Resolved to approve the submitted list of recommended books for M.Sc. Clinical Nutrition and the course on **Biostatistics and Research Methodology** [ANNEXURE-7].

Annexure-7 of AC-51/2025

Biostatistics & Research Methodology Books List

Subject	Book Name	Author
Biostatistics & Research Methodology	Biostatistics: A Foundation for Analysis in the Health Sciences (10th ed.)	Daniel WW.
	Biostatistical Analysis (5th ed.)	Zar JH.
	Research Methodology: Methods and Techniques	Kothari CR, Garg G.
	Methods in Biostatistics for Medical Students and Research Workers (7th ed.)	Mahajan BK.
	Sampling Theory and Methods	Murthy MN.
	Fundamentals of Research Methodology and Statistics	Singh YK.
	Fundamentals of Biostatistics (8th ed.)	Rosner B.
	An Introduction to Medical Statistics (4th ed.)	Bland M.

MOPTOM 105 CP: MOPTOM Directed Clinical Education-I

Course Outcomes	• The primary focus is on developing students' clinical skills, diagnostic abilities, and patient care expertise through supervised training in the real-world clinical settings. Students should be able to demonstrate proficiency in comprehensive eye examinations, specialized optometric procedures, interpret clinical findings for formulating management strategies and to co-manage the conditions with a multidisciplinary approach utilizing critical discussion making and problem-solving skills while exhibiting professional and ethical behavior in clinical settings.

Community orientation & clinical visit (including related practical's to the parent course)

The primary focus is on developing students' clinical skills, diagnostic abilities, and patient care expertise through supervised training in the real-world clinical settings. Students should be able to demonstrate proficiency in comprehensive eye examinations, specialized optometric procedures, interpret clinical findings for formulating management strategies and to co-manage the conditions with a multidisciplinary approach utilizing critical decision making and problem-solving skills while exhibiting professional and ethical behavior in clinical settings. (**Total - 225 hrs.)**

FIRST YEAR

M. Optometry

SEMESTER- II

Code No.	Core Subjects
Discipline Specific Core Theory	
MOPTOM 106 T	Posterior Segment Diseases and Diagnostic
MOPTOM 107 T	Advanced Contact Lenses
MOPTOM 108 T	Binocular Vision and Pediatric Optometry
MOPTOM 109 T	Low Vision and Rehabilitation
Discipline Specific Core Practical	
MOPTOM 110 P	Posterior Segment Diseases and Diagnostic
MOPTOM 111 P	Advanced Contact Lenses
MOPTOM 112 P	Binocular Vision and Pediatric Optometry
MOPTOM 113 P	Low Vision and Rehabilitation
MOPTOM 114 CP	MOPTOM Directed Clinical Education-II
Skill Enhancement Course	
SEC 001 T	Innovation and Entrepreneurship
SEC 002 T	NPTEL Swayam

Name of the Program	**M. Optometry**
Semester	**Semester II**
Name of the Course	**Posterior Segment Diseases and Diagnostic**
Course Code	**MOPTOM 106 T**

Teaching Objective	• To develop an understanding of 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.
Learning Outcomes	• To be able to perform electro diagnostic procedures and interpret electro diagnostic reports ,ERG, EOG and VEP • To be able to perform stereoscopic fundus photography • To be able to use Ocular photography as a tool for evidence based clinical decision making and progression analysis • To be able to perform posterior segment photography • To be able to manage and co-manage diseases and disorders of posterior segment

Sr. No.	Topics	No. of Hrs.
1	Retina and Vitreous: Applied anatomy & Physiology, Diabetic retinopathy, Hypertensive retinopathy, Retinal venous occlusive disease, Retinal arterial occlusive disease, Ocular ischemic syndrome, Sickle cell retinopathy, Retinopathy of prematurity, ARMD, Central serous chorioretinopathy, Cystoid macular oedema, Microcystic macular oedema, CRAO, CRVO, BRAO, BRVO, Retinal detachment (Peripheral lesions predisposing to retinal, Posterior vitreous detachment, Retinal breaks, Rhegmatogenous retinal detachment, Tractional retinal detachment, Exudative retinal detachment	**8**
2	Vitreous: Vitreous Detachment, Vitreous hemorrhage, Vitreous cyst, Vitreoretinal Degeneration	**4**
3	Lens: Applied Anatomy and Physiology, Clinical examination, Classification of cataract, Congenital and Developmental cataract, Management of cataract, Complications of cataract surgery	**6**
4	Neuro optometric diseases and disorders: Applied Anatomy of visual pathway, Lesions of the visual pathway, Pupillary reflexes and abnormalities, Optic neuritis, Anterior Ischemic optic neuropathy, Papilledema, Optic atrophy, Cranial nerve palsy (CN III, IV, VI & VII palsy)	**6**
5	Glaucoma: Applied anatomy and physiology of anterior segment, Clinical Examination, Definitions and classification of glaucoma, Pathogenesis of glaucomatous ocular damage. Management: common medications, laser intervention and surgical techniques	**6**
6	**Posterior segment Diagnostics-** ERG, EOG, VEP, OCT, Fundus photography, HRT, GDx, Perimetry, Gonioscopy and ONH evaluation	**15**
Total		**45 hrs**

MOPTOM 110 P – Posterior Segment Diseases and Diagnostic

Sr. No.	Topics	No. of Hrs.
1	Hands on training and Interpretation of all the above listed tests	**30**
Total		**30 hrs**

Reference Books:

- Clinical Ophthalmology: Jack J Kanski
- Parsons' Diseases of the Eye.
- Diagnostics and imaging techniques in Ophthalmology: Dr. Amar Agarwal

Name of the Program	**M. Optometry**
Semester	**Semester II**
Name of the Subject	**Advanced Contact Lenses**
Subject Code	**MOPTOM 107 T**

Teaching Objective	• 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.
Learning Outcomes	• To be able to understand corneal physiology and oxygen needs • To be able to diagnose and manage complications due to contact lenses • To be able to fit specialized contact lenses

Sr. No.	**Topics**	**No. of Hrs.**
1	Refresher of IACLE modules 1 & 2: Anatomy, physiology, contact lens materials & its properties	**5**
2	Cornea and Contact lens and its Oxygen requirements	**2**
3	RGP & Soft Contact Lens: Pre-Fitting examination –steps, significance, recording of results	**3**
4	RGP & Soft Contact Lens: Post-fitting examination - steps, significance, recording of results & fitting types	**2**
5	Correction of Astigmatism with RGP contact lens & soft contact lens	**2**
6	Introduction to various Contact lens management modalities for irregular corneal conditions	**2**
7	Contact lens management in Presbyopia	**2**
8	Therapeutic Contact lens	**2**
9	Extended and Continuous wear Lenses	**2**
8	Pediatric contact lens fitting	**2**
9	Tinted contact lenses: Application in aesthetics	**2**
10	RGP & Soft Contact Lens: Care & maintenance	**2**
11	RGP & Soft Contact Lens: Complications & management	**2**
	Total	**30 hrs**

