STUDY GUIDE

ORTHOPAEDICS AND REHABILITATION MODULE

FOURTH YEAR MBBS

Duration: 8 weeks 2nd Dec 2019 – 25th Jan 2020





TEAM

TRAUMA EVALUATION

& MANAGEMENT



Fracture of the radius and the ulna is dislocated at the wrist



LIAQUAT NATIONAL HOSPITAL & MEDICAL COLLEGE



STUDY GUIDE FOR ORTHOPAEDICS & REHABILITATION MODULE

S.No	CONTENTS	Page No.
1	Overview	3
2	Introduction to Study Guide	4
3	Module1: Orthopaedics	5
3.1	Introduction	5
3.2	Learning Methodologies	6
3.2.1	TEAM®	8
3.2.2	Task-Oriented Learning (TOL)	9
3.3	Objectives and Learning Strategies	11
3.4	Objectives for Task Oriented Learning	19
3.5	Learning Resources	23
3.6	Additional Learning Resources	25
4	Assessment Methods	26
5	LNMC Examination Rules and Regulations	27
6	Schedule	28
7	Appendix: A	29
8	Appendix: B	30

Module name: Orthopaedics and Rehabilitation

Year: **Four**

Duration: 8 weeks (Dec 2019 - Jan 2020)

Timetable hours: Lectures, Case-Based Discussion (CBD), TEAM[®], Clinical Rotations, Task

Oriented Learning, Task Presentation, Demonstrations, Skills, Self-Study

MODULE INTEGRATION COMMITTEE

MODULE COORDINATOR:	Dr. Muhammad Kazim (Orthopaedics)
	Dr. Muhammad Sufyan (Rehabilitation)
CO-COORDINATORS:	Dr. Sobia Ali (DHCE)
TEAM® COURSE DIRECTOR	Dr. Rufina Soomro (General Surgery)

DEPARTMENTS' & RESOURCE PERSONS' FACILITATING LEARNING

CLINICAL AND ANCILLARY DEPARTMENTS		
ENDCOCRINOLOGY		
Dr. Aqiba Sarfraz		
GENERAL SURGERY		
Dr. Rufina Soomro		
MAXILLOFACIAL		
Dr.Tauqeer-ul-Islam		
NEUROLOGY		
Dr. Naveeduddin Ahmed		
NEURO-SURGERY		
Dr. Salman Yousuf Sharif		
ORTHOPAEDICS		
Prof. Syed Shahid Noor		
Prof. Intikhab Taufiq		
Prof. Zaki Idrees		
Dr. Muhammad Asif Paracha		
PEDIATRICS		
Professor Samina Shamim		
Dr. Atika Sher		
RADIOLOGY		
Dr. Misbah Tahir		
RHEUMATOLOGY		
Dr. Tahira Perveen		
TH CARE EDUCATION		
Ali • Dr. Afifa Tabassum		
naz Umair		
NAGEMENT		
kki, Principal, LNH&MC		
Director A.A & R.T LNH&MC		
Dr. Sobia Ali, Associate Professor, Department of Health Care Education		
Dr. Muhammad Suleman Sadig, Lecturer III, Department of Health Care Education		

INTRODUCTION

WHAT IS A STUDY GUIDE?

It is an aid to:

- Inform students how student learning program of the module has been organized
- Help students organize and manage their studies throughout the module
- Guide students on assessment methods, rules and regulations

THE STUDY GUIDE:

- Communicates information on organization and management of the module. This will help the student to contact the right person in case of any difficulty.
- Defines the objectives which are expected to be achieved at the end of the module.
- Identifies the learning strategies such as lectures, small group teachings, clinical skills, demonstration, tutorial and case based learning that will be implemented to achieve the module objectives.
- Provides a list of learning resources such as books, computer assisted learning programs, web- links, journals, for students to consult in order to maximize their learning.
- Highlights information on the contribution of continuous and modular 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.
- Focuses on information pertaining to examination policy, rules and regulations.

INTEGRATED CURRICULUM comprises system-based modules such as Orthopedics which links basic science knowledge to clinical problems. Integrated teaching means that subjects are presented as a meaningful whole. Students will be able to have better understanding of basics sciences when they repeatedly learn in relation to clinical examples.

LEARNING EXPERIENCES: Case based integrated discussions, Task oriented learning followed by task presentation, skills acquisition in skills lab, computer-based assignments, learning experiences in clinics, wards and Trauma Evaluation and Management[®] (TEAM[®]) workshops.

MODULE 3: ORTHOPAEDICS AND REHABILITATION

INTRODUCTION TO THE ORTHOPAEDICS AND REHABILITATION MODULE

Orthopedics is a medical specialty that focuses on the diagnosis, correction, prevention, and treatment of patients with skeletal deformities - disorders of the bones, joints, muscles, ligaments, tendons, nerves and skin. These elements make up the musculoskeletal system.

Many common problems encountered in daily medical and surgical practice have either manifesting symptoms or actual pathological origins in the musculoskeletal system that also forms the largest system of the body by volume. Integrity and health of this complex system of bones, joints, ligaments, tendons, muscles and nerves allows you to move, work and be active.

Once devoted to the care of children with spine and limb deformities, orthopedics now cares for patients of all ages, from newborns with clubfeet, to young athletes requiring arthroscopic surgery, to older people with arthritis.

Trauma is a major cause of morbidity and mortality in both the developed and developing world. It is perhaps the disease which has the most negative impact on healthcare systems and societies today, yet up to 90% is preventable. Injuries are the leading cause of death under the age of 40 years in the United States of America (USA) according to trauma registry data.

