

SYLLABUS

DEPARTMENT OF OPHTHALMOLOGY

These guidelines are based on MCI recommendations.

Teaching has to be done keeping in mind the goal and Objectives to be achieved by medical students

(1) GOAL

The broad goal of the teaching of students in ophthalmology is to provide such knowledge and skills to the student that shall enable him/her to practice as a clinician and as a primary eye care physician and also to function effectively as a community health leader to assist in the implementation of National Programme for the prevention of blindness and rehabilitation of the visually impaired.

(2) OBJECTIVES

2.1 Knowledge : -

At the end of the course, student shall have the knowledge of

2.1.1 common problems affecting the eye,

2.1.2 principles of management of major ophthalmic emergencies,

2.1.3 main systemic diseases affecting the eye;

2.1.4 effects of local and systemic diseases on patient's vision and the necessary action required to minimize the sequelae of such diseases;

2.1.5 adverse drug reactions with special reference to ophthalmic manifestations;

2.1.6 magnitude of blindness in India and its main causes;

2.1.7 national programme for control of blindness and its implementation at various levels.

2.1.8 eye care education for prevention of eye problems

2.1.9 role of primary health center in organization of eye camps;

2.1.10 organization of primary health care and the functioning of the ophthalmic assistant;

2.1.11 integration of the national programme for control of blindness with the other national health programmes.

2.1.12 eye bank organization

2.2 Skills :-

At the end of the course, the student shall be able to:

2.2.1 elicit a history pertinent to general health and ocular status;

- 2.2.2 assist in diagnostic procedures such as visual acuity testing, examination of eye, Schiotz tonometry, staining of Corneal pathology, confrontational perimetry, subjective refraction including correction of presbyopia and aphakia, direct ophthalmoscopy and conjunctival smear examination and Cover test;
- 2.2.3 diagnose and treat common problems affecting the eye;
- 2.2.4 interpret ophthalmic signs in relation to common systemic disorders,
- 2.2.5 assist/observe therapeutic procedures such as subconjunctival injection, corneal conjunctival foreign body removal, carbolic cautery for corneal ulcers, Nasolacrimal duct syringing and tarsorrhaphy;
- 2.2.6 provide first aid in major ophthalmic emergencies;
- 2.2.7 assist to organize community surveys for visual check up;

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- 2.2.8 assist to organize primary eye care service through primary health centers.
- 2.2.9 use effective means of communication with the public and individual to motivate for surgery in cataract and for eye donation.
- 2.2.10 establish rapport with his seniors, colleagues and paramedical workers, so as to effectively function as a member of the eye care team.

(3) INTEGRATION

The undergraduate training in Ophthalmology will provide an integrated approach towards other disciplines especially Neuro-sciences, ENT, General Surgery and Medicine.

(4) LEARNING METHODS

- 4.1 Total teaching hours: - 100
- 4.2 Theory lectures: - 70 (6th, 7th term). Tutorials- 30 (6th +7th term)
- 4.3 Clinical postings :
- Three clinical postings of total 10 weeks
- 4.3.1 1st in 4th semester (2 weeks)
- 4.3.2 2nd in 6th semester (4 weeks)
- 4.3.3 3rd in 7th semester (4 weeks)
- Clinical postings will also include bedside clinics

(5) SYLLABUS

5.1 Anatomy & Physiology of the eye, Orbit, – 3 Lectures

- 5.1.1 Introduction to eye
- 5.1.2 Anatomy of the eye
- 5.1.3 Physiology of the eye
- 5.1.4 Neurology of the eye

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5.2 Conjunctiva- 4 lectures

- 5.2.1 Symptomatic conditions
 - (a) Hyperemia, subconjunctival haemorrhage
- 5.2.2 Diseases
 - (a)) Classification of conjunctivitis
 - (b) Mucopurulent Conjunctivitis
 - (c) Trachoma
 - (d) Membranous Conjunctivitis, spring catarrh
 - (e)) Degenerations: -Pinguecula and Pterygium
 - (f) ophthalmia neonatorum (resolution no. BM-04-(i)-15 dated 15/5/2015)

