



LIAQUAT UNIVERSITY
OF MEDICAL & HEALTH SCIENCES,
JAMSHORO, SINDH

STUDY GUIDE

FOURTH PROFESSIONAL MBBS

BATCH 2022-23

ACADEMIC SESSION 2025-26



ACADEMIC CALENDAR

Academic Session 2025-2026

Activity	Class Year	Dates
Classes starts	All Batches of MBBS	January 26, 2026
Summer Vacation/ Internship/Elective	1 st to Final Year MBBS	June 01 to 27, 2026
Classes Resumes	All Batches of MBBS	June 29, 2026
Classes Ends	1 st to 4 th Year MBBS	October 30, 2026
	Final Year MBBS	November 27, 2026
Exam Preparation	1 st to 4 th Year MBBS	November 01 to November 27, 2026
	Final Year MBBS	November 30 to December 25, 2026
Annual Examination	1 st to 4 th Year MBBS	November 30 to December 27, 2026
	Final Year MBBS	December 28, 2026 to January 30, 2027
New session will start	1 st to 4 th Year MBBS	January 11, 2027

WEEKLY TIME TABLE
FOURTH PROFESSIONAL MBBS (BATCH 2022-23)
FROM MONDAY 26 JANUARY 2026
TIME: 08.00 AM TO 03.00 PM

HOSPITAL POSTING

DATE	INTEGUMENTARY		GASTRO	CARDIO LOGY	RENAL & EXCRETORY			ENT
	DERMAT OLOGY	PLASTIC SURGERY			UROLOGY		NEPHRO LOGY	
					I	II		
26-01-2026 TO 06-02-2026	A1	A2	A3	A4	A5a	A5b	A6	A7+8
09-02-2026 TO 20-02-2026	A2	A1	A4	A3	A6a	A6b	A5	
23-02-2026 TO 06-03-2026	A3	A4	A5	A6	A7a	A7b	A8	A1+2
09-03-2026 TO 27-03-2026	A4	A3	A6	A5	A8a	A8b	A7	
30-03-2026 TO 10-04-2026	A5	A6	A7	A8	A1a	A1b	A2	A3+4
13-04-2026 TO 24-04-2026	A6	A5	A8	A7	A2a	A2b	A1	
27-04-2026 TO 08-05-2026	A7	A8	A1	A2	A3a	A3b	A4	A5+6
11-05-2026 TO 29-05-2026	A8	A7	A2	A1	A4a	A4b	A3	
DATE	ORTHOPAEDICS AND TRAUMATOLOGY		NEURO SCIENCE		PULMO NOLOGY	RADIO LOGY	EYE	
	ORTHO PAEDICS	NEURO SURGERY	NEURO LOGY	PYSCHI ATRY				
26-01-2026 TO 06-02-2026	B1	B2	B3	B4	B5	B6	B7+8	
09-02-2026 TO 20-02-2026	B2	B1	B4	B3	B6	B5		
23-02-2026 TO 06-03-2026	B3	B4	B5	B6	B7	B8	B1+2	
09-03-2026 TO 27-03-2026	B4	B3	B6	B5	B8	B7		
30-03-2026 TO 10-04-2026	B5	B6	B7	B8	B1	B2	B3+4	
13-04-2026 TO 24-04-2026	B6	B5	B8	B7	B2	B1		
27-04-2026 TO 08-05-2026	B7	B8	B1	B2	B3	B4	B5+6	
11-05-2026 TO 29-05-2026	B8	B7	B2	B1	B4	B3		

DATE	INTEGUMENTARY		GASTRO	CARDIO LOGY	RENAL & EXCRETORY			ENT
	DERMAT OLOGY	PLASTIC SURGERY			UROLOGY		NEPHRO LOGY	
					I	II		
18-05-2026 TO 17-07-2026	A8	A7	A2	A1	A4a	A4b	A3	A5+6
20-07-2026 TO 31-07-2026	B1	B2	B3	B4	B5a	B5b	B6	B7+8
03-08-2026 TO 14-08-2026	B2	B1	B4	B3	B6a	B6b	B5	
17-08-2026 TO 28-08-2026	B3	B4	B5	B6	B7a	B7b	B8	B1+2
31-08-2026 TO 11-09-2026	B4	B3	B6	B5	B8a	B8b	B7	
14-09-2026 TO 25-09-2026	B5	B6	B7	B8	B1a	B1b	B2	B3+4
28-09-2026 TO 09-10-2026	B6	B5	B8	B7	B2a	B2b	B1	
12-10-2026 TO 23-10-2026	B7	B8	B1	B2	B3a	B3b	B4	B5+6
26-10-2026 TO 06-11-2026	B8	B7	B2	B1	B4a	B4b	B3	
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03-08-2026 TO 14-08-2026	A2	A1	A4	A3	A6	A5		
17-08-2026 TO 28-08-2026	A3	A4	A5	A6	A7	A8	A1+2	
31-08-2026 TO 11-09-2026	A4	A3	A6	A5	A8	A7		
14-09-2026 TO 25-09-2026	A5	A6	A7	A8	A1	A2	A3+4	
28-09-2026 TO 09-10-2026	A6	A5	A8	A7	A2	A1		
12-10-2026 TO 23-10-2026	A7	A8	A1	A2	A3	A4	A5+6	
26-10-2026 TO 06-11-2026	A8	A7	A2	A1	A4	A3		

PREFACE

The MBBS curriculum is designed to prepare the medical student to assume the role of the principal care for patients. The majority of instruction in the various basic and clinical science disciplines is focused on attaining this objective. The amount of material and specificity that the student must acquire in order to complete the MBBS programme as a whole is substantial. Subject-based instruction affords students the chance to develop comprehensive and profound understanding of each respective subject. However, this instructional framework might result in the student failing to recognize the interconnectedness of knowledge across different disciplines, their interrelation, and most significantly, their significance in the context of patient care.

Over the years, numerous inventive approaches have been devised to tackle these obstacles. One such approach is the integration of instruction at multiple levels, which eliminates and reduces boundaries within subjects, both vertically and horizontally, across phases. LUMHS, while acknowledging the merits of these methodologies, has endeavored to seize the opportunity to comprehend the interdependencies and minimize duplication in the subjects being instructed through the implementation of an integrated modular approach.

The cardiovascular system, musculoskeletal system, and respiratory system are few examples of system-based modules in an integrated modular curriculum that connects basic scientific knowledge to clinical problems. By means of integrated instruction, subjects are presented as a unified whole. Students can enhance their comprehension of basic scientific principles through consistent application of clinical examples in their learning. A skills lab provides early exposure to the acquisition of skills, case-based discussions, and self-directed learning are all elements of an integrated teaching programme.

LEARNING STRATEGIES

The following instructional and learning strategies are implemented to foster greater comprehension:

- ❖ Interactive Lectures
- ❖ Small group sessions
- ❖ Case-Based Learning (CBL),
- ❖ Self-Study,
- ❖ Practical,
- ❖ Skills lab sessions,
- ❖ Demonstrations
- ❖ Field visits

INTERACTIVE LECTURES

In large group, the lecturer actively involves the students by introducing the topic or common clinical conditions and explains the underlying phenomena by questions, pictures, videos of patients' interviews, exercises, etc. in order to enhance their learning process.

SMALL GROUP TEACHING (SGT):

This strategy is helpful for the students to make their concepts clear, and s acquiring skills or attitudes. These sessions are organized with the help of specific tasks such as patient case, interviews or discussion topics. Students are than encouraged to exchange their ideas and apply knowledge gained from lectures, tutorials and self-study. The facilitator employs probing questioning, summarization, or rephrasing techniques to enhance the understanding of concepts.

CASE- BASED LEARNING:

A format of small group discussion that centers on a sequence of questions derived from a clinical scenario, with the aim of facilitating learning. Students engage in discussions and provide answers by applying pertinent knowledge acquired in clinical and basic health sciences throughout the curriculum.

PRACTICAL:

Basic science practical related to anatomy, biochemistry, pathology, pharmacology and physiology are scheduled to promote student learning by application.

SKILLS LAB SESSION:

Skills relevant to respective module are observed and practiced where applicable in skills laboratory.

SELF DIRECTED LEARNING:

Students take on the responsibility of their own learning by engaging in independent study, collaborating and talking with classmates, accessing knowledge from the Learning Resources available, teachers, and other experts. Students can make use of the designated self-study hours provided by the college.

FIELD VISITS:

Students visit community health areas to understand the common diseases and their preventive measures.

HOSPITAL POSTINGS:

Students attend tertiary care hospital postings and learn common diseases and their management.

Prof. Manzoor Ali Lakhair

Director Academics

Liaquat University of Medical & Health Sciences, Jamshoro, Pakistan

STUDY GUIDE

A study guide is a strategic and effective approach to:

- ❖ Provide students a detailed framework of the modules organization
 - ❖ Support students in organizing and managing their studies throughout academic year.
 - ❖ Provide students information on assessment methods and the rules and regulations that apply.
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- It outlines the outcomes which are expected to be achieved at the end of each module.
 - Ascertains the education strategies such as lectures, small group teachings, demonstration, tutorial and case based learning that will be implemented to achieve the module objectives.
 - Provides a list of learning resources for students in order to increase their learning.
 - Emphasizes information on the contribution of attendance, end module tests, block examinations and annual examinations on the student's overall performance.
 - Includes information on the assessment methods that will be held to determine every student's achievement of objectives.

ABBREVIATIONS

OPHTHALMOLOGY	Ophth
OTORHINOLOGY	ENT
ORTHOPAEDICS & TRAUMATOLOGY	Orth-T
ORTHOPAEDICS	Ortho
NEUROSURGERY	Nsurg
NEUROSCIENCE	NS
NEUROLOGY	NeuM
PSYCHIATRY	PSY
RENAL & EXCRETORY	EXC
NEPHROLOGY	Neph
UROLOGY	Uro
PHARMACOLOGY	Pharm
SPIRAL	S
INTEGUMENTARY	IM
PLASTIC SURGERY	Psurg
DERMATOLOGY	Derm
RADIOLOGY	Rad

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OPHTHALMOLOGY MODULE

Introduction

- To feel more comfortable performing a basic eye examination
- To identify common eye conditions and be able to treat or triage these disorders.
- To expose students to the field of ophthalmology
- To identify potential longitudinal patients that could be followed in other clinics.

Rationale: The purpose of the Ophthalmology curriculum is to produce doctors with the generic professional and specialty specific capabilities needed to understand and diagnose a wide range of medical conditions affecting the eyes, orbits and visual pathways. Eye disorders are frequently seen in the practice of medicine in all age groups. The scope of medical ophthalmology is broad and includes refraction problems, ocular inflammatory diseases like conjunctivitis, cataracts, glaucoma, retina disorders, neuro-ophthalmic conditions and urgent eye care in adults and children. A physician also has to understand the fundamentals of funduscopy in order to evaluate common eye problems.

Duration **04 Weeks**

Curriculum Goals

After completion of MBBS course the student should be able to:

- To feel more comfortable performing a basic eye examination
- To identify common eye conditions and be able to treat or triage these disorders.
- To expose students to the field of ophthalmology
- To identify potential longitudinal patients that could be followed in other clinics.

