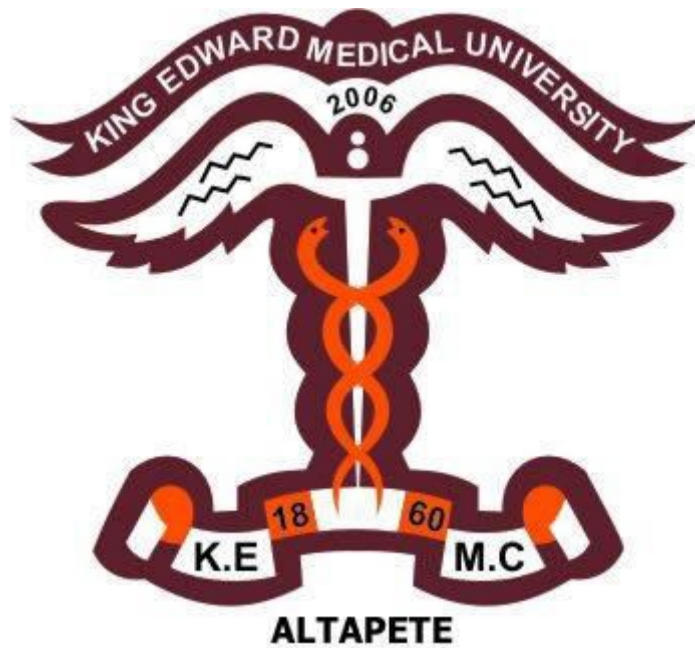


STUDY GUIDE

OPHTHALMOLOGY

FOR FOURTH YEAR M.B.B.S. STUDENTS



DEPARTMENT OF OPHTHALMOLOGY
KING EDWARD MEDICAL UNIVERSITY LAHORE

TABLE OF CONTENTS

TOPIC	PAGE
Introduction to Study Guide	3
Organogram	4
Faculty	5
Objectives of Curriculum	6
Curriculum Map	7
Structure of Third and Fourth Year	8
Timetable	9
Ward Rotation Program	10
Assessment	12
Modules	14
Skills	23
Learning Resources	24

INTRODUCTION TO STUDY GUIDE

Dear Students,

This study guide has been made to take you through the Ophthalmology course set out for you over Third and Fourth year of medical teaching. The course cumulative amounts to 150 hours of dedicated teaching in the subject of Ophthalmology and it will take the shape of lectures as well as ward learning, case-based discussions and group discussions.

Ophthalmology is one of the first clinical subjects you will come face to face with after the basic sciences. It is important to understand the importance of this subject as a general practitioner or any other Specialty doctor of future. You may become the point of contact for very important emergency ocular conditions, or other indolent conditions whose timely diagnoses and referral may save a patient from blindness. The course has been designed keeping in line the curriculum provided by Pakistan Medical & Dental Council to equip you with the basics of Ophthalmology and to enable you to be the first point of contact for emergencies and for referral when pertinent.

The guide includes information regarding the Department of Ophthalmology. It also elucidates the modules with their learning objectives. Owing to a greater integration, modules and inter-modules will enable necessary nesting with the concurrent subjects.

We extend our heartiest welcome to this Subject of Ophthalmology on behalf of the entire Department. We urge you to go through this study guide to garner the maximum out of the subject and hope to do the same at our end.

