



# MAHARASHTRA UNIVERSITY OF HEALTH SCIENCES

REGIONAL CENTRE, AURANGABAD

DEPT. OF COMMUNITY  
OPHTHALMOLOGY

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INFORMATION BROCHURE

TWO YEAR CERTIFICATE COURSE IN  
**OPTOMETRY**

**IMPORTANT INFORMATION AT GLANCE**  
**TWO YEAR CERTIFICATE COURSE IN**  
**OPTOMETRY**

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- NOTE:-** 1) Day, Date & Time of Entrance Examination.  
2) Entrance Examination centre.  
3) Declaration of Result/Merit list.  
4) Date of Selection process (Counselling & Admissions).  
5) Venue of Selection Process (Counselling & Admissions etc will be inform separately).

**TWO YEAR CERTIFICATE COURSE IN**  
**OPTOMETRY**

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## **1) Introduction**

Optometry is a Para professional subject for primary eye care. It includes visual system check up required for refractive errors estimation. It also covers the production and supply of optical aids including spectacles, contact lenses.

Blindness is a major public health problem in India and according to WHO there are about 10 million blind and visually disabled, nearly 80% of the blindness can be prevented if there are adequate number vision care professionals for right to sight programme in India.

The programme would train several people working at Eye Care hospitals and canters. It would give them an opportunity to provide upgraded primary eye care services to needy people particularly in the community.

## **2) Aims & Objectives**

- A two year course designed to train students to assess patients' refractive error and prescribe spectacles and to perform ophthalmic diagnostic procedures.
- To prepare the students to assist the ophthalmologist in eye institutes, hospitals, primary eye care units.
- To enable students to estimate refractive errors and dispense glasses.
- To enable students to use common instruments in the out patients units and perform simple ophthalmic procedures.
- To enable students to participate in eye health promotion activities in the community.
- To enable the learners to teach optometry at school/college of optometry.
- To enable learners to conduct research in optometry field.
- To enable students to produce and select appropriate optical aids including spectacles

### **3) Eligibility**

- The candidate should have passed class 12 examination of CBSE or equivalent examination with physics, chemistry, and biology with at least 45% marks in the aggregate.

### **4) Duration**

The course is of two years (four semesters) duration full time.

**5) Language of Course**            English

**6) Total Number of Seats**    : 30 per year.

(Reservations as per State Government Rules.)

**7) Nature of Course**            Optometry , Full time course.

**8) Fee Structure**                    Rs. 15,000/- per Semester.

(For 4 semester Rs .60, 000)

### **1. Following attested photocopies are required to be submitted along with the application from:**

1. Nationality Certificate OR Valid Passport
2. SSC Board Certificate (Certificate of age).
3. HSC Mark sheet.
4. Equivalence Certificate from A.I.U. for NRI (if applicable)
5. Physical fitness Certificate.
6. Bonafide Certificate from Dean/Principle of the college  
(if applicable) OR Gap affidavit on stamp paper of Rs. 20/-
7. College leaving Certificate (Transfer Certificate)
8. Certificate of additional Qualifications.
9. Affidavit for change of Name (Marriage Certificate/copy of Govt. Gazette if applicable)
10. Caste Certificate.

11. Caste Validity Certificate.
12. Creamy layer Certificate.
13. Migration Certificate issued by respective Board/University (if applicable).

1	Exam Fee	1,000/-
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- **Student will have to pay examination fees and any other fees applicable as per the latest changes made by MUHS.**

**9) Refund of the Fees:- (Subject No.94/2007)**

- The Student who taken admission to the “Two Year Certificate Course in optometry ” the fee should be deducted as per following act (MUHS Act No. 94/2007)

Sr.No.	Period of Cancellation	Permissible Deductions
1.	Within 15 days from the date of admission	10,000/-
2.	Within 30 days from the date of admission	5,000/-
3.	After 30 days from the date of admission	No refund

**10) Application form & Information Brochure**

1) Information Brochure along with blank Application form is available on the University Website([WWW.Muhsnashik.com](http://WWW.Muhsnashik.com)). The candidates are requested to download the application form and send it along with a D.D. of Rs. 500/- per in favor of “Registrar MUHS, Nashik”. D.D. should be drawn on any Branch of Nationalized Bank Payable at Nashik. The envelop should be superscripted with “two year Certificate Course in optometry”.

2) The application form must be filled by the candidate in his/her own handwriting using black ball point pen and submit it own or before last date of submission of the application forms on the following address.