Learning Objectives

At the end of the ophthalmology rotation the student should be able to:

1. **Perform the following skills:**

a) History taking regarding

- Pain in and around the eye
- Abnormal appearance of the eye and orbit
- Discharge from the eye
- Defect in visual activity, colour vision, field of vision and diplopia.

b) Physical examination

- Visual acuity test for distance and near
- Pin Hole Examination
- Colour vision
- Measure the IOP by palpation
- External (pen torch) Adnexa anterior segment by examination by inspection and palpation,
- upperlid eversion
- Regurgitation test.
- Pupillary examination
- Ophthalmology (distant direct and direct)
- Ocular alignment and motility tests (corneal reflection test, cover test and motility test)
- Visual field test (confrontation method)

c) Management

- Ocular irrigation (chemical burns)
- Instillation of eye drops
- Patching (pressure patch and eye shield)

2. **Diagnose and manage common eye problems such as:**

- Blepharitis
- Hordeolum (styes)
- Periorbital cellulitis (mild)
- Conjunctivitis
- Ophthalmia neonatorum
- Trachoma
- Episcleritis
- Subconjunctival hemorrhage

3. **Recognize / Evaluate and refer as appropriate:**

- Acute red eye
- Corneal ulceration and its complications
- Herpes simplex and Herpes zoster infections
- Orbital cellulitis
- Pterygium
- Diseases of lids: lumps, Trichiasis, entropion, ectropion, ptosis
- Disease of lacrimal passage: epiphora, acute and chronic dacryocystitis
- Acute visual loss
- Chronic visual loss
- Cataract
- Refractive error and presbyopia
- Glaucomas
- Childhood squint
- Childhood cataract (white pupil)
- Moderate to severe eye injuries, chemical burns
- Ocular manifestations of nervous diseases: papilloedema, nerve palsies
- Ocular manifestations of systemic diseases: diabetic retinopathy, thyroid eye disease

Topics with PMDC Syllabus

S. #	LEARNING OBJECTIVES	TOPIC	TEACHING STRATEGY	ASSESSMENT
1		Anatomy of Eye – Review • Orbit: Bones and Contents • Eye ball, • Extraocular muscles, • Adnexia (lid, conjunctiva & lacrimal system) • Vascular supply • Cranial nerves II, III, IV, VI & VII (cranial nerves)	Lecture/ Demonstration, SGD, Practical, CBL/ PBL	SBQs & OSVE, OSCE, ClinicalExam SBQs & OSVE, OSCE, ClinicalExam
2		Physiology of Eye – Review • Visual functions • Aqueous humour dynamics		

3		Eyelid • Styel • Chalazion • Blepharitis • Trichiasis • Entropion • Ectropion • Ptosis • Basal cell carcinoma • Squamous cell carcinoma		
4		Conjunctiva • Infective Conjunctivitis - Bacterial Conjunctivitis - Viral Conjunctivitis • Ophthalmia Neonatorum • Trachoma • Vernal keratoconjunctivitis (VKC) • Keratoconjunctivitis Sicca (Dry Eye) • Pterygium • Pinguecula • Vitamin A Deficiency		
5		Nasolacrimal system • Lacrimation & epiphora • Congenital Nasolacrimal Duct Block • Acute Dacryocystitis • Chronic Dacryocystitis		
6		Cornea • Infective keratitis (Corneal ulcer) - Viral - Bacterial - Fungal - Amoebia • Contact lens related problems • Kerato-refractive surgeries		
7		Sclera • Scleritis • Episcleritis		
8		Lens • Congenital cataract - Classification & Etiology - Clinical features - Differential diagnosis - Management • Acquired Cataract - Types & Etiology	Lecture/ Demonstration ,SGD, Practical, CBL/ PBL	

		- Clinical features - Management • Complication of Cataract surgery		
9		Glaucoma • Classification • Primary open angle glaucoma • Primary Angle Closure Glaucoma • Diagnostic Tools • Congenital Glaucoma • Secondary Glaucoma - Lens induced - Neovascular - Inflammatory		
10		Uveitis • Classification • Clinical features of Acute and Chronic uveitis • Management of uveitis		
11		Medical Retina • Diabetic retinopathy • Hypertensive retinopathy • Retinal vein occlusion • Retinal artery occlusion • Age-related macular degeneration • Retinoblastoma • Retinopathy of prematurity (ROP)		
12		Surgical Retina • Retinal detachment – Rhegmatogenous, Exudative and tractional detachment • Management of retinal detachment • Vitreous hemorrhage		
13		Neurophthalmology • Pupillary & Visual pathway • Relative Afferent Pupillary Defect (RAPD) • Optic neuritis • Papilledema • Optic atrophy • Third, Fourth, Sixth & Seventh Cranial Nerves		

14		Orbit • Proptosis • Orbital Infection and Inflammation - Preseptal Cellulitis - Orbital Cellulitis • Thyroid Eye Disease		
15		Ocular injuries • Ocular Foreign bodies • Blunt injuries • Penetrating injuries • Chemical injuries - Acid burns - Alkaline burns		
16		Strabismus • Amblyopia • Non paralytic squint • Paralytic squint		
17		Refractive error • Emmetropia • Ametropia - Hypermetropia - Myopia - Astigmatism • Presbyopia		

Common symptoms/ Signs of Ophthalmology

- i. **Red Eye:** Painful and Painless
- ii. Watery eye
- iii. **Visual Loss:** Gradual and Sudden
- iv. Causes of Diplopia
- v. Halos
- vi. Hyphema
- vii. Hypopyon
- viii. Distortion of images
- ix. White pupillary reflex (leukokoria)
- x. Dilated pupil
- xi. Small pupil
- xii. Proptosis
- xiii. Night blindness
- xiv. Eso deviation
- xv. Exo deviation

Assessment at the end of posting

- MCQs and OSPE

OTORHINOLARYNGOLOGY (ENT) MODULE

Introduction This module uses an integrated curriculum of basic science and clinical material to develop the student's knowledge and ability to describe and diagnose conditions related to Ear, Nose and Throat. It covers learning a wide range of areas using team-based and small-group learning exercises, lectures, anatomy labs, hands-on clinical skills labs, independent learning, clinical experiences and radiological imaging. In addition, the students will learn the microbiology, physiology and pharmacology of the upper respiratory region. The goal of this module is to provide medical students with a comprehensive pathophysiologic understanding of the Ear, Nose and Throat and their diseases. Otorhinolaryngology, is an important, interesting and diverse specialty and the study guide is carefully designed in such manner that the students are able to better comprehend and analyze the objectives of their course of the ENT department.

Rationale The knowledge and skills acquired in this module will enable students to appropriately evaluate, diagnose, treat and manage a broad spectrum of common problems like hearing loss, ear ache and discharge, rhinorrhea, sore throat. Student can order suitable investigations and diagnose common conditions and be able to undertake adequate referral where appropriate. This module will act as a guide to identify various common ENT conditions and implement their knowledge in medical practices.

Duration 04 Weeks

Learning Outcomes

Knowledge: At the end of the course, the student should have knowledge of:

- Common problems affecting the Ear, Nose and Throat.
- Principles of management of major ENT emergencies
- Effects of local and systemic diseases on patient and the necessary action required to minimize the sequelae of such diseases;

Skills: At the end of the course, the student should be able to:

- Know how to remove the foreign bodies from the ear, nose and throat.
- know the indication for tracheostomy and explain its procedure postoperative care and complications
- know the methods to control the Epistaxis

Attitude At the end of course, the student should have:

- Patient-Centered Attitude:
 - Cultivate respect and compassion for patients, actively listening to their concerns and involving them in their care.
- **Empathetic Understanding:**
 - Develop empathy for patients experiencing discomfort, acknowledging their emotional and physical challenges.
- **Cultural Sensitivity:**
 - Appreciate the importance of culturally sensitive care, respecting diverse backgrounds of patients.
- **Ethical Commitment:**
 - Uphold ethical standards, maintaining patient confidentiality and informed consent.
- **Interdisciplinary Collaboration:**
 - Respect collaboration with other professionals for comprehensive patient care.

Themes:

Theme 1: Disorders of Ear and Audio-Vestibular System
(Pain, Itching, Discharge, Facial Palsy, Tinnitus, Vertigo, Deafness)

- Theme 2:** Disorders of Nose & Para Nasal Sinuses
(Nasal Obstruction, Rhinorrhea, Sneezing, Itching, Impaired Smell, Epistaxis, Headache)
- Theme 3:** Disorders of Oral Cavity, Pharynx and Oesophagus (Sore Throat, Difficulty in Swallowing, Change of Voice)
- Theme 4:** Disorders of Larynx Trachea and Bronchi
(Cough, Hoarseness of Voice, Difficulty in Breathing)

Topics with Specific Learning Objectives and Teaching Strategies

**Theme 1: Disorders of Ear and Audio-Vestibular System
(Pain, Itching, Discharge, Facial Palsy, Tinnitus, Vertigo, Deafness)**

S #	LEARNING OBJECTIVES	THEME AND SUB-THEMES	TEACHING STRATEGY	ASSESSMENT
1	Explain Anatomy & Physiology of the Ear	ENT-S2-Ana-1 Clinical Basis of EAR	Lecture/ Demonstration ,SGD, Practical, CBL/ PBL	SBQs & OSVE, OSCE, Clinical Exam
2	Discuss the Causes, clinical features, investigation & management	ENT-S2-ENT-1 PAIN A. D/D of Earache & referred earache B. Disorder of External Ear. 1. Traumatic- Frost Bite, Perichondritis and Aural Hematoma. 2. Inflammatory a. Bacterial- i. Acute Otitis Externa ii. Diffuse and Malignant Otitis Externa b. Viral-Herpes Zoster Oticus. C. Disorder of Middle Ear. i. Acute Otitis Media. ii. Otitis Media with Effusion iii. Otitic Baro-trauma		
3	Diagnosis & management	ENT-S2-ENT-2 ITCHING Wax and Foreign Bodies in Ear Fungus- Otomycosis		
4	Discuss the Causes, clinical features, investigation & management	ENT-S2-ENT-3 DISCHARGE Disorder of Middle Ear. Chronic Suppurative Otitis Media, Cholesteatoma and Complications		
5	Causes, Investigation & management	ENT-S2-ENT-4 FACIAL PALSY Facial Nerve Palsy, Middle Ear Surgery & its complications		
6	Describe the clinical features, investigation & principle of management	ENT-S2-ENT-5 TINNITUS D/D of Tinnitus, Glomus tumor, Acoustic neuroma & Otosclerosis ENT-S2-ENT-6 VERTIGO D/D of Vertigo, Labyrinthitis, BPPV / Meiere's Disease.		

7	Discuss causes, Clinical features, investigations/ assessment and Management of Congenital and Acquired conditions Causing Hearing Deficit.	ENT-S2-ENT-7 DEAFNESS Causes and assessment of hearing impairment. D/D of Conductive and Sensory neural hearing deficit, Disorder of Inner Ear. Noise Induced Hearing Loss / Ototoxicity/ Presbiacusis.		
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Theme 2: Disorders of Nose & Para Nasal Sinuses

(Nasal Obstruction, Rhinorrhea, Sneezing, Itching, Impaired Smell, Epistaxis, Headache)

S #	LEARNING OBJECTIVES	THEME AND SUB-THEMES	TEACHING STRATEGY	ASSESSMENT
8	Explain Anatomy & Physiology of Nose and Paranasal Sinuses	ENT-S2-Ana-2 Clinical Basis of Nose & Paranasal sinuses		
9	Discuss the Causes, clinical features, investigation & management	ENT-S2-ENT-8 NASAL OBSTRUCTION - D/D of Nasal obstruction - Septal Deformities Adenoid Hypertrophy ENT-S2-ENT-9 RHINORRHEA - D/D of Rhinorrhea - Rhino-sinusitis ENT-S2-ENT-10 SNEEZING - Allergic Rhinitis Non Allergic Rhinitis ENT-S2-ENT-11 ITCHING - Foreign Bodies & Rhinolith ENT-S2-ENT-12 IMPAIRED SMELL - Sino-Nasal Polyps ENT-S2-ENT-13 EPISTAXIS - D/D of Epistaxis - Angiofibroma Hemangioma ENT-S2-ENT-14 HEADACHE - Sinusitis - Sino-Nasal Tumors	Lecture/ Demonstration ,SGD, Practical, CBL/ PBL	SBQs & OSVE, OSCE, Clinical Exam

Theme 3: Disorders of Oral Cavity, Pharynx and Oesophagus (Sore Throat, Difficulty in Swallowing, Change of Voice)

S #	LEARNING OBJECTIVES	THEME AND SUB-THEMES	TEACHING STRATEGY	ASSESSMENT
10	Explain Anatomy & Physiology of Digestive track	ENT-S2-Ana-3 Clinical Basis Digestive track		

11	Discuss the Causes, clinical features, investigation & management	ENT-S2-ENT-15 SORE THROAT • D/D of Sore throat • Mouth Ulcers • Pharyngitis & Tonsillitis • Infectious mononucleosis • Diphtheria/ Vincent Angina/ • Scarlet fever	Lecture/ Demonstration ,SGD, Practical, CBL/ PBL	SBQs & OSVE, OSCE, Clinical Exam
		ENT-S2-ENT-16 DIFFICULTY IN SWALLOWING • Dysphagia • causes & management		
		ENT-S2-ENT-17 CHANGE OF VOICE • Rhinolalia Clausa & Aperta • Tumors of Pharynx		

