Jinnah Medical & Dental College

Orthopedics module

Study Guide

4th Year

MBBS
2021

Lack of activity
destroys
the good condition of
every human being

Hippocrates

Team Members of the Study guide
2021

Name	Committee	Department
Dr. Shahid Ahsan Professor	Member	Biochemistry
Dr. Syed Sanower Ali Professor	Member	Community Medicine
Dr. Imran Afzal Professor	Member	Forensic Medicine
Dr. Ishaq Ghauri Professor	Member	Internal Medicine
Dr. Farooq Umer Professor	Member	Orthopedics
Dr. Mahdev Harani Professor	Member	Pathology
Dr. Samia Perwaiz Professor	Member	Pharmacology
Dr. Sadaf Naqvi Associate Professor	Member	Physiology
Dr. Sehrish S. Sethar Assistant Professor	Member	Radiology
Dr. Zeelaf Shahid Associate Director	Member	Medical Education

Introduction

A very warm welcome to medical students in the Orthopedics posting**.** Orthopedics revolves around diagnosis, treatment, rehabilitation and prevention of injuries or diseases afflicting the spine, pelvis and extremities. The module presents state of the art knowledge and experience from clinical experts and researchers specializing in the area of trauma and orthopedic surgery. It is a review of in-depth clinical aspects of trauma and orthopedic surgery. It will have a thematic emphasis on interactions between basic and clinical sciences related to trauma and orthopedics.

This clinical rotation has been developed to impart integrated teaching as a part of curriculum in Jinnah Medical and Dental College, Karachi. It will be covered in 5 weeks. This will benefit the students to understand the basic biomedical information in relation to clinical sciences. This clinical posting has been designed to introduce new entrants to the MBBS program basic concepts essential for understanding a number of topics in Orthopedics. It aims to provide ‘basic’ knowledge to the students so that they are able to apply it when they come across more advanced topics. This clinical posting hence provides a framework within which learners are expected to build future competencies. Concepts acquired during this module will be revisited in all other subsequent postings of the undergraduate course.

Rationale

It will have a thematic emphasis on interactions between basic and clinical sciences related to trauma and orthopedics.

General Learning Objectives

At the end of the module, the students will be able to:

1. Diagnose common Orthopedic conditions based on clinical information and knowledge of basic sciences

2. Correlate clinical presentation and management plans with underlying pathophysiology and anatomy

3. Justify treatment plans based on principles of management of orthopedics and knowledge of Pharmacology

4. Demonstrate ability for quantitative research at the level of Undergraduates

5. Recommend action plan for dealing with firearm injuries in hospitals

6. Demonstrate truthfulness with patients, peers, and in professional work (e.g., documentation, communication, presentations, research, taking patient consent etc).

7. Demonstrate accountability to patients as well as colleagues and accepts responsibility for errors.

8. Works cooperatively and communicates effectively to achieve common patient care and educational goals of all involved health care providers.

9. Counseling of patients regarding disease, management and prognosis

JMDC CURRICULUM FRAMEWORK: MBBS 1-5 YEARS

Year	Module	EOM	Module	EOM	Module	EOM	Module	EOM	Module	EOM	Module	EOM
Year 1	**Module 1**	**EOM**	**Module 2**	**EOM**	**Module 3**	**EOM**	**Module 4**	**EOM**	**Module 5**	**EOM**	**Module 6**	**EOM* End of Exam**
	Foundation-1 8 weeks		Blood-1 4 weeks		Locomotor-1 8 weeks		Respiratory-1 4 weeks		CVS-1 4 weeks		GIT-1 4 weeks	
2	**Module 7**	**EOM**	**Module 8**	**EOM**	**Module 9**	**EOM**	**Module 10**	**EOM**	**Module 11**	**EOM**	**Module 12**	**EOM**
	Head & Neck-1 5 weeks		Neurosciences-1 7 weeks		Special Senses 3 weeks		Endocrine-1 5 weeks		Reproductive-1 4weeks		Urinary-1 5weeks	
3	**Module 13**	**EOM**	**Module14**	**EOM**	**Module15**	**EOM**	**Module16**	**EOM**	**Module17**	**EOM**	**Module 18**	**EOM**
	Foundation 2 10 weeks		Blood-2 5weeks		Locomotor-2 4 weeks		Respiratory-2 4 weeks		CVS-2 5 weeks		GIT-2 7weeks	