**11) Scheme of Entrance Examination (Screening Test)**

**Syllabus & rules for Entrance Examination:-**

Multiple Choice questions shall be based on the General Knowledge related to health sciences.

- ❖ Students have to appear for objective type Entrance Examination.
- ❖ The Examination will be conducted at Nashik.
- ❖ Date of Examination, Time & Venue shall be informed on University website.
- ❖ Language of Entrance Examination shall be English.
- ❖ The Examination shall consist of common objective type question paper of 100 marks containing 50 questions, and duration of Examination shall be one hour.
- ❖ The candidate will be required mark the correct answer by black /blue ball point pan in the given objective question booklet .
- ❖ Each correct will be given two marks . there shall be no negative marking .
- ❖ Scratching , overwriting , multiple answerers will be considered as wrong answers and no marks will be allotted to them .

12 ) **Declaration of result / merit list :**

Merit list shall be prepared of only those candidate securing 50% or more marks in open category and 45% or more marks in reserve category .The merit list will displayed on the university website.

**Tie –Breaker :**

In case of equal mark in Common Entrance Test the following procedure shall be adopted for deciding the merit..

**First Level :** the candidate with more aggregate marks ( converted in to % up to two decimal points ) at HSC .

**Second Level :** if the tie still persists then an older candidate will be preferred over the young candidate .

### **13) Selection process :**

- The candidate will be called for interview as per category wise merit list
- Date of interview will be informed on the website.
- The allotment of seats shall be made to the successful candidate as per merit list .Merit list will be prepared in accordance with the State Govt. rules / norms .
- The candidate will not appear for the interview on the notified date in person his selection shall be considered as canceled and such candidate shall lose his seat.
- Eligibility of candidate will be finalized after verification of all original documents.
- The candidate is required to take admission within one week of issuing a letter of selection, he has to pay the fees as mentioned in point no. 8 .
- Seats that have been fallen vacant shall be filled in subsequent rounds and display on the notice board of university and the official web site.
- Decision of selection committee shall be final.

### **14) Disqualification for Admission :**

- A candidate who has already taken admission in to course in other subject or faculty will not be eligible for admission .
- Selected candidates who have cancelled there admission or do not take admission within stipulated period they shall not be eligible for admission in future .

### **15) Attendance :**

- 80 % attendance is compulsory failing which students will not allowed appearing for the examinations. Doctor certificate is necessary if absence is due to illness.

### **16) Accommodation :**

Students have to make their own residential arrangements when they are posted .

### **17) Conduct of Course:-**

- The Candidate admitted in this fulltime course shall have to remain in institute for full day.
- The candidate admitted in this course will not be allowed to work in any other institute or will not be allowed to work as a medical practitioner part/full time
- The student while studying in this course, if found indulging in antinational activities, unlawful activities or reigning in any form, will be label to expelled form the dept. by the competent authority.
- It is responsibility of each student to have proper documents.

### **18) Certificates**

After successful completion of the course, certificate shall be awarded by the Maharashtra University of Health Sciences, MUHS (Nashik)

“Two year certificate course in optometry ”.

### **19) Teaching Schedule, Modules and Evaluation:**

Semester wise theory and practical examination shall be conducted by the University Dept. in Community Ophthalmology at Regional Centre Aurangabad in each form six month

## **20) Academic Calendar of the course :**

SN	Subject	Theory	Practical Viva	Total
	<b>Year 1 ( 2 semester)</b>			
1.	Anatomy, Physiology and Biochemistry	100	80	180
2.	Optics and Refraction	100	80	180
3.	Common eye diseases	100	80	180
4.	Clinical optometry	100	80	180
	Project Work year 1			100
	<b>Year 2 ( 2 semester)</b>			
5.	Community Eye health	100	80	180
6.	Optometry profession and public relation	100	80	180
7.	Clinical Ophthalmic Techniques and dispensing optics	100	80	180
8.	Hospital procedure and health education, promotion	100	80	180
	Project Work for year 2			<b>100</b>
		<b>800</b>	<b>640</b>	
			<b>Total</b>	<b>1640</b>

N0. Of lecture hours (800hrs) + practical and Hospital visits and project 840 hours

Total hours = 1640 hrs.

## **21) Infrastructure**

Facilities Available

Hospital Training at attached hospital, Dispensing units & other units.