MOPTOM 111 P - Advanced Contact Lenses

Sr. No.	Topics	No. of Hrs.
1	Identifying the potential contact lens patient & training them for contact lens use. Availability of RGP & Soft contact lenses in clinical practices.	**5**
2	RGP & Soft Contact lenses: Spherical & Toric Fitting, Care & maintenance, ordering & verification	**20**
3	Availability of RGP & Soft contact lenses in clinical practices.	**5**
Total		**30hrs**

Reference Books:

1. IACLE modules
2. Contact Lenses by Janet Stone and Philip

Name of the Program	**M. Optometry**
Semester	**Semester II**
Name of the Subject	**Binocular Vision and Pediatric Optometry**
Subject Code	**MOPTOM 108 T**

Teaching Objective	• 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
Learning Outcomes	• To be able to diagnose and manage and co-manage binocular vision anomalies • To be able to co-manage visual perceptual anomalies • To be able to manage diplopia, suppression and ARC • To be able to manage amblyopia

Sr. No.	Topics	No. of Hrs.
1	**Refractive Development**- Early Refractive Development, Visually Guided control of Refractive State: Animal Studies, Infant Accommodation and Convergence	**5**
2	**Oculomotor Function**- Conjugate Eye Movements of Infants, Development of the Vestibuloocular and optokinetic reflexes.	**5**
3	**Spatial and Chromatic Vision**-Front-end Limitations to Infant Spatial vision: Examination of two analyses, Development of the Human Visual Field, Development of Scotopic Retinal Sensitivity, Infant Color vision, Orientation and Motion selective Mechanisms in Infants, Intrinsic Noise and Infant performance	**5**
4	**Binocular Vision-**Development of interocular vision in Infants, Stereopsis in Infants and its developmental relation to visual acuity, Sensorimotor Adaptation and Development of the Horopter, Two stages in the development of Binocular Vision and Eye Alignment	**5**
5	Retinal and cortical Development, Abnormal Visual Development, What next in Infant Research	**5**
6	**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, Contant Strabismus, Management Guidelines – Amblyopia, Accommodation and Vergenceanomalies, Nystagmus, Common genetic problems in Pediatric optometry, Pediatric Ocular Diseases, Ocular Trauma in Children, Myopia control, Clinical uses of prism	**5**
Total		**30 hrs**

MOPTOM 112 P - Binocular Vision and Pediatric Optometry

Sr. No.	Topics	No. of Hrs.
1	Hands on training and Interpretation of all the above tests for children	**30**
Total		**30 hrs**

Reference Books:

1. Clinical management of binocular vision Mitchell Scheiman and Bruce Wick
2. Applied concepts in vision therapy: Leonard Press
3. Pediatric MOPometry: Jerome K Rosner

Name of the Program	**M. Optometry**
Semester	**Semester II**
Name of the Subject	**Low Vision and Rehabilitation**
Subject Code	**MOPTOM 109 T**

Teaching Objective	▪ 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.
Learning Outcomes	▪ To be able to diagnose and manage patients with vision impairment ▪ To be able to perform specialized diagnostics , Rudimentary vision , Berkeley visual field test , Hand disc perimetry ▪ To be able to train for eccentric viewing and steady eye techniques ▪ To be able to diagnose and manage patients with vision impairment ▪ To be able to perform specialized diagnostics for patients with low vision with multiple disabilities ▪ To be able to train for eccentric viewing and steady eye techniques ▪ To be able to rehabilitate patients with VI with vocational counseling and activities of daily living

Sr. No.	Topics	No. of Hrs.
1	**Low vision:** Definition, Epidemiology, classification, causes, disease process and Models of Low vision services.	**4**
2	**Evaluation of low vision patients:** History taking**,** Clinical evaluation, Functional assessment, Vision evaluation of Infants, 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	**4**
3	**Low vision devices:** Optical, non-optical, electronics, Assistive Devices and Advance Technology for low vision and blind, Optics of low vision devices, magnification types & calculation, management of field loss.	**6**
4	**Visual Disorders - 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.	**4**
5	**Rehabilitation & Counselling:** Training of low vision devices, Role of psychosocial Factors in adaptation to vision Impairment and Habilitation outcomes for Children and Youth, 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 life span, the person – Environment perspective of vision impairment. Associated Depression, Disability and rehabilitation.	**6**

	Counselling of low vision patients.	
6	Low vision aids dispensing & prescribing aspects	**2**
7	Legal aspects of Low vision in India	**2**
8	Case Analysis	**2**
Total		**30 hrs**

MOPTOM 113 P - Low Vision and Rehabilitation

Sr. No.	Topics	No. of Hrs.
1	Hands on training and Interpretation of all the above tests for low vision care	**15**
2	Determining & Training of Low Aid Devices	**15**
Total		**30 hrs**

Reference Books

1. The lighthouse handbook on vision impairment and Vision rehabilitation: Barbara Silverstone, Mary Ann Lang, Bruce Rosenthal, Faye.
2. Low vision Rehabilitation (SLACK Incorporated) by Mitchell Scheiman Stephon G Whittaker
3. Essentials of Low Vision Practice (Butterworth Heinemann) by Richard Brilliant
4. Clinical Low Vision Elenor E. Faye

MOPTOM 114 CP: MOPTOM Directed Clinical Education-II

Course Outcomes	• The primary focus is on developing students' clinical skills, diagnostic abilities, and patient care expertise through supervised training in the real-world clinical settings. Students should be able to demonstrate proficiency in comprehensive eye examinations, specialized optometric procedures, interpret clinical findings for formulating management strategies and to co-manage the conditions with a multidisciplinary approach utilizing critical decision making and problem-solving skills while exhibiting professional and ethical behavior in clinical settings.

Community orientation & clinical visit (including related practical's to the parent course)

The primary focus is on developing students' clinical skills, diagnostic abilities, and patient care expertise through supervised training in the real-world clinical settings. Students should be able to demonstrate proficiency in comprehensive eye examinations, specialized optometric procedures, interpret clinical findings for formulating management strategies and to co-manage the conditions with a multidisciplinary approach utilizing critical decision making and problem-solving skills while exhibiting professional and ethical behavior in clinical settings. **(Total -225 hrs.)**

SKILL ENHANCEMENT COURSES

Name of the Program	**M. Optometry**
Semester	**Semester II**
Name of the Subject	**Innovation and Entrepreneurship**
Subject Code	**SEC 001 T**

Course Outcome	• Students will grasp the concepts of innovation, its ecosystem, and the role of various stakeholders such as government policies, startups, and innovation hubs. • Cultivating an entrepreneurial mindset and leadership qualities necessary for driving innovation and leading ventures. • Understanding the intersection of technology and innovation and leveraging emerging technologies for entrepreneurial ventures.

