SARDAR PATEL UNIVERSITY

Second Year B.Sc Optometry

Sr. No	Subject	Code	Duration of Uni. Exam	External Marks	Internal Marks	Total
1	Basic Optics	BOPT-201	3	80	20	100
2	Basic Optics (P)	BOPT - 201(P)	-	80	20	100
3	Visual Optics I & II	BOPT – 102	3	80	20	100
4	Visual Optics I & II (P)	BOPT – 202(P)	-	40	10	50
5	Ocular Disease I & II	BOPT – 203	3	80	20	100
6	Ocular Disease I & II (P)	BOPT – 204(P)	-	40	10	50
7	Pathology & Microbiology	BOPT – 206	3	80	20	100
8	Pharmacology & Nutrition	BOPT – 207	3	80	20	100
	Grand Total					**700**

SECOND YEAR BACHELOR OF OPTOMETRY (B.OPTOM.)
SUB : BASIC OPTICS (DISPENSING & OPTOMETRIC)

Scope and Objective:

This course deals mainly with the prescription of lenses, prisms and frames, which form the backbone of optometry practice, prepares the students to work competently and confidently in the Clinic environment. Imparting the knowledge about surfacing and polishing, spherical, sphero-cylindrical, and bifocal spectacle lenses. To cut finished lenses according to various frame shapes and sizes and they are taught to evaluate all parameters, which are essential for an ideal spectacle fit. To check any defects in a finished lens before dispensing the lenses to a patient.

Text and reference Books:

i. System for Ophthalmic Dispensing: CLIFFORD W BROOKS & IRVIN M. BORISH
ii Principles of Ophthalmic Lenses : M.Jalie.
ii. Practical Aspects of Ophthalmic Optics: MAGARET DOWALIBY.
ii. The fine art of prescribing glasses without making a spectacle of yourself-BENJAMIN MIDER & MRLVIN L. RUBIN.
iii. Clinical Optics : Troy E Fennin & Theodore Grossvenor
iv. *understanding lens surfacing - Bennets*

DISPENSING OPTICS

1. Spectacle Frames
    - Frame types and parts
    - Classification of spectacle frames-material, weight, temple position, coloration
    - Frame construction
    - Frame Measurements and markings
    - Frame manipulation and repair
    - Facial measurements and frame choice
2. Measurement of assorted faces for spectacles
3. Measuring the interpupillary distance and pupillometer
4. Lens insertion
5. Standard alignment

SPECTACLE LENSES

- Principle of surface generation and glass cements
- Joining plastics by different solvents

- Introduction to lens manufacture. - Surfacing and polishing glass lenses

LENS QUALITY

- Inspecting the quality of lenses
- Lens faults inspection
- Faults in lens materials
- Faults in lens surface

1. Glazing - Size, shape and mounting of the ophthalmic lenses.
2. Tinted and protective lenses
3. Characteristics of tinted lenses
4. Dying of plastic lenses
5. Scratch resistance coating
6. Anti Reflection coating
7. Mirror coating
8. Antifog coating
9. Optical considering with increasing lens power
10. Complete dispensing for subjects
11. Special lenses- examination of specimens.
12. prescription ophthalmic lenses Standards: ISI, ANSI, European
13. Prescription writing, order form and interpretation

OPTOMETRIC OPTICS

Scope and Objective:

Optometric Optics is more a clinical oriented course. The object of the course is to prepare the student to co-relate all aspects of Optics, clinical examination, diagnosis and planning Optometric management of the patient.

