

**SHRI GOVIND GURU UNIVERSITY,
VINZOL(GODHRA)**



Faculty of Medical
Syllabus for
Bachelor of Optometry

F.Y B.OPTOM

1. (OCULAR)ANATOMY & PHYSIOLOGY

- ANATOMY OF EYE BALL
- ANATOMY OF EYELIDS & GLANDS
- ANATOMY OF CONJUNCTIVA
- ANATOMY CORNEA & SCLERA
- ANATOMY OF IRIS , CILIARY BODY & CHOROID .
- EXTRAOCULAR MUSCLES (EOM)
- LACRIMAL APPARATUS
- ANATOMY OF RETINA
- ANATOMY OF LENS & VITREOUS
- ANATOMY OF OPTIC NERVE
- OCULAR MOVEMENTS & BINOCULAR VISION
- PHYSIOLOGY OF EOM
- VISUAL ACQUITY & TESTING
- PHYSIOLOGY CORNEA & SCLERA
- LIGHT REFLEX ,ACCOMODATION & CONVERGENSE
- PHYSIOLOGYOF RETINA
- PHYSIOLOGY OF LENS & VITREOUS
- PHYSIOLOGY VISUAL PATHWAY

2.PHYSICAL OPTICS

- PROPERTIES OF LIGHT
- PRINCIPLES OF REFLECTION OF LIGHT
- PRINCIPLES OF REFRACTION OF LIGHT
- LAWS OF REFLECTION & REFRACTION
- SNELLEN'S LAW
- PROPAGATION OF LIGHT WAVES
- POLARIZATION
- LENSES & THERE COMBINATION
- POLARIZATION & CRYSTAL OPTICS
- DIFFRACTIONS
- I. LASERS
- DUAL NATURE OF LIGHT & WAVE VELOCITY
- VELOCITY OF LIGHT

3.GEOMETRICAL OPTICS

- MECHANISM OF LIGHT EMISSION
- LASERS
- HOLOGRAPHY
- FIBRE OPTICS
- NON-LINEAR OPTICS
- ATOM LASER
- WAVES AND WAVE PACKETS
- PROPOGATION OF LIGHT WAVES
- INTERFERENCE
- INTERFERENCE IN THIN FILMS
- COHERENCE
- FRESNEL DIFFRACTION
- FRAUNHOFFER DIFFRACTION
- RESOLVING POWER
- POLARISATION

4.EYE EXAMINATION

- SKULL
- FACE
- EYEBALL
- HEAD POSTURE
- EXAMINATION OF LID
- EXAMINATION OF CONJUNCTIVA
- EXAMINATION OF LACRIMAL APPARATUS
- EXAMINATION OF CORNEA
- EXAMINATION OF IRIS
- EXAMINATION OF AC
- EXAMINATION OF PUPIL
- EXAMINATION OF LENS
- EXAMINATION OF SCLERA

5.COMMUNITY OPHTHALMOLOGY

- IBLINDNESS & VISION IMPAIRMENT
- GLOBAL INITIATIVES FOR PREVENTION OF BLINDNESS 3
- NATIONAL PROGRAMME FOR CONTROL OF BLINDNESS IN INDIA
- ROLE OF EYE CAMPS IN PREVENTION OF BLINDNESS
- EYE BANKING
- REHABILITATION OF THE BLIND

S.Y B.OPTOM

1. *VISUAL OPTICS*

- OPTICS OF OCULAR STRUCTURE
- MEASUREMENT OF OPTICAL CONSTANTS OF THE EYE
- REFRACTIVE ANOMALIES AND THEIR CAUSES
- VISUAL ACQUITY
- COLOR VISION
- CONTRAST SENSITIVITY AND ITS TESTING
- REFRACTIVE CONDITION
- FAR AND NEAR POINT OF ACCOMODATION

2. *BASIC OPTICS*

- SPECTACLE FRAMES
- MEASUREMENT OF ASSORTED FACES FOR SPECTACLES
- MEASUREMENT OF IPD AND PUPILOMETER
- LENS INSERTION
- STANDARD ALLIGNMENT
- SPECTACLE LENSES
- LENS QUALITY

3. *OCULAR DISEASES 1 & 2*

- EYELIDS
- LACRIMAL SYSTEM
- SCLERA & EPISCLERA
- ORBIT
- CONJUNCTIVA
- CORNEA
- DEGENERATION AND DYSTROPHY
- CILIARY BODY AND PUPIL
- CHOROID
- LENS
- VITREOUS
- RETINA
- GLAUCOMA

