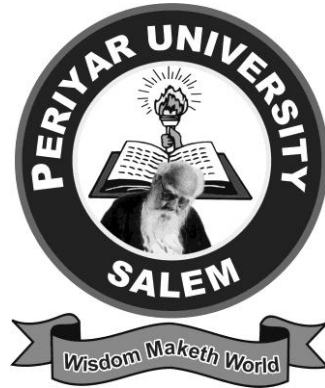


**PERIYAR UNIVERSITY  
SALEM**



**PERIYAR INSTITUTE OF DISTANCE EDUCATION**

**DIPLOMA IN REFRACTION OPTOMETRY TECHNOLOGY  
(2 YEARS)**

**SYLLABUS / REGULATIONS**

[Candidates admitted from 2007-2008 onwards]

## **Diploma in Refraction Optometry Technology (2 Years)**

**Eligibility:** +2 pass or with any degree

**Duration:** 2 years

### **First Year:**

<b>S.No</b>	<b>Subject</b>	<b>Duration</b>	<b>Theory</b>	<b>Practical</b>	<b>Total</b>
Paper 1	Anatomy and Physiology of the Eye	3 hrs	100		100
Paper 2	Basic Pharmacology & Micro Biology & Clinical pathology	3 hrs	100		100
Paper 3	Principles of Refraction	3 hrs	100		100
Paper 4	Ophthalmic Instruments	3 hrs	100		100

### **Second year**

<b>S.No</b>	<b>Subject</b>	<b>Duration</b>	<b>Theory</b>	<b>Practical</b>	<b>Total</b>
Paper 1	Clinical ophthalmology	3 hrs	100		100
Paper 2	Practical Refraction	3 hrs	100		100
Paper 3	Community Ophthalmology	3 hrs	100		100
Paper 4	Ophthalmic Nursing	3 hrs	100		100

# DETAILED SYLLABUS

## Paper 1

### Anatomy and Physiology of the Eye

**Unit** 1 *Basic Human Anatomy ~ Basic Human Physiology*

*Unit 1 Anatomy of the eye:*

- ~ Lids
- ~ Lacrimal Apparatus
- ~ Conjunctiva
- ~ Cornea
- ~ Sclera
- ~ Urea

*Unit 2*

- ~ Vitreous
- ~ Retina
- ~ Optic Nerve
- ~ Orbit
- ~ Visual Cortex

*Physiology of the Eye*

**Unit** 3

- ~ Tear Secretion
- ~ Maintenance of the IOP
- ~ Visual pathway
- ~ Color vision
- ~ Blindness

**Unit** 4

- ~ Visual acuity
- ~ Macular Function
- ~ Movements of the eye
- ~ Pupil

**Unit** 5

- ~ Accommodation
- ~ Binocular Vision

## **Paper 2**

### **Basic Pharmacology & Micro Biology & Clinical Pathology**

#### **Unit 1 : Pharmacology:**

- ~ Various methods of administration of drugs in ophthalmology
- ~ Topical Drugs used in ophthalmology
- ~ Mydriatics and miotics
- ~ Anesthetic Eye Drops

#### Unit 2

- ~ Systemic Drugs used in ophthalmology
- ~ Glaucoma Drugs
- ~ Lubricant eye Drops
- ~ Steroids
- ~ Visco elastics used in ophthalmology

#### **Micro Biology**

##### **Unit 3**

- ~ Introduction to various micro organisms
- ~ Bacteria
- ~ Virus
- ~ Fungi
- ~ Parasites

#### Unit 4

- ~ Roots of Infection
- ~ Anti septic / anti- biotic
- ~ Sterilization /disinfection

#### **Clinical Pathology**

##### **Unit 5**

- ~ Examination of Urine
- ~ Estimation of albumin/ sugar
- ~ Estimation of blood sugar
- ~ Blood and its components

## **Paper 3**

### **Principles of Refraction**

#### **Physical optics:**

##### **Unit 1**

- ~ Properties of light
- ~ Principles of reflection and refraction of light
- ~ Lenses and its combinations

#### **Physiological Optics:**

##### **Unit 2**

- ~ General concept of Eye as a refracting apparatus
- ~ Corneal and lenticular system

##### **Unit 3**

- ~ Optical resolution of the eye
- ~ Visual angle / Visual acuity
- ~ Aberrations of the eye

#### **Optometric optics:**

##### **Unit 4**

- ~ Trial lenses / Retinoscope / Snellen's Test letter chart
- ~ Visual acuity estimation

##### **Unit 5**

- ~ Errors Refractive
- ~ near Vision testing

## Paper 4

### Ophthalmic Instruments

#### Unit I

- ~ Trial Frames
- ~ Auto refractor
- ~ Lenso meter
- ~ Kerato meter

#### Unit II

- ~ Color vision chart
- ~ Fields estimation
- ~ peri meter ~ auto mated / Goldman's perimeter
- ~ A- B scans