The stipulated health burden in the developing world is unknown due to lack of data but should theoretically be much higher due to lack of road and civil safety. Presently, injuries account for one in seven health life years lost worldwide, and the WHO predicts that this will increase to one in five by 2020, with low and middle income countries accounting for the majority of the increase.

In the Orthopedic and trauma module, varied teaching learning experiences will enable the student to appreciate disorders of the musculoskeletal system with an integrated approach incorporating knowledge of anatomy, physiology, biochemistry, pathology, pharmacology, radiology, allied medical and surgical disciplines with orthopedic principles.

INTEGRATING DISCIPLINES OF ORTHOPAEDICS AND REHABILITATION MODULE



Note: *Community Medicine & Forensic Medicine curriculum run parallel

LEARNING METHODOLOGIES

The following teaching/learning methods are used to promote better understanding:

- Interactive Lectures
- Small Group Discussion
- Case- Based Discussion(CBD)
- Clinical Experiences
 - Clinical Rotations
- Skills session
- Task-Oriented Learning(TOL)
 - Task Presentation
- Trauma Evaluation and Management[®] (TEAM[®])workshops
- Case Based interactive learning(CBIL)

INTERACTIVE LECTURES

In large group, the lecturer introduces a topic or common clinical conditions and explains the underlying phenomena through questions, pictures, videos of patients' interviews, exercises, etc. Students are actively involved in the learning process.

SMALL GROUP SESSION: This format helps students to clarify concepts, acquire skills or desired attitudes. Sessions are structured with the help of specific exercises such as patient case, interviews or discussion topics. Students exchange opinions and apply knowledge gained from lectures, tutorials and self study. The facilitator role is to ask probing questions, summarize, or rephrase to help clarify concepts.

CASE-BASED DISUCSSION (CBD): A small group discussion format where learning is focused around a series of questions based on a clinical scenario. Students' discuss and answer the questions applying relevant knowledge gained previously in clinical and basic health sciences during the module and construct new knowledge.

CLINICAL LEARNING EXPERIENCES: In small groups, students observe patients with signs and symptoms in hospital wards, clinics and outreach centers. This helps students to relate knowledge of basic and clinical sciences of the module and prepare for future practice.

 CLINICAL ROTATIONS: In small groups, students rotate in different LNH wards like Medicine, Pediatrics, Surgery, Obs Gynae, ENT, Orthopaedics, Family Medicine clinics and outreach centers and related community Medicine experiences are included as well. Here students observe patients, take histories and perform supervised clinical examinations in outpatient and inpatient settings. They also get an opportunity to observe medical personnel working as a team. These rotations help students relate basic medical and clinical knowledge in diverse clinical areas.

SKILLS SESSION: Skills relevant to respective module are observed and practiced where applicable in RSDC.

SELF-DIRECTED STUDY: Students' assume responsibilities of their own learning through individual study, sharing and discussing with peers, seeking information from Learning Resource Center, teachers and resource persons within and outside the college. Students can utilize the time within the college scheduled hours of self-study.

TRAUMA EVALUATION AND MANAGEMENT[®] (TEAM[®]) WORKSHOPS

What is TEAM?

Trauma Evaluation and Management[®] (TEAM[®]) introduces the concepts of trauma assessment and management to medical students during their clinical years.

Content: The core content is adapted from the American College of Surgeons (ACS) Advanced Trauma Life Support[®] (ATLS[®]) course. Developed by the ATLS Committee of the ACS Committee on Trauma, TEAM is an expanded version of the ATLS "Initial Assessment and Management" lecture.

The TEAM format:

- Pre-Test of 30 mins will be conducted a week before TEAM[®] workshop for each group.
- TEAM[®] workshop will be flexible, with a 90-minute slide presentation and optional components. The
 program includes a three-segment initial assessment through video demonstration, a series of
 clinical trauma case scenarios for small-group discussion, and skills sessions. The slide/lecture
 presentations have been adapted for LNHMC curriculum.
- Post-Test of 30 mins will be conducted a day after the TEAM[®] workshop

On completion of the TEAM program, students would be able to demonstrate knowledge of the philosophy, intent, and content of principles of multidisciplinary trauma care as laid down in the ATLS program.

Certification: Students will be awarded Certificate of Participation at the end of the course recognized by the American College of Surgery (ACS) as official recognition of completion of this course. Attendance in all components of TEAM[®] i.e. Pre-Test, Lecture, Video demonstration, Working through stations and Post-Test is mandatory. Certificate of participation will not be awarded to any student who is either not present or fails to complete any of the component of TEAM[®] workshop.

IMPORTANT:

- TEAM is an abbreviated version of the ATLS course and should not be used to replace ATLS participation. Individuals who take the TEAM course are not considered as having completed an ATLS course. Medical students are encouraged to take the ATLS course in their final year of medical school or after graduation.
- Use of Cell phones is prohibited during Pre and Post Tests.

TASK-ORIENTED LEARNING: (TOL)

TOL is a learning activity that encourages students' self-directed learning, discussion in small groups, and peer to peer collaborative work.

For TOL, those objectives are selected that enhance students' understanding of the basic concepts in relation to its application to medical practice. Tasks are primarily questions that students seek answers through different authentic resources, and prepare presentations that reflect understanding of concepts, and ready to give explanations, or defend their responses through questions and answers to large group.

PROCESS of TOL

Learning in this strategy will comprises of two stages

- Stage 1. Pre-class learning in groups
- Stage 2.In-class group focused active learning





Stage 2 (In-Class)

Individual/group study and group presentation preparation



- Each of the four groups (Groups A-D) of 25 students are further divided into three sub groups comprising 8-9 students each (see Appendix A). Every group is given similar Tasks to be completed within the defined time.
- Every day for two hours, *one* group which includes three sub groups meets to discuss the Task, and seek explanation from the recommended authentic sources including website (*patient education websites are strictly NOT ADVISED*!!!) and work in groups to develop presentations during allotted study hours
- Students' prepare presentations for large group discussion on the fifth day.