Final Exam

Clinical Rotations (Each Batch) **WT* = Ward test**

R 1	**Medicine 2 weeks**	**WT**	**Psychiatry 2weeks**	**WT**	**Surgery 2 weeks**	**WT**	**Orthopedics 2 weeks**	**WT**	**OBS/ GYN 2 weeks**	**WT**	**Pediatrics 2 weeks**	**WT**	**Eye 2 weeks**	**WT**	**Ent 3 weeks**	**WT**
R2	**Medicine 2 weeks**		**Psychiatry 2weks**		**Surgery 2 weeks**		**Orthopedics 2weeks**		**OBS/ GYN 2 weeks**		**Pediatrics 2 weeks**		**Eye 2 weeks**		**Ent 3 weeks**	

4	**Module 19**	**EOM**	**Module 20**	**EOM**	**Module 21**	**EOM**	**Module 22**	**EOM**	**Module 23**	**EOM**	**Module 24**	**EOM**	**Lectures**
	Orthopedics 7 weeks		**Reproductive-2 7 weeks**		**Neuroscience-2 9 weeks**		**Genetics 1 week**		**Dermatology 2 weeks**		**Rehabilitation 2 weeks**		**ENT/ EYE**

Clinical Rotations (Each Batch)

R 1	**Medicine 3 weeks**	**WT**	**Psychiatry 3 weeks**	**WT**	**Surgery 3 weeks**	**WT**	**Orthopedics 3 weeks**	**WT**	**OBS/ GYN 3 weeks**	**WT**	**Pediatrics 3 weeks**	**WT**	**Eye 3 weeks**	**WT**	**Ent 3 weeks**	**WT**

R2	**Medicine 3weeks**	**WT**	**Surgery 3weeks**	**WT**	**Eye 3weeks**	**WT**	**Ent 3weeks**	**WT**

LECTURES **R***= Rotation**

5	**Medicine**	**Surgery**	**OBS/Gynae**	**Pediatrics**
	Clinical Rotations			
R 1	**Medicine 4 weeks**	**Surgery 4 weeks**	**OBS/ GYN 4 weeks**	**Pediatrics 4 weeks**
R2	**Medicine 5 weeks**	**Surgery 5 weeks**	**OBS/ GYN 5 weeks**	**Pediatrics 5 weeks**

General Learning Objectives

- Diagnose common Orthopedic conditions based on clinical information and knowledge of basic sciences
- Correlate clinical presentation and management plans with underlying pathophysiology and anatomy
- Justify treatment plans based on principles of management of orthopedics and knowledge of Pharmacology
- Demonstrate ability for quantitative research at the level of undergraduates
- Recommend action plan for dealing with firearm injuries in hospitals

Competencies assessed in this module

K=Knowledge

S=Skill

A=Attitude

Teaching / Learning Methods

The teaching learning sessions of this module will be of diverse types:

a. Large group interactive sessions (LGIS)
b. Small group teaching will include tutorials and, case – based learning session.
c. Problem – based learning sessions.
d. Practical session will comprise sessions on early exposure to clinical methods and practical laboratory demonstrations.
e. Seminars: on different topics, in which students will make oral presentations on different aspects of the allocated topic.
f. Self-directed learning sessions: This is the time during which students are expected to revise what they have learnt in the class, clear their concepts by consulting different textbooks, reference material and prepare their assignments and projects.

Students Assessment

There will be an end of rotation ward test after completion of clinical posting which will comprise the following components: -

i. Written Assessment

The theory paper will have components of one – best type multiple – choice questions (MCQs).

ii. Practical / lab examination:

This will comprise Objective Structured Clinical Examination (OSCE) The OSCE will have both observed and non-observed stations. The end of clinical posting will be of 2 hours duration. This will comprise the following components:

The OSPE/ OSCE will be conducted in batches. The students will be having different patterns of OSPE/OSCE in the subjects otolaryngology.