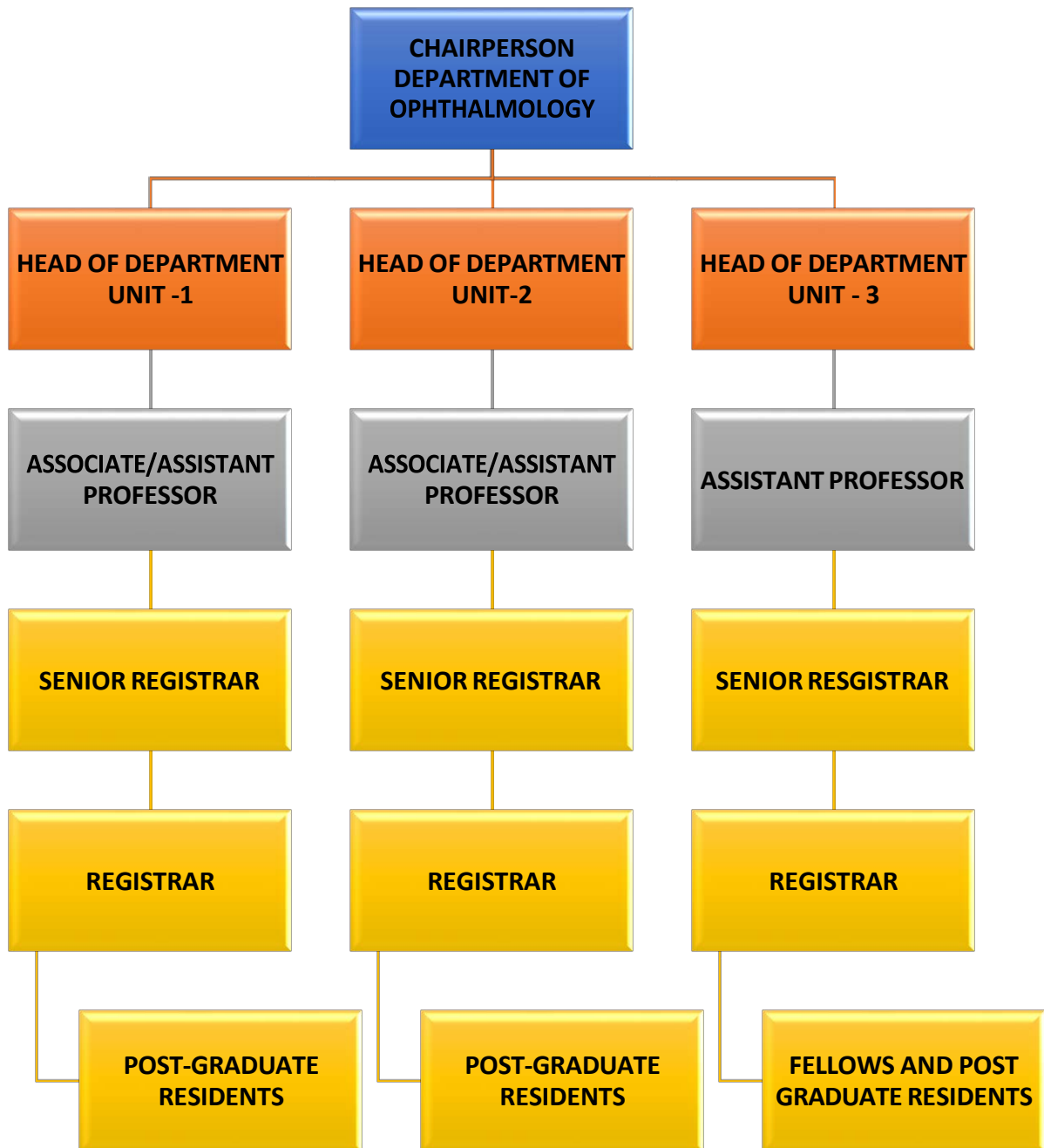
Our learning resources are also available online. Personnel are always available in wards to extend guidance as well as any necessary help for the benefit of the students.

Hoping for a great learning experience,



Prof. Muhammad Moin
Chairperson Department of Ophthalmology
King Edward Medical University/Mayo Hospital
Lahore

