**STUDY GUIDE**

**FOR**

**MBBS students**

**Subject of Ophthalmology**

****

**Lahore Medical and Dental College, Lahore**

By

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**Introduction**

Medical education is a life-long process and MBBS curriculum is a part of the continuum of education from pre-medical education, MBBS, proceeding to house job, and post-graduation. PM&DC outlines the guiding principles for undergraduate medical curriculum and has defined the generic competencies and desired outcomes for a medical graduate to provide optimal health care, leading to better health outcomes for patients and societies. These generic competencies set the standards of care for all physicians and form a part of the identity of a doctor. Each competency describes a core ability of a competent physician. This study guide will give an insight to the students of MBBS about all these competencies and how to plan their educational activities in the subject of ophthalmology during the period of two years.

**Details of the course**

Name of the module**:** Ophthalmology

Level of Students: 3rd and 4th-year MBBS

Total No of students: 150 +150

Total No of batches 10+10 (15 students/ batch)

Clinical subjects Coordinator: Prof. Mian M. Shafique

(Ophthalmology)

Student’s Coordinator: Two students, one each from 3rd and 4th year

This module will run in parallel with other modules.

**Duration of the course**

Total of 150 hours will be spread over a period of two years. 54 hours for whole class activity in the form of interactive lectures and seminars. 96 hours for each clinical batch which will work in clinical wards or community hospitals for a period of 8weeks (4days a week for 3 hours daily). One third of time will be allocated in 3rd year while remaining two third in 4th year.

**Learning Objectives *(knowledge, skills, attitude)***

***General learning objectives***

To enable the undergraduates to acquire important knowledge, learn skills and bring change in behaviour enabling them to:

1. Identify the important eye ailments in OPD and emergency and treat or refer if required.
2. Communicate adequately with the patients, their attendants and society with reference to the disease and its treatment.
3. Apply therapeutic morals and keep the confidentiality of the patient intact.
4. Understand the ophthalmic public health problems and know how to prevent these.
5. Comprehend the effect of systemic diseases on eye.

***Specific Learning Objectives***

At the end of ophthalmology module, the student of fourth year MBBS should be able to

1. Take adequate history of eye diseases for
	1. Problem of vision, perception of colour & field defects
	2. Discharging eyes
	3. Painful conditions of eye
	4. Double vision
2. Examine the eyes adequately and perform
	* Visual acuity for near and distance
	* Pinhole test
	* Colour vision tests
	* Visual fields test by confrontation method
	* Torch examination of eye and adnexa
	* Regurgitation test to check lacrimal passages
	* Cover tests and Hirschberg test to detect squint
	* Exraocular movements to find any limitation
	* Pupil reflexes to detect RAPD (Marcus Gunn Pupil)
	* Intra-ocular pressure (IOP) digitally
	* Distant direct ophthalmoscopy, direct ophthalmoscopy & retinoscopy

1. Make diagnose of common ophthalmic diseases like stye, chalazion, blepharitis, conjunctivitis including trachoma, ocular allergies and acute or chronic dacryocystitis.
2. Identify complex eye diseases and refer the patient to appropriate places for further treatment like cataract, all types of glaucoma, trauma to eye, strabismus, painless or painful blind eyes.
3. Start early management of acute congestive glaucoma, corneal abrasion or foreign body or ulcers, red eye and white pupil and then refer to designated eye hospital.
4. Iinstill eye drops properly, stain the cornea with fluorescein dye.
5. Identify common eye instruments like slit lamp, different types of tonometers, direct and indirect ophthalmoscope and retinoscope.

**Teaching Methodologies and Learning formats**

Multiple teaching and learning formats will be used in this module including

* Interactive lectures
* Tutorials /problem-based learning
* Bedside learning
* Ward rounds🡪 presentation of cases and observations
* OPD🡪Practical training for basic skills
* Case-based learning in the clinical meetings and discussions
* Community-based learning
* Operation Theatres
	+ skills of sterilization to be learned and practiced
	+ observations of major procedures,
* Observation of ocular labs (perimetry, Hess charting, keratometry, ultrasound, laser therapy)
* Emergency duties

**Contents of the module (Syllabus)**

The following is the final list of contents of the module. A special attention will be paid to

* **Eyeball** Essential anatomy, physiology, biochemistry, pharmacology and pathology
* **Adnexa & Orbit:** thyroid eye disease, orbital cellulitis, proptosis and orbital tumors.
* **Lacrimal Apparatus:** Acute and chronic dacryocystitis, tumors of lacrimal sac & gland, Epiphora and lacrimation.
* **Lids:** Distichiasis, trichiasis, entropion, ectropion blepharitis, stye, chalazion, , ptosis, and benign /malignant tumors of lids
* **Conjunctiva:** Dry eyes, infective and allergic conjunctivitis and pterygium.
* **Cornea:** Keratitis, corneal ulcers, corneal opacity, corneal dystrophy and corneal grafting.
* **Sclera:** Scleral discoloration, episcleritis, scleritis,.
* **Uveal Tract:** Uveitis, and its differential diagnosis from other causes of  the red-eye.
* **Pupil:** Common abnormalities and pathways of reflexes of pupil.
* **Lens:** Cataract classification, etiology, management including visual rehabilitation. Lens subluxation and dislocation
* **Glaucoma:** Aetiology, classification, diagnosis and general principles of management.
* **Retina and Vitreous:** Vitreous detachment and hemorrhage, retinal detachment, hypertensive retinopathy, diabetic retinopathy, central retinal vein occlusion, central retinal artery occlusion, branch retinal vein occlusion, branch retinal artery occlusion , age-related macular degeneration, retinoblastoma and retinitis pigmentonsa.
* **Errors of refraction:** Introduction to optical system of normal eye,  emmetropia, myopia, hypermetropia, anisometropia, astigmatism,  presbyopia, aphakia, pseudophakia, and refractive surgery.
* **Squint:**, Phoria and tropia, paralytic and non-paralytic squint and management of amblyopia
* **Neuro-ophthalmology**:  Optic neuritis, papilloedema, optic atrophy, Visual field defects in the lesions of optic nerve, optic chiasma, and visual cortex. 3rd, 4th, 6th and 7th cranial nerve palsies.
* **Ocular emergencies:**  Chemical burns, corneal ulcer, corneal foreign body, acute congestive glaucoma, perforated globe, leucocoria in children, retinal artery and vein occlusion, acute vitreous hemorrhage, rhegmatogenous retinal detachment and papillitis
* **Injuries:** Intra and extraocular foreign bodies,  chemical injuries and burns and sympathetic ophthalmitis and blunt and perforating injuries
* **Systemic Diseases:** Vitamin A  deficiency, Diabetes, hypertension,  collagen vascular disorders and thyroid eye disease.
* **Ophthalmic therapeutics:** Antibiotics, antiviral, antifungal, local anesthetics, antiglaucoma, fluorescein dye, mydriatic- cycloplegic and steroids