Text and reference Books:

1. Clinical optics - Troy Fennin & Theodore Grosvenor
2. Principles of Ophthalmic Lenses: M. O. Jalie
3. System for Ophthalmic Dispensing by Borish
4. Practice of Refraction - Duke Elders,
5. Optics for Clinicians- MELVIN L RUBIN,
6. Fine art of prescribing glass - MELVIN L RUBIN & Benjamin Milder

SPECTACLE LENSES- PART I

a. Introduction to theory of ophthalmic lens and properties of ophthalmic lens
b. Transposition: simple and Toric, Importance & significance
c. Power Specification and measurement
d. Aberrations in ophthalmic lenses
e. Ophthalmic lens material
   - Ophthalmic Glass
   - Plastic Material
   - The strength of lens materials
   - Protective eye wear

OPHTHALMIC PRISMS

a. Definition of prisms; units of prism power.
b. Thickness difference and base-apex notation.
c. Dividing, compounding and resolving prisms.
d. Rotary prisms and effective prism power in near vision
e. Recumbent prisms and Fresnel prisms.
f. Prismatic effect, decentration, Prentices rule.
g. Prismatic effect of spherocylinders and Plano cylinders.
h. Differential prismatic effect.

1. Bifocal lenses
2. Trifocal lenses
3. Progressive addition lenses
4. Lenticular lenses
5. Aspheric Lenses
6. Polarizing filters
7. Photochromatic lenses
8. Miscellaneous spectacle lenses
9. Reflections from spectacle lenses, ghost images reflections in multifocals at the dividing line.
10. Spectacle magnifiers
11. Safety Lenses / Toughened Lenses
12. Field of the view of the lenses

SECOND YEAR BACHELOR OF OPTOMETRY (B.OPTOM.)
PRACTICAL SUBJECT
OPTOMETRIC INSTRUMENTS

REFRACTIVE INSTRUMENTS

1. Various Visual Acuity Charts:
2. Test charts standards.
3. Choice of test charts
4. Projection charts
5. Illumination of the consulting room.
6. Trial case :Trial lenses, accessories
7. Trial frame design
8. Refractor (phoropter) head units
9. Retinoscope - types available
10. Autorefractometers
11. Infrared optometry devices.
12. The interpretation of objective findings
13. Special tests

OPHTHALMOSCOPES AND RELATED DEVICES

1. Design of ophthalmoscopes-illumination
2. Design of ophthalmoscopes-viewing
3. Ophthalmoscope disc
4. Filters for ophthalmoscope
5. Indirect ophthalmoscope
6. The use ophthalmoscope in special cases

LENSOMETER, LENS GAUGES OR CLOCK
lens analyzer

CORNEAL EXAMINATION

1. Placido's disc
2. Keratometer
3. Topography modeling system
4. Video keratoscope
5. Orbscan
6. Specular microscope
7. Astheciometer
8. Pachymeter:optical and ultrasound

SLIT LAMP

1. Slit lamp systems
2. Viewing microscope systems
3. Mechanical design instruments
4. Slit lamp accessories

TONOMETER

1. Tonometer principles
2. Types of Tonometer and standardization
3. Use and interpretation of Tonometer

FIELDS OF VISION AND SCREENING DEVICES

1. Amsler's Grid
2. confrontation test
3. Perimeter and visual field
4. Illumination of field - testing instruments
5. Projection perimeters and campimeters
6. Bowl perimeter
7. Screening devices for field defects
8. Automated perimetry types and techniques
9. Results of field examination
10. Interpretation of field report
11. Newer developments & Strategies in visual field techniques

SPECIAL INSTRUMENTS

1. Brightness acuity test
2. Vision analyzer
3. Video acuity test
4. Potential Acuity Meter
5. Abberometer
6. Interferometer
7. confocal scanning laser ophthalmoscope
8. tearscope

OPHTHALMIC ULTRASONOGRAPHY

1. "A" Scan
2. "B" Scan
3. M R I
4. C T Scan

IMAGING TECHNIQUES

1. The fundus camera-principles & Techniques
2. External eye photography apparatus
3. FFA (Fundus Fluorescein Angiography), ICG (Indocyenin Green)
4. HRT (Heidelberg retinal tomography), OCT (Optical Coherence Tomography)
5. NFA (Nerve fiber analyzer) or GDx (Glaucoma Diagnostics)

ELECTRODIAGNOSIS

1. ERG
2. EOG
3. VEP
4. VER

MAINTENANCE OF INSTRUMENTS

SECOND YEAR BACHELOR OF OPTOMETRY (B.OPTOM.)
SUB : VISUAL OPTICS I & II

VISUAL OPTICS - I

Scope and Objective:

A sound knowledge of theory in Visual Optics is a pre-requisite for Practical training in clinical refraction and related area. The objective of this course is to prepare the candidate through didactic lectures which he is expected to translate into practice at the clinics.