Summary of marks of each module exam

Theory (BCQs) = 100 marks

OSPE (10 stations) = 100 marks

Total = 200 marks

Internal Assessment:

• Continuous monitoring of attendance and practical assessment in short groups By Mini CEX and logbooks.

• It may be in the form of MCQs (BCQs), Ward tests, and OSCE.

• Internal assessment carries 20% weightage

Course Evaluation:

Course evaluation will be obtained through a feedback form which will be posted on the JMC website

Mandatory Policy:

Eligibility for sitting in Professional Examinations is as follows:

- 75% overall Class Attendance
- 75% Attendance all Clinical Wards with passing marks in all Clinical Ward Tests.
- Minimum 40% aggregate marks on all Internal Examinations (Module Tests, Midterm, Pre-Professional Examinations)
- MBBS 1stYear: Complete all Professional Communication assignments with passing marks
- MBBS 1st& 2ndYear: Obtain passing marks in Behavioral Sciences & Research Module assessments
- MBBS 2ndYear: Presentation in Journal club at least twice in a year
- MBBS 4th& Final Year: CPC Presentation at least once in a year
- Skills Labs: Must be completed with passing marks
- Research Paper must be completed before MBBS 4 Professional Examination

Failure to Meet the Eligibility Requirements:

- A Student failing to meet the above listed eligibility for sitting in the professional examination will NOT be allowed to sit in 1st attempt of the Professional Examination.

  The college has the right to withhold all students who however, not met the eligibility requirements from sitting in the 1st attempt.
- Such students who have been withheld from sitting in the 1st attempt of the Professional exam because of failure to meet the eligibility requirements will be allowed only to sit in the retake of that examination.

  It is expected that deficiency in requirements of Professional communication assignments, Behavioral Sciences & Research Module assessments, journal Club presentations, CPC, Skills Labs must be made up and fulfilled before a student will allowed to sit in the retake exam.

Details of ATTENDANCE POLICY

The CR is responsible to bring attendance sheets from Student Affairs Office to each class. At the end of class, the attendance sheet must be signed and returned by the faculty member to the Student Affairs Office. No attendance sheets from students will be accepted.

These attendances will be compiled together as follows:

LECTURE ATTENDANCE = # Lectures Attended / Total # of Lectures

PRACTICAL ATTENDANCE = # Practicals Attended / Total # of Practicals

TUTORIAL ATTENDANCE = # Tutorials Attended / Total # of Tutorials

NOTE: All tutorials will be conducted by a Senior Faculty Member (AP or above), assisted by a Junior Faculty Member (Lecturer)

FINAL CLASS ATTENDANCE =

%Lecture Attendance + %Tutorial Attendance + %Practical Attendance

3

Recommended Reading Material

Biochemistry

1.

2.

Community Medicine

1.

2.

Forensic Medicine

1.

2.

Internal Medicine

1.

2.

Orthopedics

1.

2.

Pathology

1.

2.

Pharmacology

1.

2.

Physiology

1.

2.

Radiology

1.

Orthopedics

Organization

Time requirements:

Biochemistry	=	2 hours
Community Medicine	=	12 hours
Forensic Medicine	=	3 hours
Internal Medicine	=	10 hours
Orthopedics	=	10 hours
Pathology	=	6 hours
Pharmacology	=	9 hours
Physiology	=	4 hours
Radiology	=	1 hours
Total	=	57 hours