4. PHARMACOLOGY AND NUTRITION

- GENERAL PHARMAC
- BASIC OF OCULAR PHARMAC
- ANTISEPTIC AND DISINFECTANTS
- CONTACT LENS SOLUTION
- ANTI-MICROBIAL AGENTS
- ANTI-INFLAMMATORY DRUGS
- MYDRIATICS AND CYCLOPLEGICS
- DRUGS FOR GLAUCOMA
- LOCAL ANESTHETICS
- DRUG THERAPY FOR SPECIFIC EYE DISEASE
- ARTIFICIAL TEARS AND LUBRICATING AGENTS
- CURRENT OPTOMETRY DRUGS IN USE
- OPTOMETRIC USE IN PHARMACEUTICALS

5. OPTICS AND REFRACTION

- VISUAL ACQUITY, CONTRAST SENSITIVITY & TEST FOR POTENTIAL VISION
- ERRORS OF REFRACTION AND BINOCULAR OPTICAL DEFECT
- ASTHENOPIA, ANOMALIES OF ACCOMODATION AND CONVERGENCE
- CLINICAL REFRACTION, DETERMINATION OF ERROR OF REFRACTION
- KERATOMETRY, CORNEAL TOPOGRAPHY & ABERROMETRY
- SPECTACLES, CONTACT LENS, REFRACTIVE SURGERY
- INTRA OCULAR LENSES, OPTICAL ASPECT AND POWER CALCULATION

6. OPERATION THEATRE

- OPEATION THEATRE TECHNIQUE
- ANASTHESIA FOR OCULAR SURGERY
- ESSENTIAL EQUIPMENT FOR OPHTHALMIC OPERATION THEATRE
- OPHTHALMIC INSTRUMENT
- ROLE OF OPTOMETRY IN OPERATION THEATRE AS AN OPHTHALMIC ASSISSTANT
- PREOPERATIVE CARE AND PREPARATION OF THE PATIENTS
- OPHTHALMIC SURGICAL DEVICES
- ANTISEPTIC FOR PREOPERATIVE PREPARATION OF SKIN AND HANDS
- COMMAN ANTISEPTIC USES IN OPERATION THEATRE
- STEPS FOR SURGICAL HAND WASH
- STERILIZATION & DISINFECTION
- FUMIGATION OF OPERATION THEATRE
- PROTECTIVE CLOTHING FOR USE IN OPERATING THEATRE

T.Y.B.OPTOM

1.BINOCULAR VISION & ORTOPTICS

BINOCULAR VISION

- BINOCULAR VISION
- BINOCULAR VISION
- BINOCULAR VISION & SPACE PERCEPTION
- GRADES OF BINOCULAR VISION
- STEREOPSIS
- DEVELOPMENTAL BINOCULAR VISION
- NEURAL ASPECTS OF BINOCULAR VISION
- VISUAL ACQUITY
- ANATOMY OF EOM
- PHYSIOLOGY OF OCULAR MOVEMENT
- FUNDAMENTAL LAWS OF OCULAR MOTILITY
- UNIOCLAR & BINOCULAR MOVEMENTS
- SENSORY ADAPTATION
- NEAR VISION COMPLEX
- CONVERGENCE
- PUPILLARY CONSTRICTION
- ABNORMALITIES OF BINOCULAR VISION FUNCTION

ORTOPTICS

- STRABISMUS
- DEVELOPMENT OF SQUINT OR OCULAR DEVIATION
- ORTHOPTIC INSTRUMENT & THRIE USES
- METHODS OF EXAMINATION
- ABNORMAL RETINAL CORRESPONDENCE(ARC)
- SUPPRRESION
- AMBLYOPIA & ECCENTRIC FIXATION
- LATENT STRABISMUS
- ESOTROPIA
- EXOTROPIA
- CYCLO-VERTICAL DEVIATION
- A & V PATTERN
- PARALYTIC SQUINT
- SPECIAL FORMS OF STRABISMUS
- NYSTAGMUS
- PRINCIPAI OF NON SURGICAL TREATMENT
- PRINCIPAI OF SURGICAL TREATMENT
- VISION TRAINING PROGRAM

2. MAJOR EYE DISEASES & SYSTEMIC DISEASES

MAJOR EYE DISEASES

- DISEASES OF CONJUCTIVA
- DISEASES OF CORNEA
- DISEASES OF SCLERA
- DISEASES OF UVEAL TRACT
- DISEASES OF LENS
- GLAUCOMA
- DISEASES OF VITREOUS
- DISEASES OF RETINA
- NEURO - OPHTHALMOLOGY
- OCULAR MOTILITY & STRABISMUS
- DISORDERS OF EYELIDS
- DISEASES OF LACRIMAL APPARATUS
- DISEASES OF ORBIT
- OCULAR INJURIES & MANAGEMENT

SYSTEMIC DISEASE

- MYASTHENIA GRAVIS
- LEPROSY
- HIV IN EYE
- VITAMIN A DEFICIENCY
- DIABETES & HYPERTENSION
- THYROID
- RHEUMATOID ARTHRITIS
- MARFAN SYNDROME
- ALBINISM
- WEILL MARCHESANI SYNDROME