Text and reference Books:

1. Principles of Optics and Refraction - Duke Elder.
2. Visual Optics and Refraction - A clinical approach DRAVID D. MICHAELS
3. Clinical Refraction - Benjamin & Borish's
4. Clinical Visual Optics - Bennett & Rabbett's
5. Primary Care Optometry - Theodore Grosvenor
6. Clinical Optics - Troy Fannin
7. Optics of The Human Eye - David Atchison, George Smith

REVIEW OF GEOMETRICAL OPTICS

1. Vergence and power
2. Sign convention
3. Spherical refracting surface
4. Spherical mirror; Catoptric power
5. Cardinal points
6. Magnification
7. Light and visual function
8. Clinical Relevance of - Fluorescence, Interference, Diffraction, Polarization, Birefringence, Dichroism.
9. Aberration - Spherical & Chromatic

OPTICS OF OCULAR STRUCTURE

1. Cornea and aqueous
2. Crystalline lens
3. Vitreous
4. Schematic and reduced eye
5. Emmetropization

MEASUREMENTS OF OPTICAL CONSTANTS OF THE EYE

1. Corneal curvature and thickness
2. Keratometry
3. Curvature of the lens and ophthalmophakometry

REFRACTIVE CONDITIONS

1. Emmetropia
2. Myopia
3. Hypermetropia
4. Astigmatism
5. Accommodation
6. Presbyopia
7. Anisometropia and Aniseikonia
8. Aphakia and Pseudophakia

REFRACTIVE ANOMALIES AND THEIR CAUSES

1. Etiology of refractive anomalies
2. Optical component measurements
3. Growth of the eye in relation to refractive errors.

VISUAL ACUITY

1. Definition of visual acuity tasks
2. Factors affecting visual acuity
3. Clinical measurement of visual acuity
4. Visual acuity charts

VISUAL OPTICS I (PRACTICAL)

1. Study of Purkinje image I and II.
2. Study of Purkinje image III and IV.
3. Measurement of corneal curvature
4. Measurement of corneal thickness
5. Mathematical models of the eye-Emmetropia
6. Mathematical models of Hypermetropia
7. Mathematical models of myopia
8. Conjugate points-demonstration-worked examples
9. Axial and refractive Hyperopia-worked examples
10. Axial and refractive myopia - worked examples
11. Visual acuity charts
12. Effect of lenses in front of the eye
13. Effect of prisms in front of the eye
14. Vision through pinhole, slit, filters, etc.

VISUAL OPTICS (II)

FAR AND NEAR POINTS OF ACCOMMODATION

1. Correction of spherical Ametropia
2. Axial versus refractive Ametropia
3. Relationship between accommodation and convergence, AC/A ratio

OBJECTIVE REFRACTION (RETINOSCOPY)

1. Retinoscopy - principles and methods
2. Retinoscopy- speed of reflex and optimum condition
3. Retinoscopy- design consideration. Dynamic/ Static
4. Difficulties in objective tests and their avoidance
5. Transposition of lenses
6. Spherical equivalent
7. Keratometry
8. Direct Ophthalmoscopy
9. Auto refractometry
10. Topography ; Topography modeling systems

SUBJECTIVE REFRACTION

1. Fogging
2. Duochrome test
3. Astigmatism refining techniques
   - Jackson's cross cylinder
   - Astigmatic Fan & Clock Dial
   - Rotating 'T'
4. Friends test
5. Binocular Balancing
6. Binocular refraction

