

LIST OF ABBREVIATIONS

ANA	Anatomy
BCH	Biochemistry
CFH	Community and Family Health
CSM	Clinical Skill Module
ENP	Ethics and Professionalism
MIC	Microbiology
MSS	Musculoskeletal & Skin
PAT	Pathology
PHA	Pharmacology
PHY	Physiology
RAD	Radiology
RCS	Research Culture & Skill
SBA	Single Best Answer
SBS	Social and Behavioral Science
SDL	Self-Directed learning

Module Planning Committee

Patron	Professor Dr. Hla Win Myint Rector, University of Medicine, Taunggyi
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Course Description

Musculoskeletal and Skin Module (MSS) is the 8-week theme-based integrated module.

The goal of this module is to provide students with an understanding of structure and function of the musculoskeletal and skin system, basic science and clinical concepts to understand common presenting complaints, diagnostic techniques, and treatment methods for musculoskeletal and cutaneous disorders. The module consists of following themes:

- 1) Structures and Functions
- 2) Diseases of muscle, bone and joint
- 3) Fractures and injuries of limb
- 4) Infections of muscles, bones and joints
- 5) Integumentary system
- 6) Infections of skin
- 7) Applied Pharmacology

Expected Learning Outcomes:

After completion of this module, students will be able to;

- acquire knowledge of the normal structure and functions of musculoskeletal and skin system,
- demonstrate an understanding of etiological, pathophysiological basic and diagnostic approaches for common clinical manifestations of diseases related to musculoskeletal and skin system.
- demonstrate an understanding of principles of therapeutics including mechanism of action, relevant pharmacokinetics, therapeutic indications and adverse effects of drugs used in treatment of disorders of skin, bone, skeletal muscle, including rheumatic diseases.
- demonstrate an understanding of how behaviors, social and psychological factors may affect and be affected by health, impairments and disability
- demonstrate acquired knowledge on general principles of basic epidemiology, how environmental health, occupational health relate to prevention and control of diseases, role of preventive medicine in control of communicable diseases and non-communicable diseases
- recognize ethics and professionalism as an integral part of doctor patient relationship

Distribution of Subjects in Musculoskeletal Module

Summary (Hours)

Subject	Lecture	Practical	SGD	SDL	CBL	TBL	Visit	Test	Group Presentation & Discussion	Total
Anatomy (ANA)	18	25	18	4						65
Physiology (PHY)	9	1	5	1						16
Biochemistry (BCH)	7		5							12
Pathology (PAT)	12	5	2	2						21
Pharmacology (PHA)	17		10	2				2		31
Microbiology (MIC)	5	3	2	2						12
Radiology (RAD)	3									3
Combined			3			6				9
Horizontal Total	71	34	45	11		6		2		169
C & F Health (CFH)	18		3				6		3	30
Ethics & Profess: (ENP)	4		2	1						7
Research culture (RCS)	2		2							4
Clinical Skill Module (CSM)	8									8
Social & Behav: (SBS)	4									4
Vertical Total	36	0	7	1			6		3	53
TOTAL	107	34	52	12	0	6	6	2	3	222
									Revision	6
									Private study	6
									Assessment	6
									Grand Total	240

Summary Matrix of Teaching Schedule

Theme 1: Structure and functions (Week 1)