5.3 Cornea - 5 lectures

- 5.3.1 Corneal ulcers: Bacterial, fungal, viral
- 5.3.2 Hypopyon ulcer
- 5.3.3 Complication of corneal ulcer
- 5.3.4 Management of complication of corneal ulcer
- 5.3.5 Fascicular ulcer
- 5.3.6 Interstitial keratitis
- 5.3.7 Herpes zoster ophthalmicus
- 5.3.8 Keratoconus
- 5.3.9 Corneal opacities
- 5.3.10 Keratomalacia (Vit A deficiency)
- 5.3.11 Pannus
- 5.3.12 Keratoplasty-eye donation
- 5.3.13 Eye banking

5.4 Sclera – 1 lecture

- 5.4.1 Episcleritis
- 5.4.2 Scleritis
- 5.4.3 Staphyloma

5.5 Uvea - 3 lectures

- 5.5.1 Classification of uveitis
- 5.5.2 Gen. Etiology, investigation and principle management of uveitis
- 5.5.3 Acute & chronic iridocyclitis
- 5.5.4 Panophthalmitis
- 5.5.5 Endophthalmitis
- 5.5.6 Choroiditis
- 5.5.7 Chorioretinitis
- 5.5.8 D/D of Red eye (resolution no. BM-04-(i)-15 Dated 15/5/2015)

5.6 Lens – 5 lectures

- 5.6.1 Cataract- Aetiological classification
- 5.6.2 Senile mature cataract
- 5.6.3 Management of cataract 1) Medical 2) Surgical

5.6.4 Anaesthesia

5.6.5 Treatment of aphakia

5.6.6 IOL implant (Phacoemulsification)

5.6.7 Recent advances in cataract management

5.6.8 Role of eye camp(resolution no. BM-04-(i)-15 Dated 15/5/2015)

5.7 Glaucoma – 4 lectures

5.7.1 Aqueous Humor Dynamics

5.7.2 Factors Controlling Normal IOP

5.7.3 Tonometry, Automated perimetry

5.7.4 Provocative tests

5.7.5 Classification of Glaucoma

5.7.6 Congenital Glaucoma

5.7.7 Angle Closure Glaucoma

5.7.8 Open Angle Glaucoma

5.7.9 Secondary Glaucoma

5.7.10 Recent advances in treatment of glaucoma

5.8 Vitreous – 1 lecture

5.8.1 Vitreous Haemorrhage& Opacities

5.8.2 PVD

5.8.3 Proliferative vitreo – retinopathy

5.9 Intraocular Tumors – 2 lectures

5.9.1 Retinoblastoma

5.9.2 Malignant Melanoma

5.10 Retina – 3 lectures

5.10.1 Vascular Retinopathies: Diabetic, Hypertensive, Toxemia of pregnancy

5.10.2 Retinal Detachment – classification, aetiology& management

5.10.3 Retinitis Pigmentosa

5.11 Optic nerve – 2 lectures

5.11.1 Optic Neuritis

5.11.2 Papilloedema

5.11.3 Optic Atrophy

5.12 Optics - 5 lectures

5.12.1 Basic Optics

5.12.2 Principles: V.A. testing, Retinoscopy, Ophthalmoscopy (distant direct, direct, indirect)

5.12.3 Refractive errors – Myopia, Hypermetropia, Astigmatism

5.12.4 Accommodation& Presbyopia

5.12.5 Spectacles , Contact Lens

5.12.6 Surgical treatment of Refractive Errors

1) RK 2) PRK 3) LASIK

5.13 Orbit – 2 lectures

5.13.1 Proptosis- Aetiology, Clinical Evaluation,

Investigations & Principles of Management

5.13.2 Endocrinal Exophthalmos

5.13.3 Orbital Haemorrhage

5.14 Lids – 3 lectures

5.14.1 Inflammation of various lid glands

5.14.2 Blepharitis

5.14.3 Trichiasis, Entropion

5.14.4 Ectropion

5.14.5 Symblepheron

5.14.6 Ptosis

5.15 Lacrimal System – 3 lectures

5.15.1 Epiphora

5.15.2 Dry Eye – etiology & treatment

5.15.3 Nasolacrimal Duct Obstruction

5.15.4 Dacrocystitis – Acute & Chronic

5.15.5 Lacrimal gland tumors

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5.16 Ocular Mobility – 4 lectures