TOL Process: Stage II

Every group will present its 10 minute power point presentations (PPT) or Prezi to the large group and five minutes for questions supported by concerned faculty

TOL Assessment:

The group presentations and collaborative work will be graded on defined criteria. (See Appendix: B). Each week, student is to demonstrate active participation and effective contribution during the group activities. It is mandatory for the students to participate in this activity as their scores will contribute to internal evaluation.



LIAQUAT NATIONAL MEDICAL COLLEGE

COURSE OBJECTIVES AND STRATEGIES

By the end of Orthopaedics and Rehabilitation module, students should be able to:

	OBJECTIVES	FACULTY	LEARNING STRATEGY
TRAU	MA		
1. 2. 3. 4. 5.	Describe the morphology, function and neurovascular supply of bones. Discuss bone remodeling and repair of bone fractures. Describe the development of bones and joints. Describe the process of increase in length and width of bone during embryonic life and afterbirth. Discuss the congenital anomalies related to	Anatomy	Interactive Lecture
6. 7. 8. 9.	Differentiate b/w the types of cartilages Describe the development of cartilage Compare the structure and function of three types of cartilages Discuss histogenesis of cartilage.	Anatomy	Small group discussion session
10. 11.	Compare the processes of modeling and remodeling of bone Explain the major steps in bone remodeling.	Physiology	Interactive Lecture
12. 13.	Describe the main characteristics and function of connective tissue Explain the composition and function of synovial fluid in a typical synovial joint	Biochemistry	Tutorial
14. 15. 16. 17. 18. 19. 20.	Classify the natural disasters Explain the terms like mitigation, preparedness, response to disaster etc Describe the effect of disaster on public health Discuss the application of epidemiological methods to disaster (before, during and after the event) Describe the concept of Accident Enumerate the difference of intention and un- intension accident injury Describe the control and prevention of Accident	Community Medicine	Interactive Lecture

LIAQ	UAT NATIONAL MEDICAL COLLEGE 4 th YEAR MB	BS, ORTHOPAEDICS & REH	ABILITATION MODULE
Occupa	ational health		
Workp	lace and its Hazards		
21.	Define occupational health		
22.	Enumerate the common occupational health issues	in	
	Pakistan.		
23.	Discuss the control and prevention of occupational		
	health hazards		
24.	Emphasize the role of government in the prevention	Community Medicine	Tutorial
	of occupational health hazards		
25.	Describe the steps in risk prevention on hazards in		
	the workplace		
Occupa	ational disease Prevention		
26.	Explain the common Occupational diseases		
27.	Explain the Health Hazards related to occupation	Community Medicine	Small group discussion
28.	Enumerate the steps for health hazard identification		session
29.	Differentiate the Risk of Health hazard identification		
	and Risk management		
Health	education in Occupational health		
30.	Give Approaches of health education		
31.	List Essential components of health education in		
	occupational health	Community Medicine	Lecture
32.	Discuss Limitations of health education	,	
33.	Discuss the Importance of health education in		
	occupational health		
Bone d	isorder classification		
34.	Classify bone disorders based on pathogenesis and		
	pathologic findings.		
0	Inflammatory bone disease		
0	Metabolic bone diseases		
0	Hereditary bone diseases		
0	Diseases of unknown etiology	Detheles	Small group discussion
0	Bone tumors	Pathology	session
Develo	pmental and Congenital Anomalies		
35.	Discuss the developmental and congenital anomalie	s	
	related to skeletal system		
Synovi	al fluid analysis		
36.	Correlate synovial fluid analyses with their		
	representative disease classification		
37.	Classify fractures and describe followings named		
	fractures:		
	 Colles' Fracture 		
	 Green stick Fracture 		
	o Ronaldo		
	o Bannete Fracture		
	 Smith Fracture 	Orthopaedics	Interactive Lecture
38.	Describe the principles of non-operative and		
	Operative management of upper and lower limbs		
	fractures in adults		
39.	Describe the principles of non-operative and		
	operative management of fractures in children		

LIAQ	UAT NATIONAL MEDICAL COLLEGE 4 th YEAR MBB	S, ORTHOPAEDICS & REH	ABILITATION MODULE
40.	Describe the principles of management of open fracture		
41.	Discuss an overview of ATLS protocol for management of trauma patients		
42.	Develop a plan for the evaluation and management of pelvic injuries		
43.	Describe the sequence of a trauma patient evaluation	General Surgery &	
44.	Describe the appropriate triage of trauma patient	Orthopaedics	TEAM [®] Workshops
45.	Discuss the evaluation and management of a patient with spine trauma		
46.	Describe the evaluation and Management of non- traumatic pain of spine	Neurosurgery	Interactive Lecture
47.	Describe the mechanism of injury, assessment and management of a patient with maxillofacial trauma	Maxillofacial Surgery	Interactive Lecture
48.	Identify common skeletal injuries on radiographic films (e.g. fractures and dislocations)	Radiology	Small group session
PEDIA	ATRICS / METABOLIC		
1. ph	Discuss the biochemical role of calcium & osphate in bones		Interactive Lecture
2. 3.	Describe the role of Parathyroid hormone, vitamin D & calciton in bone metabolism Discuss the impact of calcium, vitamin D, and parathyroid hormone concentration changes on bone resorption	Biochemistry	Small group discussion session
4. 5. 6. 7.	List developmental and congenital anomalies related to skeletal system Differentiate between acquired/metabolic syndromes of bones and cartilages Differentiate between the features of hyper and hypoparathyroidism. Describe and classify the etiological organisms, route of spread and pathophysiology and morphology of various types of osteomyelitis	Pathology	Interactive Lecture
8. 9.	Discuss pathophysiology, diagnosis of osteoporosis, rickets and osteomalacia Differentiate between osteoporosis, rickets and pagets' disease osteomalacia on the basis of lab test		Small Group Discussion
10 11 12 13	 Classify the drugs used in the management of Osteoporosis and Osteomalacia Discuss the treatment of Osteoporosis and Osteomalacia in detail List the adverse effects of drugs use in the treatment of osteoporosis and osteomalacia Prescribe the drug's used in the treatment of osteoporosis and osteomalacia 	Pharmacology	CBIL