**Theme 4: Disorders of Larynx Trachea and Bronchi
(Cough, Hoarseness of Voice, Difficulty in Breathing)**

S #	LEARNING OBJECTIVES	THEME AND SUB-THEMES	TEACHING STRATEGY	ASSESSMENT
12	Explain Anatomy & Physiology of Airway track	ENT-S2-Ana-4 Clinical Basis of Airway track	Lecture/ Demonstration, SGD, Practical, CBL/ PBL	SBQs & OSVE, OSCE, Clinical Exam
13	Discuss the Causes, clinical features, investigation & management	ENT-S2-ENT-18 COUGH Airway Foreign Bodies		
		ENT-S2-ENT-19 HOARSENESS OF VOICE • Congenital Laryngeal web / Laryngocele • Inflammatory Acute Laryngo-tracheo-bronchitis / Tuberculus Laryngitis • Non- Neoplastic • Vocal Nodule / Vocal polyps • Neoplastic Laryngeal papillomatosis / Malignant lesions • Recurrent laryngeal Palsy		
		ENT-S2-ENT-20 DIFFICULTY IN BREATHING • Laryngomalacia • Acute Epiglottitis • Subglottic/Tracheal stenosis • Airway management		

ORTHOPAEDIC & TRAUMATOLOGY MODULE

ORTHOPAEDICS

Introduction

Rationale

The integrated module on Orthopaedic Surgery, Traumatology and musculoskeletal system is multi-fold, it provides the students with basic knowledge of bone and joint problems. Interdisciplinary learning is fostered, simulating real-world medical scenarios where collaborative care is crucial. The integration also cultivates a well-rounded skill set by comparing immediate emergency interventions with long-term therapeutic strategies. Including musculoskeletal trauma, fractures, infections, tumours, Degenerative and metabolic disorders. Therefore, the module is designed to offer a balanced, resourceful, and interdisciplinary approach to medical education aimed to impart at undergraduate level. The Orthopaedics and Traumatology module in the basic cycle has already provided a sound basis of the related anatomy, physiology, surgical and pathological basis of bone diseases. In this 2nd clinical spiral, apart from basic revision of different subjects, students will be able to define and learn the clinical presentations, diagnoses and management of these diseases.

Duration 02 Weeks

Learning Outcomes:

By the end of this module, the students will be able to:

- Demonstrate the principles and clinical considerations in Orthopaedics and Traumatology, including diagnoses and treatment.
- Develop immediate and long-term treatment strategies for orthopaedic and traumatic conditions.
- Adopt a patient-centered approach, considering both immediate and long-term needs in treatment planning.
- Take and demonstrate history taking, and also able to perform physical examination.
- Make proper differential diagnoses and prescribe medicine accordingly.

Themes:

- | | |
|----------|--------------------------|
| Theme 1: | Fractures & Dislocations |
| Theme 2: | Infections |
| Theme 3: | Metabolic Bone Disorders |
| Theme 4: | Bone Tumors |
| Theme 5: | Congenital Anomalies |
| Theme 6: | Degenerative Disorders |

Topics with specific learning objectives and teaching strategies

Theme 1: Fracture and Dislocation

S. #	LEARNING OBJECTIVE	TOPIC	LEARNING STRATEGY	ASSESSMENT
1	Discuss structure of bone, joints movements and blood supply	ORTH-T-S2-Ana-1 Re-visit of bone and joint anatomy with blood supply	Lecture/ Demonstration ,SGD, Practical, CBL/ PBL	SBQs & OSVE, OSCE, Clinical Exam
2	Discuss development of bone	ORTH-T-S2-Ana-2-E-1 Bone development ossification of bone & joint		
3	Define fracture Classify types of fractures	ORTH-T-S2-Orth-1 Definition of fracture, types		
4	Identify bone lesions in the imaging scans	ORTH-S2-Rad-1 X-Ray Definition X-ray reading & views		
5	Define different types of fractures based on clinical presentation	ORTH-T-S2-Orth-2 Sign & symptoms of fractures open & closed fractures		
6	Define joint dislocations	ORTH-T-S2-Orth-3 Types of dislocations & subluxations		
7	Assess the patient for fractures and bone disorders	ORTH-T-S2-Orth-4 History taking & bed side teaching		
8	Identify different types of congenital bone defects	ORTH-T-S2-Ana-3 Developmental abnormalities and bone structures		
9	Discuss management of open and closed type of fractures	ORTH-T-S2-Orth-6 Management of open and closed fracture		
10	Describe consequences of fractures & dislocations	ORTH-T-S2-Orth-7 Complications of Open fractures and dislocations		
11	Discuss Imaging techniques	ORTH-T-S2-Rad-2 Imaging techniques X-ray CT-Scan and MRI		
12	Discuss post-surgical complications	ORTH-S2-Orth-8 Complications of open fractures and post-surgical complications		
13	Prevention and multidisciplinary approach	ORTH-S2-Orth-9 Rehabilitation and physiotherapy		

14	Pathophysiological changes in fracture healing	ORTH-T-S2-Phy-1 Fracture healing, Remodeling functions of Osteoclasts & Osteoblasts		
15	Types of bone union	ORTH-S2-Orth-10 Fracture union Primary and Secondary union		
16	Bone findings on Imaging	ORTH-S2-Orth-11 X-ray Reading		
17	Approach to patient with bone disorder, fracture	History taking and bed side teaching		

Theme 2: Infections

Theme 3: Metabolic Bone Diseases

S #	LEARNING OBJECTIVE	TOPIC	LEARNING STRATEGY	ASSESSMENT
18	Bone infections, pathophysiology	ORTH-T-S2-Path-1 Bone Infection Types of infection, Patho-Physiology of Osteomyelitis	Lecture/ Demonstration ,SGD, Practical, CBL/ PBL	SBQs & OSVE, OSCE, Clinical Exam
19	Define osteomyelitis and its types	ORTH-T-S2-Orth-1 Definition of Osteomyelitis Types of Osteomyelitis		
20	Diagnosis and management of osteomyelitis	ORTH-T-S2-Orth-2 Investigations and treatment options		
21	Assess findings of osteomyelitis by imaging techniques	ORTH-T-S2-Rad-1 Imaging and Osteomyelitis X-ray Ct-scan and MRI		
22	Surgical management of osteomyelitis	ORTH-T-S2-Orth-3 Surgical Interventions and osteomyelitis		
23	Prevention and multidisciplinary approach to management	ORTH-T-S2-Orth-4 Rehabilitation and Infection Prevention		
24	Discuss Calcium and vitamin D metabolism	ORTH-T-S2-Bio-1 Calcium Metabolism Parathyroid hormone and vitamin D Metabolism		
25	Definition, causes and bone changes in rickets	ORTH-T-S2-Orth-5 Definition of Rickets, effects of Calcium & Vitamin D on Bone		
26	Discuss clinical features, treatment and prevention of Rickets & osteomalacia	ORTH-T-S2-Orth-6 Clinical Feature of Rickets and Osteomalacia Treatment and Prevention		

27	Define osteoporosis and osteomalacia	ORTH-T-S2-Phy-1 Osteoporosis & Osteomalacia		
28	Discuss hyperparathyroidism and its clinical presentation	ORTH-T-S2-Orth-7 Diagnosis, Clinical Features and Management of Hyper-Parathyroidism		
29	Discuss Management and prevention of Osteoporosis and Osteomalacia	ORTH-T-S2-Orth-8 Management and prevention of Osteoporosis and Osteomalacia		
30	Define WHO Classification of bone tumors	ORTH-T-S2-Path-2 Bone tumors and WHO Classification		
31	Define a management plan of trauma patient	ORTH-T-S2-Orth-9 Management of Upper Limb Trauma		
32	Discuss Approach to a trauma patient	ORTH-T-S2-Orth-10 Approach to Trauma patient		
33	Approach to patient	History taking and bed side teaching		

Theme 4: Bone Tumors

Theme 5: Congenital Anomalies

Theme 6: Degenerative Disorders

S #	LEARNING OBJECTIVE	TOPIC	LEARNING STRATEGY	ASSESSMENT
34	Common sites of benign and malignant tumors	ORTH-T-S2-Path-1 Benign & malignant bone Tumor		
35	Radiographic features of bone tumors	ORTH-T-Rad-1 Imaging in Tumor X-ray Ct-Scan and MRI		
36	Discuss Management protocols of bone tumors	ORTH-T-S2-Orth-1 Management of bone Tumors		
37	Define Bone tumors diagnostic protocols Discuss Basic Principles of tumor biopsies	ORTH-T-S2-Orth-2 Tumor Protocol and Biopsy Principles		
38	Discuss Surgical management of bone tumors	ORTH-T-S2-Orth-3 Surgical Interventions and Bone Tumors		
39	Discuss Prosthetic management of bone disorders	ORTH-T-S2-Orth-4 Prosthesis and Orthosis		

40	Define types of joints, their structure and functions	ORTH-T-S2-Ana-1 Type of joints, joint Lining	Lecture/ Demonstration ,SGD, Practical, CBL/ PBL	SBQs & OSVE, OSCE, Clinical Exam
41	Define congenital anomalies of bone Discuss clinical features	ORTH-T-S2-Orth-5 Congenital Talipes Equinovarus, Developmental Dysplasia Hip, Sign & Symptoms & Clinical Features		
42	Discuss treatment and prevention of CTEV and DDH	ORTH-T-S2-Orth H-6 Treatment of CTEV and DDH and its prevention		
43	Describe Metabolic pathway of uric acid production and accumulation	ORTH-T-S2-Pharm-1 Uric Acid pathway and metabolism		
44	Define the pathophysiology and clinical features of Osteo-Arthritis, Rheumatoid Arthritis, Gout	ORTH-T-S2-Orth-7 Degenerative Disorders: Osteo-Arthritis, Rheumatoid Arthritis, Gout		
45	Discuss Diagnostic and Management approach to OA, RA and Gout	ORTH-T-S2-Orth-8 Diagnosis and Management of Osteoarthritis Rheumatoid Arthritis, Gout		
46	Define appropriate pain management plan	ORTH-T-S2-Pharm-2 NSAIDs, DMARDs its Effects and Side Effects		
47	Discuss surgical management of bone degenerative disorders	ORTH-T-S2-ORTH-9 Surgical Options in Degenerative Disorders		
48	Define Post-Surgical Complications	ORTH-T-S2-ORTH-10 Post-Surgical Complications		
49	Approach to patient	History taking & Bed Side teaching		

DAY	THEM	TIME	TEACHING STRATEGY					FACULTY TEACHER
			Lecturer /Demos tration	Small group discussion	Self- Study	Practi cal	CPL / PBL	
1 st WEEK ORTHOPAEDIC TRAUMA (FRACTURE & DISLOCATIONS), DEGENERATIVE DISORDERS AND OSTEOMYELITIS								
Monday Ortho-1 City ward	Fracture definition & types Open & closed fractures Types of dislocations & subluxations	08:30 to 10:15	√	√				Prof. Asadullah Makhdoom / Dr. Imran khan Mahar 01:30 – 2:30 Demonstrati on room in city ward
		10:30 to 11:30						
		11:30 to 12:15			√			
		12:15 to 01:00				√		
		01:00 to 02:30					√	
Tuesday OT-09 Jamshoro	Management of open and closed fracture	08:30 to 10:15	√	√				Dr. Muhammad Faraz Jokhio / Dr. Lachman Das Maheshwari 01:30 – 2:30 OT-09
		10:30 to 11:30			√			
		11:30 to 12:15				√		
		12:15 to 01:00						
		01:00 to 02:30					√	
Wednesday W-11, Jamshoro	Complications of Open & closed fractures and dislocations Fracture healing & Remodeling	08:30 to 10:15	√					Prof. Dr Asadullah Makhdoom / Dr. Nizam Attari 01:30 – 2:30 Demonstrati on room in W-11
		10:30 to 11:30		√				
		11:30 to 12:15			√			
		12:15 to 01:00				√		
		01:00 to 02:30					√	
Thursday OT-09, Jamshoro	Congenital talipes equinovarus (CTEV) & Developmental Dysplastic Hip (DDH) Degenerative disorders	08:30 to 10:15	√	√				Prof Dr. Irshad Ahmed Bhutto / Dr. Siraj Ahmed Butt 01:30 – 02:30 Demonstrati on room in W-11
		10:30 to 11:30			√			
		11:30 to 12:15				√	√	
		12:15 to 01:00						
		01:00 to 02:30						
Friday Ortho-I, City ward	Osteomyelitis	08:30 to 10:15	√	√				Prof Dr. Zamir Hussain Tunio / Dr. Shakeel Ahmed Memon 12:00 – 01:30 Lecture room in city ward
		10:30 to 11:30			√			
		11:30 to 12:15						
		12:15 to 01:00				√		
		01:00 to 02:30					√	