Week 1	1	2	3	Lunch	4	5	6
	9-10 AM	10-11 AM	11-12 AM	12-1 PM	1-2 PM	2-3 PM	3-4 PM
Day 1 2.1.2023	Lecture Anatomy	Lecture Anatomy	Practical Osteo Anatomy		SGD Anatomy	Practical Dissect: Anatomy	Practical Dissect: Anatomy
	Overview of components of MSS (MSS-ANA 01)	Axilla & pectoral region (MSS-ANA 02)	Bones of the Upper Limb (MSS-ANA 03)		Brachial plexus & clinical importances (MSS-ANA 04)	Pectoral region & axilla (MSS-ANA 05)	
Day 2 3.1.2023	Lecture Anatomy	Lecture Anatomy	Lecture Biochemistry		Lecture Biochemistry	SGD Biochemistry	SGD Biochemistry
	Muscles of Upper Limb (MSS-ANA 06)	Nerves of the UL (MSS-ANA 07)	Structure of skeletal muscle (MSS-BCH-01)		Energy metabolism in skeletal muscle (MSS-BCH-02)	Intracellular Ca ⁺⁺ homeostasis (MSS-BCH-03)	
Day 3 5.1.2023	Lecture Physiology	Lecture Physiology	Lecture Anatomy		Practical Dissect: Anatomy	Practical Dissect: Anatomy	Practical Dissect: Anatomy
	Excitation, contraction, coupling in the skeletal muscle contraction (MSS-PHY 01)		Blood supply of arm, forearm & hand (MSS-ANA 08)		Anterior aspects of UL (MSS-ANA 09)		
Day 4 6.1.2023	SGD Physiology	SDL Anatomy	Lecture Anatomy		SGD Anatomy	Lecture C&F Health	Lecture C&F Health
	Skeletal muscle contraction (MSS-PHY 02)	Cubital Fossa (MSS-ANA 10)	Hand (MSS-ANA 11)		Palmar spaces & synovial sheaths of hand (MSS-ANA 12)	Concept of health and disease -Determinants of health (MSS-CFH 01)	
Day 5 9.1.2023	Practical Dissect: Anatomy	Practical Dissect: Anatomy	SDL Anatomy		Lecture Ethics & Profess:	Lecture Ethics & Profess:	SDL Ethics & Profess:
	Posterior aspects of UL (MSS-ANA 13)		Applied anatomy of Median, Ulnar & radial nerves (MSS-ANA 14)		Respect for dead body and specimen (presentations) & Silent Mentor program (MSS-ENP 01)		

Theme 1: Structure and functions (Week 2)

Week 2	1	2	3	Lunch	4	5	6
	9-10 AM	10-11 AM	11-12 AM	12-1 PM	1-2 PM	2-3 PM	3-4 PM
Day 1 10.1.2023	Lecture Anatomy	SGD Anatomy	SGD Anatomy		SGD Anatomy	SGD Anatomy	SGD Anatomy
	Joints of the UL (MSS-ANA 15)	Shoulder joint with clinical application (MSS-ANA 16)	Wrist Joint with clinical application (MSS-ANA 17)		Applied anatomy of Median, Ulna & radial nerves (MSS-ANA 18)		Elbow and radio ulnar joints & its stability (MSS-ANA 19)
Day 2 11.1.2023	SGD Anatomy	Lecture Anatomy	Lecture Anatomy		Practical Osteo Anatomy	Practical Osteo Anatomy	SGD Anatomy
	Anatomical spaces of upper limb and clinical application (MSS-ANA 20)	Muscles & Fascia of Head & Neck (MSS-ANA 21)			Skull Bone & Mandible (MSS-ANA 22)		Facial muscles & lesion (MSS-ANA 23)
Day 3 12.1.2023	Lecture Radiology	Lecture Radiology	Lecture Anatomy		Lecture C&F Health	Lecture C&F Health	Lecture C&F Health
	Imaging of Head & Neck, UL (MSS-RAD 01)		TM joint & muscles of mastications (MSS-ANA 24)		Preventive Medicine progress of PM, Public health (MSS-CFH 02)	Natural history of disease, level of prevention (MSS-CFH 03)	
Day 4 13.1.2023	Lecture Anatomy	Lecture C&F Health	Lecture C&F Health		Practical Dissect: Anatomy	Practical Dissect: Anatomy	Practical Dissect: Anatomy
	Triangles of neck (MSS-ANA 25)	Environmental Health: Food and water sanitation (MSS-CFH 04)			Dissections of Face & Neck (MSS-ANA 26)		
Day 5 16.1.2023	Practical Osteo Anatomy	Lecture Anatomy	SDL Anatomy		Practical Dissect: Anatomy	Practical Dissect: Anatomy	Practical Dissect: Anatomy
	Bones of Lower Limb (MSS-ANA 27)	Fascia of LL, compartments & muscles of LL (MSS-ANA 28)	Femoral triangle & Adductor canal (MSS-ANA 29)		Anterior & medial aspects of Thigh (MSS-ANA 30)		

Theme 2: Diseases of Bone and Joint (Week 3)