Biochemistry lectures

Sr. No.	LEARNING OBJECTIVES By the end of the module, the students should be able to:	CONTENT AREA	LEARNING ACTIVITIES (Duration)	ASSESSMENT
1.	• Explain the classification and biochemical role of calcium, phosphate and vi **(K)**	**Calcium, Phosphate and Vit. D**	LGIS 50 min	MCQs
2.	• Define the importance of calcium in bone mineral metabolism • Explain the action of parathyroid hormone on gut, bone and kidney • • Describe the role of 1,25-dihydroxy Vitamin D and Calcitonin in calcium homeostasis **(K)**	**Effects of Parathyroid hormone on bone mineral metabolism**	LGIS 50 min	MCQs
3.	• Define gout, its types and complications. • List the enzymes' defects involved in purine nucleotide metabolism • Explain the causes of hyperuricemia **(K)**	**Uric acid metabolism & Gout**	LGIS 50 min	MCQs
4.	• Explain the composition and function of synovial fluid in a typical Synovial joint **(K)**	**Synovial fluid composition**	LGIS 50 min	MCQs

Community medicine lectures

Sr. No.	LEARNING OBJECTIVES By the end of the module, the students should be able to:	CONTENT AREA	LEARNING ACTIVITIES (Duration)	ASSESSMENT
1.	• Describe occupational health • Explain Occupational health practice • Enumerate occupational health diseases • Discuss the control and prevention of occupational health hazards • Describe Lead poisoning **(K)**	**Occupational health & diseases**	LGIS 50 min	MCQs
2.	• Describe accidents & different types of injuries • Explain the risk factors for different types of injuries related caused by accidents • Enumerate the issues surrounding the road traffic accidents • Discuss the measures for control and prevention of Accidents • Describe injury-specific prevention & control measures **(K)**	**Accidents and Prevention**	LGIS 50 min	MCQs
3.	• Describe disaster and its Management • Classify the types of disaster • Enumerate the steps in planning disaster management • Describe the steps of surveillance cycle **(K)**	**Disaster management**	LGIS 50 min	MCQs
4.	• Describe Sport Medicine • Explain the role of sports physician in the practice of sports medicine	**Sports Medicine**	LGIS 50 min	MCQs

	• Discuss the female athlete triad • Describe pharmacological & legal aspects of use of Ergogenic aids by athletes **(K)**			

Pharmacology lectures

Sr. No.	LEARNING OBJECTIVES By the end of the module, the students should be able to:	CONTENT AREA	LEARNING ACTIVITIES (Duration)	ASSESSMENT
1.	• Describe the rationale of management of osteoporosis & osteomalacia • Enumerate drugs used to treat osteoporosis & osteomalacia **(K)**	**Drug management of Osteoporosis & Osteomalacia**	LGIS 50 min	MCQs
2.	• Describe the kinetics & dynamics of these drugs • Describe the rationale of management of Gout • Enumerate the drugs used to treat Gout • Describe the kinetics & dynamics of these drugs **(K)**	**Drugs used in Gout**	LGIS 50 min	MCQs

PATHOLOGY lectures

Sr. No.	LEARNING OBJECTIVES By the end of the module, the students should be able to:	CONTENT AREA	LEARNING ACTIVITIES (Duration)	ASSESSMENT
1.	• Classify developmental disorders of bone and cartilage according to etiology • Discuss the pathogenesis and morphology of various bone diseases with respect to the defect in nuclear proteins, transcription factor, defects in hormones and signal transduction proteins, extracellular structural proteins, and metabolic pathway • Discuss the diseases associated with defect in degradation of macro-molecules **(K)**	**Introduction of bone structure and diseases**	LGIS 50 min	MCQs
2.	• Discuss the etiology, pathogenesis, and morphology of acquired disorders of bone (Paget's disease, hyperparathyroidism and renal osteodystrophy) **(K)**	**Acquired disorder of bone**	LGIS 50 min	MCQs
3.	• Classify bone forming tumors according to WHO classification • Discuss the etiology, pathogenesis, morphology, clinical and radiologic findings of osteoid osteoma, osteoblastoma and osteosarcoma **(K)**	**Bone forming tumors**	LGIS 50 min	MCQs
4.	• Classify cartilage forming tumors according to WHO classification • Discuss the etiology, pathogenesis, morphology, clinical and radiologic findings of osteochondroma, and chondroma **(K)**	**Cartilage forming tumors**	LGIS 50 min	MCQs
5.	• Discuss the etiology, pathogenesis, morphology, clinical and radiologic findings of Ewing sarcoma, giant cell tumor, and aneurysmal bone cyst.	**Tumors of unknown origin**	LGIS 50 min	