3. CONTACT LENS I & II

CONTACT LENS I

- HISTORY OF CONTACT LENS
- RELATED ANATOMY & PHYSIOLOGY
- RELATED VISUAL OPTICS
- CONTACT LENS - MATERIAL, TERMINOLOGY, CLASSIFICATION & PROPERTIES
- OPTICS OF CONTACT LENS, COMPARISON SPECTACLES
- INDICATION & CONTRAINDICATION
- ADVANTAGES & DISADVANTAGES OF CONTACT LENS
- MANUFACTURING OF CONTACT LENS
- PRE FITTING EXAMINATION
- INSTRUMENTS USED FOR EXAMINATION.
- SPECIAL INVESTIGATION IN PRE FITTING
- KERATOMETRY & TOPOGRAPHY
- SLIT LAMP EXAMINATION
- FITTING RIGID CONTACT LENS
- METHODS OF ASSESSMENT OF CONTACT LENS FIT
- TYPES OF FIT - STEEP, FIT, OPTIMUM - ON SPHERICAL CORNEA
- TYPES OF FIT - STEEP, FIT, OPTIMUM - ON TORIC CORNEA WITH SPHERICAL LENS
- TYPES OF FIT - STEEP, FIT, OPTIMUM - ON TORIC CORNEA WITH TORIC LENS

- CONTACT LENS PARAMETERS
- CONTACT LENS SOLUTIONS
- TEACHING THE PATIENTS TO INSERT & REMOVAL OF CONTACT LENS
- HANDLING INSTRUCTION
- COMPLICATION OF RGP LENS WEAR
- CONTACT LENS DEPOSITS

CONTACT LENS II

- SOFT CONTACT LENS - MATERIAL, TERMINOLOGY, CLASSIFICATION & PROPERTIES
- MANUFACTURING OF SOFT CONTACT LENS
- SAFT CONTACT LENS - ADVANTAGES & DISADVANTGES
- FITTING SOFT CONTACT LENS
- METHODS OF ASSESSMENT OF SOFT CONTACT LENS FIT
- TYPES OF FIT- STEEP, FIT, OPTIMUM - ON SPHERICAL CORNEA
- TYPES OF FIT- STEEP, FIT, OPTIMUM - ON TORIC CORNEA WITH SPHERICAL LENS
- TYPES OF FIT- STEEP, FIT, OPTIMUM - ON TORIC CORNEA WITH TORIC LENS
- SOFT CONTACT LENS SOLUTION
- ORTHOKERATOLOGY & CORNEAL REFRACTIVE THERAPY
- SPECIAL CONSIDERATION FOR FITTING CONTACT LENSES-CHILDREN, IRREGULAR CORNEA, UNIOCLAR APHAKIA, SPORTS, ONE EYED, POST RK, POST PRK
- AFTER CARE AND FOLLOW UP
- COMPLICATION OF RGP LENS WEAR
- SCLERAL CONTACT LENS
- PROSTHETIC & THERAPEUTIC LENSES
- SILICON HYDROGELS
- PRACTICE MANAGEMENT OF CONTACT LENS
- SPECIAL SOFT CONTACT LENS - COSMETICS, DISPOSABLE TORIC ETC
- TEACHING THE PATIENTS TO INSERT & REMOVAL OF SOFT CONTACT LENS
- HANDLING OF SOFT CONTACT LENS

4. GERIATRIC, PEDIATRIC & LOW VISION AID

GERIATRIC OPTOMETRY

- FUNCTIONAL PERSPECTIVE OF AGING
- STRUCTURAL CHANGES OF EYE
- PATHOLOGICAL CHANGES OF EYE
- PHYSIOLOGICAL CHANGES OF EYE
- NUTRITION IN AGEING
- OPTICAL & REFRACTIVE CHANGES IN EYE
- APHAKIA, PSEUDOPHAKIA AND ITS CORRECTION
- AGE RELATED OCULAR DISEASE
- SPECIAL CONSIDERATION IN THE OPHTHALMIC DISPENSING TO THE ELDERLY
- MANAGEMENT OF VISUAL PROBLEMS OF AGING
- HOW TO CARRY ON ONE'S VISUAL TASK OVERCOMING THE PROBLEMS OF AGING.
- OCULAR IMPLICATION OF SYSTEMIC DISEASE IN ELDERLY