**Timetable of the module (Alignment of activities with study hours)**

|  |  |  |  |
| --- | --- | --- | --- |
| **Topic** | **Activity** | **Year**  | **Time****(Hours)** |
| Introduction of faculty and ophthalmology department  | Discussion and visit of the ward | 3rd year | 2 |
| Anatomy of the eye  | Interactive lecture, tutorial with models | 3rd year | 3 |
| Physiology of the eye  | Interactive lecturesTutorials  | 3rd year | 3 |
| History Taking General examination of eye | OPD discussion | 3rd year | 6 |
| Eyelid diseases &Lid eversion | LectureCase discussion in the ward, OPD and theatre | 3rd year | 6 |
| Conjunctival diseases | LectureCase discussion in the ward and OPD | 3rd year | 6 |
| Corneal diseasesCorneal stainingForeign body removal | LectureCase discussionOPD and theatre | 3rd year | 6 |
| Lacrimal Apparatus | LectureCase discussionOPD and theatre | 3rd year | 4 |
| Diseases of Optic nerveRelated to pupil reactions | Discussion in the ward /OPDOcular lab | 4th year | 4 |
| Refractive errorsRetinoscopy Contact lens, PRK, Lasik | Discussion in the ward & OPD | 4th year | 6 |
| Visual pathways | Lecture and discussion in the ward & OPD | 4th year | 4 |
| OrbitProptosis, Thyroid eye disease | Discussion in the ward & OPD | 4th year | 4 |
| LensDistant Direct ophthalmoscopyCataract (examination management & operation) | LecturesCase discussionBedside and operation theatreCommunity-based learning | 4th year | 10 |
| GlaucomaTonometryVisual fieldsAnti-Glaucoma drugs | LectureOPD and ward discussiontheatre | 4th year | 10 |
| Uveitis | OPD discussion | 4th year | 4 |
| Pupil reactions and examination | Discussion ward/ OPD | 4th year | 4 |
| RetinaFundoscopy and management | Lecture and discussion in the ward & OPD | 4th year | 6 |
| Squint, types, management, Hess test and cover test | Discussion in the ward/ OPD Ocular lab | 4th year | 5 |
| Red eyeWhite pupilDry eye Wet eye | Problem Based LearningLectureDiscussion in the ward & OPDOcular lab | 4th year | 10 |
| Self-study time |  |  | 30 |
| Assessment  |  |  | 6 |
| Total |  |  | 150 |

**Attendance Requirement**

Minimum of 75% attendance will be required for students to qualify to appear in final university examinations and the final exam of the module. They must attend all scheduled teaching sessions and examinations. Absence due to illness must be certified appropriately by the General Physician. Attendance will be recorded through biometrics system. If their attendance is short they will be warned at midterm level.

**The Assessment**

Multiple assessment tools will be used during formative and summative assessment as show in the following table.

|  |  |  |  |
| --- | --- | --- | --- |
| **Type of Assessment** | **Knowledge** | **Clinical skills** | **Attitudes** |
| **Formative (Internal)** **(10% = 20marks)**Class test Ward test Log Book | Multiple choice questions (MCQ)Short Answer Questions (SEQ) | Case presentation  | Case presentation  |
| **Summative (External)****(90% =180 marks)**End of 4th year examination by UHS as 3rd professional MBBS  | 45MCQs: each having 1mark 9 SEQs: each having 5marks(90 marks) | OSPE (14 stations) including interactive Case Presentation(90 marks) | Case presentation during OSPE |

* Theory or knowledge assessment by MCQ and SEQ papers by UHS = 90 marks
* Skills and attitude assessment by OSPE by UHS = 90 marks
* Internal assessment by formative assessment by LMDC = 20 marks
* Total = 200 marks
* Internal assessment will include the performance of students both in 3rd and 4th Year.
* *10 marks of internal assessment will be added each to theory and practical to make the final result by UHS.*
* *Minimum of 50% marks will be required to pass each theory and practical separately.*

**Learning resources/ facilities**

1. Parson diseases of Eye. Butterworth-Heinemann;
2. Clinical Ophthalmology by M. S Jatoi, Farooq Kitab Ghar, Urdu Bazar, Karachi.
3. Clinical Ophthalmology by M. Saleem Akhtar, National Book Foundation, Lahore
4. Video tapes of clinical skills and surgical procedure will be made available in IT library.
5. Skills lab will provide the simulated learning experience the basic skills and procedures
6. Computer and Internet resources to gather the latest information.
7. The students will be provided many educational facilities like study room equipped with multimedia facilities and internet connection throughout the college campus.