# SANKALCHAND PATEL UNIVERSITY

FACULTY OF MEDICINE
BACHELOR OF MEDICINE AND BACHELOR OF SURGERY
(M.B.B.S.)

# OPHTHALMOLOGY

## CURRICULUM / SYLLABUS & ASSESSMENT

**(AS PER COMPETENCY BASED MEDICAL EDUCATION CURRICULUM FOR THE INDIAN MEDICAL GRADUATE-2024, NATIONAL MEDICAL COMMISSION)**

**(In force for students admitted in year (2024-25) and thereafter)**

**Faculty of OPHTHALMOLOGY**
**Nootan Medical College & Research Centre**

Teaching & Evaluation Scheme for Faculty of Medicine

**Semester/Year:** Third Year M.B.B.S. Part-I
**Program Name:** Bachelor of Medicine and Bachelor of Surgery
**Effective from Academic Year:** 2024-2025
**Program Code:** MB01

| Course Code | Subject Name | Hrs/Week | | | UA | | IA | | Total | |
|---|---|---|---|---|---|---|---|---|---|---|
| | | L | P | Total | Max | Min | Max | Min | Max | Min |
| 2OP301 | Ophthalmology | 2 | - | 2 | 100 | 40 | - | - | 100 | 100 |
| 2OP302 | Ophthalmology Practical | - | 18 | 18 | 100 | 40 | - | - | 100 | |
| 2OP303 | Ophthalmology IA Theory | - | - | - | - | - | 100 | 40 | 200 | 100 |
| 2OP304 | Ophthalmology IA Practical | - | - | - | - | - | 100 | 40 | | |

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# OPHTHALMOLOGY

**COURSE CONTENT**

## PREAMBLE

The broad goal of the teaching of undergraduate students in Ophthalmology is to equip them with the knowledge, skills, and attitudes necessary for diagnosis and management of common eye disorders and emergencies. By bridging the gap between clinical practice and medical ophthalmology plays a key role in advancing healthcare and improving patient outcomes.

Medical Ophthalmology is crucial for understanding:

- **Disease Mechanisms:** How eye abnormalities contribute to the development and progression of diseases.
- **Diagnosis:** The use of clinical examination, radiological, optometric test to identify and diagnose diseases.
- **Treatment:** Provide best treatment for eye diseases with use of advanced technique and instruments.

## Goal:

The learner after teaching learning in Ophthalmology should be able to:

1. Demonstrate understanding of the anatomy and physiology of the eye and related structures.
2. Describe the etiology, clinical features, complications, and management of common eye diseases.
3. Perform clinical examination and basic diagnostic procedures in Ophthalmology.
4. Recognize and manage common Ophthalmology emergencies.
5. Demonstrate communication skills and empathy in managing Ophthalmology patients.

# Summary of Time Allotted, Teaching and Learning Methods

| Curricular component | Time allotted in hours |
|---|---|
| Lectures | 15 |
| Small group teaching / tutorials / integrated learning / practical | 32 |
| Self-directed learning | 15 |
| AETCOM | 05 |
| Clinical Posting | 72 |
| **Total** | **139** |

# OPHTHALMOLOGY SYLLABUS

(WITH NMC COMPETENCY NUMBER, AS PER COMPETENCY BASED MEDICAL EDUCATION CURRICULUM

FORTHE INDIAN MEDICAL GRADUATE-2024, NATIONAL MEDICAL COMMISSION)