LIAQU	JAT NATIONAL MEDICAL COLLEGE 4 th YEAR MBBS	5, ORTHOPAEDICS & REH	ABILITATION MODULE
14.	Describe the congenital bone diseases and their management Discuss the diagnosis and Management of following congenital bone diseases Osteogenesis imperfect Achndroplasia Development Displasia of Hip 	Orthopaedics	Interactive Lecture
	 Congenital talipesequinovarus 		
16. I	Discuss the diagnosis and management of Osteomalacia and Osteoporosis		TOL
17.	Evaluate a patient with acute flaccid paralysis and describe management of GBS and Poliomyelitis	Neuro-medicine	Interactive Lecture
18.	Discuss the management of disorders of the parathyroid gland and its skeletal manifestations	Endocrinology	Interactive Lecture
19. (19. (20. (Classify rickets on the basis of vitamin D responsiveness Describe pathophysiology, diagnosis and	Pediatric Medicine	Interactive Lecture
21.	Evaluate a patient with Cerebral Palsy and discuss management		
22. 23.	Discuss the causes of short stature Evaluate short stature clinically	Pediatric Medicine	Small Group Discussion
MUSCU	JLOSKELETAL INFECTIONS AND TUMORS		
	Name the major pathogenic organisms causing joint infection. Describe the pathophysiology and elements of prevention and management of joint infection Outline the main clinical features and laboratory tests to recognize Joint Infections (Septic, Viral,Tuberculosis arthritis) Classify etiological organisms, route of spread and pathophysiology of osteomyelitis	Pathology	Small Group Discussion
5. (6.	Classification of bone tumors on the basis of their cells of origin Discuss risk factors, epidemiology and pathophysiology of important bone tumors		Interactive Lecture
7. (8.	Classify soft tissue tumors on the basis of their cells of origin Discuss clinical manifestations, prognostic factors morphology and diagnostic tools of soft tissue tumors.		Interactive Lecture

LIAQ	UAT NATIONAL MEDICAL COLLEGE 4 th YEAR MBB	<u>S, ORTHOPAEDICS & REH</u>	ABILITATION MODULE
9. 10. 11. 12.	Classify the drugs used inosteomyelitis Discuss the mechanism of action , clinical uses and adverse effects of drugs used inosteomyelitis Prescribe the drugs used inosteomyelitis Discuss in detail parameters to monitor efficacy and toxicity of anti microbial drugs inosteomyelitis	Pharmacology	Interactive Lecture
13. 14. 15. 16.	Classify primary bone tumors Classify soft tissue tumors Justify the investigations involved in diagnosis of malignant lesions of bones Develop a management plan for malignant lesions of soft tissues	Orthopaedics	Interactive Lecture
17.	Describe the use of radiological modalities in diagnosis of bone and soft tissue infections and tumors List the indication for the use of isotope bone scan, MRI, DEXA Scan and CTscan	Radiology	Small Group Disscussion
SPOR	TS ORTHOPAEDICS AND DEGENERATIVE CONDITIONS		
1. 2.	Classify bone disorders. Discuss diseases of joints (Osteoarthritis and Rheumatoidarthritis)	Pathology	Interactive Lecture
<u>Osteoa</u> 3. 4. 5.	rthritis (OA) and Rheumatoid Arthritis (RA) Classify the drugs used in the treatment of OA and RA Discuss the pharmacokinetics, clinical uses and adverse effects of drugs used in OA and RA. Prescribe the drugs used in OA and RA	Pharmacology	CBIL
6.	Describe the basic concepts in sports medicine	Community Medicine	Interactive Lecture
7.	Describe the management of sport injuries	Orthopaedics	Interactive Lecture
List the 8.	indications for amputation Describe the techniques of amputation	Orthopaedics	Interactive Lecture
9.	Describe the investigations to diagnose and manage degenerative condition of joints of appendicular skeleton(RA, OA)	Orthopaedics	TOL
INFLA	MMATORY CONDITIONS OF JOINTS		
1. 2. 3.	Explain the clinical significance of purine degradation, hyperuricemia and Gout. Discuss Pyrophosphate Metabolism in Pseudogout and bonemineralization. Discuss the clinical correlation of uric acid with renal function.	Biochemistry	Interactive Lecture
4.	Discuss crystal induced Arthritis (Gout and pseudogout)	Pathology	Interactive Lecture