CORRECTION OF AMETROPIA

1. Ocular refraction versus spectacle refraction
2. Ocular accommodation versus spectacle accommodation
3. Spectacle magnification and relative spectacle magnification
4. Retinal image blur, depth of focus and depth of field

COLOR VISION

1. Theories of Color Vision
2. Color Vision Measuring Devices

CONTRAST SENSITIVITY

1. Contrast sensitivity
2. Contrast sensitivity evaluation

PRINCIPLE OF PHOTOMETRY AND RETINAL IMAGE QUALITY

1. Aberration and Retinal Image Quality
2. Effect of light loss on visual performance
3. Relation between luminous flux and luminous intensity, luminance and
4. Illuminance and units of measurement.
5. Point and Line Spread Functions (PSF & LSF) - Grating, Aberrated, Human Eye
6. Application to the retinal image quality, Central vision, Defocus, Peripheral vision

VISUAL OPTIC PRACTICAL (II)

1. Visual acuity, stereo acuity in Emmetropia
2. Myopia and pseudomyopia, myopia and visual acuity
3. Myopic correction-subjective verification (monocular and binocular)
4. Hypermetropia- determination of manifest error subjectively.
5. Hypermetropic correction-subjective verification
6. Demonstration of astigmatism: Use of slit and Keratometry to find the principal meridians
7. Astigmatism: Fan-subjective verification tests.
8. Astigmatism: Cross-cylinder Subjective verification tests
9. Measurement of accommodation: near and far points and range
10. Presbyopic correction and methods: accommodative reserve, balancing the relative accommodation and cross grid cylinder test.
11. Methods of differentiating axial and refractive Ametropia
12. Practice of Retinoscopy-Emmetropia
13. Practice of Retinoscopy-spherical Ametropia
14. Practice of Retinoscopy-simple astigmatism.
15. Practice of Retinoscopy - compound Hypermetropia
16. Practice of Retinoscopy -compound myopia
17. Practice of Retinoscopy -oblique astigmatism
18. Practice of Retinoscopy -media opacities
19. Practice of Retinoscopy -in irregular astigmatism
20. Practice of Retinoscopy - in strabismus and eccentric fixation
21. Interpretation of cycloplegic retinoscopic findings
22. Prescription writing
23. Binocular refraction
24. Exercises for vengeance
25. Color Vision - Ishihara, Ichikawa, FM 100U test, D15

SECOND YEAR BACHELOR OF OPTOMETRY (B.OPTOM.)

SUB : PATHOLOGY & MICROBIOLOGY & PSYCHOLOGY

PATHOLOGY

Scope and Objective:

The object of the course is to prepare the students to be aware of the pathogenetic organism, aetilogical causes and the changes seen in the tissues and particularly in the eye chamber. It also helps them to educate the public in prevention of blindness by adapting hygienic methods.

Text and reference Books:

1. Text book of Pathology by N. C. Dey & T. K. Dey
2. Text book of Pathology by Harsh Mohan
3. Robbins Basic Pathology by Vinay Kumar

1. GENERAL PATHOLOGY

1 Cell injury and adaptations.
2 Inflammation and repair.
3 Specific infections.
4 Circulatory disturbances-Thrombosis, Infarction and embolism.
5 Neoplasia -General considerations, specific neoplasia of eye (including retinoblastoma).
6 Introduction to genetic diseases.
7 Albinism
8 Nutritional deficiency affecting ocular system

2. OCULAR PATHOLOGY

1. Etiology, signs, symptoms, diagnosis and epidemiology of diseases of ocular adnexa and anterior segment of eye.
2. Etiology, signs, symptoms, diagnosis and epidemiology of diseases of posterior segment of eye, higher visual and oculomotor system, multi system diseases.
3. Eye in diabetes mellitus and hypertension.