Sr. No.	Topics	No. of Hrs.
1	Innovation and Innovation Eco-System, The Policy Framework, Startup Landscape and Innovation Hubs, - Digital India and Make in India, - Linking Innovation with Intellectual Property Rights, Raising Finance for Startups in India, Innovation in Indian Context, Writing a business plan	**15**
2	Creativity and Research, Converting Researches to Innovation: Innovation Types and Models, Product Development, IPR and its Commercialisation, Support System to Develop Culture of Research and Innovation, Commercialisation of research and innovation, Fund raising – Research and Innovation, Envisioning Innovation and Scenario Building	**15**
3	Introduction to Innovation in Entrepreneurship, Idea Generation and Validation, Design Thinking in Entrepreneurship, Business Model Innovation, Technology and Innovation, Funding Innovation, Entrepreneurial Mindset, Leadership & amp; Intellectual Property, Scaling and Growth Strategies, sustainability & amp; Social Innovation	**15**
Total		**45 hrs**

Name of the Program	**M. Optometry**
Semester	**Semester II**
Name of the Course	**NPTEL Swayam**
Course Code	**SEC 002 T**

Note: The links of SWAYAM/NPTEL courses (https://swayam.gov.in/nc_details/NPTEL)

Scheme of University Examination Theory for PG Program:

General structure / patterns for setting up question papers for Theory / Practical courses, their evaluation weightages for PG programs of MGMSBS are given in the following tables

Marks scheme for the University exam:

Final theory marks will be 100 marks (80 marks University Theory exam + 20 Marks Internal assessment).

Question		Marks distribution	Marks allotted per section	Marks
Sec: A	MCQ	10 x 1 M = 10	10	10
Sec: B	SAQ	3/4x 5 M = 15	15	35
Sec: B	LAQ	2/3 x 10 M = 10	20	
Sec: C	SAQ	3/4x 5 M = 15	15	35
Sec: C	LAQ	2/3x 10 M = 10	20	
Total				**80 Marks**

Marks Scheme for the University Examination (50 Marks)

Final theory marks will be 50 marks University Theory exam pattern Research Methodology & Biostatistics (Core course)

Question	Question No.	Question Type	Marks Distribution	Marks
Sec: A	1.	LAQ (2 out of 3)	2 X 10 Marks = 20	20
Sec: B	2.	SAQ (6 out of 8)	6 X 05 Marks = 30	30
Total				**50 Marks**

Marks Scheme for the University Examination (100 Marks)

Final theory marks will be 100 marks University Theory exam pattern Elective Course

Question	Question No.	Question Type	Marks Distribution	Marks
Sec: A	1.	LAQ (10 out of 12)	10 X 10 Marks = 100	100
Total				**100 Marks**

Practical exam pattern: Total 40 marks with following breakup:

Exercise	Description	Marks
Q No 1	Practical exercise - 1	1 x15=15 M
Q No 2	Station exercise	2x5M=10 M
Q No 3	VIVA	10 M
Q No 4	Journal	5M
Total		**40 Marks**

Practical exam pattern Research Methodology & Biostatistics (Core course)
Total 50-mark distribution:

Exercise	Description	Marks
Q No 1	**Practical/Problem-Solving:** These questions can assess statistical analysis, research design, hypothesis testing, or interpretation of data etc.	2 × 10 marks each) = **20 marks**
Q No 2	Identification of study designs, Critical appraisal of research papers, Application of biostatistical tools, Sampling techniques etc.	(4 × 5 marks each) = **20 marks**
Q No 3	**Viva Voce (Oral Examination)** Assessing conceptual clarity, application of research methodology, and statistical reasoning.	**10 marks**
Total		**50 Marks**

Practical to be conducted at respective departments and marks submitted jointly by the parent department to the university.

Breakup of theory IA calculation for 20 marks

Description	Marks
Internal exam (at department)	15 marks
Seminar	5 marks
Total	**20 Marks**

Breakup of practical IA calculation:

Description	Marks
Internal exam (at department)	10 marks
Viva	5 marks
Journal	5 marks
Total	**20 Marks**

Note –20 marks to be converted to 10 marks weightage for submission to the university.

Model Checklist for Evaluation of the Clinical Directed Posting (PG)

Name of the student: _____Date:_____
Program:_____
Semester: _____ Name of the Internal faculty/Observer:_____
Name of the External Faculty/Observer:_____

Core Competencies	Marks allotted	Marks obtained
Students will begin to develop critical thinking abilities utilizing the allied health personnel roles of communicator and caregiver. Students will learn principles of professional allied health personnel practice and provide direct care to individuals within a medical surgical setting while recognizing the diverse uniqueness of individuals with health alterations.		
Clinical Teaching		
a. Demonstrate beginning competency in technical skills.	10	
Independent Work by Student guided by faculty		
a. Develop effective communication skills (verbally and through charting) with patients, team members, and family	2.5	
b. Identify intra and inter-professional team member roles and scopes of practice. Establish appropriate relationships with team members.	2.5	
Hands on practical work by students		
a. Protect confidentiality of electronic/manual health records data, information, and knowledge of technology in an ethical manner	05	
Independent work by student		
a. Demonstrate expected behaviors and complete tasks in a timely manner. Arrive to clinical experiences at assigned times. Maintain professional behavior and appearance.	05	
Log book	10	
Viva	10	
Attendance	05	
Total	**50 Marks**	

Sign of Internal Examiner:_____
Sign of External Examiner:_____

Resolution No. 5.1 of Academic Council (AC-52/2025):

Resolved to approve the CBCS syllabus, including Program Outcomes (POs) and Course Outcomes (COs), for Postgraduate (PG) 2-year programs under MGMSBS (semester III & IV) for M.Sc. Medical Biotechnology, M.Sc. Medical Genetics, M.Sc. Clinical Embryology, M.Sc. Clinical Nutrition, M.Sc. Medical Dialysis Technology, M.Sc. Molecular Biology, M.Sc. Medical Radiology & Imaging Technology, M.Sc. Cardiac Care Technology, M.Sc. Operation Theatre and Anaesthesia Technology, M.Sc. Emergency and Trauma Care, M. Optometry, Masters in Hospital Administration, Masters of Public Health, M.Sc. Health Informatics, M.Sc. Medical Laboratory Technology, M.Sc. Clinical Research, to be effective from batch admitted in the Academic Year 2025-26 onwards. Guidelines for selected programmes as per National Commission for Allied & Healthcare Professions will be adopted for the given programmes from academic year 2026-27 onwards **[ANNEXURE-17A, 17B, 17C, 17D, 17E, 17F, 17G, 17H, 17I, 17J, 17K, 17L, 17M, 17N, 17O & 17P** and **ANNEXURE-18A, 18B, 18C, 18D, 18E, 18F, 18G, 18H, 18I, 18J, 18K, 18L, 18M, 18N, 18O & 18P].**

Annexure-17K of AC-52/2025

MGM SCHOOL OF BIOMEDICAL SCIENCES

(A constituent unit of MGM INSTITUTE OF HEALTH SCIENCES)

(Deemed to be University u/s 3 of UGC Act 1956)

Grade "A^{++}" Accredited by NAAC

Sector 1, Kamothe, Navi Mumbai-410209, Tel.No.: 022-2743763, 27437632, 27432890

Email. sbsnm@mgmuhs.com/Website: www.mgmsbsnm.edu.in

CHOICE BASED CREDIT SYSTEM (CBCS)

(Academic Year 2025 - 26)