Week 3	1	2	3	Lunch	4	5	6
	9-10 AM	10-11 AM	11-12 AM	12-1 PM	1-2 PM	2-3 PM	3-4 PM
Day 1 17.1.2023	Lecture Anatomy	SGD Anatomy	SGD Anatomy		Practical Dissect: Anatomy	Practical Dissect: Anatomy	Practical Dissect: Anatomy
	Nerves of LL (MSS-ANA 31)	Gluteal region (MSS-ANA 32)	Popliteal fossa & its clinical application (MSS-ANA 33)		Gluteal region, posterior aspect of Thigh & popliteal fossa (MSS-ANA 34)		
Day 2 18.1.2023	Lecture Biochemistry	Lecture Biochemistry	Lecture Biochemistry		SGD Biochemistry	Lecture Physiology	SGD Physiology
	Biomedical architecture of bone & cartilage (MSS-BCH-04)	Extracellular matrix and its importance (MSS-BCH-05)			Markers of bone forming & resorption (MSS-BCH-06)	Physiology of Bone formation & Remodeling (MSS-PHY 03)	Muscle adaption & Bone density changes to exercise (MSS-PHY 04)
Day 3 19.1.2023	Lecture Biochemistry	Lecture Pathology	Lecture Pathology		Lecture Pathology	Practical Pathology	Lecture Anatomy
	Uric acid metabolism (MSS-BCH-07)	Arthritis (RA,OA, Gout) (MSS-PAT 01)			Metabolic bone disease(Osteoporos is, Osteomalacia) (MSS-PAT 02)	Arthritis (MSS-PAT 03)	Joints of Lower Limb (MSS-ANA 35)
Day 4 20.1.2023	Lecture Pharmacology	Lecture Pharmacology	Lecture Social & Behav:		SGD Pharmacology	Lecture Physiology	Lecture Physiology
	Uric acid lowering agents (MSS-PHA 01)		Basic human Psychology (MSS-SBS-1)		Mineral supplement for bone and joints and Drugs used in osteoporosis (MSS-PHA 02)	Physiology of Pain (MSS-PHY 05)	
Day 5 23.1.2023	Lecture Pharmacology	Lecture Pharmacology	SGD Physiology		Lecture Ethics & Profess:	SGD Ethics & Profess:	SGD Ethics & Profess:
	Analgesics (Narcotic analgesics) (MSS-PHA 03)		Pain Transmission (MSS-PHY 06)		Introduction to basic principle of communication (MSS-ENP 02)		Introduction to basic principle of communication (MSS-ENP 03)

Theme 3: Fractures and Injuries of limb (Week 4)

Week 4	1	2	3	Lunch	4	5	6
	9-10 AM	10-11 AM	11-12 AM	12-1 PM	1-2 PM	2-3 PM	3-4 PM
Day 1 24.1.2023	Lecture Pharmacology	Lecture Pharmacology	SGD Pharmacology		SGD Pharmacology	Lecture Pharmacology	Lecture Ethics & Profess:
	Analgesics (non-narcotic and adjuvant analgesics) (MSS-PHA 04)		Analgesics (MSS-PHA 05)		Central muscle relaxant (MSS-PHA 06)	Peripheral muscle relaxant (MSS-PHA 07)	Introduction to ethics and professionalism (MSS-ENP 04)
Day 2 25.1.2023	SGD Anatomy	SGD Anatomy	SGD Anatomy		Practical Dissect: Anatomy	Practical Dissect: Anatomy	Practical Dissect: Anatomy
	Hip joint & its applied (MSS-ANA 36)	Knee joint & its applied (MSS-ANA 37)	Ankle joint & arches of foot & its applied (MSS-ANA 38)		Leg & Foot (MSS-ANA 39)		
Day 3 26.1.2023	SGD Pharmacology	Lecture Pathology	Lecture Pathology		SDL Pathology	SGD Pathology	Practical Pathology
	Analgesic (MSS-PHA 08)	Healing of fracture bone and complications of fracture healing (MSS-PAT 04)			Healing of fracture bone (MSS-PAT 05)	Healing of fracture bone and complications of fracture healing (MSS-PAT 06)	Healing of fracture bone and complications of fracture healing (MSS-PAT 07)
Day 4 27.1.2023	SGD Anatomy	SGD Anatomy	SGD Anatomy		Lecture Radiology	Lecture Clinical Skill Module	Lecture Clinical Skill Module
	Nerve lesions of lower limb (MSS-ANA 40)	Blood supply of thigh, leg & foot muscles and Lymphatic drainage of LL & clinical importances (MSS-ANA 41)			Imaging of lower limbs (MSS-RAD 02)	Basic clinical approach to musculoskeletal disorder (MSS-CSM 01)	
Day 5 30.1.2023	Lecture Clinical Skill Module	Lecture Clinical Skill Module	Lecture Clinical Skill Module		Lecture Anatomy	Lecture Research culture	Lecture Research culture
	Common fractures of upper limb and lower limb (MSS-CSM 02)				Development of vertebral column (MSS-ANA 42)	Basic research terminology (MSS-RCS 01)	