ORGANOGRAM DEPARTMENT OF OPHTHALMOLOGY



FACULTY

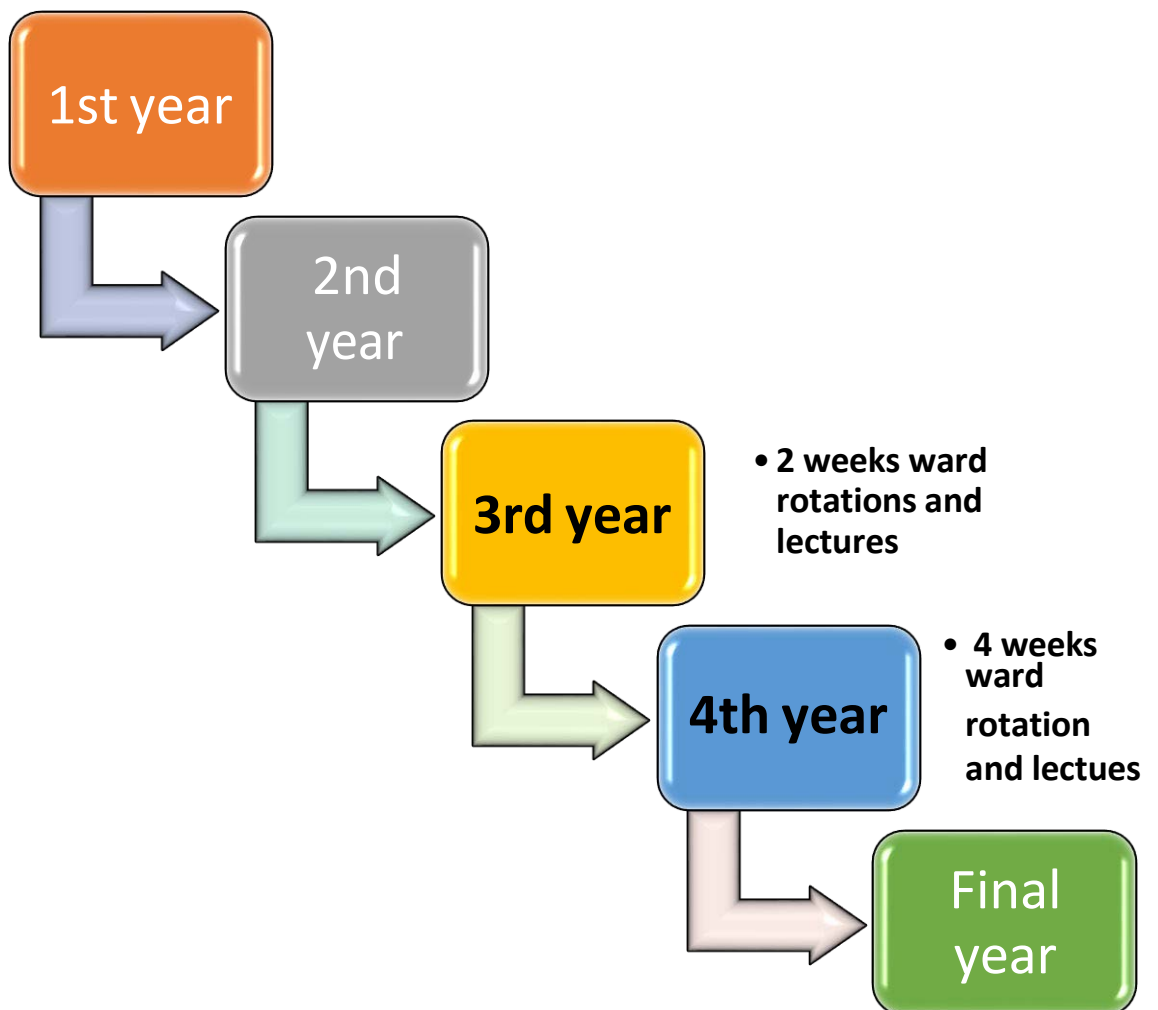
Prof. Dr. Muhammad Moin	Chairperson and Head Department of Ophthalmology
Prof. Dr. Asad Aslam Khan	Visiting Professor and Professor Emeritus
Prof. Dr. Ali Ayaz Sadiq	Professor and Head Eye Unit-1
Prof. Dr. Syed Raza Ali Shah	Professor and Head Eye Unit-2
Prof. Dr. Nasir Chaudhary	Professor Eye Unit-2
Dr. M. Shaheer	Associate Professor Eye Unit-3
Dr. Aisha Azam	Associate Professor Eye Unit-1
Dr. Junaid Afzal	Assistant Professor Eye Unit-1
Dr. Tehseen Mehmood Mahju	Assistant Professor Eye Unit-3
Dr. Sidrah Latif	Assistant Professor Eye Unit-3

OBJECTIVES OF CURRICULUM

General objectives of under graduate Ophthalmology teaching and training are to equip the students with essential knowledge, skills and attitudes, so that they are able to:

- Identify ophthalmic diseases including emergencies, provide primary eye care, refer to appropriate center and provide follow-up to the patients
- Perform essential ocular examination.
- Communicate effectively with the patient, the family and the community regarding eye diseases and relevant issues.
- Maintain the confidentiality of patient and highest standards of medical ethics.
- Identify the issues related to public health pertaining to Ophthalmology and overview scope of community Ophthalmology.
- Practice patient safety and ensure quality of care.
- Application of knowledge for research and understanding medical writing including use of information technology.