5.16.1 Extraocular muscles-Basic anatomy & actions

5.16.2 Squint: Gen. Etiology, Diagnosis and principles of management

5.16.3 Paralytic and Non Paralytic Squint

5.16.4 Heterophoria

5.16.5 Nystagmus

5.17 Miscellaneous – 3 lectures

5.17.1 Colour Blindness

5.17.2 Lasers in Ophthalmology- Principles

5.17.3 Recent advances in ophthalmology

5.18 Ocular trauma – 3 lectures

5.18.1 Blunt Trauma

5.18.2 Perforating Trauma

5.18.3 Chemical Burns

5.18.4 Sympathetic Ophthalmitis

5.19 Principles of Management of Major Ophthalmic

Emergencies – 2 lectures

5.19.1 Acute Congestive Glaucoma

5.19.2 Corneal Ulcer

5.19.3 Intraocular Trauma

5.19.4 Chemical Burns

5.19.5 Sudden Loss of Vision

5.19.6 Acute Iridocyclitis

5.19.7 Secondary Glaucoma

5.19.8 Endophthalmitis

5.20 Systemic Diseases Affecting the Eye – 2 lectures

5.20.1 Tuberculosis

5.20.2 Syphilis

5.20.3 Leprosy

5.20.4 AIDS
5.20.5 Diabetes
5.20.6 Hypertension
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5.21 Drugs – 2 lectures

5.21.1 Antibiotics
5.21.2 Steroids
5.21.3 Anti Glaucoma Drugs
5.21.4 Mydriatics&Cycloplegics
5.21.5 Viscoelastics
5.21.6 Fluorescein dye
5.21.7 Adverse reactions affecting the eye

5.22 Community Ophthalmology – 2 lectures

5.22.1 Blindness: Definition, causes & Magnitude
5.22.2 N.P.C.B- Vision 2020
5.22.3 Preventable Blindness – causes & treatment
5.22.4 Role of PHCs in Eye Care
5.22.5 Nutritional deficiencies
5.22.6 Role of camp in vision 2020

(6) TUTORIALS (Total 30 Hours)

6.1 Surgical Techniques

Cataract - ECCE

- ICCE

- IOL Implantation

- Phaco-emulsification.

- Pterygium

- Chalazion

- Glaucoma

- Foreign Body Removal

- Enucleation

- Keratoplasty

- Basic of squint, L 10

6.2 Instruments

- OPD

- Operative

- Basic Examination and Diagnostic instruments

Tonometer, Sac Syringing, Slit Lamp.

6.3 Optics - Lenses – Spherical, Cylindrical, Prisms,

- Pinhole, Slit, Maddox Rod & Maddox wing,

- Red & Green Glasses.

- IOLs

- Ophthalmoscopy

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- Retinoscopy

- Contact Lenses

- Colour Vision

6.4 Drugs

Miotics, Antibiotics, Antiglaucoma,
Mydriatics, Steroids, Anti virals,
NSAIDS, Anti Fungals
Viscoelastics Pre-Op. & Post – Op.