Theme 4: Infections of muscles, bones and joints (Week 5)

Week 5	1	2	3	Lunch	4	5	6
	9-10 AM	10-11 AM	11-12 AM	12-1 PM	1-2 PM	2-3 PM	3-4 PM
Day 1 31.1.2023	SGD Combined	SGD Combined	SGD Combined		Lecture Microbiology	Lecture Microbiology	SGD Microbiology
	Acute gouty arthritis				Causal organisms, mode of transmission, pathogenesis, clinical presentation of infection of muscles, bones and joints (MSS-MIC 01)	Infection of muscles, bones and joints (MSS-MIC 02)	
Day 2 1.2.2023	Lecture Microbiology	Lecture Microbiology	SDL Microbiology		Lecture Pharmacology	Lecture Pharmacology	SDL Pharmacology
	Bacterial infection of skin and soft tissue (MSS-MIC 03)		Bacterial infection of skin and soft tissue (MSS-MIC 04)		General principle of Antibiotics (MSS-PHA 09)	Relevant Antibiotics for Infections of bones & joints (MSS-PHA 10)	Antibiotics (MSS-PHA 11)
Day 3 2.2.2023	Lecture Social & Behav:	Lecture Social & Behav:	Lecture Social & Behav:		Lecture Pathology	Lecture Pathology	Practical Pathology
	Concepts of perception (MSS-SBS 02)	Theories of emotion (MSS-SBS 03)	Stages of cognitive development across life span (MSS-SBS 04)		Infection of Bone (MSS-PAT 08)		Infection of Bone (MSS-PAT 09)
Day 4 3.2.2023	Lecture Pathology	Lecture Pathology	Lecture Anatomy		Lecture C&F Health	Lecture C&F Health	SGD C&F Health
	Bone tumors (MSS-PAT 10)		Development of Limb (MSS-ANA 43)		Environmental Health: Healthful housing, excreta and refuse sanitary disposal (MSS-CFH 05)		Environmental Health: urban health (MSS-CFH 06)
Day 5 6.2.2023	Practical Dissect: Anatomy	SGD Research culture	SGD Research culture		Lecture C&F Health	Lecture C&F Health	SGD C&F Health
	Spine and Back muscles (MSS-ANA 44)	Research terminology (MSS-RCS 02)			Occupational Health: Occupational hazards and prevention (MSS-CFH 07)		OH:Ergonomic in occupation (MSS-CFH 08)

Theme 5: Integumentary system (Week 6)