	• Discuss metastatic tumors of bones **(K)**			
6.	• Discuss various diseases of joints including joint tumours and tumour like conditions • Discuss aetiology, pathogenesis, morphology and clinical features of ganglion, synovial • cyst, and ten synovial giant cell tumours **(K)**	**Joint tumors**	LGIS 50 min	MCQs
7.	• Classify soft tissue tumors according to WHO classification • Discuss etiology, pathogenesis, morphology and clinical features of tumors of adipose tissue (lipoma, liposarcoma), fibrous tumors, and skeletal muscle tumors (leiomyoma leiomyosarcoma **(K)**	**Soft tissue tumors**	LGIS 50 min	MCQs
8.	• Discuss various diagnostic methods of synovial fluid analysis and their clinical Implications **(K)**	**Clinical implication of synovial fluid in various forms**	LGIS 50 min	MCQs

Physiology lectures

Sr. No.	LEARNING OBJECTIVES By the end of the module, the students should be able to:	CONTENT AREA	LEARNING ACTIVITIES (Duration)	ASSESSMENT
1.	• Compare the processes of bone modeling and remodeling • Explain the functions of osteoblasts and osteoclasts in bone formation and bone Resorption **(K)**	**Bone modeling and remodeling**	LGIS 50 min	MCQs
2.	• Discuss the impact of calcium, vitamin D, and parathyroid hormone on bone formation and resorption **(K)**	**Hormonal control of bone metabolism**	LGIS 50 min	MCQs

Radiology lectures

Sr. No.	LEARNING OBJECTIVES By the end of the module, the students should be able to:	CONTENT AREA	LEARNING ACTIVITIES (Duration)	ASSESSMENT
1.	• Explain the role of radiologic imaging in Musculo-skeletal system disease • Describe the principles of MRI, isotope bone scans, DEXA scans and CT scans	**Imaging of Musculo-skeletal system**	LGIS 50 min	MCQs
2.	• List the techniques involved in diagnosis of bone tumors • Identify common skeletal injuries on radiographic films (e.g. fractures and dislocations)	**Imaging of bone tumors**	LGIS 50 min	MCQs

Medicine lectures

Sr. No.	LEARNING OBJECTIVES By the end of the module, the students should be able to:	CONTENT AREA	LEARNING ACTIVITIES (Duration)	ASSESSMENT
1.	• Name the major pathogenic organisms causing joint infections • Describe the pathophysiology, elements of prevention, and management of joint Infections • Outline the main clinical features and laboratory tests to diagnose joint infections (Septic, Viral, Tuberculous arthritis) **(K)**	**Joint infections**	LGIS 50 min	MCQs
2.	• Classify gout • Describe the pathogenesis, morphological and clinical features of gout • Differentiate among various types of gout, based on clinical presentations • Develop a plan for treating acute gouty arthritis **(K)**	**Gout**	LGIS 50 min	MCQs
3.	• Diagnose hyper-and hypo-parathyroid disorders based on clinical manifestations and investigation findings • Develop treatment plans for hyper and hypo parathyroid disorders **(K)**	**Parathyroid disorders**	LGIS 50 min	MCQs
4.	• Classify vasculitis • Describe the pathophysiology of vasculitis • Discuss the clinical manifestations and treatment of vasculitis **(K)**	**Vasculitis**	LGIS 50 min	MCQs
5.	• Describe the pathology, prevalence, etiology, symptoms, and diagnosis of systemic Sclerosis **(K)**	**Systemic sclerosis**	LGIS 50 min	

	• Describe the pathology, prevalence, etiology, symptoms, and diagnosis of Polymyositis and Dermatomyositis • Discuss the current management strategies for Polymyositis and Dermatomyositis **(K)**	**Polymyositis and Dermatomyositis**		