(7) Brief Summary of theory lectures held in 6th & 7th Terms

- 7.1 Anatomy & Physiology 3
- 7.2 Optics 5
- 7.3 Conjunctiva 4
- 7.4 Cornea 5
- 7.5 Sclera 1
- 7.6 Uvea 3
- 7.7 Cataract 5
- 7.8 Glaucoma 4
- 7.9. Optic Nerve 2
- 7.10 Retina 3
- 7.11 Vitreous 1
- 7.12 Squint 4
- 7.13 Community Ophthalmology 2
- 7.14 Lids 3
- 7.15 Orbit 2
- 7.16 Lacrimal Apparatus and Dry Eye 3
- 7.17 Miscellaneous & Others 20

Total Lectures 70

Tutorials 30

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(8) Evaluation Methods -
(Theory, Practical and Viva)

8.1 Internal assessment: 20 (Theory 10 +Practical 10)

8.1.1 Marks of Internal Assessment should be sent to University before the commencement of Theory examination.

8.1.2 Passing in internal assessment is essential for passing, as Internal assessment is separate head of passing. in examination.

8.1.3 It will also be considered for grace marks as per existing rules

8.1.4 Combined theory and practical of internal assessment will be considered for passing in internal assessment.

8.1.5 Student will be allowed to appear for both theory and practical exam independent of marks obtained in internal assessment but he if fails in that head even after including the grace marks he will be declared

“Fail in that Subject” .

8.2 Internal Assessment in Theory

8.2.1 Examinations during semesters : This will be carried out by conducting theory examinations during 6th semester (50 marks).

Total of 50marks to be converted into 5 marks.(A/5)

8.2.2 Prelim examination : This shall be carried out during 7th semester.

One theory papers of 40 marks as per university examination.

Total of 40 marks to be converted into 5 marks. (B/5)

Total marks of Internal assessment- Theory will be addition of A and B.

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8.3 Internal assessment in Practical

Examinations at end of Clinical postings:

8.3.1 There will be practical examination at the end of each clinical posting of Ophthalmology, 6th and 7th semester. Each examination will be of 50 marks.

Best of two- 50marks , will be converted to 5 marks.(C/5)

8.3.2 Preliminary examination:

This will be conducted for 40 marks as per university pattern and marks will be converted to 5 (D/5).

Total marks of Internal of Practical will be addition of C and D.

(9) PATTERN OF FINAL EXAMINATION

(including distribution of marks, questions and time)

Pattern of theory examination including distribution of marks

9.1 There shall be one theory paper, carrying 40 marks

9.2 The paper will have two sections, A and B

9.3 The paper will be of 2.5 hours duration.

9.4 Section A and Section B will have to be written in separate answer sheets.

9.5 Theory :40 marks Duration : Two and half hours (2 & 1/2) hours

9.5.1 Section A(22)

i) One line answer questions.Answer any 8 out of 10 (**8 marks**)

ii) Structured Long Answer question- Answer any 2 out of 3 (**2X7=14 marks**)

9.5.2 Section B

9.5.3 i) Short answer question—Answer any 6 out of 8 (**18 marks**)

9.6 Practical :40 marks

9.6.1 Clinical : One long case : 25 marks :30 min. for taking case and 10 minutes for assessment,

Drugs:5 marks

9.6.2 Oral (viva voce) :10 marks:10 min. duration

1. Optics 05 marks

2. Instruments 05 marks

(10) BOOKS RECOMMENDED

10.1 Text books :

10.1.1 Parson` Diseases of Eye 22nd Edition –
2014 publisher Butterworth-Heinemann

10.1.2 elsevier publication

10.1.3 Text book of diseases of eye by
Vasudev Anand Rao- ISBN -13 3rd edition
2015 Published by A.I.T.R.S publisher &
distributors

10.1.4 Comprehensive Ophthalmology by A K
Khurana 6th edition 2015 Jaypee publication

10.1.5 Basic Ophthalmology by
Renu Jogi- 5th edition 2016
Published by Jaypee Brothers Medical
Publisher (P)Ltd

10.1.6 Essential of Ophthalmology by
Samar K. Basak- 6th edition
Published by jaypee brothers

10.2 Reference Books :

10.2.1 Clinical Ophthalmology
Jack J Kanski, 8th edition, 2015
elsevier publication -

10.2.2 Essentials of Ophthalmology
Pradeep Sharma, 3rd edition CBS
Publishers

10.2.3 Manual of Ocular Diagnostic & Therapy
Pavan Langston, 6th edition, 2008
wolter kluwer Co