LIAQUAT NATIONAL MEDICAL COLLEGE 4 th YEAR MBE	<u>SS, ORTHOPAEDICS & REH</u>	ABILITATION MODULE
 Classify the drugs used in the treatment ofgout Discuss the indications, side effects, dosage of 	Pharmacology	CBII
drugs used ingout	Fildimacology	CDIL
7. Prescribe the drugs used forgout		
8. Discuss the diagnosis and management of		
systemic inflammatory conditions affecting the		
joints (rheumatoid arthritis, SLE induced arthritis, Psoriatic arthritis)		
9. Discuss the diagnosis and management of crystal	_	
induced arthropathies (gout and pseudogout)		
10. Classify vasculitis		
11. Describe the pathophysiology involved in the	Rheumatology	Interactive Lecture
inflammatory process of vasculitis		
 Discuss the clinical manifestations and treatment of vasculitis 		
13. Describe the pathology, prevalence, etiology,		
symptoms, and diagnosis associated with systemic		
sclerosis, Polymyositis and Dermatomyositis.		
14. Discuss current treatment strategies used in the		
15. Describe the clinical features, laboratory tests,		
imaging of musculo skeletal diseases:		
16. Rheumatoid Arthritis, SeronegativeSpondylo -	Orthopaedics	Lecture
arthtropathies, Systemic Lupus Erythematosus,	0.000	
Osteoarthritis and Osteoporosis,		
Octoorgonosis imporfact a Octoorgulitis Paget's		
disease		
(OsteitisDeformans), bone tumors.		
17. Describe the bony features, curvatures,	Anatomy	Lecture
18. Identify causality between injury and the		
consequence in cases of cervical spinal cord injury	Forensic medicine	Lecture
with or without fracture/ dislocation.		
19. Identify the most common conditions causing back		
pain	Neurosurgery	Lecture
20. Diagnose and manage non-traumatic neck and back		
problems		

NEIIAD			
1.	Summarize rehabilitation methods following surgical intervention for fractures	Orthopaedics	Lecture
2.	Define concepts of primary, secondary and tertiary prevention in the context of rehabilitation medicine		
3.	Explain the general concept of Primary, Secondary and Tertiary prevention		
4.	To define the terms disability, injury, accident, impairment and handicap	Community Medicine	Lecture
5.	To describe the epidemiology of disability		
6.	To explain the quantification of disease in terms of DALYs (disability adjusted life years), QALYs (quality adjusted life years), YLD (years live with disability) and YLL (years of life lost)		
Physica	al Medicine		
7. 8.	Explain the purpose of rehabilitation Describe current tools and systems for the measurement of impairment, disability and activity limitation or participation restriction	Physical Medicine	Lecture
9.	Identify the steps in the clinician's assessment of AT for individuals with disabilities		
10.	Discuss the adaptive techniques and assistive devices for ADL		
11.	Describe assessment methods and rehab interventions for peadiatric patients which includes Cerebral Palsy, TalipesEquinoVarus		Lecture
Comm	unity based rehabilitation		
12. 13.	Define community based rehabilitation Describe the strategies of incorporating rehabilitation	Physical Medicine	
	in the community		
14.	List the benefits of community based rehabilitation		
15.	Describe the potential role and benefit of specific medical and rehabilitation therapies in the assessment and management of disability		
16.	Interpret relevant diagnostic investigations, including radiological and electro-diagnostic tests		Lecture
Assessi	ment of disabilities	Physical Medicine	
17.	Describe the potential role and benefit of specific medical and rehabilitation therapies in the assessment and management of disability		
18.	Interpret relevant diagnostic investigations, including radiological and electro-diagnostic tests		

LIAQUAT NATIONAL MEDICAL COLLEGE 4 th YEAR	MBBS, ORTHOPAEDICS & REH	<u>ABILITATION MODULE</u>
Pediatric Rehabilitation		
19. Describe assessment methods and rehab	Orthonaedics	
interventions for pediatric patients (of Cerebral	Orthopaedies	Lecture
Palsy, TalipesEquinoVarus, Myopathies, Spina Bi	fida)	
Pediatric Rehabilitation		
20. Summarize the theories of development and nor	rmal	
developmental milestones	Physiotherapy	small group session
21. Describe assessment methods and rehab	riysioeneropy	Sindin Broup session
interventions for pediatric patients (of Cerebral		
Palsy, TalipesEquinoVarus, Myopathies, Spina Bi	fida)	
Management of Arthritis		
22. Describe Assess patient presenting with		
complications of arthritis	Orthopedic	small group session
23. Rehabilitation interventions to improve joint ran	ge of	
movement (ROM), muscular strength, pain reliev	ve,	
balance and coordination		
Rehabilitation of Amputee		
24. Describe epidemiology of major limb loss includi	ng	
etiology, incidence, morbidity and mortality	Physiotherapy	small group session
25. Summarize surgical principles of limb amputatio	n and	sindi group session
levels of amputation including digit(s), thumb, pa	artial	
hand, trans-carpal wrist disarticulation trans-rad	ial,	
elbow disarticulation etc.		

Apart from attending daily scheduled sessions, students too should engage in self-study to ensure that all the objectives are covered



Objectives for Task Oriented Learning (TOL)

	WEEK 5
	Task 1
A 75-year old female presented i weight about 5 days back. She wa fracture about one year back afte and she is unable to walk straight X-ray of dorso-lumbar spine is giv	n Orthopaedics OPD with complaint of worsening backache after lifting as unable walk after onset of pain. She has also history of distal radial er minor fall. There have been a gradual change in the posture of spine t. She is also having generalized bone and joint pains for many years. Yen below.

S.No	Groups	Questions	
1	A1/C1	What are the differential diagnoses and why?	
2	A2/C2	ow other anatomical areas are involved?	
3	A3/C3	Vhat is the patho-physiology of this disease?	
4	B1/D1	How will you further investigate her and what will be the interpretation of	
		findings?	
5	B2/D2	What will be the management plan for this patient?	
6	B3/D3	What are the complications of this disease?	