#### Unit III Squint clinic (orthoptic Instruments)

- ~ Synoptophore
- ~ Maddox Wing / Rod
- ~ Tangent Scale
- ~ RAF ruler
- ~ Brims Bar/
- ~ Cover – uncover Testing

#### Unit IV Lasers

- ~ Red Laser
- ~ Green Laser
- ~ Yag Laser

#### Unit V Special postings

- ~ Fundus Camera
- ~ Ultra Sonography
- ~ IOL Power Calculation
- ~ Slit lamps
- ~ operating Microscope
- ~ Auto clave / sterilizer
- ~ IOP Calculation / tono meters

## **Second Year**

### **Paper 1 – (5)**

#### **Clinical ophthalmology**

##### **Examination of the eye**

###### **Unit 1**

- ~ History taking
- ~ Causes of redness
- ~ Pupillary reaction

##### **Diseases of the eye**

###### **Unit 2**

- ~ Disease of the lid
- ~ Conjunctivitis
- ~ Diseases of the cornea
- ~ Diseases of the lens

###### **Unit 3**

- ~ Diseases of the Orbit
- ~ Diseases of the Retina
- ~ Diseases of the uvea
- ~ Glaucoma

##### **Ocular Emergencies**

###### **Unit 4**

- ~ Ocular emergencies
- ~ Injuries /chemical/ thermal / mechanical/ physical

##### **Systemic Manifestations**

###### **Unit 5**

- ~ Ocular manifestations of Systemic Diseases
- ~ Hypertension
- ~ Diabetics
- ~ Nutritional Problems of the eye

## Paper 2 - (6)

### Practical Refraction

#### Unit 1

- ~ Retinoscopy Principles
- ~ Subjective Examination
- ~ Muscle Balance Test
- ~ Cross cylinder
- ~ Duo chrome Test

#### Errors of refraction

#### Unit 2

- ~ Hypermetropia
- ~ Myopia
- ~ Astigmatism
- ~ Anisometropia

#### Presbyopia and Accommodation

#### Unit 3

- ~ Accommodation
- ~ Presbyopia
- ~ near Vision testing
- ~ Convergence

#### Low Vision Aids

#### Unit 4

- ~ Indication for low vision aid
- ~ Types of low vision aids

#### Squint

- Unit V** ~ Anatomy and physiology of binocular Vision
- ~ Diagnosis of muscle balance
- ~ Hetero tropia Principle of therapy in squint
- ~ Treatment of amblyopia

#### **Spectacle Dispensing**

- ~ Types of frames
- ~ Types of spectacle lenses
- ~ Lens Fitting
- ~ Bifocal Spectacles



## **Paper 3 (7)**

### **Community Ophthalmology**

#### **Causes and prevention of Blindness**

##### **Unit 1**

- ~ Vitamin A deficiency
- ~ Causes of Blindness
- ~ Role of WHO/ DBCS

#### **School screening camps**

##### **Unit 2**

- ~ Early detection of Refractive errors
- ~ Squint detection
- ~ Amblyopia Treatment

##### **Unit 3**

- ~ Cataract screening camps
- ~ Assessment of Pre and post operative cases

##### **unit 4**

- ~ Eye Banks –need/ establishment / maintain ace/

Unit 5 ~ Eye Care Awareness programs

## **Paper 4 (8)**

### **Ophthalmic nursing**

#### **Unit 1 Assisting in OPD procedures**

- ~ OPD assisting
- ~ Maintenance of ophthalmic Instruments at OPD
  - Foreign body removal
  - Suture removal
  - Epilation
  - I&D
  - Eye Wash
  - Syringing
  - Dressing
  - Instruments sterilization
  - Eye Pad preparation
  - BP check up
  - Pulse check up
  - Waste Disposal

#### **Performance of Special Investigations**

##### **Unit 2**

- ~ tonometry
- ~ Color Vision
- ~ Pre operative evaluation
- ~ Post operative instructions
- ~ FFA assisting
- ~ IOL Power calculation
- ~ Fields estimation

#### **Wards**

##### **Unit 3**

- ~ Preparation of patients for surgery
- ~ Bed making
- ~ Post operative Dressing
- ~ Patient counseling
- ~ Intravenous infusion Technique

#### **Operation theater Procedures**

##### **Unit 4**

- ~ Block room preparation
- ~ Blocking
- ~ Peri bulbar / retro bulbar/ facial
- ~ Operation theater disinfection /sterilization
- ~ CSD supply
- ~ Instruments sterilization and maintenance

- ~ Emergency Drug Trolley Preparation
- ~ Emergency Resuscitation Procedures

### **Assisting in the operation theater**

#### **Unit 5**

- ~ Operation table and trolley preparation
- ~ assisting in Cataract surgery non phaco
- ~ Phaco –Assisting
- ~ assisting in RD surgery
- ~ Assisting in Squint Surgery
- ~ DCR /DCT
- ~ Orbit surgery
- ~ Assisting in Lasik procedure.