Teaching Staff at Dept. of Community Ophthalmology

- Director Professor 01
- Associate Professor 02
- Lecturer 01
- Medical Officer 01

- Ophthalmic Assistant 01
- Senior Research Officer 01
- Junior Research Officer 01

➤ Library Facility (Conventional)

## **22) Core Curriculum & Syllabus**

### **OPTOMETRY**

#### **I ANATOMY & PHISIOLOGY & BIOCHEMISTRY**

##### **1.1 : General Anatomy**

Parts of Body, its functions, tissue of body, general plan of organ system, cell structure and other anatomical aspects of vital organs of body.

##### **1.2 : General Physiology**

Cell physiology, Blood, Digestion, Excretion, Endocrines, Reproduction, Circulation, Nervous System and Special Senses.

##### **1.3 : Anatomy & Physiology of Eye**

Ocular Anatomy, Embryology of Sclera, Cornea, Urea, Retina, Visual pathway, Layers of Eye Ball, protective Mechanism in the Eye, Extra ocular Muscle, Physiology, Lens Metabolism, Visual Acuity, Visual pathway.

##### **1.4 : Basic Biochemistry, Pharmacology**

Hormones & Metabolic Regulation, Whole body metabolism, Ocular Biochemical aspects of the Eye. Biochemistry Techniques. Introduction of Carbohydrates, Protiens, Lipids, Enzymes, Minerals. Mechanisms of Drugs, principals of Ocular pharmacology, Optometric diagnostic drugs.

**1.5 : Pathology & Microbiology**

Pathological tests, Clinical pathology, staining, laboratory tests.  
Principles of Cultivation of Bacteria, Sterilization and Disinfection.

**1.6 : Functional English & Communication**

Grammar in Usage, Tenses, Prepositions, Phrasal Verbs,  
Communication, Process of Communication.

**OPTICS**

**2.1 : Geometric Optics**

Fibre optics, colour theory, lens power, visual acuity, magnification,  
refractive index of lenses, prismatic power.

**2.2 : Optometric Optics**

Form of lenses, Base Curves, Lens Tools and Blanks, Cylindrical  
lenses, Determining lens power, Absorptive lenses.

Types of spectacle frames and lenses, toric glasses, Bifocal and  
Multifocal lenses. Tinted lenses, safety and industrial eye Protective lenses,  
Spectacle magnifiers.

**2.3 : Visual Optics**

Refractive conditions, far and near points of accommodation,  
Refractive anomalies and their cause. Retinoscopy, principles and methods,  
Objective and subjective methods, effective power of spectacle.

**2.4 : Dispensing Optics**

Surfacing & Polishing , Dispensing, lens, faults inspection, marking and edging of Bifocal lenses, Selection of frames. IPD measurement.

**2.5 : Optometric Instruction**

Refractive Instruments, Lensometer, Retinoscope, Optometers Ophthalmoscope, Slit lamp, Tonometer, Keratometer, Colour vision, Vision Testing instruments, Refractometer.

**2.6 : Computer Programming**

Introduction and use of computer, use of computer in ophthalmic and optometry sciences. Management and handling and problem solving.

**2.7 : Basic Mathematic**

Basic formulas and calculations. For optometric purpose.

**3.1 : Low Vision Aids**

Identifying and evaluation of low vision patients, refraction and optical and low vision Aids, low vision care and rehabilitation case management and diagnostic procedures in low vision, low vision aids and their use Orthoptic Exercises.

**3.2 : Nutrition**

Energy, carbohydrates, proteins, fats, vitamins, Role of Nutrition for Eye Disorders.

**3.3 : Clinical Examination of Visual System**

Visual acuity testing, IOP, Ophthalmoscopy, Examination of Lacrimal system, orbit, macular function test, visual field testing.

**3.4 : Vision Testing Procedures**

Testing of distant Vision, Near Vision, Color Vision, Field Vision, Diagnostic Procedures and use of Instrument in Refractive Error.

## **CLINICAL OPTOMETRY**

**4.1 : Refractive Errors and Its Correction**

Diagnosis of Myopia, Hyermetropia, Aphakia, Astigmatism and its correction.

**4.2 : Ocular Eye Disease's**

Diseases of Eye Lids, Lacrimal system, Orbit, Sclera, Conjunctiva and Cornea, Urea, Vitroretinal disorders, Cataract, Glaucoma, Trauma, Neuro Ophthalmic Disorders.

**4.3 : Contact Lenses**

History and Development, Types of Contact Lenses, Fitting of contact lenses, disposable contact lenses, specility of contact lens, complications of contact lenses.