Curriculum for

M.Sc. Allied Health Sciences

M. Optometry

Semester III & IV

COURSE OUTCOMES

Semester III

MOPTOM 115 T	Advanced Dispensing Optics	Mapped PO	Teaching-Learning Methodology	Assessment Tools
CO1	Apply knowledge of ophthalmic lens materials, designs, coatings, and their optical performance.	PO1, PO4, PO5, PO6, PO7, PO8, PO9,	Lecture, Group Discussion, E-learning	Internal Assessment, Seminar University Exam(Theory)
CO2	Understand, recommend special lenses design and evaluate frame styles, ergonomics, and eye wear suitability as per patient's requirement.	PO1, PO2, PO3, PO4, PO5, PO6 PO7, PO8,	Lecture, Practical, Role play, Problem-Based Learning (PBL)	Internal Assessment, University Exam (Theory)
CO3	Have a thorough understandings and interpretation of industry standards, quality control of lenses and frame.	PO1, PO2, PO4, PO5, PO7, PO9, PO11	Lecture, Industrial Visit, Group Discussion,	Internal Assessment, University Exam (Theory)
MOPTOM 116 T	**Specialty Contact Lenses**	**Mapped PO**	**Teaching-Learning Methodology**	**Assessment Tools**
CO1	Demonstrate understanding of advanced contact lens designs, their application and patient selection.	PO1, PO2, PO4, PO5, PO7, PO8, PO9, PO10	Lecture, Group Discussion, Assignment, videos	Internal Assessment, Seminar University Exam (Theory)
CO2	Thorough understanding of ocular anatomy and physiology for specialty lens fittings.	PO1, PO2, PO4, PO5, PO7, PO8 PO9, PO11	Quiz, Group Discussion, Flip Classroom	Internal Assessment, University Exam (Theory)
CO3	Identify, explain, and manage complications related to contact lens wear, and have a better understanding of contact lens care & maintenance.	PO1, PO2, PO3, PO4, PO5, PO7, PO8, PO9, PO10, PO11	Demonstration, Problem Based Learning, Clinical Postings.	Internal Assessment, University Exam (Theory)
CO4	Demonstrate awareness of evidence-based practices, recent advancements, and legal considerations in contact lens care.	PO1, PO2, PO3, PO4, PO5, PO7, PO8, PO9, PO10, PO11	Demonstration, Problem Based Learning, Clinical Postings.	Internal Assessment, University Exam (Theory)
MOPTOM 117 T	**Visual Perception, Neuroscience and Psychophysics.**	**Mapped PO**	**Teaching-Learning Methodology**	**Assessment Tools**
CO1	Develop a comprehensive understanding of the neural mechanisms underlying vision and the coordinated development of the eye and brain.	PO1, PO2, PO3, PO4, PO5, PO6, PO7, PO8, PO9, PO10, PO11	Lecture, Group Discussion, Assignment, videos	Internal Assessment, University Exam (Theory)

CO2	Demonstrate understanding regarding the psychophysical visual performance evaluation.	PO1, PO2, PO3, PO4, PO5, PO6, PO7, PO8, PO9, PO10, PO11	Quiz, Group Discussion, Flip Classroom	Internal Assessment, University Exam (Theory)
CO3	Analyse perceptual processes and apply neuroscience research findings to clinical optometry.	PO1, PO2, PO3, PO4, PO5, PO6, PO7, PO8, PO9, PO10, PO11, PO12	Demonstration, Problem Based Learning, Clinical Postings.	Internal Assessment, University Exam (Theory)
MOPTOM 118	**Research Project/ Dissertation**	**Mapped PO**	**Teaching-Learning Methodology**	**Assessment Tools**
CO1	Formulate a research problem with clearly defined objectives, conduct a critical literature review, design an appropriate methodology with suitable data tools, and prepare a proposal for ethical approval.	PO1, PO2, PO3, PO4, PO5, PO6, PO7, PO8, PO9, PO10, PO11, PO12	Practical, Demonstration, Problem Based Learning, Lecture, Group Discussion,	Internal Assessment,
CO2	Systematically collect and analyse data.	PO1, PO2, PO3, PO4, PO5, PO6, PO7, PO8, PO9, PO10, PO11, PO12	Experiment conduction, Discussion	Progress Report
MOPTOM 119 P	**Advanced Dispensing Optics**	**Mapped PO**	**Teaching-Learning Methodology**	**Assessment Tools**
CO1	Demonstrate skills in Verifing lens power, axis, and quality using lensometers and other tools.	PO1, PO2, PO3, PO4, PO5, PO6, PO7, PO8, PO9, PO10, PO11, PO12	Practical, Demonstration, Problem Based Learning,	Internal Assessment, University Exam (Practical: Viva-Voce, Station Exercise,)
CO2	Perform accurate facial measurements and be able to select and adjust frames for optimal fit and comfort.	PO1, PO2, PO3, PO4, PO5, PO6, PO7, PO8, PO9,PO10, PO11,PO12	Practical, Role play, Problem-Based Learning (PBL)	Internal Assessment, University Exam (Practical: Viva-Voce, Station Exercise,)
CO3	Demonstrate dispensing of special lenses eg: bifocals, occupational, progressive, prism, safety.	PO1, PO2, PO3, PO4, PO5, PO6, PO7, PO8, PO9, PO10, PO11,PO12	Demonstration, Practical, Role play, Problem-Based Learning (PBL)	Internal Assessment, University Exam (Practical: Viva-Voce, Station Exercise,)

MOPTOM 120 P	Specialty Contact Lenses	Mapped PO	Teaching-Learning Methodology	Assessment Tools
CO1	Able to fit specialty contact lenses and assess lens performance.	PO1, PO2, PO3, PO4, PO5, PO7, PO8, PO9, PO10,PO11, PO12	Demonstration, Practical, Role play, Problem-Based Learning (PBL)	Internal Assessment, University Exam (Practical: Viva-Voce, Station Exercise,)
CO2	Educate patients on lens handling, hygiene and effectively manage lens complications.	PO1, PO2, PO3, PO4, PO5, PO6, PO7, PO8, PO9, PO10, PO11,PO12	Practical, Demonstration, Problem Based Learning, Clinical Postings.	Internal Assessment, University Exam (Practical: Viva-Voce, Station Exercise, Clinical Case Study)
MOPTOM 121 CP	**MOPTOM Directed Clinical Education-III**	**Mapped PO**	**Teaching-Learning Methodology**	**Assessment Tools**
CO1	The primary focus is on developing students' clinical skills, diagnostic abilities, and patient care expertise through supervised training in the real-world clinical settings. Students should be able to demonstrate proficiency in comprehensive eye examinations, specialized optometric procedures, interpret clinical findings for formulating management strategies and to co-manage the conditions with a multidisciplinary approach utilizing critical discussion making and problem-solving skills while exhibiting professional and ethical behavior in clinical settings.	PO1, PO2, PO3, PO4, PO5, PO6, PO7, PO8 PO9, PO10, PO11	Practical, Experimental Problem Based Learning, Workshops, Clinical Postings.	Internal Assessment, University Exam (Practical: Viva-Voce, Station Exercise, Clinical Case Study)