Week 6	1	2	3	Lunch	4	5	6
	9-10 AM	10-11 AM	11-12 AM	12-1 PM	1-2 PM	2-3 PM	3-4 PM
Day 1 7.2.2023	TBL	TBL	TBL		TBL	TBL	TBL
	Painful Swelling of a Joint (Preparation)				Painful Swelling of a Joint		
Day 2 8.2.2023	Lecture Anatomy	SDL Anatomy	Practical Histo Anatomy		Lecture Physiology	Lecture Physiology	Lecture Physiology
	Structure and histology of skin and fascia (MSS-ANA 45)	Histology of skin & fascia (MSS-ANA 46)	Histology of thin & thick skin (MSS-ANA 47)		General function of skin (MSS-PHY 07)	Body temperature and Heat loss & heat gain mechanisms (MSS-PHY 08)	
Day 3 9.2.2023	Lecture Physiology	Practical Physiology	SDL Physiology		SGD Pharmacology	SGD Physiology	SGD Physiology
	Thermoregulation (MSS-PHY 09)	Body temperature measurement (MSS-PHY 10)	Thermoregulation at different ages (MSS-PHY 11)		Antibiotics for bone and joints infection (MSS-PHA 12)	Thermoregulatory response to heat /cold stress (MSS-PHY 12)	
Day 4 10.2.2023	Visit C&F Health	Visit C&F Health	Visit C&F Health		Lecture Biochemistry	SGD Biochemistry	SGD Biochemistry
	EH: Site Visit 1 (MSS-CFH 09)				Chemical composition & biochemical functions of skin (MSS-BCH 08)	Biological theories of aging (MSS-BCH 9)	
Day 5 13.2.2023	Lecture Pathology	Lecture Pathology	SGD Pathology		Practical Pathology	Lecture Anatomy	SGD Anatomy
	Pigmented lesions of skin (MSS-PAT 11)		Pigmented lesions of skin (MSS-PAT 12)		Pigmented lesions of skin (MSS-PAT 13)	Dermatomes of upper and lower limb (MSS-ANA 48)	Walking mechanism and gait of body (MSS-ANA 49)

Theme 6: Infections of Skin (Week 7)

Week 7	1	2	3	Lunch	4	5	6
	9-10 AM	10-11 AM	11-12 AM	12-1 PM	1-2 PM	2-3 PM	3-4 PM
Day 1 14.2.2023	Lecture C&F Health	Lecture C&F Health	Lecture C&F Health		Visit C&F Health	Visit C&F Health	Visit C&F Health
	Epidemiology: Definition and uses of epidemiology, Trials of disease causation and distribution (MSS-CFH 10)				EH: Visit 2 (MSS-CFH 11)		
Day 2 15.2.2023	Lecture Microbiology	SDL Microbiology	SGD Microbiology		Lecture Pathology	SDL Pathology	Practical Pathology
	Micro-organisms (virus, fungus, parasites) causing skin infections (MSS-MIC 05)	Micro-organisms (virus, fungus, parasites) causing skin infections (MSS-MIC 06)	Micro-organisms (virus, fungus, parasites) causing skin infections (MSS-MIC 07)		Tumors of skin (MSS-PAT 14)	Tumors of skin (MSS-PAT 15)	Tumours of skin (MSS-PAT 16)
Day 3 16.2.2023	Lecture Pharmacology	Lecture Pharmacology	Lecture Pharmacology		Lecture Pharmacology	Lecture C&F Health	Lecture C&F Health
	Autacoid and their antagonist (MSS-PHA 13)		Drugs used in leprosy (MSS-PHA 14)		Anti-fungal (MSS-PHA 15)	Dynamic of disease transmission, Disease measurement (MSS-CFH 12)	
Day 4 17.2.2023	Lecture C&F Health	Lecture C&F Health	SGD C&F Health		Practical Microbiology	Practical Microbiology	Practical Microbiology
	Principles of Prevention and Control of CDs (MSS-CFH 13)		Principles of Prevention and Control of CDs (MSS-CFH 14)		Skin Infections (MSS-MIC 08)		
Day 5 20.2.2023	Lecture Clinical Skill Module	Lecture Clinical Skill Module	Lecture Clinical Skill Module		Group Presentation & Discussion C&F Health	Group Presentation & Discussion C&F Health	Group Presentation & Discussion C&F Health
	Approach to patients with skin lesions (MSS-CSM 03)				Presentation and discussion of all site visits (MSS-CFH 15)		

Theme 7: Applied Pharmacology (Week 8)

