PERIYAR UNIVERSITY
SALEM

Annexure - 18

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:

<table>
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<tr>
<th>S.No</th>
<th>Subject</th>
<th>Duration</th>
<th>Theory</th>
<th>Practical</th>
<th>Total</th>
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<tr>
<td>Paper 1</td>
<td>Anatomy and Physiology of the Eye</td>
<td>3 hrs</td>
<td>100</td>
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<tr>
<td>Paper 2</td>
<td>Basic Pharmacology &amp; Micro Biology &amp; Clinical pathology</td>
<td>3 hrs</td>
<td>100</td>
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<tr>
<td>Paper 3</td>
<td>Principles of Refraction</td>
<td>3 hrs</td>
<td>100</td>
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<tr>
<td>Paper 4</td>
<td>Ophthalmic Instruments</td>
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<td>100</td>
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Second year

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<th>Duration</th>
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<tr>
<td>Paper 1</td>
<td>Clinical ophthalmology</td>
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<tr>
<td>Paper 2</td>
<td>Practical Refraction</td>
<td>3 hrs</td>
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<tr>
<td>Paper 3</td>
<td>Community Ophthalmology</td>
<td>3 hrs</td>
<td>100</td>
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<td>100</td>
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<tr>
<td>Paper 4</td>
<td>Ophthalmic Nursing</td>
<td>3 hrs</td>
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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 I
~ 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
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
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
Community Ophthalmology

Causes and prevention of Blindness

Unit I
~ Vitamin A efficiency
~ 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
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
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.