Semester IV

MOPTOM 122 T	Applied Vision Therapy	Mapped PO	Teaching-Learning Methodology	Assessment Tools
CO1	Well versed with the principles, models and concept of vision therapy.	PO1, PO2, PO3, PO4, PO5, PO7, PO8, PO9, PO10,PO11	Lecture, Practical, Role play, Problem-Based Learning (PBL)	Internal Assessment, University Exam (Theory)
CO2	Demonstrate understanding regarding, relationship between various binocular conditions and visual skills, performance indicator, Sensory motor integration.	PO1, PO2, PO4, PO5, PO6, PO7, PO8, PO9, PO10,PO11	Lecture, Group Discussion, Assignment	Internal Assessment, University Exam (Theory)
CO3	Able to apply evidence-based practices, management strategies, and standardized protocols in vision therapy for various conditions.	PO1, PO2, PO3, PO4, PO5, PO7, PO8, PO9, PO10,PO11	Lecture, Guest Lecture, Workshop, Case Study	Internal Assessment, University Exam (Theory)
MOPTOM 123 P	**Applied Vision Therapy**	**Mapped PO**	**Teaching-Learning Methodology**	**Assessment Tools**
CO1	Perform diagnostic tests for various non strabismic binocular vision dysfunction.	PO1, PO2, PO5, PO7, PO11	Practical, Demonstration, Problem Based Learning, Clinical Postings.	Internal Assessment, University Exam (Practical: Viva-Voce,)
CO2	Able to formulate and conduct assessment for diagnosis of special conditions.	PO1, PO2, PO3, PO4, PO5, PO6, PO7, PO8 PO9, PO11	Practical, Demonstration, Problem Based Learning, Clinical Postings.	Internal Assessment, University Exam (Practical: Viva-Voce,)
CO3	Design and conduct vision therapy programs, and maintain record, monitor, and interpret therapy outcomes	PO1, PO2, PO3, PO4, PO5, PO6, PO7, PO8 PO9, PO10, PO11	Practical, Demonstration, Problem Based Learning, Clinical Postings.	Internal Assessment, University Exam (Practical: Viva-Voce, Station Exercise, Clinical Case Study)
MOPTOM 124 CP	**MOPTOM Directed Clinical Education-IV**	**Mapped PO**	**Teaching-Learning Methodology**	**Assessment Tools**
CO1	The primary focus is on developing students' clinical skills, diagnostic abilities, and patient care expertise through supervised training in the real-world clinical settings. Students should be able to demonstrate proficiency in	PO1, PO2, PO3, PO4, PO5, PO6, PO7, PO8 PO9, PO10, PO11	Practical, Experimental Problem Based Learning, Workshops, Clinical Postings.	Internal Assessment, University Exam (Practical: Viva-Voce, Station Exercise, Clinical Case Study)

	comprehensive eye examinations, specialized optometric procedures, interpret clinical findings for formulating management strategies and to co-manage the conditions with a multidisciplinary approach utilizing critical discussion making and problem-solving skills while exhibiting professional and ethical behavior in clinical settings.			
MOPTOM 118	**Research Project/ Dissertation**	**Mapped PO**	**Teaching-Learning Methodology**	**Assessment Tools**
CO1	Collect and analyse research data with appropriate statistical methods and interpret results.	PO1, PO2, PO3, PO4, PO5, PO6, PO7, PO8, PO9, PO10, PO11,PO12	Practical, Demonstration, Problem Based Learning,	Progress Report
CO2	Able to prepare a structured dissertation with critical discussion and defend findings in viva-voce/presentation.	PO1, PO2, PO3, PO4, PO5, PO6, PO7, PO8, PO9,PO10, PO11,PO12	Experiment conduction, Discussion	University Exam Viva-Voce Defense

OUTLINE OF COURSE CURRICULUM

M. Optometry

Semester III

Code No.	Core Course	Credits/Week					Hrs/Semester					Marks		
		Lecture (L)	Tutorial (T)	Practical (P)	Clinical Posing/ Rotation (CP)/ Experiential	Total Credits (C)	Lecture (L)	Tutorial (T)	Practical (P)	Clinical Posing/ Rotation (CP)/ Experiential	Total (hrs.)	Internal Assement (IA)	Semester End Exam (SEE)	Total
Discipiline Specific Core Theory														
MOPTOM 115 T	Advanced Dispensing Optics	2	-	-	-	**2**	30	-	-	-	**30**	**20**	**80**	**100**
MOPTOM 116 T	Speciality Contact Lenses	2	-	-	-	**2**	30	-	-	-	**30**	**20**	**80**	**100**
MOPTOM 117 T	Visual Perception, Neuroscience and Psychophysics	4	-	-	-	**4**	60	-	-	-	**60**	**20**	**80**	**100**
MOPTOM 118	Research Project/ Disserration	-	-	10	-	**5**	-	-	150	-	**150**	**50**	-	**50**
Discipiline Specific Core Practical														
MOPTOM 119 P	Advanced Dispensing Optics	-	-	2	-	**1**	-	-	30	-	**30**	**10**	**40**	**50**
MOPTOM 120 P	Speciality Contact Lenses	-	-	2	-	**1**	-	-	30	-	**30**	**10**	**40**	**50**
MOPTOM 121 CP	MOPTOM Directed Clinical Education-III	-	-	-	15	**5**	-	-	-	225	**225**	-	**50**	**50**
Total		**8**	**0**	**14**	**15**	**20**	**120**	**0**	**210**	**225**	**555**	**130**	**370**	**500**

OUTLINE OF COURSE CURRICULUM

M. Optometry

Semester IV

Code No.	Core Course	Credits/Week					Hrs/Semester					Marks		
		Lecture (L)	Tutorial (T)	Practical (P)	Clinical Posing/ Rotation (CP)/ Experiential	Total Credits (C)	Lecture (L)	Tutorial (T)	Practical (P)	Clinical Posing/ Rotation (CP)/ Experiential	Total (hrs.)	Internal Assement (IA)	Semester End Exam (SEE)	Total
Discipiline Specific Core Theory														
MOPTOM 122 T	Applied Vision Therapy	4	-	-	-	**4**	60	-	-	-	**60**	**20**	**80**	**100**
Discipiline Specific Core Practical														
MOPTOM 123 P	Applied Vision Therapy	-	-	2	-	**1**	-	-	30	-	**30**	**10**	**40**	**50**
MOPTOM 124 CP	MOPTOM Directed Clinical Education-IV	-	-	-	12	**4**	-	-	-	180	**180**	-	50	**50**
MOPTOM 118	Research Project/ Disserration	-	-	22	-	**11**	-	-	330	-	**330**	-	200	**200**
Total		**4**	**0**	**24**	**12**	**20**	**60**	**0**	**360**	**180**	**600**	**30**	**370**	**400**

SECOND YEAR

M. Optometry

SEMESTER-III

Code No.	Core Subjects
Discipline Specific Core Theory	
MOPTOM 115 T	Advanced Dispensing Optics
MOPTOM 116 T	Specialty Contact Lenses
MOPTOM 117 T	Visual Perception, Neuroscience and Psychophysics
MOPTOM 118	Research Project/ Dissertation
Discipline Specific Core Practical	
MOPTOM 119 P	Advanced Dispensing Optics
MOPTOM 120 P	Specialty Contact Lenses
MOPTOM 121 CP	MOPTOM Directed Clinical Education-III

Name of the Program	**M. Optometry**
Semester	**Semester III**
Name of the Subject	**Advanced Dispensing Optics**
Subject Code	**MOPTOM 115 T**

Course Outcome	• Apply knowledge of ophthalmic lens materials, designs, coatings, and their optical performance. • Understand, recommend special lenses design and evaluate frame styles, ergonomics, and eye wear suitability as per patient's requirement. • Have a thorough understandings and interpretation of industry standards, quality control of lenses and frame.