CURRICULUM MAP



The curriculum of Ophthalmology is covered during 3rd and 4th year of medical teaching. While main concepts may be introduced in 3rd year, the detailed aspects with wider clinical exposure will be afforded during the 4th year.

STRUCTURE OF THIRD AND FOURTH YEAR

THIRD YEAR:

During 3rd year M.B., B.S. there will be 26 in class lectures of Ophthalmology and 2-week ward rotation, 4 days per week.

FOURTH YEAR:

During 4th year of M.B.B.S. there will be 57 in class lectures of Ophthalmology and 4-week ward rotation 6 days a week.

TOTAL LECTURES BREAKUP		
	LECTURES	ASSESSMENTS
THIRD YEAR	26	-
FOURTH YEAR	57	8

ROTATION IN CLINICAL WARDS	THIRD YEAR 2 WEEKS	FOURTH YEAR 4 WEEKS	
WORKING DAYS	08 DAYS	24 DAYS	
ROTATION BREAKUP			
THIRD YEAR	DAILY	TOTAL ROTATION HOURS	
	1.5 HOUR PER DAY	8X1.5 = 12 HOURS	
FOURTH YEAR	WEEKLY HOURS – 17 HOURS		TOTAL ROTATION HOURS
	4 HOUR PER DAY	3X4 = 12 HOURS	17X4 = 68 HOURS
	1.5 HOUR PER DAY	2X1.5 = 3 HOURS	
	2 HOUR PER DAY	1X2 = 2 HOURS	

TIMETABLE

THIRD YEAR TIMETABLE					
DAY	8.00-8.45 AM	8.45- 9.30 AM	9.30- 10.15 AM	10.15- 12.00	12.10-2.00
MONDAY	LECTURES			WARD	PRACTICAL
TUESDAY				WARD	
WEDNESDAY				WARD	
THURSDAY				WARD	
FRIDAY					
SATURDAY				LECTURES	

FOURTH YEAR TIMETABLE					
DAY	8.00-8.45 AM	8.45- 9.30 AM	9.30- 10.15 AM	10.30- 12.30	12.30-2.30
MONDAY	LECTURES			WARD	WARD
TUESDAY				WARD	PRACTICAL
WEDNESDAY				WARD	WARD
THURSDAY				WARD	PRACTICAL
FRIDAY				WARD	
SATURDAY				WARD	WARD

WARD ROTATION PROGRAM

FOURTH YEAR WARD CLASSES SCHEDULE

WEEK 1

OT	WARD DAY	OPD
Orientation of theatres	History Taking	OPD clinic tour
Sterilization of instruments	Clinical methods	Dark room tests

WEEK 2

OT	WARD DAY	OPD
Cataract and its surgery	History and examination	Refractive error, Refraction, Biometry
Retinal detachment surgery	Retinal Detachment surgery	Diabetic Retinopathy

WEEK 3

OT	WARD DAY	OPD
Eyelid surgery	Eyelid deformities and lesions	Ocular emergency
Glaucoma surgery	Glaucoma	Applanation tonometry, Automated perimetry

WEEK 4

OT	WARD	OPD
Instruments and drugs	Corneal ulcer	Fluorescein Test, Corneal sensitivity test, Corneal diagram
Revision of clinical methods	Uveitis	Strabismus Examination

- History and Examination should be done on all days.

Timings:

- Mon, Wed, Sat: 10:30am – 2:30pm
- Tue, Thurs: 10:30am – 12:00pm
- Fri: 10:30am - 12:30 pm

Total dedicated hours: 68 hrs

LEARNING OBJECTIVES

- **PERFORM INDEPENDENTLY:**
 - Optic Nerve Function Tests
 - Torch Examination
 - Dark Room Tests
 - Strabismus and Ptosis examination
 - Digital Tonometry
 - Regurgitation Test
 - Clinical History and Examination
 - Counselling of Patient
 - Identification of Drugs and Instruments

- **OBSERVE:**
 - Sterilization Techniques
 - Pre-op & Post op patient preparation
 - Common Ophthalmology Surgeries
 - Slit Lamp Examination
 - Indirect Ophthalmoscopy
 - Applanation Tonometry
 - Refraction
 - Automated Perimetry
 - Biometry