02nd WEEK BONE INFECTIONS & METABOLIC DISORDERS AND TUMOURS

Monday Ortho-I City ward	Surgical Interventions osteomyelitis in	08:30 to 10:15	√					Prof. Asadullah Makhdoom / Dr. Imran khan Mahar 01:30 – 2:30 Demonstrati on room in city ward
		10:30 to 11:30		√		√		
		11:30 to 12:15					√	
		12:15 to 01:00						
		01:00 to 02:30					√	
Tuesday OT – 09, Jamshoro	Rickets & Osteomalacia	08:30 to 10:15	√					Dr. Muhammad Faraz Jokhio / Dr. Lachman Das Maheshwari 01:30 – 2:30 OT -09
		10:30 to 11:30		√				
		11:30 to 12:15			√			
		12:15 to 01:00				√		
		01:00 to 02:30					√	
Wednesday W-11, Jamshoro	Osteopetrosis Osteoporosis	08:30 to 10:15	√					Prof. Asadullah Makhdoom / Dr. Nizam Attari 01:30 - 2:30 Demonstrati on room in W-11
		10:30 to 11:30		√				
		11:30 to 12:15				√		
		12:15 to 01:00					√	
		01:00 to 02:30						
Thursday OT – 09, Jamshoro	Bone Tumors Surgical Interventions in Bone Tumors	08:30 to 10:15	√					Prof Dr. Irshad Ahmed Bhutto / Dr. Siraj Ahmed Butt 01:30 – 02:30 Demonstrati on room W- 11
		10:30 to 11:30		√				
		11:30 to 12:15				√		
		12:15 to 01:00					√	
		01:00 to 02:30						
Friday Ortho – I, City ward	Assessment	08:30am to ON WARDS						

NEUROSURGERY

Learning Objectives

By the end of the curriculum the student shall be able to:

- Recall functional neuroanatomy brain and spinal cord.
- Revised embryology and histology of neuron, nerve and neuroglia.
- Enlist the investigations for diagnosing neurological disorder.
- History taking and examination of head injury and spinal cord pathology patient.
- Discuss the assessment and management of raised ICP, cerebral edema and brain herniation.
- Classify brain tumors and evaluate management plan.
- Assess the vascular pathology of brain.
- Know the approach for assessment and management of congenital disorder the brain and spine.

Themes

- Theme 1: Congenital anomalies of CNS
 Theme 2: Traumatic Brain Injury
 Theme 3: Intracranial hemorrhage
 Theme 4: Composition, Synthesis and Flow of CSF, Hydrocephalus and Its Management
 Theme 5: Approaches and Management of CNS tumors at different ages
 Theme 6: Spinal cord trauma and myelopathy

Topics with specific learning objectives and teaching strategies

Theme 1: Congenital Anomalies of CNS

S #	LEARNING OBJECTIVE	TOPIC	LEARNING STRATEGY	ASSESSMENT
1	Revisit the neuroanatomy of brain	ORTH-T-S2-Ana-1 Functional Neuroanatomy of Brain	Lecture/ Demonstration, SGD, Practical, CBL/ PBL	SBQs & OSVE, OSCE, Clinical Exam
2	Revisit the development of the brain	ORTH-T-S2-Ana-2-E1 Development of brain		
3	Formulate the cases and consequences of various birth defect and developmental disorder involving CNS	ORTH-T-S2-NSur-1 Neural tube defects, fore brain anomalies, posterior fossa anomalies.		
4	Revisit histology of neurons and neuroglia	ORTH-T-S2-Ana-3-H-1 Neurons and neuroglia		

Theme 2: Traumatic Brain Injury

S #	LEARNING OBJECTIVE	TOPIC	LEARNING STRATEGY	ASSESSMENT
	Predict the general reaction	ORTH-T-S2-NSUR-2 Assessment of causes and management of cerebral edema, raised intracranial pressure and brain herniation		
		ORTH-T-S2-Rad-1 CT-scan & MRI Brain		

5	of brain to various injurious processes in terms of brain edema or raised intracranial pressure and develop a management plan	ORTH-T-S2-NSUR-3 1. Skull fractures 2. Parenchymal injuries • Concussion • Direct parenchymal injuries • Diffuse axonal injuries 3. Traumatic vascular injuries • Epidural hematoma • Subdural hematoma • Parenchymal 4. Sequelae of brain trauma	Lecture/ Demonstration ,SGD, Practical, CBL/ PBL	SBQs & OSVE, OSCE, Clinical Exam
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Theme 3: Intracranial Hemorrhage

S #	LEARNING OBJECTIVE	TOPIC	LEARNING STRATEGY	ASSESSMENT
6	Manage ischemic or hemorrhagic cerebrovascular events by knowing their effect on brain parenchyma and various clinical effects along with radiological diagnosis	ORTH-T-S2-Ana-4 Circulation of brain and basalganglion ORTH-T-S2-NSUR-4 Intracranial hemorrhage ORTH-T-S2-Rad-2 CT Scan & MRI	Lecture/ Demonstration, SGD, Practical, CBL/ PBL	SBQs & OSVE, OSCE, Clinical Exam

Theme 4: Composition, Synthesis and Flow of CSF, Hydrocephalus and Its Management

S #	LEARNING OBJECTIVE	TOPIC	LEARNING STRATEGY	ASSESSMENT
7	Synthesis and flow of CSF along with its composition, hydrocephalus and its management	ORTH-T-S2-Phy-1 Flow and circulation of CSF ORTH-T-S2-Ana-5 Ventricular System ORTH-T-S2-NSUR-5 Presentation and management ORTH-T-S2-Rad-3 CT Scan & MRI	Lecture/ Demonstration, SGD, Practical, CBL/ PBL	SBQs & OSVE, OSCE, Clinical Exam

Theme 5: Approaches and Management of CNS tumors at different ages

S #	LEARNING OBJECTIVE	TOPIC	LEARNING STRATEGY	ASSESSMENT
8	Relate the neoplastic processes involving different parts of brain with their clinical presentations and different ages	ORTH-T-S2-Path-1 Brain tumor ORTH-T-S2-NSUR-6 Approach and management of CNS Tumors & different ages ORTH-T-S2-Rad-4 Radiological appearance of brain tumor	Lecture/ Demonstration, SGD, Practical, CBL/ PBL	SBQs & OSVE, OSCE, Clinical Exam

Theme 6: Spinal cord trauma and myelopathy

S #	LEARNING OBJECTIVE	TOPIC	LEARNING STRATEGY	ASSESSMENT
9	To localizes the lesion of compressive spinal cord pathology including vascular, neoplastic, infective and traumatic	ORTH-T-S2-Ana-6 Brief view of Spinal Cord	Lecture/ Demonstration, SGD, Practical, CBL/ PBL	SBQs & OSVE, OSCE, Clinical Exam
		ORTH-T-S2-NSUR-7 Etiology, clinical presentation and management		
		ORTH-T-S2-Rad-5 X-rays, CT-Scan & MRI		

Schedule 4th year MBBS 2026 Ward Posting

Day with Topic	Ward Orientation	Ward Round	History Taking	Lecture	Skills Exam / Procedure	Discussion + Ward Work
Day-1 Monday Topic: Congenital anomalies of CNS. ➤ Neuroanatomy. ➤ Embryology. ➤ Neural tube defects.	08.00 am to 09.00 am	09.00 am to 11.00 am	11.00 am to 12.00 Noon	12.00 Noon to 01.00 Pm	01.00 pm To 02.00 pm	02.00 pm to 03.00pm
Day-2 Tuesday Topic: Congenital anomalies of CNS ➤ Clinical presentation ➤ Imaging ➤ Management	08.00 am to 09.00 am	09.00 am to 11.00 am	11.00 am to 12.00 Noon	12.00 Noon to 01.00 Pm	01.00 pm To 02.00 pm	02.00 pm to 03.00pm
Day -3 Wednesday Topic: Traumatic brain injury. (TBI) ➤ Definition, classification. ➤ Biomechanics and etiology ➤ Initial assessment.	08.00 am to 09.00 am	09.00 am to 11.00 am	11.00 am to 12.00 Noon	12.00 Noon to 01.00 Pm	01.00 pm To 02.00 pm	02.00 pm to 03.00pm
Day-4 Thursday Topic: Traumatic brain injury. (TBI) ➤ CT / MRI Interpretation. ➤ Raised ICP. ➤ Brain herniation.	08.00 am to 09.00 am	09.00 am to 11.00 am	11.00 am to 12.00 Noon	12.00 Noon to 01.00 Pm	01.00 pm To 02.00 pm	02.00 pm to 03.00pm
Day-5 Friday Topic: Traumatic brain injury. (TBI) ➤ Ward cases. ➤ Management. ➤ Procedures.	08.00 am to 09.00 am	09.00 am to 11.00 am	-----	11.00 am to 12.00 Noon	12.00 Noon to 01.00 Pm	-----
Day- 6 Monday Topic: Intracranial hemorrhage. ➤ Types. ➤ Pathophysiology. ➤ Radiology.	08.00 am to 09.00 am	09.00 am to 11.00 am	11.00 am to 12.00 Noon	12.00 Noon to 01.00 Pm	01.00 pm To 02.00 pm	02.00 pm to 03.00pm

Day-7 Tuesday Topic: CSF physiology & Hydrocephalus ➤ Ventricular system ➤ Types of hydrocephalus ➤ Management	08.00 am to 09.00 am	09.00 am to 11.00 am	11.00 am to 12.00 Noon	12.00 Noon to 01.00 Pm	01.00 pm To 02.00 pm	02.00 pm to 03.00pm
Day-8 Wednesday Topic: CNS tumors ➤ Classification ➤ Clinical features ➤ Imaging & Management	08.00 am to 09.00 am	09.00 am to 11.00 am	11.00 am to 12.00 Noon	12.00 Noon to 01.00 Pm	01.00 pm To 02.00 pm	02.00 pm to 03.00pm
Day-9 Thursday Topic: Spinal cord trauma & myelopathy ➤ Clinical features ➤ Localization ➤ Imaging ➤ Management	08.00 am to 09.00 am	09.00 am to 11.00 am	11.00 am to 12.00 Noon	12.00 Noon to 01.00 Pm	01.00 pm To 02.00 pm	02.00 pm to 03.00pm
Day-10 Friday Topic: Assessment ➤ OSCE ➤ MCQs Feedback	08.00 am to 09.00 am	09.00 am to 11.00 am	OSCE + MCQs + Feedback (11:00 am to onward)			Examination MCQs 30% OSCE 40% History 10% Attendance 20%

NEUROSCIENCES MODULE

NEUROLOGY

Introduction Neuroscience is a multidisciplinary field that looks into the causes underlying neurological illness as well as the development and cellular operations of the nervous system. This module includes basic anatomical, physiological and biochemical concepts in relation to the nervous system and its link with clinical aspects related to the diseases of brain and nerves. This curriculum combines the chance to learn about the field broadly with in-depth knowledge in one of the three primary areas of neuroscience: clinical neuroscience, functional and integration neuroscience, and cellular and systems neuroscience.

Rationale The main goal of this module is to provide the foundation for understanding the impairments of sensation, action & cognition that accompany injury, disease or dysfunction in the central nervous system. This module will build upon the knowledge acquired through prior studies of cell molecular biology, general physiology & human anatomy with primary focus on the CNS. It will cover the important clinical aspects, pathological features, therapeutics & other common diseases of the CNS. Through this module student will develop an integrated, scientific knowledge and will be able to practice in a clinical setting and develop problem-solving skills helping to progress scientific discovery into neurological aspects of clinical and medical practice.

Duration 02 weeks

Learning Outcomes

By the end of this module, the students will be able to:

- Develop a well-rounded understanding of the neuroanatomy, neurophysiology, and neuropsychology that underlie both neurological and psychiatric disorders.
- Acquire the skills to correlate anatomy, pathology, and pharmacology with clinical presentations in both neurology and psychiatry.
- Demonstrate the utilization of diagnostic tests such as EEG, CT, MRI, and plain X-rays, along with psychiatric evaluation tools, for accurate diagnosis.
- Formulate holistic treatment plans incorporating pharmacological, psychological, and Neuro-rehabilitation strategies for managing both neurological and psychiatric disorders.