| Number | COMPETENCY<br>The student should be able to |
|---|---|
| **Topic 1: Visual Acuity Assessment** | |
| OP1.1 | Describe the physiology of vision,optics of eye and anatomy of visual pathway. |
| OP1.2 | Define,classify and describe the types and methods of correcting refractive errors. |
| OP1.3 | Demonstrate the steps in performing the visual acuity assessment for distance vision,near vision,colour vision,the pinhole test and the menace and blink reflexes |
| OP1.4 | Enumerate the indications and describe the principles of refractive surgery |
| OP1.5 | Define Amblyopia,enumeratethe types of Amblyopia and describe the prevention and treatment of refractive Amblyopia. |
| **Topic 2: Lids and Adnexa,Orbit** | |
| OP2.1 | Describe and discuss the aetiology and clinical features, investigations and treatment of Hordeolumexternum, Hordeoluminternum, Ectropion, Entropion, Lagophthalmos, Blepharitis, Preseptal cellulitis. |
| OP2.2 | Demonstrate under supervision,the clinical procedure performed- Bell's phenomenon, Ptosis evaluation, Massage technique in Congenital Dacryocystitis, Epilation. |
| OP2.3 | Describe the aetiology,clinical presentation,complications and management of Thyroid eye disease |
| OP2.4 | Describe the aetiology, clinical presentation. Discuss the Complications and management of orbitalcellulitis |
| OP2.5 | Describe the clinical features on ocular examination and management of a patient with cavernous sinus thrombosis |
| OP2.6 | Enumerate the causes and describe the differentiating features, and clinical features and management of proptosis |
| OP2.7 | Classification and clinical presentation of various types of orbital tumours |
| OP2.8 | Describe the investigations,management,indicationsfor referral of Orbital tumours. |
| **Topic 3: Conjunctiva** | |
| OP3.1 | Demonstrate history taking in a patient with'Redeye',Enumerate the causes for red eye. |
| OP3.2 | Describe the etiopathogenesis,clinical features and treatment of acute bacterial and viral conjunctivitis. |
| OP3.3 | Enumerate the causes for chronic conjunctivitis.Describe the aetiology, pathophysiology, ocular features, differential diagnosis, complications and management |

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|---|---|
| | of trachoma. |
| OP3.4 | Enumerate the causes for all ergicconjunctivitis.Describe the aetiology pathophysiology, ocular features, complications and management of vernal catarrh. |
| OP3.5 | Describe the aetiology,pathophysiology,ocularfeatures,differential diagnosis, complications and management of pterygium |
| OP3.6 | Demonstrate correct technique of removal offoreign body from the eye in a simulated environment |
| OP3.7 | Demonstrate under supervision the technique of instillation of eye drops and counselling of patients you put on topical ocular medications |
| **Topic 4: Corneas** | |
| OP4.1 | Describe the applied anatomy and physiology of corneaand the Factors maintaining corneal transparency |
| OP4.2 | Enumerate various congenitalanomalies and inflammations of cornea. |
| OP4.3 | Enumerate the differential diagnosis of corneal ulcer (infective Keratitis) and describe the aetiopathogenesis,clinical features and management of each type of infective keratitis. |
| OP4.4 | Identify corneal opacity and different grades of corneal opacity. Enumeratev arious management modalitiesof corneal opacity. |
| OP4.5 | Describe tear film.Enumerate the causes of dry eyes and describe the clinical features and management of dry eyes |
| OP4.6 | Define blindness.Enumerate the causes of corneal blindness |
| OP4.7 | Enumerate the type sand the indications of Keratoplasty. |
| OP4.8 | Describe the importance of eye donation and eye banking and enumerate the various protocols involved in eye donation and eye banking. |
| OP4.9 | Identify corneal foreign body and demonstrate techniquesof removal of corneal foreign body in simulated environment. |
| OP4.10 | Counsel patients and family in a simulated environment about eye donation and teach them how to preserve the eye in the deceased till Enucleationis done. |
| **Topic 5 : Sclera** | |
| OP5.1 | Describe the etiopathogenesis, classification,clinical features, Complications and management of episcleritis. |
| OP5.2 | Enumerate the systemic conditions associated with episcleritis and scleritis, indications for their referral. |
| **Topic 6 : Iris and Anterior chamber** | |
| OP6.1 | Define Uveitis. Describe the anatomical classification of Uveitis. Describe the clinical features of Iridocyclitis. Distinguish granulomatous iridocyclitis from non-granulomatousiridocyclitis. |
| OP6.2 | Describe the complication of iridocyclitis, investigations and treatment of iridocyclitis. |
| OP6.3 | Distinguish Hyphema from Hypopyon clinically and enumerate their causes. |
| OP6.4 | Enumerate systemic conditions associated with Uveitis.Counselthe patients with uveitis in a simulated environment |
| **Topic 7 : Glaucoma** | |
| OP7.1 | Describe the etiopathogenesis, clinical features and management of congenital glaucoma. |
| OP7.2 | Describe the etiopathogenesis, clinical features and management of primary open angle glaucoma. |