Orthopedics lectures

Sr. No.	LEARNING OBJECTIVES By the end of the module, the students should be able to:	CONTENT AREA	LEARNING ACTIVITIES (Duration)	ASSESSMENT
1.	• Classify the different types of fractures • Describe the specific types of fractures (hip fractures, Colles' fracture, pelvic fractures) • Discuss the general principles of management of fractures • Describe the therapeutic measures for different fractures, principles of fracture treatment in children and common complications of fractures • Discuss the management of fractures and the principles of fracture fixation **(K)**	**Fractures**	LGIS 50 min	MCQs
2.	• Describe the clinical features, laboratory tests, and imaging of the following musculoskeletal diseases: i. Rheumatoid Arthritis ii. Seronegative Spondylo-arthropathies iii Systemic Lupus Erythematosus iv. Osteoarthritis and Osteoporosis v. Achondroplasia vi. Osteogenesis imperfecta vii. Osteomyelitis viii Paget's disease (Osteitis Deformans) ix. Bone tumours x. Duchenne muscular dystrophy xi. Myotonic dystrophy • Develop a treatment plan for Osteoporosis **(K)**	**Musculoskeletal diseases**	LGIS 50 min	MCQs
3.	• Describe the sequence of evaluation of a trauma patient • Describe the criteria for triage of a trauma patient • Describe the rapid assessment of a patient with spinal trauma • Describe the etiology, pathophysiology, and the	**Trauma**	LGIS 50 min	MCQs

	appropriate management of patients with spinal cord injury • Develop a plan for diagnosis and treatment of patients with torso trauma • Describe the classification of pelvic fractures and the associated complications • Describe the mechanisms, assessment, and management of maxillo-facial injuries **(K)**			
4.	• Identify the most common conditions causing back pain • Develop a plan for diagnosis and management of non-traumatic neck and back Problems **(K)**	**Back pain**	LGIS 50 min	MCQs
5.	• Correlate the pathological findings of bone tumors with their clinical presentation • Justify the diagnosis, investigations and treatment plans for primary bone tumors **(K)**	**Bone tumors**	LGIS 50 min	

Forensic Medicine Tutorials

Sr. No.	LEARNING OBJECTIVES By the end of the module, the students should be able to:	CONTENT AREA	LEARNING ACTIVITIES (Duration)	ASSESSMENT
1.	• Describe whip lash injuries, fractures of cervical spine, and railway spine • Discuss the injuries to thoracic and lumbar spine, and sacrum • Describe the medicolegal aspects of spinal injuries **(K)**	**Spinal injuries**	SGD Tutorials 90 min	MCQs

Pharmacology Tutorials

Sr. No.	LEARNING OBJECTIVES By the end of the module, the students should be able to:	CONTENT AREA	LEARNING ACTIVITIES (Duration)	ASSESSMENT
1.	• Discuss the classification of drug used in OA & RA • Describe the kinetics and dynamics of these drugs **(K)**	**Treatment of Rheumatic Arthritis & Osteoarthritis (OA & RA)**	SGD Tutorials 90 min	MCQs
	• Discuss the classification of drug used in Gout • Describe the kinetics and dynamics of these drugs **(K)**	**Drug used in Gout**	SGD Tutorials 90 min	

Practical's

Sr. No.	LEARNING OBJECTIVES By the end of the module, the students should be able to:	CONTENT AREA	LEARNING ACTIVITIES (Duration)	ASSESSMENT
1.				

Practical's

Sr. No.	LEARNING OBJECTIVES By the end of the module, the students should be able to:	CONTENT AREA	LEARNING ACTIVITIES (Duration)	ASSESSMENT
1.				