Themes

Neurology

- Theme 1: Weakness (Monoplegia, Hemiplegia)
- Theme 2: Loss of Consciousness and Fits
- Theme 3: Headache
- Theme 4: Tremors and Difficulty in Walking / Loss of Balance (Ataxia)
- Theme 5: Vertigo and Loss of Vision
- Theme 6: Forgetfulness and Loss of Memory
- Theme 7: Paraplegia, Quadriplegia
- Theme 8: Loss of Vision
- Theme 9: Numbness and Parasthesias (Tingling, Needling Sensation)

S #	LEARNING OBJECTIVE	TOPIC	LEARNING STRATEGY	ASSESSMENT	
1	Revisit the neuro anatomy of brain, cranial nerves and cerebellum(revisit) + Localize the lesion in CNS and PNS +Evaluation of ischemic or hemorrhagic cerebrovascular eventsand their clinical effect on brain parenchyma	NS-S2-Ana-1 Functional Neuroanatomy and blood supply brain	Lecture/ Demonstration, SGD, Practical, CBL/ PBL	SBQs & OSVE, OSCE, Clinical Exam	
		NS-S2-Ana-2 Functional Neuroanatomy of Spinal Cord			
2	To learn about the pathological processes affecting the neurons system. And Correlation between clinical presentations and pathogenic mechanisms.	NS-S2-Path-1 Cerebral hypoxia and cerebraledema			
		NS-S2-Path-2 Degenerative disorders of brain and spinal cord pathological perspective			
		NS-S2-Path-3 Pathological perspective/ classification of neuropathies			
3	Investigations for Neurological Disorders + Correlate between clinical presentations and pathogenic mechanisms involved in CNS infections and infestations. + Identify the involvement of isolated or multiple brain regions and structures in degenerative disorders and know resulting clinical syndromes. + Localize the lesion in various neruo axis. + To learn about clinical presentation and diagnosis and investigation about stroke, headache and epilepsy. +Differentiate between different types of anterior horn cell disorders, neuropathies and Myopathies by knowing their pathology, clinical features and investigations. lesions and their radiological appearance + Predict the general reaction of	NS-S2-Neu-1 Cerebrovascular Disorders diagnosis			
		NS-S2-Neu-2 Definition and classification of seizure disorders			
		NS-S2-Neu-3 Cerebrovascular disorders management			
		NS-S2-Neu-4 Diagnosis & management of epilepsy			
		NS-S2-Neu-5 Meningitis			
		NS-S2-Neu-6 Encephalitis			
		NS-S2-Neu-7 Brain abscess			
		NS-S2-Neu-8 Migraine			
		NS-S2-Neu-9 Loss of consciousness / coma(approach to diagnosis and management)			

	brain to various injurious processes in terms of brain edema or raised intracranial pressure and develop a management a plan. +	NS-S2-Neu-10 Parkinson disease		
		NS-S2-Neu-11 Cerebellar dysfunctions diagnosis and management		
		NS-S2-Neu-12 Chorea		
		NS-S2-Neu-13 Friedreich's ataxia		
		NS-S2-Neu-14 Wilson disease		
		NS-S2-Neu-15 Normal pressure hydrocephalus		
		NS-S2-Neu-16 Leuko dystrophies		
		NS-S2-Neu-17 Alzheimer disease		
		NS-S2-Neu-18 Multiples sclerosis		
		NS-S2-Neu-19 Transverse myelitis		
		NS-S2-Neu-20 Neuro electro physiology (NCSEMG, VEP, BERA, EEG)		
		NS-S2-Neu-21 TB spine		
		NS-S2-Neu-22 Acute and chronic peripheral neuropathies		
		NS-S2-Neu-23 Sub-acute combine degeneration of cord		
		NS-S2-Neu-24 Myasthenia gravis		
		NS-S2-Neu-25 Muscular dystrophies		
		NS-S2-Neu-26 Approach to the visual loss		
		NS-S2-Neu-27 Metabolic and inflammatory Myopathies		

4	To learn the basic concept about neuroimaging and their interpretation	NS-S2-Rad-1 basics of neuro imaging (X -ray, CT Scan and MRI)		
		NS-S2-Rad-2 Neuro imaging of multiple sclerosis		
5	To learn about the indication contraindication of various drugs used for management of common neurological disorders	NS-S2-Pharm-1 Anti-epileptic drugs + Drugs for migraine		
		NS-S2-Pharm-2 Anti tubercles and drugs for the CNS infections		
		NS-S2-Pharm-3 Drugs for parkinsonism		
6	Recognize the importance of Community medicine in neurological disorders	NS-S2-CM-1 Overview on global burden of neurological Disorders		
		NS-S2-CM-2 Public health principles and awareness about neurological disorders		
7	To learn about the basic knowledge about Neuro rehabilitation	NS-S2-PMR-1 Neuro rehabilitation of common UMN and LMN disorders		

DEPARTMENT OF NEUROLOGY (4TH YEAR MBBS TEACHING SCHEDULE)

NO	Day	Time	Lectures	Skills
1st Week				
01	Monday	8:00 to 11:00	History taking/ Clinical examination	
		11:30 to 12:30	Overview of Neurological Symptomatology	
		12:30 to 1:30	Localization of Lesion in UMN & LMN	
		1:30 to 3:00	Dementia PBL	
02	Tuesday	8:00 to 11:00	Ward round and History taking/ clinical examination	
		11:30 to 12:30	Parkinson Disease	
		12:30 to 1:30	Chorea	
		1:30 to 3:00	Wilson disease	
03	Wednesday	8:00 to 11:30	History taking/ Clinical examination	
		11:30 to 12:30	Overview of Headache Disorders	
		10:00 to 1:00	Migraine	
		1:30 to 3:00	Case based discussion of Headache disorders	

04	Thursday	8:00 to 11:00	History taking/ Clinical examination	
		11:00 to 11:30	Overview of Neuropathies	
		11:30 to 12:30	G B S	
		1:30 to 3:00	Interpretation of EEG & NCS-EMG	
05	Friday	8:00 to 10:00	History taking/ Clinical examination	
		10:30 to 11:30	Stroke	
		12:00 to 1:30	Neuroradiology	
		1:30 to 3:00	Interpretation of CT & MRI of Brain/ Spinal cord	

NO	Day	Time	Lectures	Skills
2nd Week				
06	Monday	8:00 to 11:00	History taking/ Clinical examination	
		11:30 to 12:30	Spinal cord disorder	
		12:30 to 1:30	Epilepsy	
		1:30 to 3:00	Coma PBL	
07	Tuesday	8:00 to 11:00	ward round and History taking/ clinical examination	
		11:30 to 12:30	Overviews of CNS infection & Meningitis, Encephalitis	
		12:30 to 1:30	Multiple sclerosis	
		1:30 to 3:00	Lumber puncture Indication/ contraindication and practical	
08	Wednesday	8:00 to 11:00	History taking/ clinical examination	
		11:30 to 12:30	overview Anterior Horn cell disorder + MND	
		12:30 to 1:30	Myasthenia Gravis	
		1:30 to 3:00	Case based discussion	
09	Thursday	8:00 to 11:00	Clinical based learning at OPD	
		11:30 to 12:30	Overview of Myopathies	
		12:30 to 1:30	Review History taking/ clinical examination	
		1:30 to 3:00	Review of Localization of Lesion	
10	Friday		Module Test	

PSYCHIATRY

Introduction is a fascinating and important area of medicine. Due to the nature of psychiatric illness (which may often be present/co-morbid with other conditions and/or affect the way people behave in a variety of situations), improved knowledge of Psychiatry would benefit professionals working in fields supplementary to Psychiatry and/or likely to come into contact with psychiatric illness on a regular basis.

Rationale Psychiatry is a core clinical discipline dealing with prevention, diagnosis and management of mental disorders across all age groups. Psychiatric illnesses frequently coexist with medical and surgical conditions; therefore, undergraduate medical students must be competent in recognizing, assessing and initiating management or referral of common psychiatric disorders.

Duration 02 weeks

Learning Outcomes: By the end of this module, the students will be able to:

- Take a comprehensive psychiatric history and perform a Mental State Examination (MSE)
- Identify and differentiate common psychiatric disorders
- Perform suicide risk and substance use assessment
- Recognize psychiatric emergencies
- Demonstrate professional attitude and communication skills with patients and families

DAILY SCHEDULE (WARD POSTING STRUCTURE)

Time	Activity	Description
08:00 am - 08:30 am	Morning Briefing	Orientation, learning objectives, group allocation
08:30 am - 10:00 am	Interactive Lecture / Case Based Discussion	Lecture, core topics with case vignettes and videos
10:00 am - 10:30 am	Break	Short refreshment break
10:30 am - 12:00 pm	Clinical Skills Training	MSE, history taking, OSCE mini-stations, supervised practice
12:00 pm - 01:00 pm	Debrief & Preparation	Students prepare for ward encounters, patient assignment
01:00 am - 03:00 pm	Ward Posting with Patients	Bedside evaluation, documentation, case presentation

S #	LEARNING OBJECTIVE	TOPIC	LEARNING STRATEGY	ASSESSMENT
1	• Understand scope and importance of psychiatry • Conduct complete psychiatric history • Perform and document MSE	NS-S2-PSY-1 : INTRODUCTION & PSYCHIATRIC ASSESSMENT 1. Introduction to psychiatry 2. Assessment in Psychiatry 1.1. Psychiatric History taking 1.2. Mental state Examination		

2	- Identify symptoms of depression and bipolar disorder - Differentiate mania, hypomania and depression - Outline management principles	NS-S2-PSY-2: MOOD DISORDERS 1. Overview of Mood Disorders 1.1. Depressive Disorder 1.2. Bipolar Affective Disorder	Lecture/ Demonstration, SGD, Practical, CBL/ PBL	SBQs & OSVE, OSCE, Clinical Exam
3	- Recognize positive and negative symptoms - Understand course and prognosis - Overview of antipsychotics	NS-S2-PSY-3: PSYCHOTIC DISORDERS 1. Overview of Psychosis 1.1. Schizophrenia		
4	- Differentiate anxiety disorders - Identify obsessions, compulsions and panic attacks - Understand somatoform disorders	NS-S2-PSY-4: NEUROTIC, STRESS RELATED & SOMATOFORM DISORDERS 1. Overview of Anxiety Disorders 2. Generalized Anxiety Disorder 3. Phobic Anxiety Disorders 4. Panic Disorder 5. Post-Traumatic Stress Disorder 6. Obsessive-Compulsive Disorder 7. Medically Unexplained Symptoms		
5	- Identify diagnostic features - Recognize medical complications - Understand management approach	NS-S2-PSY-5: EATING DISORDERS 1. Eating Disorders Overview 1.1. Anorexia Nervosa 1.2. Bulimia Nervosa		
6	- Identify intoxication, dependence and withdrawal - Use screening tools (CAGE, AUDIT) - Outline management strategies	NS-S2-PSY-6: ALCOHOL & SUBSTANCE MISUSE 1. Alcohol Use Disorders 2. Substance Use Disorders		
7	- Classify personality disorders - Identify common clinical features - Understand management challenges	NS-S2-PSY-7: PERSONALITY DISORDERS 1. Personality Disorders		

8	- Identify suicidal ideation and risk factors - Perform suicide risk assessment - Immediate management and referral	NS-S2-PSY-8 SUICIDE & SELF HARM 1. Deliberate Self-Harm 2. Suicide 3. Suicide Risk Assessment	
9	- Differentiate delirium and dementia - Identify developmental disorders - Understand assessment tools	NS-S2-PSY-9 OLD AGE & CHILD PSYCHIATRY Old Age Psychiatry: 1. Delirium 2. Dementia Child Psychiatry: 3. Autism Spectrum Disorder 4. Hyperkinetic Disorder (ADHD) 5. Learning Disability	
10		NS-S2-PSY-10 ASSESSMENT & FEEDBACK	

CARDIOLOGY

Introduction Welcome to the Cardiology module. This interesting module very essential to build your foundation in medicine and allied. This module is designed to make your learning both interesting and productive by including several inter active activities.

This module comprehensively covers the clinical applications that we encounter in everyday life as a cardiologist. All these topics are interactive and helpful in understanding the disease process as well as theirmanagement.