Sr. No.	Topics	No. of Hrs.
1	Introduction to advanced dispensing	**1**
2	Facial anatomy and frame fitting Special measurements for fitting special lenses – single vision, bifocal, prisms, multifocal Types of Human faces and cosmetic dispensing	**2**
3	International standardization for spectacle and guidelines for safety standards for spectacles, industrial safety wear	**2**
4	Special lenses: Lenses for use under water, recumbent prisms, Fresnel lenses, Fresnel prisms, Chavasse lenses, Frosted lenses, Lenses for occlusion, Trigeminal spectacles, Ptosis spectacles, Adaptive lenses Occupational multifocal/bifocal lenses.	**6**
5	Prescribing for low vision	**4**
6	Functional dispensing – according to various age groups and occupations	**4**
7	Dispensing counter organization	**1**
8	Special purpose frames and accessories – Swimming goggles spectacles, safety goggles, masks, recumbent spectacles, Special purpose frames for specific sports etc.	**10**
Total		**30 hrs.**

Name of the Program	**M. Optometry**
Semester	**Semester III**
Name of the Subject	**Advanced Dispensing Optics**
Subject Code	**MOPTOM 119 P**

Course Outcome	• Demonstrate skills in verifying lens power, axis, and quality using lensometers and other tools. • Perform accurate facial measurements and be able to select and adjust frames for optimal fit and comfort. • Demonstrate dispensing of special lenses eg: bifocals, occupational, progressive, prism, safety.

Sr. No.	Topics	No. of Hrs.
1	Lens Verification – Lensometer, Thickness gauge, Lens Marking, Centration	**5**
2	Facial and other measurements for occupational and functional spectacles	**5**
3	Occupational and special functional use single vision and Bifocal measurements and dispensing	**3**
4	Occupational and special functional use Progressive lens measurements and dispensing	**4**
5	Dispensing prisms	**2**
6	Frame adjustments and modifications	**4**
7	Spotting of lens, Blocking of lens, Edging – Pattern less Edger	**4**
8	Guest lectures a. Company representatives and independent practitioners	**3**
Total		**30 hrs.**

Reference books:

- Jalie MO: Ophthalmic lens and Dispensing, 3rd edition, Butterworth –Heinemann, 2008
- Troy E. Fannin, Theodore Grosvenor: Clinical Optics, 2nd edition, Butterworth – Heinemann, 1996
- C W Brooks, IM Borish: System for Ophthalmic Dispensing, 3rdedition, Butterworth - Heinemann, 2007
- Michael P Keating: Geometric, Physical & Visual Optics, 2nd edition, Butterworth – Heinemann, 2002

Name of the Program	**M. Optometry**
Semester	**Semester III**
Name of the Course	**Specialty Contact Lenses**
Course Code	**MOPTOM 116 T**

Course Outcome	• Demonstrate understanding of advanced contact lens designs, their application and patient selection. • Thorough understanding of ocular anatomy and physiology for specialty lens fittings. • Identify, explain, and manage complications related to contact lens wear, and have a better understanding of contact lens care & maintenance. • Demonstrate awareness of evidence-based practices, recent advancements, and legal considerations in contact lens care.

Sr. No.	Topics	No. of Hrs.
1	Introduction to corneal irregularities (keratoconus, pellucid marginal degeneration, post-keratoplasty corneas, post-LASIK ectasia) & Management Using Contact Lens Modalities	**4**
2	**Scleral contact lenses:** Types - mini-scleral, semi-scleral, corneo-scleral, full scleral, Fitting philosophies, Indications, Care & Maintenance, Complications & Management	**4**
3	**Orthokeratology:** Principle, Lens design, material selection, and fitting procedures, Care & Maintenance**,** Complications & Management**,** Clinical follow-up protocols	**4**
4	**Myopia control and contact lens**: Epidemiology of myopia progression, Contact lens strategies: orthokeratology, dual-focus/multifocal soft lenses, Evidence-based outcomes and limitations.	**4**
5	**Rose K lens**: History and design evolution, Rose K lens series, Fitting guidelines: base curve selection, edge lift modifications, Care & Maintenance, Complications & Management.	**4**
6	**Hybrid Contact Lenses:** Design & fitting, Indications, Care & maintenance	**4**
7	Recent development in contact lens practice	**2**
8	Evidence based practice in contact lens	**2**
9	Legal issues and contact lenses	**2**
Total		**30 hrs.**

Name of the Program	**M. Optometry**
Semester	**Semester III**
Name of the Course	**Specialty Contact Lenses**
Course Code	**MOPTOM 120 P**

Course Outcome	• Able to fit specialty contact lenses and assess lens performance. • Educate patients on lens handling, hygiene and effectively manage lens complications.

Sr. No.	Topics	No. of Hrs.
1	Slit lamp examination & Keratometry	5
2	Corneal topography: Procedure & Interpretation	5
3	Scleral lens insertion & removal techniques, Evaluation of fitting using fluorescein & OCT images, Care & maintenance, troubleshooting complications	5
4	Ortho K lens insertion & removal techniques, Evaluation of fit, Care & maintenance, troubleshooting complications	5
5	Rose K Lens: insertion & removal techniques, Evaluation of fit, Care & maintenance, troubleshooting complications	5
6	Hybrid Contact Lenses: Lens design & fitting demonstration, Insertion & removal, fitting assessment.	5
Total		**30 hrs.**

Reference books:

- New IAECL modules (Vol. 1 to 5) by International Association of Contact Lens Educators, Australia
- Contact Lens practice- Nathan Efron
- Clinical Contact Lens Practice- Edward. S. Bennet, Barry, A. Weissman
- Contact Lenses- Anthony J. Phillips, Lynne Speedwell
- Contact Lenses- Anthony. J. Philips, Janet Stone
- Contact Lens Complications- Nathan Efron

Name of the Program	**M. Optometry**
Semester	**Semester III**
Name of the Subject	**Visual Perception, Neuroscience and Psychophysics**
Subject Code	**MOPTOM 117 T**

Course Outcome	• Develop a comprehensive understanding of the neural mechanisms underlying vision and the coordinated development of the eye and brain. • Demonstrate understanding regarding the psychophysical visual performance evaluation. • Analyse perceptual processes and apply neuroscience research findings to clinical optometry.