Problem Based Learning (PBL)

- ___ PBLs will be conducted in this module
- Each will be introduced in one week and will be discussed the next week

Learning Tool	Theme	PBL Trigger	Subjects integrated in PBL
PBL 1			Learning objectives will be from Anatomy, Biochemistry and Physiology
PBL 2			Learning objectives will be from Anatomy, Biochemistry and Physiology

Learning Resources:

The students will be guided to look for the relevant study material from the books, internet guided by each discipline in the study guide in their relevant section in addition to other reference books from the college library

Medical Education Lectures / Workshop

S.NO	Learning Objectives (domain) At the end of session, student will be able to:	Content Areas	Teaching Activity (Duration)	Assessment
1.	**Introduction to Medical Education** • Appreciate the journey of medical education from learning biomedical to clinical science. **(K)** • Introduction to Study Guide	• Plan of medical education in college (From school into college) • Organization of undergraduate medical curriculum • Integrated Curriculum • Study Guide Session	LGIS 50 mins	–
2.	**Assessment Tools and Evaluation** • Describe assessment • Describe evaluation **(K)**	• Describe assessment • Describe evaluation	LGIS 50 mins	–
3.	**Problem – based Learning** • Describe the basis of problem – based learning. **(K)** • Follow the process / steps of problem – based learning session. **(S)**	• Basics of problem-based learning • Process / steps of problem – based learning • Practical demonstration of PBL session	Workshop (1 hours)	–

Learning resource: How to succeed at medical school, Dason Evans & Jo Brown, 2009

TIME TABLE

Jinnah Medical & Dental College

MBBS 4 (Batch 21)

EYE/ENT- ORTHOPEDICS MODULE – WEEK 1

Venue: Monday/Tuesday – JMDC LH103 (Group 1+2 Mon; Group 3+4 Tues) Wed-Saturday – JMCH LH 1 + LH 2

	8:30–9:20	9:25-10:15		10:45-11:35		12:00-1:30	1:30-3:00
MON March 1 Group 1 + 2	ANATOMY / EMBRYOLOGY Bone, Cartilage, Joint Development & Histogenesis	PHYSIOLOGY Parathyroid Hormone, Vitamin D, Calcitonin & Bone Metabolism	TEA BREAK	ANATOMY EYE Revision Anatomy of Eye & Orbit		GROUP 1-Physiology Practical-ENT/EYE (Dry Lab) GROUP 2-Physiology Practical-ENT/EYE (Wet Lab)	RESEARCH MODULE Project Work
TUES March 2 Group 3 + 4	PHYSIOLOGY Classification & Role of Ca++, PO_4, Vit D	ANATOMY / EMBRYOLOGY Long Bone Blood/Nerve Supply & Ossification		PHYSIOLOGY Bone Modeling & Remodeling		GROUP 3-Physiology Practical-ENT/EYE (Dry Lab) GROUP 4-Physiology Practical-ENT/EYE (Wet Lab)	RESEARCH MODULE Project Work

	9:00-9:50	9:55-10:45		11:00-1:00	1:15-2:30	2:30-3:10
WED Mar 3	CLINICAL PATHOLOGICAL CONFERENCE Introduction	ENT Surgical Ant, Physio, Sx & Congenital Ear Dz	TEA BREAK	CLINICAL WORK	PBL Ortho 1.1 1-Surgery-Surgery SR 2-Ob/Gyn-Ob/Gyn SR 3-Medicine-Medicine SR 4-Pediatrics-Peds SR	SELF STUDY
THURS Mar 4	ORTHOPEDICS Congenital & Developmental Anomalies	MEDICINE Parathyroid Conditions		CLINICAL WORK	PBL Ortho 1.2 1-Surgery-Surgery SR 2-Ob/Gyn-Ob/Gyn SR 3-Medicine-Medicine SR 4-Pediatrics-Peds SR	SELF STUDY
FRI Mar 5	MEDICINE Osteoporosis & Osteomalacia	COMMUNITY MEDICINE Natural Disasters & Management		CLINICAL WORK	SELF STUDY	
SAT Mar 6	MEDICINE Osteoarthritis	EYE Lid Abnormalities		CLINICAL WORK	1:15-2:00 SURGERY / MEDICINE Post PBL Session 1.3	SELF STUDY

BUSES PROVIDED BY JMDC WILL LEAVE MEDICARE CAMPUS AT 8:15 AM SHARP FOR KORANGI CAMPUS

WEEK 5

END Of Module

Orthopedics TEST THEORY

Orthopedics TEST OSCE