Rationale Heart is the one of if not the most essential organ of the body, it has a complex interaction with other essentialorgans of the body, its importance in human life is critical for survival of human being to understand the complex functioning as well as the common disease process is critical for every medical student to learn andby understanding it one can truly excel in medicine.

Duration 02 Weeks

Learning Outcomes After completion of MBBS course the student should be able to:

- Recognize the clinical presentations of common cardiovascular diseases in the community.
- Diagnose these diseases on the basis of history, examination and clinical investigations.
- Identify the preventive measures for counseling their patients.
- Practice basic principles of management of common disease and make appropriate referral.
- Recognize of the prognosis to counsel their patients.
- Be aware of the specific diagnostic tools for cardiovascular diseases, and their interpretation.

Topics with specific learning objectives and teaching strategies

Theme 1: Ischemia, Heart Failure, Congenital Heart Diseasesand Vascular Diseases

S #	LEARNING OBJECTIVE	TOPIC	LEARNING STRATEGY	ASSESSMENT
1	• NSTEMI-ACS: ○ Unstable Angina ○ NSTEMI • STEMI	CAR-S2-Cardio-1 Acute Coronary Syndrome	Lecture/ Demonstration, SGD, Practical, CBL/ PBL	SBQs & OSVE, OSCE, Clinical Exam
2	• Introduction • Clinical Presentation • Diagnostic testing • Therapy	CAR-S2-Cardio-2 Chronic Coronary Syndrome		
3	• Heart Failure with systolic Dysfunction • Heart Failure with preserved ejection fraction	CAR-S2-Cardio-3 Heart Failure		
4	• ASD • VSD • PDA • Coarctation of Aorta\ • Tetralogy of Fallot	CAR-S2-Cardio-4 Congenital Heart Diseases		
5	• Venous thromboembolism • Peripheral Arterial disease • Carotid artery disease.	CAR-S2-Cardio-5 Vascular Diseases		

Theme 2: Arrhythmias, Valvular Heart Disease and Heart Diseases and Pregnancy

S #	LEARNING OBJECTIVE	TOPIC	LEARNING STRATEGY	ASSESSMENT
1	- Supraventricular arrhythmias - Ventricular arrhythmias	CAR-S2-Cardio-6 Tachyarrhythmia	Lecture/ Demonstration, SGD, Practical, CBL/ PBL	SBQs & OSVE, OSCE, Clinical Exam
2	- Sinus Node Dysfunction 1st degree AV Blocks 2nd degree AV Block 3rd degree AV Block	CAR-S2-Cardio-7 Bradyarrhythmias		
3	- Mitral Valve Disease - Mitral stenosis - Mitral Regurgitation	CAR-S2-Cardio-8 Valvular Heart Disease		
4	- Aortic Valve Disease - Aortic stenosis - Aortic Regurgitation	CAR-S2-Cardio-9 Valvular Heart Disease		
5	- Introduction - Normal Physiologic changes during pregnancy - Cardiovascular evaluation during pregnancy - Pregnancy in women with CHD - VHD and pregnancy - Hypertensive disorders in Pregnancy	CAR-S2-Cardio-10 Heart Diseases and Pregnancy		

EXCRETORY & RENAL MODULE

NEPHROLOGY

Introduction Welcome to the Nephrology module. This module is very essential to build foundation in the field of medicine and allied. This module is designed to make learning both interesting and productive by including several interactions.

This module covers the structural anatomy, and physiology of the kidneys, as well as common renal disorders encountered in our society. All these topics are interactive and helpful in understanding the renal diseases.

Rationale The kidneys are very important organs of the body. Maintaining the blood pressure (hemodynamic status), pH, electrolytes, body volume & excretion of waste products from the body. The kidneys are vulnerable to many systemic diseases, genetic diseases, and environmental diseases, infections, communicable & non-communicable diseases. Understanding therapeutic and preventive measures for many renal diseases is the need of time, not only to save the cost of treatment which is very high for managing kidney diseases but also for maintaining the better quality of life.

At the end of module, the student shall gain the understanding to diagnose & manage common renal problems including Acute Kidney Injury, Chronic Kidney Injury, and Electrolyte disorders such as sodium, potassium, calcium, magnesium & interpretation of ABGs disorders. Understanding the clinical renal module will not only be important for patients management but will also be helpful for clearing in various licensing examination for many countries.

Duration 02 Weeks

Learning outcomes After completion of MBBS course the student should be able to:

- ☐ Recognize the clinical presentations of common renal disorders.
- ☐ Diagnose these disorders on the basis of history, examination and clinical investigations.
- ☐ Identify the preventive measures for counseling regarding the non-communicable diseases.
- ☐ Practice basic principles of management of common disease and make appropriate referral.
- ☐ Estimate the prognosis to counsel the patients and family members.
- ☐ Aware of the specific diagnostic tools for renal diseases, and their interpretation.

Themes

- Theme 1: Glomerular Conditions Including Glomerular Syndromes, Conditions Associated with Systemic Disorders and Isolated Glomerular Abnormalities
- Theme 2: Renal Excretory Infections and Vascular Disease
- Theme 3: Obstructive Uropathy (Urolithiasis, Hydronephrosis)
- Theme 4: Tumors of Renal/ Excretory System

Topics with specific learning objectives and teaching strategies

S #	LEARNING OBJECTIVE	TOPIC	LEARNING STRATEGY	ASSESSMENT
1	• Basic and advance renal investigations • When, how, which and what type of investigation to be sent according to renal illness • The basics that how such investigation to be interpret • The significance of test in disease, its prognosis and monitoring. • Basic case scenarios on various important investigations.	EXC-S2-Neph-1 Investigations in renal medicine	Lecture/ Demonstration, SGD, Practical, CBL/PBL	SBQs & OSVE, OSCE, Clinical Exam
2	• Definition of terms • Basic classification of glomerular diseases • Proteinuria and its types • Difference b/w nephritic and nephrotic syndrome • Approach to a patient with glomerular diseases • Management of nephritic and nephrotic syndrome • Case based scenarios on various glomerular diseases.	EXC-S2-Neph-2 Clinical presentation and basic management of glomerular diseases: nephritic & nephrotic syndrome		
3	• Describe an over view of anatomy & physiology of urinary system. • Explain the classification of acute renal injury. • Discuss the clinical picture and presentation of acute renal injury. • Basic management • Case based scenarios.	EXC-S2-Neph-3 Acute kidney injury		
4	• Identify the causes of chronic kidney disease • Explain the pathogenesis of chronic kidney disease • Describe the signs and symptoms and presentation of CKD • Management • Clinical case-based scenarios	EXC-S2-Neph-4 Chronic kidney disease		
5	• Different modalities of dialysis • Over view of renal transplant • Common post renal transplant medical complications.	EXC-S2-Neph-5 Renal replacement therapy		

1	- Describe the distribution of potassium in the body. - Enlist the causes of hypokalemia and hyperkalemia. - Discuss the diagnosis and management of these disorders	EXC-S2-Phy-1 Potassium Disorders	Lecture/ Demonstration, SGD, Practical, CBL/ PBL	SBQs & OSVE, OSCE, Clinical Exam
2	- Describe the distribution of sodium in the body. - Enlist the causes of hyponatremia and hypernatremia. - Discuss the diagnosis and management of these disorders	EXC-S2-Phy-2 Sodium disorders		
3	- Physiology of acid base homeostasis - Metabolic acidosis: causes. Pathophysiology, case-based interpretation with compensation. - Metabolic alkalosis: causes. Pathophysiology, case-based interpretation with compensation - Respiratory acidosis: causes. Pathophysiology, case-based interpretation with compensation - Respiratory alkalosis: causes. Pathophysiology, case-based interpretation with compensation - Mixed disorders, diagnosis	EXC-S2-Neph-6 Management of Acid base disorders & Arterial blood Gases interpretation (two days)		
4	- Case based scenarios (50 questions). - Clinical examination at bed side history/systemic examination.	Assessment	Award to best student of the group	SBQs & OSVE

UROLOGY

Introduction Its Renal Excretory Module, module comprises of conditions related with Kidneys, Ureter, Urinary Bladder, Prostate, Male Genitalia and accessory glands. It is collectively known as Urology. It is one of most diverse fields of medicine which share major chunk of innovations in the field of medicine. This module will enable you to understand conditions related to organs which are related to this module, its clinical implications and ways for treating the related diseases in most constructive and interactive manner.

Rationale This module comprises of multiple important organs of body. They are having pivotal role in the homeostasis of the human body. Organs like kidneys, ureter, bladder, prostate and male genitals are complex organs and functions in very diverse ways so disease process also take very unusual pathways so it is beyond discussion that it is very important to know treating strategy for urological conditions like urolithiasis, urological neoplasms, infertility and paediatric urological conditions etc and preventing the recurrence of the disease.

Learning Outcomes At the end of module candidate should be able to:

- Understand the normal functioning of organs in the module.
- Take thorough history, clinical examination emphasising on Urological structures.
- Interpret diagnostic tests and their proper indications.

- Diagnose clinical conditions involving mentioned organs with the help of basic as well as advanced investigative tools.
- Advice proper treatment modalities to commonly occurring conditions.
- Design preventive measures for different conditions discussed in module.
- Provide proper follow-ups to get good prognosis.

Topics with specific learning objectives and teaching strategies

S #	LEARNING OBJECTIVE	TOPIC	LEARNING STRATEGY	ASSESSMENT
1	Pathogenesis of stone formation with different theories	EXC-S2-URO-1 Stone disease 1	Lecture/ Demonstration, SGD, Practical, CBL/ PBL	SBQs & OSVE, OSCE, Clinical Exam
2	Diagnosis with brief introduction to investigations	EXC-S2-URO-2 Stone disease 2		
3	Pathogenesis of BPE and carcinoma of prostate, overview of investigative modalities'	EXC-S2-URO-3 Prostate (benign and Malignant)		
4	Types of bladder tumors, pathogenesis and diagnosis	EXC-S2-URO-4 Urinary bladder Neoplasms		
1	History, Clinical examination, Investigations, medical and surgical management	EXC-S2-URO-5 Urolithiasis		SBQs & OSVE, OSCE, Clinical Exam
2	History, Clinical examination, Investigations, medical and surgical management.	EXC-S2-URO-6 Benign prostatic enlargement		
3	History, Clinical examination, Investigations, medical and surgical management, prognosis, follow up.	EXC-S2-URO-7 Prostatic neoplasms		
4	History, Clinical examination, Investigations, management. History, clinical examination, diagnosis, Medical and surgical management, follow up and prognosis	EXC-S2-URO-8 Urinary tract infection		
5		EXC-S2-URO-9 Renal Neoplasms		
6	PUJO, PUV, VUR, cryptorchidism	EXC-S2-URO-10 Paediatrics Urology		
7	Renal, ureter, bladder, male genitals	EXC-S2-URO-11 Urological Trauma		
8	Hydrocele, varicocele, epididymal cyst.	EXC-S2-URO-12 Benign scrotal conditions		
9	History, Clinical examination, Investigations, diagnosis management. follow up and prognosis	EXC-S2-URO-13 Malignant scrotal conditions		
10	Oral/ MCQs	Assessment		SBQs & OSVE

INTEGUMENTARY MODULE

DERMATOLOGY

Introduction Welcome to the Integumentary module. This interesting module very essential to build your foundation in medicine and allied. This module is designed to make your learning both interesting and productive by including several inter active activities.

This module covers the structural anatomy and physiology of the skin as well as common skin disorders encounter in our society. All these topics are interactive and helpful in understanding the skin diseases.

Rationale Skin is the largest organ of the body. Its exposed position makes it susceptible to a large number of disorders which include, allergic conditions, infections, and involvement in metabolic disorders. In this dermatology module the student shall gain the understanding of skin diseases, their clinical presentation, diagnosis and their management.

Learning Outcomes After completion of MBBS course the student should be able to:

- ☐ Recognize the clinical presentations of common Skin diseases in the community.
- ☐ Diagnose these diseases on the basis of history, examination and clinical investigations.
- ☐ Identify the preventive measures for counseling their patients.
- ☐ Practice basic principles of management of common disease and make appropriate referral.
- ☐ Recognize of the prognosis to counsel their patients.
- ☐ Be aware of the specific diagnostic tools for Skin diseases, and their interpretation.

