

M.S. OPHTHALMOLOGY

SYLLABUS

Theory

During the training period effort should always be made that adequate time is spent in discussing ocular health problems of public health importance in the country.

Section I: Anatomy and Physiology

- Embryology and Anatomy
- Physiology of the Eye
- The Physiology of Vision
- The Neurology of Vision

Section II: Ophthalmic Optics

- Elementary Optics
- Elementary Physiological Optics
- Refraction
- Refractive Errors of the Eye

Section III: Ocular Examination Techniques and Ocular Therapeutics

- Ocular Symptomatology
- Assessment of Visual Function
- Examination of the Anterior Segment
- Examination of the Posterior Segment and Orbit
- Ocular Therapeutics
- Ocular Microbiology

Section IV: Diseases of the Eye

- Diseases of the Conjunctiva
- Diseases of the Cornea
- Diseases of the Sclera
- Diseases of the Uveal Tract
- The Lens
- The Glaucomas
- Diseases of the Retina
- Diseases of the Vitreous
- Diseases of the Optic Nerve
- Intraocular Tumours
- Injuries to the Eye

Section V: Disorders of Motility

- Anatomy and Physiology of the Motor Mechanism
- Comitant strabismus
- Incomitant Strabismus

Section VI: Diseases of the Adnexa

- Diseases of the Lids
- Diseases of the Lacrimal Apparatus
- Diseases of the Orbit

Section VII: Systemic Ophthalmology

- Diseases of the Nervous System with Ocular Manifestations
- Ocular Manifestations of Systemic Disorders
- Systemic drugs – Effects on eye

Section VIII: Preventive Ophthalmology

- Genetic Ophthalmology
- The Causes and Prevention of Blindness
- Eye Banking
- Eye Camps

Section IX: Surgical Instruments in Ophthalmology

- Surgical Instruments in Ophthalmology
- Local Anaesthesia in Ophthalmology
- Lasers in Ophthalmology

Practical

During the training period, PG students should learn various clinical and skilled work. PG's should be encouraged to perform the procedures (both minor & major including) given below:

Minor Procedures

- Thorough ocular examination.
- Pediatric ocular examination.
- Removal of Corneal/ forniceal foreign body.
- Syringing and probing
- Pterygium excision
- Chalazion excision
- I & D for Adnexal infections(stye)
- Posterior/Anterior sub tenon injection
- Intravitreal injection

- Tarsorrhaphy
- Epilation
- Corneal Scrapping
- Conjunctival swab
- Anterior chamber tap
- Subconjunctival injection

Major Procedures

- Cataract Surgery with IOL implantation
- Glaucoma surgery
- Lid surgeries including entropion, ectropion & ptosis
- Ocular trauma management
- Enucleation, Evisceration (and Exenteration)
- Corneal transplant
- Basic Squint Surgery

Surgical Training

It may be helpful to expose all PG students to artificial eye for various surgical steps and to hone surgical skills.

Surgical Skills

- Thoroughly examine the eye
- Treat medical conditions
- Perform all minor and at least Cataract and Glaucoma surgery

Teaching Program

General Principles

Acquisition of practical competencies being the keystone of postgraduate medical education, postgraduate training is skill oriented. Learning in postgraduate program should essentially be self-directed and primarily emanating from clinical and academic work. The formal sessions should merely be meant to supplement this core effort.

Teaching Sessions

- Seminar presentations including detailed topics covering all aspects of ophthalmology shall be taken up by the residents.
- Journal clubs shall be held for having wider view of the subject and latest research work and papers discussed in routine.
- Case discussions should be mandatory for PG students so as to be expert in clinical examination, reach a diagnosis and then plan for appropriate and required management.

Teaching Schedule

In addition to bedside teaching rounds, in the department there should be daily hourly sessions of formal teaching per week. The suggested departmental teaching schedule is as follows:

1. Seminar Presentation Once a week
2. Journal Club Once a week
3. PG Case Discussion Once a week
4. Seminar Presentation Once a week
5. Journal Club Once a week
6. PG Case Discussion / Central Session Once a week

Note:

- All sessions shall be attended by all the faculty members except for those on emergency duties. All Junior and Senior Residents are supposed to attend the session.
- All teaching sessions should be assessed by all consultants at the end of session and log books signed.
- Attendance of the Residents at various sessions has to be at least 75%.
- Research paper.

Posting

- All PG students shall be posted in Eye OPD and ward on rotation.
- OT duties shall be mandatory for all PG students and has to be taken up as per monthly roster.
- PG students should be posted in emergency to deal with any ocular emergency in casualty.
- All PG students should be posted in various basic Departments (Anatomy, Pathology and microbiology) for a period of minimum 2 weeks each.
- Effort should be made to expose PG students to the latest techniques even though they may have to be sent for sometime to the centers performing and using latest instruments or surgeries.