WEEK 5 Task 2

A 39-year old woman who was admitted to hospital after experiencing systemic bone pain and muscle weakness for more than 2 years. The patient had bilateral thigh pain and was unable to walk. Laboratory results showed a high alkaline phosphatase concentration. Nodules were visible on the thyroid and parathyroid glands during ultrasound examination. X ray was done as a part of investigation



S.No	Groups	Questions	
1	B3/D3	What are the differential diagnoses?	
2	B2/D2	What are the causes and patho-physiology of Osteomalacia?	
-	B1/D1	What are the risk factors for developing Osteomalacia?	
4	A3/C3	How other conditions can mimicOsteomalacia?	
5	A2/C2	What are the biochemical findings and laboratory investigations relevant to	
		osteomalacia?	
6	A1/C1	What is the management protocol and possible complications?	
•			

WEEK 7

Task 1

A 62-year old patient presents with complaints of aching pain in the right groin that varies in severity and extends down the anterior thigh to the knee. The pain began gradually about 3 months before. Initially the patient felt stiffness whenever he sat for prolonged periods of time or after a night's sleep. The patient reports that he can no longer walk as far as he once did, and that negotiating stairs was especially painful. The patient's past medical history is significant for a long history of osteoarthritis of the spine and occasional twinges of pain in the right groin. The patient also has history of right-sided sciatica. Radiographs of the right hip are provided.



What are the differential diagnoses of this pathology?	
List the anatomical areas which can be affected with this problem and How?	
/hat is the patho-physiology of this disease?	
What are the laboratory investigations and their findings for osteoarthritis?	
B2/D2 What are the management issue regarding non-operative and operative	
management? Why or why not?	
What are the complications of this disease?	
3 1 2 3	

WEEK 7

Task 2

A 34-year old female presented with complaints of pain and stiffness in both hands. Stiffness in hands, wrists and ankles lasts more than 1 hour every morning. She also had increasing difficulty standing for long periods at work or at home due to foot and ankle pain. She began feeling extremely tired and short tempered. She had no energy to do her usual activities. She gradually started having ulnar deviation of her hands and swan neck deformity of fingers along with nodules in soft tissues. Some preliminary investigations show raised ESR and high RA factor. X-rays were done as part of investigations.



1	B3/D3	What are the systemic manifestations of the disease?	
2	B2/D2	What is the patho-physiology of this disease?	
3	B1/D1	What are the criteria for the diagnosis of the disease?	
4	A3/C3	What are the differential diagnoses?	
	A2/C2	What are the management options for the control of the disease?	
6	A1/C1	What are the complications of this disease?	
2			

LEARNING RESOURCES

SUBJECT	RESOURCES		
GENERAL SURGERY, ORTHOPAEDIC, NEROSURGERY	TEXT BOOK 1. Bailey & Love's Short Practice of Surgery , 26 th Edition WEBSITES (ORTHOPAEDICS): www.orthobullets.com		
NEUROLOGY, RHEUMATOLOGY & ENDOCRINOLOGY	 REFERENCE BOOKS: 1. Hutchison's Clinical Methods, 23rdEdition 2. MacLeod's clinical examination 13thedition 3. Davidson's Principles and Practice of Medicine 4. Kumar and Clark's Clinical Medicine 5. HCAI guidelines CDC 		
PEDIATRICS	 Textbook of Pediatrics by PPA, preface written by S. M. Haneef Basis of Pediatrics (8th Edition Pervez Akbar) 		
ΑΝΑΤΟΜΥ	 A. <u>GROSSANATOMY</u> K.L. Moore, Clinically Oriented Anatomy B. <u>EMBRYOLOGY</u> KeithL. Moore. The Developing Human Langman's Medical Embryology 		
BIOCHEMISTRY	 A. <u>TEXTBOOKS</u> 1. Harper's Illustrated Biochemistry 2. Lehninger Principle of Biochemistry 3. Biochemistry by Devlin 		
COMMUNITY MEDICINE	 TEXTBOOKS 1. Preventive and Social Medicine by K Park 2. Community Medicine by M. Ilyas 3. Basic <i>Statistics</i> for the Health Sciences by Jan W Kuzma 		
PHARMACOLOGY	 A. <u>TEXTBOOKS</u> 1. Lippincot Illustrated Pharmacology 2. Basic and Clinical Pharmacology by Katzung 		
PATHOLOGY/MICROBIOLOGY	 TEXTBOOKS 1. Robbins & Cotran, Pathologic Basis of Disease,9th edition. 2. Rapid Review Pathology,4th edition by Edward F. Goljan MD 		

	· · · · · · · · · · · · · · · · · · ·
	WEBSITES:1.http://library.med.utah.edu/WebPath/webpath.html2.http://www.pathologyatlas.ro/
PHYSIOLOGY	 A. <u>TEXTBOOKS</u> 1. Textbook Of Medical Physiology by Guyton and Hall 2. Ganong'S Review of Medical Physiology 3. Human Physiology by Lauralee Sherwood 4. Berne & Levy Physiology 5. Best & Taylor Physiological Basis of Medical Practice
	 TEXT BOOKS Nasib R. Awan. Principles and practice of Forensic Medicine 1st ed.2002. Parikh, C.K. Parikh's Textbook of Medical Jurisprudence, Forensic Medicine and Toxicology. 7th ed. 2005. REFERENCE BOOKS
FORENSIC MEDICINE	 Knight B. Simpson's Forensic Medicine. 11thed.1993. Knight and Pekka. Principles of forensic medicine. 3rd ed.2004 Krishan VIJ. Text book of forensic medicine and toxicology (principles and practice). 4th ed.2007 Dikshit P.C. Text book of forensic medicine and toxicology. 1st ed.2010 Polson. Polson's Essential of Forensic Medicine. 4thedition.
	 2010. 8. Rao. Atlas of Forensic Medicine (latest edition). 9. Rao. Practical Forensic Medicine 3rd ed,2007. 10. Knight: Jimpson's Forensic Medicine 10th 1991,11thed.1993 11. Taylor's Principles and Practice of Medical Jurisprudence.15th ed.1999 CDS:
	 Lectures on Forensic Medicine. Atlas of Forensic Medicine.
	WEBSITES:
	www.forensicmedicine.co.uk