Sr. No.	Topic	No. of Hrs.
1	**Visual Perception:** Introduction to perception, Physiology of perception, visual receptive component, visual-cognitive component, Perceiving objects and scenes (Light, Brightness, Colour, Form, Motion, Depth and Size).	10
2	**Neurosciences: -** Introduction to Neuroscience, Biophysics of the Neuron, Action Potentials & Synaptic Transmission, Neuroanatomy of the brain, Neurochemistry of the brain, Introduction to Visual Neuroscience, Retinal Processing, Visual Pathway, Subcortical Pathways, Primary Visual Cortex (V1), Higher Visual Cortical Areas, Extra striate cortical pathways, Eye Movements & Neural Control, Disorders of Visual Neuroscience (Visual Pathway Disorders, Cortical Visual Impairment, Acquired Brain Injury, Visual Processing Disorders, Visual Agnosia). **Applications:** Neural prosthetics for vision (bionic eye), optogenetics in retinal therapy, AI models of visual processing.	30
3	**Psychophysics:** Introduction to Psychophysics**,** Sensation & Perception in Vision, Classical Methods, Signal Detection Theory (SDT), Modern Psychophysical Methods. **Applications:** Visual Acuity, Contrast Sensitivity, Color Vision, Depth & Binocular Vision, Light & Dark Adaptation, Motion Perception & Visual Fields, Low Vision & Special Populations.	20
Total		**60 hrs.**

Reference Books:

- Sensation and Perception by Bruce Goldstein
- Visual Perception a clinical orientation by Steven Schwartz
- Visual Neuroscience (Vol. I and II) by Leo Chalupa and Warner

Name of the Program	**M. Optometry**
Semester	**Semester III**
Name of the Subject	**Research Project/ Dissertation**
Subject Code	**MOPTOM 118**

Course Outcome	• Formulate a research problem with clearly defined objectives, conduct a critical literature review, design an appropriate methodology with suitable data tools, and prepare a proposal for ethical approval. • Systematically collect and Analyse data.

***The Dissertation work will begin from 3rd Semester, and will continue through the 4thSemester. (150 hrs.)**

Name of the Program	**M. Optometry**
Semester	**Semester III**
Name of the Subject	**MOPTOM Directed Clinical Education-III**
Subject Code	**MOPTOM 121 CP**

Course Outcome	• The primary focus is on developing students' clinical skills, diagnostic abilities, and patient care expertise through supervised training in the real-world clinical settings. Students should be able to demonstrate proficiency in comprehensive eye examinations, specialized optometric procedures, interpret clinical findings for formulating management strategies and to co-manage the conditions with a multidisciplinary approach utilizing critical decision making and problem-solving skills while exhibiting professional and ethical behavior in clinical settings**.**

Students will gain additional skills in clinical procedures, interaction with patients and professional personnel. Students will apply knowledge from clinical learning experience under the supervision of senior technologist Students are tested on intermediate clinical skills.
(Total: 225 hrs.)

SECOND YEAR

M. Optometry

SEMESTER-IV

Code No.	Core Subjects
Discipline Specific Core Theory	
MOPTOM 122 T	Applied Vision Therapy
Discipline Specific Core Practical	
MOPTOM 123 P	Applied Vision Therapy
MOPTOM 124 CP	MOPTOM Directed Clinical Education-IV
MOPTOM 118	Research Project/ Dissertation

Name of the Program	**M. Optometry**
Semester	**Semester IV**
Name of the Subject	**Applied Vision Therapy**
Subject Code	**MOPTOM 122 T**

Course Outcome	• Well versed with the principles, models, and concept of vision therapy. • Demonstrate understanding regarding, relationship between various binocular conditions and visual skills, performance indicator, Sensory Integration and Sensory Motor integration. • Able to apply evidence-based practices, management strategies, and standardized protocols in vision therapy for various conditions.

Sr. No.	Topic	No. of Hrs.
1	**Introduction to Vision Therapy:** Definition, Scope, Goals, Principles and Models of vision therapy, Evidence-based practice, Patient selection, and Indications.	4
2	**Basic Concepts:** Visual development, neuroplasticity, Intersensory and Sensorimotor Integration, Influence of Refractive conditions, accommodation, vergence, and oculomotor systems on visual skills.	6
3	**Performance Indicators in Vision Therapy:** Symptom-Based Indicators, Clinical Test Indicators, Functional/Behavioral Indicators, Quality-of-Life Indicators.	4
4	**Assessment and Diagnosis:** Case history and symptom analysis (CISS, VDQ, BVDQ,) Clinical evaluation of binocular vision, accommodation, oculomotor, and perceptual skills, Interpretation of findings for therapy planning.	8
5	**Vision Therapy for Functional Disorders:** Accommodative dysfunctions, Vergence dysfunctions, Oculomotor dysfunctions, Amblyopia management, Strabismus management	12
6	**Vision Therapy for Perceptual and Cognitive Skills:** Laterality and directionality Visual memory, sequential memory, visualization, Spatial awareness, and form perception/analysis, Visual-motor integration, gross and fine motor skills, Visual speed, span, sequencing, and academic relevance	12
7	**Special Applications and Interdisciplinary Aspects:** Vision therapy in paediatrics and learning-related vision problems, **Behavioural vision therapy (ADHD & Autism)** Sports vision enhancement, Vision therapy in acquired brain injury and rehabilitation, Interdisciplinary care (optometrist–OT–neurologist–educator collaboration)	6
8	**Therapy Approaches and Planning:** Conventional orthoptics and behavioural vision therapy approaches, Therapy tools: manual, optical, computerized systems, In-office vs. home-based therapy, Structuring therapy sessions, progression, and modification, Monitoring progress, documentation, and reporting	8
Total		**60 hrs.**

Name of the Program	**M. Optometry**
Semester	**Semester IV**
Name of the Subject	**Applied Vision Therapy**
Subject Code	**MOPTOM 123 P**

Course Outcome	• Perform diagnostic tests for various non strabismic binocular vision dysfunction. • Able to formulate and conduct assessment for diagnosis of special conditions. • Design and conduct vision therapy programs, and maintain record, monitor, and interpret therapy outcomes.

Sr. No.	Topic	No. of Hrs.
1	**Clinical Work-up:** Detailed history-taking for vision therapy cases, Administration of questionnaires (CISS, VDQ, BVDQ), Binocular vision assessment, Accommodative evaluation, Vergence Evaluation, Oculomotor testing Visual perceptual assessment.	8
2	**Therapy Techniques:** Accommodation Training, Vergence Training, Oculomotor Training, Amblyopia Therapy, Perceptual and Cognitive Training, Functional Training, Sports Vision Training.	12
3	**Therapy Planning & Documentation:** Preparing individualized therapy protocols, Structuring in-office and home-based therapy plans, Patient motivation and communication techniques, Progress monitoring and therapy adaptation, Documentation, reporting, and case presentations.	5
4	**Clinical Exposure:** Observation of real therapy sessions, Supervised hands-on management of patients.	5
Total		**30 hrs.**

Reference Books:

- Clinical Management of Binocular Vision: Heterophoric, Accommodative, and Eye Movement Disorders- Mitchell Scheiman, Bruce Wick
- Applied concepts in vision therapy: Leonard J Press
- Pediatric Optometry - William Harvey, Bernard Gilmartin
- Pickwell's Binocular Vision Anomalies- Bruce JW Evans
- Binocular Vision and Ocular Motility: Theory and Management of Strabismus -Gunter K. Von Noorden
- Optometric Management of Learning-related Vision Problems - Mitchell Scheiman, Michael W. Rouse
- Sports Vision. Vision care for the enhancement of sports performance: Graham Erickson
- Clinical Orthoptics – Dr. Fiona Rowe

Name of the Program	**M. Optometry**
Semester	**Semester IV**
Name of the Subject	**MOPTOM Directed Clinical Education-IV**
Subject Code	**MOPTOM 124 CP**

Course Outcome	• The primary focus is on developing students' clinical skills, diagnostic abilities, and patient care expertise through supervised training in the real-world clinical settings. Students should be able to demonstrate proficiency in comprehensive eye examinations, specialized optometric procedures, interpret clinical findings for formulating management strategies and to co-manage the conditions with a multidisciplinary approach utilizing critical decision making and problem-solving skills while exhibiting professional and ethical behavior in clinical settings.