ASSESSMENT

Formative Assessment

Third Year

Sr. no	Assessment	Tool	Frequency
1.	Ward Tests	OSPE Short cases Clinical methods	1 test at the end of rotation

Fourth Year

Sr. no	Assessment	Tool	Frequency
2.	Class Tests	20 MCQs 5 SEQs	8
3.	Ward Tests	1 Long Case + Dark Room Test 2 Short Cases + Table viva	At the end of rotation
4.	Send-Ups	30 MCQs 6 SEQs	After session end

Summative Assessment

Sr. no	Assessment	Tool
1.	Written	30 MCQs 6 SEQs
2.	Skill	1 Long Case 2 Short Cases 1 Table viva 1 Practical

MODULES

TITLE	OPHTHALMOLOGY	STUDENT NOTES
Target Students	Fourth Year	
Course Title	Module: 1 st Inter-module	
Duration	12 Lectures	
Outcomes	Acquire appropriate knowledge regarding LENS 1) Anatomy 2) Cataract a) Congenital b) Acquired c) Evaluation and management d) Post-Op complications 3) Lens dislocations GLAUCOMA 1) Basic a) Anatomy b) Physiology c) IOP principles 2) Types a) Congenital b) Acquired 3) POAG 4) PACG 5) Secondary glaucoma 6) Management of congenital glaucoma	

Specific learning objectives	<p>To diagnose and treat certain conditions and refer them for further surgical management.</p> <p>To communicate effectively with patient and family regarding disease and its related issues.</p>	
Teaching and learning strategies	Lectures, CBL, Small Group Discussions	
Assessments	MCQs, SEQs, Table viva	

TITLE	OPHTHALMOLOGY	STUDENT NOTES
Target Students	Fourth Year	
Course Title	Module: 2 nd Inter-module	
Duration	12 Lectures	
Outcomes	<ol style="list-style-type: none"> 1. Corneal ulcers 2. Peripheral corneal ulcers 3. Corneal ectasia 4. Errors of refraction 5. Management of errors of refraction 6. Evaluation of watery eyes (NLD blockage) 7. Introduction to strabismus 8. Clinical evaluation of strabismus 9. Esotropia 10. Exotropia 11. Management of Strabismus 12. Amblyopia 	
Specific learning objectives	<p>Demonstrate appropriate knowledge skills and attitudes in relation to corneal diseases</p> <p>Identify types of keratitis and describe their management</p> <p>Explain Tear film composition and disorders</p> <p>Define Epiphora</p> <p>Differentiate various types of squint and their management</p>	
Teaching and learning strategies	Lectures, CBL, Small Group Discussion	
Assessments	MCQs , SEQs, Practical	

TITLE	OPHTHALMOLOGY	STUDENT NOTES
Target Students	Fourth Year	
Course Title	Module: 3 rd Inter-module	
Duration	12 Lectures	
Outcomes	<p>To acquire knowledge of</p> <ol style="list-style-type: none"> 1. Retinal detachment 2. Management of RD 3. Macular disorders 4. Conjunctivitis 5. Pterygium, pinguecula, other conjunctival lesions 6. Management of conjunctival lesions 7. Inflammatory conditions of lid and lash disorder 8. Ptosis 9. Tumors of the lids 10. Blunt trauma and hyphema 11. Chemical injuries to the eye 12. Orbital and preseptal cellulitis 	
Specific learning objectives		
Teaching and learning strategies	Lectures	
Assessments	MCQs SEQs	

TITLE	OPHTHALMOLOGY	STUDENT NOTES
Target Students	Fourth Year	
Course Title	Module: Blood Vessels and Heart	
Duration	05 Lectures	
Outcomes	Describe 1. Clinical features of vascular diseases of retina 2. Diabetic Retinopathy 3. Hypertensive Retinopathy 4. Vascular diseases of Orbit 5. Miscellaneous retinal vascular disorders	
Specific learning objectives	To diagnose and treat certain conditions and refer them for further surgical management. To communicate effectively with patient and family regarding disease and its related issues.	
Teaching and learning strategies	Lectures, Practical, SGD, CBL	
Assessments	MCQs, SEQs, Table viva	