Week 8	1	2	3	Lunch	4	5	6
	9-10 AM	10-11 AM	11-12 AM	12-1 PM	1-2 PM	2-3 PM	3-4 PM
Day 1 21.2.2023	Lecture Pharmacology	Lecture Pharmacology	SGD Pharmacology		SGD Pharmacology	SGD Pharmacology	SGD Pharmacology
	Sums on Pharmacokinetics (MSS-PHA 16)		Kinetic sums 1 (MSS-PHA 17)		Kinetic sums 2 (MSS-PHA 18)	Kinetic sums 3 (MSS-PHA 19)	
Day 2 22.2.2023	Lecture Pharmacology	Lecture Pharmacology	SGD Pharmacology		SDL Pharmacology	Test Pharmacology	Test Pharmacology
	Solutions (MSS-PHA 20)		Sums on Solutions (MSS-PHA 21)		Solutions (MSS-PHA 22)	Applied Pharmacology Test (MSS-PHA 23)	
Day 3 23.2.2023							
	Revision				Revision		
Day 4 24.2.2023							
	Private Study				Private Study		
Day 5 27.2.2023	Assessment	Assessment	Assessment		Assessment	Assessment	Assessment
	Module End Test				Module End Test		

Theme 1 – Structure and Functions

List of Lectures

Subjects (Topics)	Code	Learning outcome
Anatomy		
Overview of components of MSS	MSS-ANA-01	To know the overview components of MSS
Axilla & pectoral region	MSS- ANA-02	<p>To understand the muscles forming the boundaries & contents of axilla,</p> <p>To describe axillary A, its relations, branches & applications,</p> <p>To describe the arrangement and group of axillary L/N and its clinical importance</p> <p>To recognize the role of muscles of pectoral region in stabilizing the pectoral region</p> <p>To describe and demonstrate the attachment of muscle of pectoral girdle, nerve supply and action</p> <p>To describe the structural organization of the clavipectoral fascia</p>
Muscles of upper limb	MSS- ANA-06	<p>To describe the compartments and how they are formed</p> <p>To understand muscles of upper limb</p> <p>To describe the detailed structures of each muscle with respect to origin, insertion, nerve supply and action of muscle with any characteristics features</p>
Nerves of the upper limb	MSS- ANA-07	To comprehend the nerves of upper limb and their supplied muscles & lesions of these nerves
Blood supply of arm, forearm & hand muscles	MSS- ANA-08	<p>To mention the course and branches of arteries supplying to arm, forearm & hand muscles</p> <p>To mention the course, tributaries & clinical applications of venous drainage of forearm & hand muscles</p>
Hand	MSS- ANA-11	To understand anatomy of hand
Joints of the upper limb	MSS- ANA-15	To describe joints of upper limbs

Subjects (Topics)	Code	Learning outcome
Muscles & Fascia of Head & Neck	MSS- ANA-21	To mention layers of scalp and cervical fascia To know the anatomy of muscles of facial expression, trapezius, sternocleidomastoid, strap muscles To describe cutaneous supply of head and neck
TM joint & muscles of mastication	MSS- ANA-24	To describe temporo- mandibular joint & identify muscles of mastication
Triangles of neck	MSS- ANA-25	To describe triangles of neck and its clinical application
Fascia of lower limb, compartments & muscles of lower limb	MSS- ANA-28	To understand fascia compartments & muscles of lower limb
Biochemistry		
Structure of skeletal muscle	MSS- BCH-01	To elicit the molecular components of skeletal muscle and their role in muscular functions
Energy metabolism in skeletal muscle	MSS-BCH-02	To discuss the sources, production, utilization and storage of energy in skeletal muscle
Physiology		
Excitation, contraction, coupling in the skeletal muscle contraction	MSS-PHY-01	To comprehend the excitation and contraction of the skeletal muscle
Community and Family Health		
Concept of health and disease -Determinants of health	MSS-CFH-01	Acquire the knowledge on concepts of health & disease and determinants of health
Preventive Medicine progress of PM, Public health	MSS-CFH-02	Comprehend the role of preventive medicine and level of disease prevention
Natural history of disease, level of prevention	MSS-CFH-03	Comprehend the role of preventive medicine and level of disease prevention
Environmental Health: Food and water sanitation	MSS-CFH-04	Realize environmental health related to prevention and control of diseases
Ethics and Professionalism		
Respect for dead body and specimen (presentations) & Silent Mentor program	MSS-ENP-01	To follow respect for patient's rights and confidentiality

Subjects (Topics)	Code	Learning outcome
Radiology		
Imaging of Head & Neck, Upper limb	MSS-RAD-01	To know the imaging methods and imaging features of upper limb, head and neck

