

P. G. Curriculum
Diploma in Ophthalmic Medicine & Surgery (D.O.M.S)
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P. G. Curriculum

Diploma in Ophthalmic Medicine & Surgery (D.O.M.S)

The infrastructure and faculty of the department of Ophthalmology will be as per MCI regulation.

1. Goals

The goal of Post graduate (DOMS) course in Ophthalmology is to produce a competent ophthalmologist who:

- ❖ Recognizes the health needs of carries out professional obligations in keeping with principles of National Health Policy and professional ethics;
- ❖ Has acquired the competencies pertaining to Ophthalmology that are required to be practiced in the community and at all levels of health care system;
- ❖ Has acquired skills in effectively communicating with the child, family and the community;
- ❖ Is aware of the contemporary advances and developments in medical sciences as related to Eye care;
- ❖ Is oriented to principles of research methodology; and
- ❖ Has acquired skills in educating medical and paramedical professionals.

2. Objectives

At the end of the DOMS course in Ophthalmology, the student should be able to :

- ❖ Recognize the key importance of child health in the context of the health priority of the country;
- ❖ Practice the specialty of Ophthalmology in keeping with the principles of professional ethics;
- ❖ Identify social, economic, environmental, biological and emotional determinants of patients and institute diagnostic, therapeutic, rehabilitative, preventive and promotive measures to provide holistic care to the patients;
- ❖ Recognize the importance of growth, nutrition and development as the foundation of Ophthalmology; and help each patient realize her/his optimal potential in this regard;
- ❖ Take detailed history, perform complete physical examination including anterior and posterior segment of eye and neuro Ophthalmology and make clinical diagnosis.
- ❖ Perform relevant investigative and therapeutic procedures for the ophthalmology patient;
- ❖ Interpret important imaging and laboratory results;

- ❖ Diagnose ocular ailment on the analysis of history, physical examination and investigative work up;
- ❖ Plan and advise measures for the prevention of eye disease and visual disability.
- ❖ Carryout common surgical procedures independently.
- ❖ Plan rehabilitation of patients suffering from ocular illness and handicap, and those with special needs;
- ❖ Manage ocular emergencies efficiently;
- ❖ Recognize the emotional and behavioral characteristics of persons with moral disability patients and keep this fundamental attributes in focus while dealing with them
- ❖ Demonstrate communication skills of a high order in explaining management and prognosis, providing counseling and giving health education messages to patients, families and communities;
- ❖ Develop skills as a self-directed learner, recognize continuing educational needs; use appropriate learning resources, and critically analyze relevant published literature in order to practice evidence-based medicine
- ❖ Demonstrate competence in basic concepts of research methodology and epidemiology;
- ❖ Facilitate learning of medical/nursing students, practicing physicians, para-medical health workers and other providers as a teacher-trainer;
- ❖ Play the assigned role in the implementation of national programs for contol of blindness, effectively and responsibly;
- ❖ Organize and supervise the desired managerial and leadership skills;
- ❖ Function as a productive member of a team engaged in health care, research and education.

3. Syllabus

3.1. 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.

- ❖ **Anatomy and Physiology**
 - Embryology and Anatomy
 - Physiology of the Eye
 - The Physiology of Vision
 - The Neurology of Vision
- ❖ **Ophthalmic Optics**
 - Elementary Optics
 - Elementary Physiological Optics
 - Refraction
 - Refractive Errors of the Eye

- ❖ **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

- ❖ **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

- ❖ **Disorders of Motility**
 - Anatomy and Physiology of the Motor Mechanism
 - Comitant strabismus
 - Incomitant Strabismus

- ❖ **Diseases of the Adnexa**
 - Diseases of the Lids
 - Diseases of the Lacrimal Apparatus
 - Diseases of the Orbit

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

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

- ❖ **Surgical Instruments in Ophthalmology**
 - Surgical Instruments in Ophthalmology
 - Local Anaesthesia in Ophthalmology

- Lasers in Ophthalmology

3.2 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.
- Ocular examination of children.
- 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.

4.0 Teaching Program

4.1. 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.

4.2 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.

4.3. 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

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%.

5. 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.
- ❖ 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.

6. Assessment

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

6.1. 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/clinicals. In addition, thesis is also assessed separately.

6.2. 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 (6 months). Formative assessment will not count towards pass/fail at the end of the program, but will provide feedback to the candidate.

6.3. 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 situation 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 take 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: Written test conducted at end of 1st year and 9 months

5. End of term practical/oral examination: Practical exam and viva examination at end of 1 year and 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 two 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 student.

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

6.4. Summative Assessment

- ❖ Ratio of marks in theory and practicals will be equal.
- ❖ The pass percentage will be 50%.
- ❖ Candidates will have to pass theory and practical examinations separately.