**4.4 : Optometry Clinics**

Optometry clinics, Instruments for optometry clinics, Setup and management of clinic, avoidable and non-avoidable blindness.

**4.5 : Common Eye Infection and Their Prevention and Control**

Common Eye diseases and their management, common eye infection that lead to visual impairment . Screening and prevention of blindness and visual impairment, Role of optometrist for prevention of avoidable blindness.

**4.6 : Systemic Diseases**

Diabetes, hypertension, Acquired heart disease, thyroid disorders, General Medical Emergencies, Infective and Non-infective disease.

**4.7 : Minor Surgical procedures**

Installation of eye drops and Subconjunctival Injection, fermentation, Errigation, Epliation, Syringing.

**COMMUNITY EYE HEALTH**

**5.1 : Community Needs Assessment for Planning Eye Care Delivery**

Project planning, surveys, data collection, estimate the community need for eye care services for planning eye care service delivery, national programme for control of blindness and its pattern of working.

**5.2 : Health Promotion & Education in Community Eye Health**

Principles of planning and Managing Eye Care Programme for control of blindness. Community needs and assessment. Eye care education, health education methods and tools. Role of optometrists for eye care education.

**5.3 : Planning & Management of Eye Care Delivery**

Programme planning for vision screening camps, school Eye screening camps, Community Eye Health Education programmes, NPCB programme and its working, vision 2020 programme, national & international agencies working for Blindness Control project.

Role of vision care Specialists in vision 2020 for Refractive Error & Management of Eye Camps.

**5.4 : Hospital Procedures & management of Community Eye Care Camps**

Funds, Administration, Correspondence, Accounts, Reception, Use, of Computers, management of Eye Camps, management of Community Eye Care Camps, dark Rooms, Refraction Set up, etc. publicity of Eye Care Camps, Involvement of community for eye care camps.

**5.5 : Prevention & Control of Visual Impairment**

Prevention and control of visual impairment in children and adults, common eye infection factors responsible for blindness, causes and control of common Eye infection that lead to visual impairment and blindness.

**5.6 : public Health & community Optometry**

Philosophy of public Health, Epidemiology, Health Care System, Health & Vision Care, Vision 2020, Blindness Control programme, population, Based surveys, Importance of visual Impairment due to Refractive Error, screening for refractive Errors in Communities, Low vision and blind persons and its rehabilitation.  
Role of primary Eye care professionals in “vision-2020”.

**METRY PROFESSION AND PUBLIC RELATION**

**6.1 : Medical Psychology**

Definition, Motivation, Normality & Abnormality, Impact of Eye Disease on the Community, Rehabilitation of the Blind.

**6.2 : Occupational Optometry**

Occupational Diseases, safety, prevention, Hygiene, Occupational Health, Factories Act.

**6.3 : Low & Optometry**

Primary Eye care profession in India, Legal Techniques, Licensure, Ethics, Medical Practice Laws, Optometry profession in India and Abroad. Organization and Bodies in the field of optometry. Laws for medical & para-medical practices on India.

**6.4 : Basic Accountancy**

Basic Accountancy Registers, Principles, Ledger, Trial Balance, Cash Book, Sales & Purchase Registers, Bank Reconciliation, Balance Sheet, Income Tax, Sales Tax.

**6.5 : Public Relation**

Definition, Public tools, public relation with press, Audio-visual communication, Definition and process of communication, types of communication. Writing for news papers, Radio, TV, public Relation with Employee, customer, community, welfare Agencies, Health Agencies, Hospitals, Institutes. Public Relation and publicity tools, for Community Eye Camps publicity Techniques.

## **PRACTICALS ON-**

- Visual Acuity.
- Near Vision.
- Colour Vision.
- Central, peripheral.
- Identification of Lenses, Spherical, Cylindrical, Prism, Neutralization.
- Lensometry.
- Ratinoscopy.
- Subjective verification, Aphakia, Children, Presbiopia.
- Measurement of verification of IPD.
- Transportation of lens.
- Common Eye Disease prevention and recognition.
- Trachoma, corneal Ulcer, Conjunctivities, Red Eyes, Eye signs in malnutrition, Glaucoma, cataract, Squints.
- Tonometry.
- Nursing Care, Minor surgical procedures, Care of Ophthalmic Equipments.
- Every Student will trained with demonstration and maintain a practical note book.