3 CLINICAL PATHOLOGY

1. Common hematologic disorders.
   - Constituents of blood
   - Anemias
   - Leukemias
   - Bleeding disorders
2. Common Hematology Investigation

- Hemoglobin
- CBC and ESR
- Interpretation of peripheral Blood smear
- BT, CT

3. Urine analysis
   - ~~Urine collection method~~
   - Physical examination of urine
   - Chemical examination of urine
   - Microscopic examination of urine

4. Processing of tissues
   - Fixation
   - Processing
   - Staining
   - Cytology interpretations-FNAC, Imprint cytology, fluid cytology

MICROBIOLOGY

Scope and Objective:

The objective of the course is to prepare the students to study the characteristics of bacteria, Viruses, Fungi and parasites causing diseases of the eye. To apply the principles of sterilization and disinfection in hospital and ophthalmic practice. To understand the pathogenesis of the diseases caused by the above listed organisms in the human body with particular reference to the eye infection and to apply principles of diagnostic ocular microbiology.At the end of this module students will be expected to have knowledge of the principle types of micro-organisms, and those that are pathological. How pathogens are transmitted and how infection is controlled

Text and reference Books:

1. Textbook of Microbiology by Ananthnarayan Paniker
2. Textbook of Microbiology by Chakraborty
3. Microbiology by Michael J Pelczar
4. Microbiology by Prescott
5. Manual of Microbiology by Kanika Sharma

GENERAL BACTERIOLOGY

1. Morphology and physiology of bacteria
2. Sterilization and disinfection
3. Culture media
4. identification of bacteria
5. infection

IMMUNOLOGY

1. Immunity
2. Immune response
3. Antigen and antibody
4. Antigen antibody reactions
5. Hypersensitivity

SYSTEMIC BACTERIOLOGY

1. Staphylococci
2. Pneumococci
3. Meningococci
4. Gonococci
5. C.Diphtheriae
6. H.Influenzae
7. Morexella
8. Pseudomonas aeruginosa

MYCOLOGY

1. General properties of fungi, classification & laboratory diagnosis
2. Candida. Fusarium, Curvularia, Aspergillus

VIROLOGY

1. General properties of virus
2. Herpes Virus
3. Adeno Virus
4. Enterovirus

PARASITOLOGY

1. Protozoan parasites affecting eye. Eg: Acanthamoeba. Toxoplasma gondii, Microsporidia
2. Helminths affecting eye Eg: T.Solium, Loa loa, Onchocercus volvulus

SECOND YEAR BACHELOR OF OPTOMETRY (B.OPTOM.)
SUB: PHARMACOLOGY & NUTRITION

Scope and Objectives

Pharmacology is the basis of therapeutics. The students are taught actions, uses, adverse effect and more of administration of drugs for various diseases.

Text and reference Books

1. Essentials of Medical Pharmacology by Tripathi
2. Pharmacology & Pharmacotherapeutics by R. S. Satoskar
3. Essentials of Pharmacotherapeutics by F. S. K. Barar
4. Text book of Ocular Therapeutics by Ashok Garg

PHARMACOLOGY I

1. General pharmacology
2. Basics of ocular pharmacology
    - Routes of ocular drug delivery
    - Dosage forms
3. Antiseptics and disinfectants
4. Contact lens solutions
5. Antimicrobial agents

PHARMACOLOGY II

1. Anti-inflammatory drugs
    - NSAIDs
    - Corticosteroids
2. Mydriatics and cycloplegics
3. Drugs for glaucoma
4. Local anesthetics
5. Drug therapy for specific eye diseases
    - Conjunctivitis
    - Trachoma
    - Keratitis and corneal ulcers
    - Posterior segment infections
6. Diagnostic dye solutions
7. Artificial tears and lubricating agents
8. Ocular effects of systemically administered drugs
9. Complications of topically administered drugs

NUTRITION

Scope and Objectives:

The course is design to bring out the role of Nutrition in "EYE CARE" Highlighting the role of various nutrients. Emphasis is on malnutrition related eye disorders and role of therapeutic nutrition in ophthalmology.