A. Theory examination

Title	Marks
Paper 1: Ocular Anatomy, Physiology & Pathology	100
Paper 2: Optics, Refraction & Recent advances in Ophthalmology	100
Paper 3: General Ophthalmology including Ophthalmic Surgery	100
Total	300

B. Practical examination

1. Long Case (1)	100
2. Short Cases 2 (50each)	100
3. Dark Room/Refraction	20
4. Spotting-(6 each) Any 5 of them.	20
Fundus Photograph	
FFA	
USG(A&B Scan)	
X-rays	
Perimetry	
CT/MRI	
OCT	
Corneal Topography	
HRT/GDx	
Surgical Instruments/steps	20
5. Oral (Grand Viva)	40
Total	300

7. 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 1st year.

- ❖ In the 2nd semester of 1st year, the resident is posted in specialty clinics.
- ❖ In 2nd year, resident is also encouraged to make independent decisions in management of cases. She/he is also involved in teaching of undergraduate students.
- ❖ Residents on emergency duty attend bed-side calls in various wards, ICUs and emergency.
- ❖ In 2nd year Junior Residents should be performing surgeries stepwise and then independently under the guidance of Senior Residents/ Consultants.

8. Suggested Books and Journals

8.1 Books

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

8.2 Journals

- ❖ American Journal of Ophthalmology
- ❖ British Journal of Ophthalmology
- ❖ Archives in Ophthalmology
- ❖ Ophthalmology
- ❖ Indian Journal of Ophthalmology
- ❖ International Ophthalmology Clinics

9 Model Test Papers

MODEL QUESTION PAPER
Diploma in Ophthalmic Medicine & Surgery (D.O.M.S)
Paper-I
Ocular Anatomy, Physiology and Pathology

Max. Marks:100

Time: 3 hrs

- **Attempt ALL questions**
 - **Answer each question & its parts in SEQUENTIAL ORDER**
 - **ALL questions carry equal marks**
 - **Illustrate your answer with SUITABLE DIAGRAMS**
-

1. Diagrammatically illustrate the development of vitreous.
2. What are the grades of binocular vision and write about a method to detect them.
3. Write in detail the relations of cavernous sinus.
4. Write about the visual cycle and its importance.
5. Write in detail about the pathological classification of malignant melanoma.
6. Define the vascular coat and discuss its arterial supply.
7. What are the layers of tear film and also mention their origin and its clinical importance.
8. In sequence, discuss the aetiopathogenesis of nongranulomatous iridocyclitis.
9. Discuss the various techniques to check the color vision.
10. What is the histology of cornea and discuss the factors which keep it transparent.

MODEL QUESTION PAPER
Diploma in Ophthalmic Medicine & Surgery (D.O.M.S)
Paper-II
General Ophthalmology including Ophthalmic Surgery

Max. Marks:100

Time: 3 hrs

- **Attempt ALL questions**
 - **Answer each question & its parts in SEQUENTIAL ORDER**
 - **ALL questions carry equal marks**
 - **Illustrate your answer with SUITABLE DIAGRAMS**
-

1. Define hypermetropia. Mention its types in relation to accommodation.
2. What are prisms. Where in a physiological and optical condition these can be used.
3. Diagrammatically show the optics of indirect ophthalmoscope.
4. What is anisometropia. What are its problems and how to take care of them.
5. What do you understand by component surgery for corneal opacity.
6. Write about the corneal surface detection techniques with emphasis in their role to detect keratoconus.
7. Write in detail about the age related macular degeneration and anti VEGF's.
8. Differentiate between LASIK and LASEK.
9. What is Pentacam and write about its role in glaucoma.
10. What do you understand by non penetrating glaucoma surgery.

MODEL QUESTION PAPER
Diploma in Ophthalmic Medicine & Surgery (D.O.M.S)
Paper-III

Max. Marks:100

Time: 3 hrs

- **Attempt ALL questions**
 - **Answer each question & its parts in SEQUENTIAL ORDER**
 - **ALL questions carry equal marks**
 - **Illustrate your answer with SUITABLE DIAGRAMS**
-

Optics, Refraction & Recent advances in Ophthalmology

1. Write briefly about signs and symptoms of glaucoma and the field defects in chronic simple glaucoma.
2. Mention the late complications of cataract surgery. Discuss the management of a retinal complication.
3. Write about causes of cataract. Mention about the hypermature cataract.
4. Discuss the differential diagnosis of retinoblastoma.
5. What are the various types of entropion. Mention briefly about the surgical procedures to correct it.
6. What do you understand by hypotonous absence of anterior chamber. Write about its management.
7. What is the role of meibomian glands. Write briefly about meibomitis.
8. Define blindness, mention the important causes of blindness in India. How will you manage ocular xerosis.
9. Write about a patient who got injury in his right eye by a shuttlecock.
10. Briefly discuss signs, symptoms and management of VKH syndrome.