### **23) Nomenclature of Papers & Marks**

**General Exam Structure for Diploma in optometry :**

#### **GENERAL EXAM STRUCTURE FOR DIPLOMA IN OPTOMETRY**

SN	Subject	Theory	Practical Viva	Total
	<b>Year 1</b>			
1.	Anatomy, Physiology and Biochemistry	100	100	200
2.	Optics and Refraction	100	100	200
3.	Common eye diseases	100	100	200
4.	Clinical optometry	100	100	200
	Project Work for year 1			100
	<b>Year 2</b>			
5.	Community Eye health	100	100	200
6.	Optometry profession and public relation	100	100	200
7.	Clinical Ophthalmic Techniques and dispensing optics	100	100	200

8.	Hospital procedure and health education, promotion	100	100	200
	Project Work for year 2			<b>100</b>
			<b>Total</b>	<b>1800</b>

#### **24) Examination Scheme**

Two year certificate in optometry will be conferred to a participant who succeeds in University Examination by obtaining 40% marks in each heading.

- a) Written Examination (four papers 100 marks for each paper (Total marks 400) for each year for two semester.
- b) Practical Examination + Oral = 400
- c) Project Work will start at the end of the second and fourth semester.(200 marks)

#### **PASSING CRITERIA**

	Theory		Practical		Work Book
	Objective	Descriptive	Practical	Viva	
Distribution Marks	50% Questions	50% Questions	70% Questions	30 Questions	
Passing	40%	40%			
Aggregate	50%		60%		50%

## **25) Future Prospects**

This course will help the candidate to develop career and choice in future in view of vision 2020 'right to sight' , National blindness control project, The Government of Maharashtra urgently require vision care professionals to develop "vision centers" in rural and urban area for the Hospitals, Dispensaries and Primary Health Centers functioning in State of Maharashtra. It is necessary to make available trained professionals to provide to these centers. Candidates will have an excellent opportunity to acquire a **University Certificate** which will provide a platform to step into the optometry world or enter into the field of National or International research or work in private or NGO eye care centers.

## **26) Future Plans**

In coming years, community ophthalmology is a planning to start following courses

- 1) Bachelor degree course in ophthalmic science.
- 2) PG Course in community ophthalmology.
- 3) Ph.D in community ophthalmology.

## **27) Reference Books**

<b>Name of Books</b>	<b>Author</b>
1) Pediatric Ophthalmology	Harly (vol-I & II)
2) Atlas Disease of the Eye	Parkins
3) Fundamentals of Ophthalmology	Kirwani
4) Clinical Refraction	Borish
5) Cosmetic Contact Lens & Artificial eyes	Kumar & Krishna
6) Strabismus	Rinke, Millon
7) Clinical Low Vision	Eleanor
8) Ophthalmic Diagnostic Procedures	Nima
9) Contact lenses	Jamct Stones
10) The Human Eye in Anatomical Tranpencies	Peter
11) Principles & Practice of Community Ophthalmology	Dr. Murthy
12) Anatomy of Orbit	Cowell Brard

13) Microbiology of the Eye	Led Suie
14) Low Vision	Monica Choudhary
15) Contact Lenses	Monica Choudhary
16) Practice of Refractions	Dake Elders
17) Modern Ophthalmology	L.C. Datta
18) Blindness Survey	IAPB
19) Practical Orthoptics in treatment of squint	Kelthlise
20) Management of Ocular Injures	Paton & Goldbarg
21) Eye & Systemic diseases	Frederick & Mausoi
22) Parson's diseases of the Eye	Miller
23) Ophthalmic Pathology atlas	Hogan
24) Basic Eye Surgery	Galbrath
25) Current Concepts in Ophthalmology	Kekaoman
26) Optics & Refractions	L.P. Agrawal
27) Disease of the Eye	May & Ayrth
28) Principles of Optic & Refraction	Agarwal
29) Clinical Refraction & Visual Science	John levene
30) Ophthalmic of Management	ICEH, Landon
31) Microbiology of Eye	Ted Snie
32) Preventive & Social Medicine	Park (New Edition)
33) Pedratric Optometry	Elen
34) Primary Eye Care	WHO Publication
35) Health Eye Activity Books	ICEH Landon
36) Village Struggle for Eye Care	ICEH Landon
37) Communication Theory	Maquills

**Date:- 20-02-2008**

**Dr. V.D. Wangikar**

**(Director Professor)**

**MUHS, Regional Centre, Aurnagabad**

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