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|---|---|
| OP7.3 | Describe the etiopathogenesis , clinical features and management of Primary angle closure glaucoma. |
| OP7.4 | Enumerate the causes of secondary glaucoma. |
| **Topic 8 : Lens** | |
| OP8.1 | Describe the surgical anatomy of lens |
| OP8.2 | Describe the etiopathogenesis,etiological classification, stages of Maturation and complications of cataract. |
| OP8.3 | Demonstrate the preoperative evaluation and counseling of a patient Posted for cataract surgery. |
| OP8.4 | Enumerate the different types of cataract surgery. Enumerate the different ocular anaesthesia techniques. Describe the steps of extra capsular cataract surgery, enumerate the intra operative and post operative complications of ECCE, discuss the Post operative treatment. |
| OP8.5 | Elicithistory and clinical sign sin a case of aphakia. Discuss the management of aphakia |
| OP8.6 | Participation of IMG in the team for cataract surgery |
| **Topic 9 : Retina & optic Nerve** | |
| OP9.1 | Demonstrate the technique of direct and indirect ophthalmoscopy. Describe the fundoscopic features of normal retina. |
| OP9.2 | Describe the etiopathogenesis, clinical features,management and screening protocol for Diabetic Retinopathy. |
| OP9.3 | Discuss the etiopathogenesis, clinical features and management of vascular occlusions of retina. |
| OP9.4 | Discuss the etiopathogenesis, clinical features and management of Hypertensiveretinopathy,retinopathy of prematurity, Ealesdisease, retinal detachment, central serous retinopathy, cystoid macular edema, age related macular degeneration, retinitis pigmentosa and Retinoblastoma. |
| OP9.5 | Describe and discuss the correlative anatomy , aetiology, clinical manifestations, diagnostictests, imaging and treatment of diseases of the optic nerve and visual pathway |
| **Topic 10 : Miscellaneous** | |
| OP10.1 | Demonstrate the correct technique to examine extra ocular movements (Uniocular&Binocular) |
| OP10.2 | Classify, enumerate the types, methods of diagnosis and indications for Referral in a patient with heterotropia/strabismus |
| OP10.3 | Describe the role of refractive error correction in a patient with headache and enumerate the indications for referral |
| OP10.4 | Describe the classifications, causes,ocular manifestations and management of vitamin A deficiency. Indications for referral. |
| OP10.5 | Enumerate the indications for enucleation,evisceration and exenteration. |
| OP10.6 | Classify ocularinjuries, describe the irprimary management. Indications for referral. |
| OP10.7 | Enumerate the causes of Blindness and Vision impairment. Discuss National Program for Control of Blindness (NPCB, including vision 2020) |

# ASSESSMENT

## Attendance

There shall be a minimum of 75% attendance in theory and 80% attendance in practical /clinical for eligibility to appear for the examinations in that subject.

## InternalAssessment

Scheme for calculation of internal assessment marks:

| Theory(maximum marks) | Marks | Practical (Maximum Marks) | Marks |
|---|---|---|---|
| 1st Internal Examination | 40 | 1st Internal Examination | 40 |
| Preliminary Examination | 40 | Preliminary Examination | 40 |
| Day to day assessment, Seminar, Project, SDL, Group discussion & Others | 20 | Day to day assessment, Seminar,Project,SDL,Group discussion & Others | 20 |
| **Total** | **100** | **Total** | **100** |

- Internal assessment should be based on competencies and skills.
- A candidate must secure at least 50% marks of the total marks (combined in theory and practical / clinical; not less than 40 % marks in theory and practical separately) assigned for internal assessment in a particular subject in order to be eligible for appearing at the final University examination of that subject.
- Day to day records and log book (including required skill certifications) should be given importance in internal assessment. Internal assessment should be based on competencies and skills.
- Level of participation in self directed learning, assignments, seminars, clinical case presentation, project work will be assessed and importance will be given in internal

assessment.