ADDITIONAL LEARNING RESOURCES

Hands-on Activities/ Practical	Students will be involved in Practical sessions and hands-on activities that	
	link with the Orthopaedics Module to enhance learning.	
NA	Models available in the museum are a rich learning resource for quick	
<u>Museum</u>	review of anatomy and related educational activities	
	Skills acquisition in a simulated environment in the skills lab involving	
Skills Lab	experiential learning will ensure patient safety and will also help to build	
	confidence in approaching the patients	
	Videos and podcasts will familiarize the student with the procedures and	
Videos/Podcasts	protocol which they can watch and listen to at any time and wherever they	
	are, as part of task oriented learning	
	Students will use easily accessible internet resources with added time	
Internet Resources	flexibility to enrich and update their knowledge and its application	

ASSESSMENT METHODS:

- Best Choice Questions(BCQs) also known as MCQs (Multiple Choice Questions)
- Objective Structured Practical/Clinical Examination (OSPE or OSCE)

BCQs:

- A BCQ has a statement or clinical scenario of four options (likely answers).
- Correct answer carries one mark, and incorrect 'zero mark'. There is NO negative marking.
- Students mark their responses on specified computer-based sheet designed for LNHMC.

OSCE:

• All students rotate through the same series of stations in the same allocated time.

• At each station, a brief written statement includes the task. Student completes the given task at one given station in a specified time.

- Stations are observed, unobserved, interactive or rest stations.
- In unobserved stations, flowcharts, models, slide identification, lab reports, case scenarios may be used to cover knowledge component of the content.
 - Observed station: Performance of skills /procedures is observed by assessor
 - Interactive: Examiner/s ask questions related to the task within the time allocated.

• In Rest station, students in the given time not given any specific task but wait to move to the following station.

Internal Evaluation

- Students will be assessed comprehensively through multiple methods.
- 20% marks of internal evaluation will be added to JSMU final exam. That 20% may include class tests,

assignment, practicals and the internal exam which will all have specific marks allocation.

Formative Assessment

Individual department may hold quiz or short answer questions to help students assess their own

learning. The marks obtained are not included in the internal evaluation

For JSMU Examination Policy, please consult JSMU website!

More than 75% attendance is needed to sit for the internal and final examinations

LNH&MC EXAMINATION RULES & REGULATIONS

- Student must report to examination hall/venue, 30minutes before the exam.
- Exam will begin sharp at the given time.
- No student will be allowed to enter the examination hall after 15 minutes of scheduled examination time.
- Students must sit according to their roll numbers mentioned on the seats.
- Cell phones are strictly not allowed in examination hall.
- If any student is found with cell phone in any mode (silent, switched off or on) he/she will not be allowed to continue their exam.
- No students will be allowed to sit in exam without University Admit Card, LNMC College ID Card and Lab Coat
- Student must bring the following stationary items for the exam: Pen, Pencil, Eraser and Sharpener.
- In discipline in the exam hall/venue is not acceptable. Students must not possess any written material or communicate with their fellow students.

SCHEDULE:

WEEKS	4 th Year	MONTH
	OPHTHALMOLOGY/ENT**	
WEEK 1		2 nd Dec 2019
WEEK 2		
WEEK 3		
WEEK 4		
WEEK 5		
WEEK 6	REHADILITATION	
WEEK 7		
WEEK 8		25 th Jan 2020*
WEEK 1		27 th Jan 2020*
WEEK 2.5	DERMATOLOGY	12th Feb 2020*
WEEK 1	OFNISTION	13 th Feb 2020*
WEEK 2.5	GENETICS	29 th Feb 2020*
	Extracurricular Activities	2 nd March 2020-7 th
		March 2020*
1 W/FFK	Revision Classes (Farlier Modules)	9 th March 2020 –
	Revision Classes (Earlier Mounles)	14 th March 2020*
	ΡΒΕΡΔΒΑΤΟΒΥ Ι ΕΔΛΕ	16 th March 2020 –
		19 th March 2020*
	MID TERM EXAM	20 th March 2020 –
		21 st March 2020*

*Final dates will be announced later

** ENT & Ophthalmology Module will run longitudinally throughout the year

APPENDIX: A

LIAQUAT NATIONAL MEDICAL COLLEGE FOURTH YEAR MBBS, ORTHOPAEDICS REHABILITATION MODULE Criteria: Group Task Presentation

Speaker/Group:

Assignment: _____

This criteria is designed to clarify the grading process for Group Oral Presentations		Poor	Average	Good	Excellent
	0	1	2	3	4
Content				•	
1. Objectives were achieved during the presentation					
 Information in presentation was clear and organized. 					
3. Material presented was derived from authentic sources					
4. Queries were answered appropriately					
Collaboration					
5. Every member of the group contributed to the presentation.					
 6. There was smooth transition (of group members) from one presenter to another during presentation. 					
Presentation Style/ Professionalism				•	
7. Appropriate interaction with audience members.					
8. Readiness to present at scheduled time.					
9. Presentation completed within assigned time					

Marks obtained out of 36:_____

Facilitators' signature:______,____,

APPENDIX B:

SR.#	Roll. #	Name of Students	Sub Group		
	Group-A				
1	MC/2022/001	Aakash Kumar			
2	MC/2022/002	Aaliya Javed			
3	MC/2022/003	Abeer Badar	A1		
4	MC/2022/004	Ahmad Nauman Ashraf			
5	MC/2022/005	Aiman Muzaffar			
6	MC/2022/006	Aiman Najam			
7	MC/2022/007	Ali Muhammad Saqib	A2		
8	MC/2022/008	Anum Afzal			
9	MC/2022/009	Aqib Jamil			
10	MC/2022/010	Aqsa Mir			
11	MC/2022/011	Areeba Abdullah			
12	MC/2022/012	Areeba Mateen	A3		
13	MC/2022/013	Areeba Syed			
14	MC/2022/014	Ayesha Fahim			
15	MC/2022/015	Ayesha Haider			
16	MC/2022/016	Ayesha Samad	A4		
17	MC/2022/017	Basmah Fayaz Yousuf			
18	MC/2022/018	Bisma Fatima Hammad			
19	MC/2022/019	Dhan Mati	۸ <u>۶</u>		
20	MC/2022/020	Divya Lalwani	AJ		
21	MC/2022/021	Ekta Kumari			
22	MC/2022/022	Fabiha Iqbal			
23	MC/2022/023	Farriha Fatima Gagun			
24	MC/2022/024	Fatima	A6		
25	MC/2022/025	Fatima Shakeel Ahmed			

SR.#	Roll. #	Name of Students	Sub Group	
Group-B				
1	MC/2022/026	Fizza Naz Farooqui		
2	MC/2022/028	Haleema Sadia	B1	
3	MC/2022/029	Hamna Jamal		
4	MC/2022/030	Hiba Shahid		
5	MC/2022/031	Humayun Zahid		
6	MC/2022/032	lqra Khalid	B2	
7	MC/2022/033	Jawad Naeem		
8	MC/2022/034	Jawaria Aleem		
9	MC/2022/035	Jaweriah Khan		
10	MC/2022/036	Jeevan Deep		
11	MC/2022/037	Julie	B3	
12	MC/2022/039	Komal Fatima		
13	MC/2022/040	Laiba Shakeel		
14	MC/2022/041	Madeeha Zehra Panjwani		
15	MC/2022/042	Maheen Khan	B4	
16	MC/2022/043	Mahnoor Rana	2.	
17	MC/2022/044	Manahil Awan		
18	MC/2022/045	Maqsood Ahmed		
19	MC/2022/046	Mariyam Kodvavi		
20	MC/2022/047	MD Zain Muzaffer	DE	
21	MC/2022/048	Mehwish Khan	BO	
22	MC/2022/049	Mir Muhammad Bux Talpur		
23	MC/2022/050	Muhammad Kashan Zaheer		
24	MC/2022/052	Mustafa Naeem	B6	
25	MC/2022/053	Narindar Kumar	50	
26	MC/2022/054	Narmeen Aslam		

SR.#	Roll. #	Name of Students	Sub Group
		Group-C	
1	MC/2022/055	Nimrah Kanwal	
2	MC/2022/056	Rahama Siraj	
3	MC/2022/057	Rani Bhatti	C1
4	MC/2022/059	Rida Urooj	
5	MC/2022/060	Rohait Kumar	
6	MC/2022/061	Romail Danial	
7	MC/2022/062	Rubaisha Ashraf	C2
8	MC/2022/063	Rukhsar	-
9	MC/2022/064	Rumaisa Ali	
10	MC/2022/065	Saba Saif	
11	MC/2022/066	Saifullah Talpur	C3
12	MC/2022/067	Sana Mumtaz	
13	MC/2022/068	Sana Najib Ashraf	
14	MC/2022/069	Sana Nazim	
15	MC/2022/070	Sateesh Kumar	C4
16	MC/2022/072	Shahmeer Rauf	
17	MC/2022/074	Shanta Bai	
18	MC/2022/075	Shazia Saleem	
19	MC/2022/076	Sidrah Khan	
20	MC/2022/077	Simra Khan	C5
21	MC/2022/078	Sonia Kumari	
22	MC/2022/079	Syed Mehmood Haider Abidi	
23	MC/2022/082	Syed Muneer Mansoor	
24	MC/2022/083	Syed Qutub Jamal	C6
25	MC/2022/084	Syeda Sabeka Abidi	

LIAQUAT NATIONAL MEDICAL COLLEGE

SR.#	Roll. #	Name of Students	Sub Group
Group-D			
1	MC/2022/085	Taha Masood Sheikh	
2	MC/2022/086	Tazeen	
3	MC/2022/087	Umaima Rafiq	D1
4	MC/2022/089	Urooba Ahmed	
5	MC/2022/090	Urooj Mazhar	
6	MC/2022/091	Vaneeza Sohail Soomro	
7	MC/2022/093	Veengus	
8	MC/2022/094	Vineesha	D2
9	MC/2022/095	Vinesh Kumar	
10	MC/2022/096	Wajiha Siddiqi	
11	MC/2022/097	Warisha Ahmed	
12	MC/2022/098	Yamna Riaz Khan	Da
13	MC/2022/099	Yash Kumar	D3
14	MC/2022/100	Zohaa Shahid	
15	MC/2022/101	Sandhiya	
16	MC/2022/102	Syed Atif Ul Haq	D4
17	MC/2022/103	Kinza Afzal	
18	MC/2022/104	Gaytri Devi	
19	MC/2022/105	Ayesha Shamim	
20	MC/2022/106	Hareem Sheikh	D5
21	MC/2022/107	Kaleem Ullah Zulfiqar	
22	MC/2021/010	Aqsa Syed Iftikhar	
23	MC/2021/052	Maham Nadeem	
24	MC/2021/077	Rabia Noor	
25	MC/2020/083	Syed Danish Rizwan	D6
26	MC/2020/090	Vijay Kumar	