Students will gain additional skills in clinical procedures, interaction with patients and professional personnel. Students will apply knowledge from clinical learning experience under the supervision of senior technologist Students are tested on intermediate clinical skills.
(Total: 180 hrs.)

Name of the Program	**M. Optometry**
Semester	**Semester IV**
Name of the Subject	**Research Project/ Dissertation**
Subject Code	**MOPTOM 118**

Course Outcome	• Collect and Analyse research data with appropriate statistical methods and interpret results. • Able to prepare a structured dissertation with critical discussion and defend findings in viva-voce/presentation.

The Dissertation work will begin from 3rdSemester and will continue through the 4thSemester. (330 hrs)

1. Dissertation/Project work should be carried out as an individual Dissertation and actual bench work.
2. The students will carry independent project work under the supervision of the staff of Department on an advanced topic assigned to him/her. In house projects are encouraged. Students may be allowed to carry out the project work in other Departmental laboratories /Research institutes /Industries as per the availability of Infrastructure.
3. Co guides from the other institutions may be allowed.
4. The Dissertation/Project work will begin from 3rd Semester, and will continue through the 4th Semester.
5. The Dissertation/Project report (also work book shall be presented at the time of presentation and viva voce) will be submitted at the end of the 4th Semester and evaluated.
6. Five copies of the project report shall be submitted to the Director, SBS.
7. For the conduct of the End Semester Examination and evaluation of Dissertation/Project work the University will appoint External Examiners.
8. Since the dissertation is by research, Dissertation/Project work carries a total of 250 marks and evaluation will be carried out by both internal and external evaluators.
9. The student has to defend his/her Dissertation/Project Work in a seminar which will be evaluated by a internal and external experts appointed by the University.
10. The assignment of marks for Project/Dissertation is as follows:
    Part I-
    Topic Selection, Review of Literature, Novelty of works-50 marks
    Part-II-
    a. Continuous Internal Assessment, Novelty, Overall Lab Work Culture - 100 Marks
    b. Dissertation/Project work book: 50 Marks
    c. Viva-Voce: 50 Marks

Scheme of University Examination Theory for PG Program:

General structure / patterns for setting up question papers for Theory / Practical courses, their evaluation weightages for PG programs of MGMSBS are given in the following tables

Marks scheme for the University exam:

Final theory marks will be 100 marks (80 marks University Theory exam + 20 Marks Internal assessment).

Question		Marks distribution	Marks allotted per section	Marks
Sec: A	MCQ	10 x 1 M = 10	10	10
Sec: B	SAQ	3/4x 5 M = 15	15	35
Sec: B	LAQ	2/3 x 10 M = 10	20	
Sec: C	SAQ	3/4x 5 M = 15	15	35
Sec: C	LAQ	2/3x 10 M = 10	20	
Total				**80 Marks**

Practical exam pattern: Total 40 marks with following breakup:

Exercise	Description	Marks
Q No 1	Practical exercise - 1	1 x15=15 M
Q No 2	Station exercise	2x5M=10 M
Q No 3	VIVA	10 M
Q No 4	Journal	5M
Total		**40 Marks**

Practical to be conducted at respective departments and marks submitted jointly by the parent department to the university.

Breakup of theory IA calculation for 20 marks

Description	Marks
Internal exam (at department)	15 marks
Seminar	5 marks
Total	**20 Marks**

Breakup of practical IA calculation:

Description	Marks
Internal exam (at department)	10 marks
Viva	5 marks
Journal	5 marks
Total	**20 Marks**

Note –20 marks to be converted to 10 marks weightage for submission to the university.

Model Checklist for Evaluation of the Clinical Directed Posting (PG)

Name of the student: _____Date:_____
Program: _____
Semester: _____ Name of the internal faculty/Observer: _____
Name of the External Faculty/Observer:_____

Core Competencies	Marks allotted	Marks obtained
Students will begin to develop critical thinking abilities utilizing the allied health personnel roles of communicator and caregiver. Students will learn principles of professional allied health personnel practice and provide direct care to individuals within a medical surgical setting while recognizing the diverse uniqueness of individuals with health alterations.		
Clinical Teaching		
a. Demonstrate beginning competency in technical skills.	10	
Independent Work by Student guided by faculty		
a. Develop effective communication skills (verbally and through charting) with patients, team members, and family	2.5	
b. Identify intra and inter-professional team member roles and scopes of practice. Establish appropriate relationships with team members.	2.5	
Hands on practical work by students		
a. Protect confidentiality of electronic/manual health records data, information, and knowledge of technology in an ethical manner	05	
Independent work by student		
a. Demonstrate expected behaviors and complete tasks in a timely manner. Arrive to clinical experiences at assigned times. Maintain professional behavior and appearance.	05	
Log book	10	
Viva	10	
Attendance	05	
Total	**50 Marks**	

Sign of Internal Examiner: _____
Sign of External Examiner: _____

Evaluation for Semester III – Dissertation (PG) (Internal Assessment)

Dissertation/Project Proposal : overall performance of the student	**Marks allotted**	**Marks Obtained**
Open mindedness/ Receptivity to feedback Integrates feedback	5 Marks	
Meets deadlines / Regularity in meeting / Consistency in communication	10 Marks	
Continuous Internal evaluation (CIE)		
Interest shown in selecting topic	5 marks	
Appropriate review	10 marks	
Discussion with guide and other faculty	10 marks	
Quality of protocol	5marks	
Preparation of proforma / log book / daily reports	5marks	
TOTAL	**Out of 50**	

Evaluation for Semester IV - Evaluation parameter (Research Project / Dissertation)

Evaluation parameter (Semester IV)	Continuous Internal Evaluation (CIE)	Semester End Evaluation (SEE)	
	Guide	Internal examiner	External examiner
Thesis preparation, Novelty, Overall Lab Work Culture	25	-	-
Dissertation/Project work book	25	25	25
Evaluation of thesis including Viva Voce	-	50	50
Total	50	75	75
Overall Total = 200			

MGM INSTITUTE OF HEALTH SCIENCES

(Deemed to be University u/s 3 of UGC Act, 1956)

Grade 'A' Accredited by NAAC

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