- Internal assessment marks will not be added to University examination marks and will reflect as a separate head of passing at the summative examination.
- The results of internal assessment should be displayed on the notice board within 1-2 weeksof the test.
- The internal and formative assessments provide ideal opportunities for students and teachers to identify learning gaps. Teachers should provide high quality feedback to each student to enable them to bridge these learning gaps.
- Formative assessments also enable the early identification of students who are struggling to achieve the intended learning outcomes. Early and appropriate targeted remediation must be planned for such students.

**UniversityAssessment**

- University examinations are to be designed with a view to ascertain whether the candidate has acquired the necessary knowledge, minimal level of skills, ethical and professional values with clear concepts of the fundamentals which are necessary for him to function effectively and appropriately as a physician of the first contact.
- Nature of questions in theory examinations shall include different types such as structured essays like Long-Answer Questions (LAQ), Short-Answer Questions (SAQ) and Multiple-Choice Questions (MCQ) shall be accorded minimum 20% weightage of the total marks of each theory paper, Scenario based MCQs shall be accorded more weightage in view of NEXT.
- Practical/clinical examinations shall be conducted in the laboratories and /or hospital wards and a blueprint must be used. The objective will be to assess proficiency and skills to conduct experiments, interpret data and form logical conclusion. Clinical cases kept in the examination must be common conditions that the learner may encounter as a physician of first contact in the community.
- Application based questions should be included for newer CBME components like foundation course, ECE, AETCOM, Integrated topics, student-learner methods etc. in all theory, practical and clinical examinations of all internal assessments and university Assessment.
- Criteria for passing in a subject: A candidate shall obtain a cumulative 50% marks in University conducted examination including theory and practical and not less than 40% separately in Theory and in Practical in order to be declared as passed in that subject. In subjects that have two papers, the learner must secure a minimum 40% marks in aggregate (both theory papers together).

## THEORY EXAMINATION PATTERN

There shall be one theory papers of 100 marks and duration of each paper will be of 3 hours.

# SECTION – A

| | | |
|---|---|---|
| Q.1 | Answer the following Structured/Case based long questions. **(**Any 1 out of 2**)** | 1×10=10 |
| Q.2 | Answer the following short questions. (Any 6 out of 7)<br>(One Question on AETCOM is Compulsory) | 6×5=30 |
| Q.3 | Answer the following short questions in one or two sentences. (Any 5 out of 6) | 5×2=10 |

# SECTION – B

| | | |
|---|---|---|
| Q.4 | Answer the following Structured/Case based long questions. **(**Any 1 out of 2**)** | 1×10=10 |
| Q.5 | Answer the following short questions. (Any 6 out of 7) | 6×5=30 |
| Q.6 | Answer following MCQ's<br>Multiple Choice Questions (Total 10 MCQs of one mark each)<br>Write the question number and appropriate single option in the given separate answer sheet.<br>Students will not be allotted marks if he/she overwrites, strikes or puts white ink on the answer once written. | 10×1=10 |

## PRACTICAL EXAMINATION PATTERN:100 Marks

| No | Type of exercise | Marks |
|---|---|---|
| 1. | Major (Case Based) Exercise and Table viva | 60 |
| 2. | Table Viva | 40 |
| | **Total** | **100** |

# LIST OF RECOMMENDED BOOKS

| Textbook | Title | Author |
|---|---|---|
| **Theory Manual** | Comprehensive Ophthalmology | A K Khurana |
| | Parson's diseases of the eye | Ramanjit Sihota<br>Radhika Tandon |
| **Practical Manual** | Practical Ophthalmology | A K Khurana |