Text and reference Books:

1. Nutrition & dietetics by Dr. M. Swaminathan
2. Manual of Practical Pediatric Nutrition by Dr. Gnana Sundaram
3. Nutritive Value of Indian foods by National Institute of Hyderabad

1. INTRODUCTION
   - History of Nutrition
   - Food and Proximate principle of foods

2. ENERGY
   - Measurements of energy
   - Energy content of foods
   - Energy expenditure in human
     - BMR, SDA, Physical activity

3. NUTRITIONAL IMPORTANCE OF MACRONUTRIENTS
   - Carbohydrate, fiber in diet
   - Lipid: EFA, Cholesterol
   - Protein: EAA, Nitrogen balance, Nutritive value of proteins, natural protein supplementation

4. NUTRITIONAL IMPORTANCE OF MICRONUTRIENTS
   - Vitamins : associated with eyes
   - Minerals: associated with eyes
   - Nutrient and Antioxidant in eye
   - Deficiency and toxicity of micro-nutrients: ophthalmic complication

5. RDA, Balance diet and Food guide pyramid

6. COMMON NUTRITIONAL DISORDER AND DIET MANAGEMENT
   - Over nutrition: Obesity
   - Under Nutrition: Starvation, Anorexia nervosa, PEM, Nutritional anemia, Goiter
   - Nutritional disorder of eye
     - Bitot's spot
     - Night Blidness
     - Cataract
     - Corneal vascularisation

- Retinitis pigmentosa
- Kayser-fleischer ring in cornea

6. DRUG AND NUTRIENT INTERACTION TOXICANT IN FOOD : NATURAL / CHEMACAL / MICRO-ORGANISM

SECOND YEAR BACHELOR OF OPTOMETRY (B.OPTOM.)
SUB :OCULAR DISEASES (I & II)

Scope and Objective

This course is designed to provide the further Optometrist with a Comprehensive yet concise Curriculum of the field of Ophthalmology, with reference to ocular diseases. The Course reviews basic background knowledge as well as focuses on specific areas of key interest to the Optometrist. Special attention will be paid to the methods of examination in various subspecialties of Ophthalmology.

Text and reference Books

1. Basic and Clinical Science Course, American Academy of Ophthalmology (AAO).
2. Parsons Diseases of the eye - STEPHEN J.H. MILLE, Churchill Livingstone.(PDE).
3. Clinical Ophthalmology - JACK J.KANSKI, 2nd Ed., 1989 Butterworth's.
4. The Ocular Disease Manual - Meyler Robertson
5. Manual of ocular fundus examination - Theo Dorion
6. Atlas of Peripheral Ocular Fundus - Jones, Butterworth Heinemann.
7. Basic Ophthalmology - Dr. Renu Jogi
8. Ophthalmology - B. M. Chatterjee

OCULAR DISEASES I

EYELIDS

- Eyelid anatomy
- Congenital and developmental anomalies
- Blepharospasm
- Ectropion
- Entropion
- Trichiasis and symblepharon
- Eyelids tumors
- Ptosis
- Eyelid trauma

LACRIMAL SYSTEM

- Lacrimal anatomy
- Lacrimal pump
- Methods of lacrimal evaluation

- Congenital and development anomalies of the lacrimal system
- Lacrimal obstruction
- Lacrimal sac tumors
- Lacrimal trauma

SCLERA, EPISCLERA

- Ectasia and staphyloma
- Scleritis and episcleritis

ORBIT

- Orbit anatomy
- Incidence of orbital abnormalities
- Methods of orbit examination
- Congenital and developmental anomalies of the orbit
- Orbital tumours
- Orbital inflammation
- Sinus disorders affecting the orbit
- Orbital trauma

CONJUNCTIVA AND CORNEA

- Inflammation
- Therapeutic principles, Specific inflammatory diseases
- Tumors
- Tumors of epithelial origin
- Glandular and adenexal Tumors
- Tumors of neuroectodermal origin
- Vascular Tumors
- Xanthomatous origins
- Inflammatory tumors
- Metastatic lesions

DEGENERATIONS AND DESTROPHIES

- Definitions
- Degeneration's
- Dystrophies
- Corneal Dystrophies
- Miscellaneous conditions
- Keratoconjunctivitis Sicca (K.Sicca)
- Tear function tests
- Steven- Johnson's syndrome
- Ocular Rosacea
- Atonic eye disorders

- Benign mucosal pemphigoid (BMP)-ocular Pemphigoid
- Vitamin A deficiency
- Metabolic diseases associated with corneal changes.