Duration 02 Weeks

Topics with specific learning objectives and teaching strategies

Theme 1: Introduction and Inflammatory Dermatoses

S. #	LEARNING OBJECTIVES	TOPICS	TEACHING STRATEGY	ASSESSMENT
1	Recognize the Layers of epidermis & Dermis Recognize the appendages Explore the functions of epidermis and dermis	IM-S2-Derm-1 Anatomy and physiology of the skin	Lecture/ Demonstration ,SGD, Practical, CBL/ PBL	SBQs & OSVE, OSCE, Clinical Exam
2	Recognize primary and secondary cutaneous lesions	IM-S2-Derm-2 Primary and secondary skin lesions		
3	To diagnose different types of psoriasis & their management	IM-S2-Derm-3 Psoriasis		
4	To diagnose acne vulgaris & its management	IM-S2-Derm-4 Acne vulgaris		
5	To diagnose atopic Eczema & study its management	IM-S2-Derm-5 Atopic dermatitis		

Theme 2: Infections of Skin

S #	LEARNING OBJECTIVES	TOPICS	TEACHING STRATEGY	ASSESSMENT
6	To diagnose superficial cutaneous bacterial infections, and their management	IM-S2-Derm-6 Bacterial Infection		

7	To diagnose different types of superficial fungal infections and their management	IM-S2-Derm-7 Fungal	Lecture/ Demonstration, SGD, Practical, CBL/ PBL	SBQs & OSVE, OSCE, Clinical Exam
8	To diagnose common cutaneous viral infections and their management	IM-S2-Derm-8 Viral Infections		
9	To diagnose the Leishmaniasis and their management	IM-S2-Derm-9 Parasitic Infections		
10	To diagnose scabies and its management.	IM-S2-Derm-10 Parasitic Infections		

PLASTIC SURGERY/ BURNS

By the end of this module, 4th-year undergraduate medical students should be able to:

- Enlist the type of skin and its behavior after injuries like pigmentation, hypertrophic scar and Keloid.
- Enumerate the relevant investigation in a given scenario including blood investigations, relevant X-ray, Echo, CT and MRI scan.
- Diagnose the type of wound and its management.
- Enlist the different skin lesion and tumor and its management on the basis of local and regional flaps.
- Discuss the axial pattern flap for distant area coverage.
- Explain the biological and artificial skin for coverage.
- Describe the acute burn care.
- Discuss how the graft applied
- Enumerate and identify various benign and malignant skin lesions.
- Enlist and describe various congenital anomalies dealt in Plastic surgery.
- Identify appropriate patient referral for further management

Duration 02 Weeks

Topics with specific learning objectives and teaching strategies

Theme: Basic

S #	LEARNING OBJECTIVES	TOPICS	TEACHING STRATEGY	ASSESSMENT
11	The student will be able to: • Define what is plastic surgery • Describe history of plastic surgery • Define sub-specialties in plastic surgery • Describe factors involved in obtaining fine line scar • Describe step ladder in plastic surgical armamentarium	IM-S2-PSurg-1 Introduction to Plastic Surgery	Lecture/ Demonstration, SGD, Practical, CBL/ PBL	SBQs & OSVE, OSCE, Clinical Exam

Theme: Burns and Wound Healing

S #	LEARNING OBJECTIVES	TOPICS	TEACHING STRATEGY	ASSESSMENT
12	The student will be able to: - Define and Identify different types and degrees of burns - Describe management of acute burns - Enumerate complications of Burns - Describe measures for prevention of burns and its complications	IM-S2-PSurg-2 Burns	Lecture/ Demonstration, SGD, Practical, CBL/ PBL	SBQs & OSVE, OSCE, Clinical Exam
13	The student will be able to: - Define stages of wound healing - Describe mechanisms involved in wound healing - Describe aberrant wound healing - Identify factors causing delayed wound healing - Describe options for wound management - Describe recent advances in wound healing strategies	IM-S2-PSurg-3 Wound healing		
14	- The student will be able to define: - What is skin graft, Types of skin graft, Mechanism of skin graft take, Uses of skin graft, Complications of skin grafts, The student is able to Define: What is a flap, Different types of flaps, Types of local flaps, Z-plasty, Uses of different flaps, Complications of different flaps	IM-S2-PSurg-4 Graft/ Flaps		

Theme: Birth Defects

S #	LEARNING OBJECTIVES	TOPICS	TEACHING STRATEGY	ASSESSMENT
15	The student will be able to describe:	IM-S2-PSurg-5 Congenital anomalies	Lecture/ Demonstration,	SBQs & OSVE, OSCE, Clinical
	Cleft lip deformity, Cleft palate deformity, Hypospadias, Haemangioma, Vascular malformations, Syndactyly		SGD, Practical, CBL/ PBL	Exam

Theme: Skin lesions/ tumours

S #	LEARNING OBJECTIVES	TOPICS	TEACHING STRATEGY	ASSESSMENT
16	The student will be able to identify: - Benign skin lesion - Cutaneous malignancies - Squamous cell carcinoma - Basal cell carcinoma - Melanoma	IM-S2-PSurg-6 Skin lesion/tumors	Lecture/ Demonstration, SGD, Practical, CBL/ PBL	SBQs & OSVE, OSCE, Clinical Exam

RADIOLOGY

TWO WEEKS TEACHING SCHEDULE AT RADIOLOGY LIAQUAT UNIVERSITY HOSPITAL HYDERABAD

1ST WEEK

DAYS	08:30 am to 09:30 am	09:30 am To 10:30 am	10:30 am to 11:30 am	11:30 am to 12:30 pm	12:30 pm to 01:00 pm	01:00pm to 02:30pm	Faculty / Teaching Name
Day-1 - Monday	Lecture (Class)	X-ray (History & Reporting)	Ultrasound	CT Scan (History & Reporting)	<i>Break Time</i>	MRI (History & Reporting)	As per Rota
Day-2 – Tuesday	Lecture (Class)	X-ray (History & Reporting)	Ultrasound	CT Scan (History & Reporting)	--	MRI (History & Reporting)	As per Rota
Day-3 – Wednesday	Lecture (Class)	X-ray (History & Reporting)	Ultrasound	CT Scan (History & Reporting)	--	MRI (History & Reporting)	As per Rota
Day-4 – Thursday	Lecture (Class)	X-ray (History & Reporting)	Ultrasound	CT Scan (History & Reporting)	--	MRI (History & Reporting)	As per Rota
Day-5 Friday	Lecture (Class)	X-ray (History & Reporting)	Ultrasound	CT Scan (History & Reporting)	--	MRI (History & Reporting)	As per Rota

2ND WEEK

DAYS	08:30 am to 09:30 am	09:30am to 10:30am	10:30 am to 11:30am	11:30am to 12:30pm	12:30pm to 01:00pm	01:00pm to 02:30pm	Faculty / Teaching Name
Day-1 - Monday	Lecture (Class)	X-ray (History & Reporting)	Ultrasound	CT Scan (History & Reporting)	<i>Break Time</i>	MRI (History & Reporting)	As per Rota
Day-2 – Tuesday	Lecture (Class)	X-ray (History & Reporting)	Ultrasound	CT Scan (History & Reporting)	--	MRI (History & Reporting)	As per Rota
Day-3 – Wednesday	Lecture (Class)	X-ray (History & Reporting)	Ultrasound	CT Scan (History & Reporting)	--	MRI (History & Reporting)	As per Rota
Day-4 – Thursday	Lecture (Class)	X-ray (History & Reporting)	Ultrasound	CT Scan (History & Reporting)	--	MRI (History & Reporting)	As per Rota
Day-5 - Friday	<i>Revision Lecture (Class)</i>			<i>Break Time</i>	<i>INTERNAL EVALUATION TEST</i>		As per Rota

PULMONOLOGY

WEEK 1: CORE SYMPTOM-BASED & COMMON DISEASES

Day 1 – Orientation & Acute Dyspnea

- Ward orientation, safety, documentation
- **Bedside:** patients with acute dyspnea
- **Topics:** Approach to dyspnea, Asthma Exacerbation, Pulmonary Edema, Pulmonary embolism
- **Skills:** Focused respiratory examination

Day 2 – Chronic Dyspnea & COPD

- **Bedside:** COPD patients
- **Topics:** Approach to chronic dyspnea, Chronic cough, COPD phenotypes & complications
- **Skills:** Inhaler techniques, oxygen prescription

Day 3 – Asthma

- **Bedside:** bronchial asthma (stable & acute)
- **Topics:** Asthma diagnosis & stepwise management Differentiation from COPD
- **Skills:** Peak flow measurement, inhaler counseling

Day 4 – Pneumonia

- **Bedside:** community-acquired & hospital-acquired pneumonia
- **Topics:** CURB-65, severity assessment Empirical antibiotics
- **Skills:** Interpreting chest X-ray consolidation

Day 5 – Tuberculosis

- **Bedside:** pulmonary TB
- **Topics:** TB presentation, diagnosis GeneXpert, sputum AFB National TB program overview
- **Skills:** Counseling & infection control

WEEK 2: ADVANCED TOPICS, PROCEDURES & INTEGRATION

Day 6 – Interstitial Lung Disease (ILD)

- **Bedside:** ILD patients (if available)
- **Topics:** Approach to ILD, HRCT patterns (UIP, NSIP overview)
- **Skills:** Differentiating ILD vs COPD clinically

Day 7 – Spirometry Day

- **Exposure:** Pulmonary function lab exposure
- **Topics:** Spirometry principles, Obstructive vs restrictive patterns
- **Skills:** Reading spirometry reports Correlation with asthma, COPD, ILD

Day 8 – ABGs & Respiratory Failure

- **Exposure:** ICU / high-dependency exposure
- **Topics:** Arterial Blood Gases (ABGs), Type I & Type II respiratory failure
- **Skills:** ABG interpretation, Acid–base disorders

Day 9 – Bronchiectasis

- **Bedside:** bronchiectasis cases
- **Topics:** Etiology, HRCT findings Management principles
- **Skills:** Sputum evaluation, Chest physiotherapy basics

Day 10 – Assessment & Wrap-Up

Ward leaving test / mock viva

OSCE-style stations: ABG interpretation, Spirometry, Chest X-ray

GASTROENTEROLOGY

1 st Week						
DAYS	08.00 to 9.30 am	10.00 to 11.30 am	11.30 to 01.00 pm	01.00 to 1.30	1.30 to 03.00 pm	Faculty/ Teaching name
	Class Presentation	Ward Round + Bed side Teaching	Outdoor Patient Teaching	Break Time	Long Case /Short Case	As per Rota
Day 1/ Monday	Acute Pancreatitis	Ward Round+ Bed side Teaching	Outdoor Patient Teaching	-	Long Case /Short Case	As per Rota
Day 2/ Tuesday	Acute Hepatitis	Ward Round+ Bed side Teaching	Endoscopy Teaching	-	Long Case /Short Case	As per Rota
Day 3/ Wednesday	DCLD	Ward Round+ Bed side Teaching	Outdoor Patient Teaching	-	Long Case /Short Case	As per Rota
Day 4/ Thursday	Wilson Disease	Ward Round+ Bed side Teaching	Small Group Discussion	-	Long Case /Short Case	As per Rota
Day 5/ Friday	Chronic Diarrhea	Ward Round+ Bed side Teaching	Small Group Discussion	-	Long Case /Short Case	As per Rota
2 nd Week						
Day 1/ Monday	Ascites	Ward Round+ Bed side Teaching	Small Group Discussion	-	Long Case /Short Case	As per Rota
Day 2/ Tuesday	IBD	Ward Round+ Bed side Teaching	Small Group Discussion	-	Long Case /Short Case	As per Rota
Day 3/ Wednesday	HCC	Ward Round+ Bed side Teaching	Outdoor Patient Teaching	-	Long Case /Short Case	As per Rota
Day 4/ Thursday	AIH	Ward Round+ Bed side Teaching	Endoscopy Teaching	-	Long Case /Short Case	As per Rota
Day 5/ Friday	Assessment Day	08.00am to 01.30pm				

ANNUAL EXAMINATION ASSESSMENT

MBBS ASSESMENT STRUCTURE (THEORY) LUMHS

No.	Scoring Parameter	Marks in %
01	Main Examination Portion / BCQ's	80 %
02	Internal Evaluation Attendance as following 05 Marks Above 90% = 5, 89-80%= 4, 79-70%=3, 65-70%=2 Below 65%=00 Module Tests (BCQ's) 15 Marks	20 %
03	TOTAL	100 %