TITLE	OPHTHALMOLOGY	STUDENT NOTES
Target Students	Fourth Year	
Course Title	Module: Hematology	
Duration	06 Lectures	
Outcomes	<ol style="list-style-type: none"> 1. Evaluating patients with orbital disease 2. Orbital lesions 3. Orbital lesions 4. Retinoblastoma 5. Medicines in Ophthalmology 	
Specific learning objectives	<p>Recognise the basic concept of proptosis and its causes and treatment</p> <p>Identify orbital cellulitis and know about its causes and treatment</p> <p>Differentiate between orbital cellulitis and pre-septal cellulitis</p> <p>Describe the medical treatment of ophthalmic problems with regards to eye drops (names, composition, dosage)</p> <p>Recognise the role and importance of Vitamin A in the eye.</p>	
Teaching and learning strategies	Lectures, Small group discussion, CBL	
Assessments	MCQs, SEQs, Table viva	

TITLE	OPHTHALMOLOGY	STUDENT NOTES
Target Students	Fourth Year	
Course Title	Module: Endocrinology	
Duration	03 Lectures	
Outcomes	<ol style="list-style-type: none"> 1. Pupils – lesions of optic tract 2. Papilledema, optic neuritis and optic atrophy 3. Thyroid Eye Disease 	
Specific learning objectives	<p>Describe the neurological pathways and mechanism of pupillary light reflex and its abnormalities</p> <p>Describe various pituitary problems and their effects on pupils and optic disc</p> <p>Discuss optic nerve including optic atrophy, opticneuritis, papilledema and papillitis</p> <p>Explain visual pathway and visual field defects</p> <p>Discuss Thyroid eye disease as part of systemic thyroid disease</p>	
Teaching and learning strategies	Lectures, Out-patient teaching, SGD, CBL	
Assessments	MCQs, SEQs, Table viva, Practical	

TITLE	OPHTHALMOLOGY	STUDENT NOTES
Target Students	Fourth Year	
Course Title	Module: CNS	
Duration	02 Lectures	
Outcomes	<ol style="list-style-type: none"> 1. 3rd nerve palsy 2. 4th and 6th nerve palsy 	
Specific learning objectives	<p>Describe features of various nerve palsies</p> <p>Identify and refer the case for investigation and management by neurology department</p>	
Teaching and learning strategies	Lectures, Audio-visual aid, CBL	
Assessments	MCQs, SEQs, Practical	

TITLE	OPHTHALMOLOGY	STUDENT NOTES
Target Students	Fourth Year	
Course Title	Module: Respiration	
Duration	06 Lectures	
Outcomes	Learn to diagnose <ol style="list-style-type: none"> 1. Uveitis 2. Management of Uveitis 3. Ocular tumors and Uveitis 4. Penetrating injury and sympathetic ophthalmitis 5. ROP 	
Specific learning objectives	Identification of signs of certain ocular conditions and establishing liaison for systemic management of the patient Understanding the various ocular traumas and the emergency management Understanding the concept of ROP Counselling parents of neonates for ROP screening	
Teaching and learning strategies	Lectures, CBL	
Assessments	MCQs, SEQs, Table viva	

SKILLS

In every module skills required are mentioned. To highlight the requirement a separate list of skills which you are expected to learn is given below.

During your clinical attachment, you are required to spend one hour daily in the ward with patients, where the required skills will be demonstrated to you and you will be given time to practice the skills. Please be careful with the patients and respect the norms of the skills.

1. History Taking
2. Visual Acuity Assessment
3. Torch Examination
4. Pupillary Light Reflex
5. Extraocular Motility Exam
6. Visual Field Assessment by Confrontation method
7. Cover and Uncover Test
8. Ptosis Exam
9. Proptosis Exam

LEARNING RESOURCES

1. Parson's Diseases of the Eye by Ramanjit Sihala and Radhika Tandor.3rd Edition
2. Ophthalmology by- Renu Jogi
3. Clinical Textbook of Ophthalmology by Dr. Saleem Akhtar
4. Clinical Ophthalmology Text & Atlas by Shafi M. Jatoi
5. Youtube channels
 - a. <https://www.youtube.com/@mmoin7>
6. Ophthalmology Online Resource on Google Classroom for Undergraduates KEMU