IRIS, CILIARY BODY, PUPIL

- Congenital anomalies
- Primary and secondary disease of the iris and ciliary body
- Tumors
- Anomalies of pupillary reaction

CHOROID

- Congenital anomalies of the choroid
- Diseases of the choroid
- Tumors

OCULAR DISEASES (II)

LENS

- Anatomy and pathophysiology
- Normal anatomy and aging process
- Developmental defects
- Acquired lenticular defects
- Management of lenticular defects.

VITREOUS

- Developmental abnormalities
- Hereditary hyaloidretinopathies
- Juvenile retinoschisis
- Asteroid hyalosis
- Cholestrolosis
- Vitreous hemorrhage
- Blunt trauma and vitreous
- Inflammation and vitreous
- Parasitic infestations
- Pigment granules in the vitreous
- Vitreous complications in cataract surgery.

RETINA

- Retinal vascular anomalies
- Diseases of the choroidal vasculature, Bruch's membrane, and retinal pigment epithelium
- Retinal tumors
- Retinoblastoma
- Phacomatoses
- Retinal vascular abnormalities
- Retinal and optic nerve head astrocytomas
- Lymphoid tumors
- Tumors of the retinal pigment epithelium
- Other retinal disorders
- Retinal inflammations
- Metabolic diseases affecting the retina.
- Miscellaneous disorders
- Electromagnetic effects on the retina
- Retinal physiology and psychophysics
- Hereditary macular disorders (including albinism)
- Peripheral retinal degeneration's
- Retinal holes and detachments
- Intraocular foreign bodies.
- Photocoagulation

GLAUCOMA

- An over view of glaucoma
- Aqueous humor dynamics
- Intraocular pressure
- Evaluation of the optic nerve head
- Visual fields
- Glaucoma screening
- Classification of glaucoma
- Primary open angle glaucoma
- Primary angle closure glaucoma
- Primary congenital glaucoma
- Secondary glaucoma
- Principles of medical therapy
- Other modalities of glaucoma treatment

PRACTICALS

- Intraocular tension
- Gonioscopy
- Indirect ophthalmoscopy

- Use of vital dyes / Anesthetics
- Evaluation of cornea
- Visual field analysis
- F.F.A.

TRAUMA

- Anterior segment trauma
- Posterior segment trauma

BLINDNESS

- Blindness definition
- Causes
- Social implications
- Rationale therapy
- Drug induced ocular disease.

CLINICAL EXAMINATION OF THE VISUAL SYSTEM:

1. History of the ophthalmic subject
    a. Ocular symptoms
    b. The past prescription and its influence
    c. Visual acuity testing- distance and near, and color vision.
    d. Examination of muscle balance & eye motility
    e. Slit lamp examination
    f. Examination of eye lids, conjunctiva, sclera
    g. Examination of cornea
    h. Examination of iris, ciliary body, and pupil
    i. Examination of lens
    j. Slit lamp photography.

2. Examination of Intraocular pressure and examination of angle of anterior chamber. (geonioscopy)
3. Ophthalmoscopy - indirect and direct.
4. Examination of fundus (vitreous and disc), (choroid and retina)
5. Examination of the lacrimal system & lacrimal function tests
6. Examination of the orbit
7. Macular function test
8. Visual field charting (central), and (peripheral) & Interpretation of Humphrey's Visual fields
9. Neuro- ophthalmological examination
10. Color perception & color vision
11. Diplopia charting
12. Electro diagnostic procedures.
13. Cases work-ups
14. Operative procedures
15. Radiology
16. Removal of foreign body