PEDIATRIC OPTOMETRY

- **FOR CHILDREN CL HISTORY-GENETIC FACTORS PRENATAL FACTORS & POST NATAL FACTORS**
- **NORMAL PRE NATAL DEVELOPMENT & EMBRYOLOGY**
- **TISSUE ORIGIN OF VARIOUS STRUCTURE OF THE EYE**
- **DELAYED DEVELOPMENT**
- **ANOMOLIES OF PRE NATAL & POST NATAL DEVELOPMENT**
- **GENETIC ORIGIN-ALBINISM, NYSTAGMUS, BUPHTHALMOS, MACULA DISORDERS, COLOUR DEFICIENCIES, COLOBOMA, CATARACT, ANIRIDIA, PUPIL DISPLACEMENT.**
- **NORMAL POSTNATAL DEVELOPMENT**
- **VISUAL ACQUITY IN CHILDREN -OBJECTIVE & SUBJECTIVE**
- **NORMAL APPEARANCE, PATHOLOGY & STRUCTURAL ANOMOLIES OF ORBIT, EYELIDS, LACRIMAL SYSTEM, CONJUNCTIVA, CORNEA, SCLERA, ANTERIOR CHAMBER, UVEAL TRACT, PUPIL, LENS, VITREOUS & FUNDUS**
- **OCULOMOTOR SYSTEM**
- **BINOCULAR VISION, STRABISMUS, HETEROPHORIA, AMBLYOPIA, FIXATION DISORDER, ARC, FUSIONAL & ACCOMODATIVE ANOMOLIES.**
- **SENSORY MOTOR ADAPTABILITY**
- **TREATMENTS OF REFRACTIVE ERRORS**
- **VISUAL AIDS & LVA.**

LOW VISION AIDS

- **DEFINITION & CLASSIFICATION OF LOW VISION**
- **EPIDEMIOLOGY OF LOW VISION**
- **IMPLICATION OF VISUAL IMPAIRMENT**
- **LOW VISION EXAMINATION**
- **SPECIALIZE TESTING IN LOW VISION**
- **SCANNING LASER OPHTHALMOSCOPE**
- **COMMON DISORDERS ENCOUNTERED IN LOW VISION**
- **MAGNIFICATION ASSOCIATION WITH LOW VISION SYSTEM**
- **LOW VISION DISTANCE SYSTEMS I - SPECTACLES & CONTACT LENS**
- **LOW VISION DISTANCE SYSTEMS II - TELESCOPES & TELEMICROSCOPE**
- **LOW VISION DISTANCE SYSTEMS I - MICROSCOPES & MAGNIFIERS**
- **LOW VISION DISTANCE SYSTEMS II - ELECTRONIC MAGNIFICATION SYSTEM**
- **REHABILITATION OF PERIPHERAL FIELD DEFECTS**
- **NON OPTICAL & ACCESSORY DEVICES**
- **COMPUTER ASSISTIVE TECHNOLOGY FOR LOW VISION PATIENTS**
- **DRIVING WITH LOW VISION**
- **PRACTICE MANAGEMENT**
- **RECENT ADVANCES IN LOW VISION AIDS**
- **LEGAL ASPECTS OF LOW VISION IN INDIA**
- **CASE STUDIES**

5.OCCUPATIONAL OPTOMETRY & SPORTS VISION

OCCUPATIONAL OPTOMERTY

- **INTRODUCTION TO OCCUPATIONAL HEALTH,HYGINE & SAFETY**
- **WHO RULES & REGULATION RELATED TO OCCUPATIONAL OPTOMETRY**
- **LABOUR INSTITUTES,NATIONAL INSTITUTE OF OCCUPATIONAL HEALTH,NATIONAL SAFETY COUNCIL**
- **OCCUPATIONAL DISEASE**
- **OCCUPATIONAL SAFETY**
- **OCULAR & VISUAL PROBLEMS OF OCCUPATION**
- **PPE**
- **STANDARDS & PROTOCOLS**
- **ROLES OF OPTOMETRIST**
- **PHILOSOPHY OF PUBLIC HEALTH**
- **HEALTH CARE SYSTEM**
- **MODES OF HEALT & VISION CARE DELIVERY**
- **LAW & OPTOMETRY**
- **VISIUAL REHABILITATION**
- **THERAPEUTIC APPROACH OF OPTOMETRY REHABILITATION**
- **OPTOMETRY REHABILITATION ASSESSMENT WITH ACTUAL CASE EXPOSURE & OBSERVATION**
- **OPTOMETRY REHABILITATION MANAGEMENT**

SPORTS VISION

- **PRINCIPLES OF VISION TRAINING**
- **VISION & SPORTS**
- **SPORTS TERMINOLOGIES**
- **SPORTS VISION EXAMINATION**
- **VISIUAL SKILLS DESCRIPTION & TRAINING PROCEDURE**
- **VISIUAL SKILLS IN SPORTS & DEVELOPMENT**
- **DESIGNING SPORTS VISION PROGRAMS**
- **SPORTS RELATED INJURIES & FIRST AIDS**