MBBS ASSESMENT STRUCTURE (PRACTICAL-FIRST TO FOURTH PROFESSIONAL) LUMHS

No.	Scoring Parameter	Marks in %
01	Main Examination Portion / OSPE and VIVA Static Stations and interactive/ viva stations	80 %
02	Internal Evaluation Research 05 Marks Practical Books 02 Marks Module Tests (OSPE/VIVA) 13 Marks	20 %
03	TOTAL	100

MBBS ASSESMENT STRUCTURE (PRACTICAL-FINAL PROFESSIONAL) LUMHS

No.	Scoring Parameter	Marks in %
01	Main Examination Portion / OSCE and VIVA Static Stations and clinical Viva at wards	80 %
02	Internal Evaluation Research 05 Marks log Books 02 Marks Module Tests (OSCE/VIVA) 13 Marks	20 %
03	TOTAL	100

PLAN FOR 4TH YEAR MBBS EXAMINATION INTEGRATED MODULAR CURRICULUM 2026

Paper I- ENT (Otorhinolaryngology)

Subject	Teaching hours allocated	Marks allocation in exit (final) exam=200			
ENT	150 hours	Theory 100	Practical 100		
		BCQs	OSCE	VIVA	IE
		100	12*4=48	4*8=32	20

Paper II- EYE (Ophthalmology)

Subject	Teaching hours allocated	Marks allocation in exit (final) exam=200			
EYE	150 hours	Theory 100	Practical 100		
		BCQs	OSCE	VIVA	IE
		100	12*4=48	4*8=32	20

Paper III- Clinical Allied Sciences I

Subject	Teaching hours allocated	Marks allocation in exit (final) exam=200			
Clinical Allied Sciences I	400 hours	Theory 100	Practical 100		
		BCQs	OCPE	VIVA	IE
		100	50	50	20

Subjects Covered in Clinical Allied Sciences I

SUBJECTS COVERED	TEACH HOURS	NO OF BCQS	TATITIC OSPE	VIVA
Psychiatry	125 hours	30	3*4 Marks	*12 Marks
Urology	75 hours	19	2*4 Marks	1*8 Marks
Urosurgery	75 hours	19	2*4 Marks	1*8 Marks
Oncology	75 hours	19	2*4 Marks	1*8 Marks
Phrology	50 hours	13	1*4 Marks	1*4 Marks
TOTAL	400 hours	100	10=40 MARKS	05=40 MARKS
INTERNAL EVALUATION			20 Marks	
GRAND TOTAL			40+40+20=100 MARKS	

Paper IV- Clinical Allied Sciences II

Subject	Teaching hours allocated	Marks allocation in exit (final) exam= 200			
Clinical Allied Sciences II	400 hours	Theory 100	Practical 100		
		BCQs	OSCE	VIVA	IE
		100	40	40	20

Subjects Covered in Clinical Allied II

SUBJECTS COVERED	TEACH HOURS	NO OF BCQS	TATITIC OSPE	VIVA
Orthopedics & Traumatology	100 hours	24	3*4 Marks	1*12 Marks
Plastic Surgery	75 hours	18	2*4 Marks	1*8 Marks
Dermatology	50 hours	13	1*4 Marks	1*4 Marks
Cardiology	50 hours	13	1*4 Marks	1*4 Marks
Immunology	50 hours	13	1*4 Marks	1*4 Marks
Gastroenterology	50 hours	13	1*4 Marks	1*4 Marks
Nephrology	25 Hours	06	1*4 Marks	1*4 Marks
TOTAL	400 hours	100	10=40 MARKS	07=40 MARKS
INTERNAL EVALUATION			20 Marks	
GRAND TOTAL			40+40+20=100 MARKS	

LEARNING RESOURCES

ENT

1. Logan Turner's Diseases of the Nose, Throat, and Ear: Head and Neck Surgery" by Michael J. Gleeso, 12th Edition
2. Diseases of Ear, Nose, and Throat" by P. L. Dhingra and Shruti Dhingra, 7th Edition
3. Oto-Rhino-Laryngology A Problem Oriented Approach – 2nd Edition Iqbal Hussain Udaipurwala
4. Current Diagnosis & Treatment Otolaryngology—Head and Neck Surgery, 4th Edition

PLASTIC SURGERY

1. Plastic Surgery: Volume 1: Principles" and "Plastic Surgery: Volume 2: Aesthetic Surgery" By Peter C. Neligan
2. Essentials of Plastic Surgery" by Jeffrey E. Janis

DERMATOLOGY

1. ABC of Dermatology, Authors: Paul K. Buxton, Rachael Morris-Jones, 7th Edition
2. Rook's Textbook of Dermatology, Authors: Christopher Griffiths, Jonathan, 9th Edition

PATHOLOGY

1. Robbins Basic Pathology, Authors: Vinay Kumar, Abul K. Abbas, Jon C. Aster, 10th Edition
2. Rapid Review Pathology" Author: Edward F. Goljan MD, 4th Edition

PHARMACOLOGY

1. Lippincott Illustrated Reviews: Pharmacology. Authors: Richard A. Harvey, Pamela C. Champe, 7th Edition.
2. Basic and Clinical Pharmacology by Katzung. Authors: Bertram G. Katzung, Anthony J. Trevor. 14th Edition.

OPHTHALMOLOGY

1. Clinical Ophthalmology" by J. J. Kanski, 9th Edition
2. Clinical Ophthalmology by Shafi Muhammad Jatoi

NEPHROLOGY

1. Davidson's principles and practice of Medicine, Ian D Penman, Stuart H. Ralston, MD 24th Edition
2. Current Medical diagnosis and Treatment, Maxine A. Papadakis, Stephen J. McPhee, Michael W. Rabow, 5th Edition
3. Primer on Kidney Disease, Scott J. Daniel & Weiner, 8th Edition

UROLOGY

1. Bailey & Love's Short Practice of Surgery, 28th Edition.
2. Smith and Tanagho's General Urology, by Jack McAninch & Tom Lue, 19th Edition 19th Edition
3. Oxford Handbook of Urology, John Reynard, Simon F. Brewster, 4th Edition

ORTHOPAEDICS

1. Campbell's Operative Orthopaedics, Frederick M. Azar & S. Terry Canale & James H. Beaty. 14th Edition
2. Miller's Review of Orthopaedics, Mark D. Miller, Stephen R. Thompson, 8th Edition
3. Orthopedic Physical Assessment by David J Magee, 6th Edition

NEUROSURGERY

1. Neurology and Neurosurgery Illustrated, Kenneth W. Lindsay, Ian Bone, Geraint Fuller, 5th Edition
2. Greenberg's Handbook of Neurosurgery by Mark S. Greenberg, 10th Edition

PSYCHIATRY

1. Shorter Oxford textbook of Psychiatry – 7th Edition

2. Behavioral Sciences by Mowadat H. Rana, 3rd Edition

NEUROLOGY

1. Davidson's principles and practice of Medicine
2. Hutchison's Clinical Methods: An Integrated Approach to Clinical Practice
3. Macleod's Clinical Examination – 14th Edition

PAEDIATRICS

Text Books:

1. Nelson textbook of pediatrics, 21st edition
2. Nelson Essentials of Pediatrics
3. Current Diagnosis & Treatment Pediatrics, 23rd edition
4. Pakistan pediatric association textbook
5. Illustrated Pediatrics by Tom Lissauer

WHO publications and society guidelines:

6. WHO publications on IMNCI
7. GINA Guidelines, Global Strategy for Asthma Management and Prevention.
8. WHO; Global Database on child growth and Malnutrition
9. WHO publication on Tuberculosis
10. Expanded Program on Immunization in Pakistan

Clinical Methods:

11. Macleod's Clinical Examination
12. Hutchison's Clinical Methods

Annexure

Policy for Electives

I. Introduction:

The undergraduate medical program (MBBS) aims to develop healthcare providers who provides care to community at large. It also envisages the student as a future scholar, specialist, researcher and scientist.

An elective permits the students to think of a career beyond examinations and offers students a stimulus to think laterally and creatively besides laying down the foundation for future professional pathways. It also lets the students to match their aspirations with the ground reality in a field of their dreams being a health care professional.

Pakistan Medical & Dental Council recommends to develop medical college's policy on electives for undergraduate medical students, implement it, monitor it and maintain the record of the students selected the electives and evaluate the elective program.

Liaquat University of Health Sciences (LUMHS) Jamshoro, Sindh follows the guiding principles of Higher Education Commission (HEC) of Pakistan and Pakistan Medical & Dental Council (PMDC) and has developed the policy on electives for undergraduate medical students and incorporated in undergraduate medical curriculum.

II. Policy on Electives

a. Definition of elective:

An elective is a learning experience created in the undergraduate medical curriculum to provide an opportunity for the learner (student) to explore, discover and experience areas or streams of his/her interest.

b. Objectives of elective

The objectives of electives are to provide the learner (student) opportunities: 1) for diverse learning experiences and to conduct research or community or institutional project that stimulates inquiry-based learning, self-directed learning, lateral thinking and thinking out of the box.

c. Duration of elective:

Duration for 2 electives is Six-eight weeks (3-4 weeks for each); the duration must be put in the time schedule for elective rotations.

d. Time of electives in Phase of MBBS Curriculum:

After completion of summative (University) examination of third year MBBS, each students have to complete 2 electives.

e. Elective a Compulsory part of course:

It is mandatory for the students to do electives.

f. Departments for electives:

Electives will be done in Pre-clinical, Para clinical and Clinical department

g. Structure of Electives:

1. There are two slabs of electives
2. The learner has to rotate through two elective slabs; each slab is of 3-4 weeks.
3. Focus of slab one is on pre-clinical and para-clinical subjects and two on clinical subjects.
4. Institutions selected for electives, nature of elective, number of students in each elective, name of supervisors and available resources will be determined 6-8 weeks ahead of schedule.
5. The list for the choice of electives will be made available six months ahead of schedule of electives.
6. The students fill the log book meant for electives and get it signed from the supervisor (internal, external if any) after completion of elective in one slab.
7. Ninety percent attendance must be ensured in each elective.
8. Learning must be focused on all three domains of learning, cognitive, psychomotor and affective.

h. Electives Slabs

Slab one	Slab two
<i>Pre-Clinical and Para-clinical</i>	<i>Clinical</i>
Experiential learning in any laboratory Pathology, Microbiology, Biochemistry, Molecular Biology, Genetics, Immunology.	Community Experiential Learning Care at Rural Health Centre level Care at Basic Health Units Care at Specialized clinics in community such as Diabetic Clinic
Other experiential learnings Pharmacovigilance and clinical pharmacology Infection Control Program Activities in Hospital	Hospital Experiential Learning Emergency care in emergency Intensive care in ICU or HDU Outpatient care any of the clinical sciences departments for 3-4 weeks
Research Activities Students initiated research Participation in faculty research Surveys: Community or epidemiological	Others Rehabilitation and palliative Care Sports Medicine Clinical Ethics CPR
Community Experiential Learning School Health Program Immunization Program Maternal and Child Health Program Other National Health Programs such TB Control, Tobacco Control	
Others Bio informatics Artificial Intelligence in Healthcare	

i. Template to be used for planning electives

Item	Response
Name of Slab	
Name of elective	
Place where elective will be done	
Name of Internal Supervisor	
Name of External Supervisor	
Learning Objective/s of the elective	
Number of students to be accommodated at the designated place	
Pre-requisite for the elective	
Learning resource to be utilized by the students	
Logbook/Portfolio entry	
Assessment	
Any other	

j. Obligation of Faculty Members/mentors

- The faculty members/mentors shall counsel the students to help students select desired electives.
- The faculty members/mentors must ascertain a student's expectation must be met from the selected electives.
- The faculty members/mentors must make aware students of the rules regarding attendance, work schedule, documentation and assessment requirements for each elective.

k. Obligation of In-charge of electives program

l. Reflective Report on Elective:

Each student has to prepare 3-4 pages reflective report on elective. The font size will be 12 in Times New Roman. Student can include 1-2 photos of activities done during elective.

m. Evaluation of Electives Program

It is to be done every year by the independent team.

III. Conclusion:

Experiential learning through electives is essential for adult learner. This program helps in grooming of the students and permit students to reflect, plan and grow their career.

THE END