Dissertation

- Every candidate shall carry out work on an assigned research project under the guidance of a recognized Postgraduate Teacher; the project shall be written and submitted in the form of dissertation.
- Every candidate shall submit Dissertation plan to the University within six months from the date of admission.
- Dissertation shall be submitted to the University six months before the commencement of theory examination i.e. for examination May/June session, 30th November of the preceding year of examination and for November/December session 31st May of the year of examination

- I. Identify a relevant research question.
- II. Conduct a critical review of literature.
- III. Formulate a hypothesis.
- IV. determine the most suitable study design
- V. State the objectives of the study
- VI. Prepare a study protocol.
- VII. Analyze and interpret research data, and draw conclusions.
- VIII. Write a research paper.

Assessment

All the PG residents should be assessed daily for their academic activities and also periodically.

General Principles

- The assessment is valid, objective and reliable.
- It covers cognitive, psychomotor and affective domains.
- Formative, continuing and summative (final) assessment is also conducted in theory as well as practical/clinical. In addition, d is also assessed separately.

Formative Assessment

The formative assessment is continuous as well as end-of-term. The former is to be based on the feedback from the senior residents and the consultants concerned. End of-term assessment is held at the end of each semester (upto the 5th semester).

Fomative assessment will not count towards pass/fail at the end of the program, but will provide feedback to the candidate.

Internal assessment

The performance of the Postgraduate student during the training period should be monitored throughout the course and duly recorded in the log books as evidence of the ability and daily work of the student. Marks should be allotted out of 100 as followed.

Sr. No.	Items	Marks
1.	Personal Attributes	20
2.	Clinical Work	20
3.	Academic activities	20
4.	End of term theory examination	20
5.	End of term practical examination	20

1. Personal attributes:

- **Behavior and Emotional Stability:** Dependable, disciplined, dedicated, stable in emergency situations, shows positive approach.
- **Motivation and Initiative:** Takes on responsibility, innovative, enterprising, does not shirk duties or leave any work pending.
- **Honesty and Integrity:** Truthful, admits mistakes, does not cook up information, has ethical conduct, exhibits good moral values, loyal to the institution.
- **Interpersonal Skills and Leadership Quality:** Has compassionate attitude towards patients and attendants, gets on well with colleagues and paramedical staff, is respectful to seniors, has good communication skills.

2. Clinical Work:

- **Availability:** Punctual, available continuously on duty, responds promptly on calls and takes proper permission for leave.
- **Diligence:** Dedicated, hardworking, does not shirk duties, leaves no work pending, does not sit idle, competent in clinical case work up and management.
- **Academic ability:** Intelligent, shows sound knowledge and skills, participates adequately in academic activities, and performs well in oral presentation and departmental tests.
- **Clinical Performance:** Proficient in clinical presentations and case discussion during rounds and OPD work up. Preparing Documents of the case history/examination and progress notes in the file (daily notes, round discussion, investigations and management) Skill of performing bed side procedures and handling emergencies.

3. Academic Activity: Performance during presentation at Journal club/ Seminar/ Case discussion/Stat meeting and other academic sessions. Proficiency in skills as mentioned in job responsibilities.

4. End of term theory examination conducted at end of 1st, 2nd year and after 2 years 9 month

5. End of term practical/oral examinations after 2 years 9 months.

Marks for **personal attributes** and **clinical work** should be given annually by all the consultants under whom the resident was posted during the year. Average of the three years should be put as the final marks out of 20.

Marks for **academic activity** should be given by the all consultants who have attended the session presented by the resident.

The Internal assessment should be presented to the Board of examiners for due consideration at the time of Final Examinations.

Job Responsibilities

During first year the resident will work under direct supervision of the 2nd/3rd year resident/senior resident and consultant on call. She/he will be responsible for taking detailed history, examination of patients as per the file record and send appropriate investigations as advised by seniors. Initially all procedures are to be observed and then done under supervision of seniors and during 2nd/3rd year can do procedures independently.

In 2nd year, resident is posted in special clinics like Cornea clinic, Uveitis Clinic and Glaucoma Clinic also and making of discharge cards including referrals.

In 3rd year, resident is also encouraged to make independent decisions in management of cases. She/he is also involved in teaching of undergraduate students.

In 2nd and 3rd year Junior Residents should be performing surgeries stepwise and then independently under the guidance of Senior Residents/ Consultants.

Suggested Books

Core books

- Parson's Diseases of the Eye Sihota & Tandon Clinical
- Ophthalmology Kanski.J.J

Reference Books

- Ophthalmology Yanoff Duker Retina Stephen. J. Ryan
- Systems of Ophthalmology Duke Elder
- Principles and Practices of Ophthalmology Peyman, Sander & Goldberg
- Diagnosis and Therapy of Glaucoma Becker Shaffer
- Glaucoma Chandler & Grant
- Refraction Duke Elder
- Practical Orthoptics in treatment of Squint Keith Lyall
- Mastering Phacoemulsification Paul. S.Koch
- Anatomy and Physiology of the Eye A.K.Khurana
- Glaucoma Shields
- Cataract Surgery and its complications Jaffe
- Stallard's Eye Surgery Stallards
- Automated Static Perimetry Anderson and Patela
- Cornea Smolin

Journals

- American Journal of Ophthalmology
- British Journal of Ophthalmology
- Archives in Ophthalmology
- Ophthalmology
- Indian Journal of Ophthalmology
- International Ophthalmology Clinic