List of Practical

Subjects (Topics)	Code	Learning outcome
Anatomy		
Bones of the Upper Limb	MSS- ANA-03*	To understand & identify bones of upper limbs on both sides
Pectoral region & axilla	MSS- ANA-05*	To dissect, identify and demonstrate the structures of pectoral muscles, fascia & axilla
Anterior aspects of upper limb	MSS- ANA-09*	To dissect, identify and demonstrate the structures in anterior aspects of upper limb
Posterior aspects of upper limb	MSS- ANA-13*	To dissect, identify and demonstrate the structures in posterior aspects of upper limb
Skull Bone & Mandible	MSS- ANA-22*	To comprehend structure and muscle attachment of skull bones & mandible
Dissections of Face & Neck	MSS- ANA-26*	To dissect, identify and demonstrate the structures of face & neck
Bones of Lower Limb	MSS- ANA-27*	To understand & identify bones of lower limb on both sides
Anterior & medial aspect of Thigh	MSS- ANA-30*	To dissect, identify and demonstrate anterior & medial aspect of thigh

* Scores will be carried for Continuous Assessment (OSPE)

List of SGD

Subjects (Topics)	Code	Learning outcome
Anatomy		
Brachial plexus & clinical importances	MSS- ANA-04	To mention the formation of brachial plexus (root, trunk, division and cords) To describe the branches arising the different cords
Palmar spaces & synovial sheaths of hand	MSS- ANA-12	To understand palmar spaces and synovial sheath of hand
Shoulder joint with clinical application	MSS- ANA-16	To understand the clinical application of shoulder joint
Wrist Joint with clinical application	MSS- ANA-17	To understand the clinical application of wrist joint

Subjects (Topics)	Code	Learning outcome
Applied anatomy of Median, Ulna & radial nerves	MSS- ANA-18	To understand and apply the clinical applications of median, ulnar and radial nerves
Elbow and radio ulnar joints & its stability	MSS- ANA-19	To describe the clinical application of elbow and radio-ulnar joints
Anatomical spaces of upper limb and clinical application	MSS- ANA-20	To understand anatomical spaces of upper limb
Facial muscles & lesion	MSS- ANA-23	To know the clinical importances of facial muscles
Biochemistry		
Intracellular Ca ⁺⁺ homeostasis	MSS-BCH-03	To explain the intracellular Ca ⁺⁺ homeostasis in skeletal muscle
Physiology		
Skeletal muscle contraction	MSS-PHY-02	To differentiate the different types of skeletal muscle contraction

List of SDL

Subjects (Topics)	Code	Learning outcome
Anatomy		
Cubital Fossa	MSS- ANA-10	To acquire the knowledge of cubital fossa
Applied anatomy of Median, Ulnar & radial nerves	MSS- ANA-14	To understand lesions of Median, Ulnar and Radial nerves
Femoral triangle & Adductor canal	MSS- ANA-29	To understand the femoral triangle & adductor canal, and their clinical application
Ethics and Professionalism		
Respect for dead body and specimen (presentations) & Silent Mentor program	MSS-ENP-01	To follow respect for patient's rights and confidentiality

Theme 2 – Diseases of Bone and Joints

List of Lectures

Subjects (Topics)	Code	Learning outcome
Anatomy		
Nerves of lower limb	MSS- ANA-31	To describe nerves of lower limb
Joints of lower limb	MSS- ANA-35	To acquire the knowledge of joints of lower limb
Biochemistry		
Biochemical architecture of bone and cartilage	MSS-BCH-04	To understand biochemical architecture of bone and cartilage
Extracellular matrix and its importance	MSS- BCH-05	To understand the properties and distribution of components of ECM and their specific functions
Uric acid metabolism	MSS- BCH-07	To be able to describe the formation of uric acid and its biomedical importance
Physiology		
Physiology of Bone formation & Remodeling	MSS-PHY-03	To discuss the physiology of bone formation and remodeling
Physiology of Pain	MSS-PHY-05	To recognize the different types of pain and their significance
Pathology		
Arthritis (RA,OA, Gout)	MSS-PAT-01	At the end of the course, the students should be able to understand the pathology of RA, OA, Gouty arthritis
Metabolic bone disease(Osteoporosis, Osteomalacia)	MSS-PAT-02	Discuss the pathology of metabolic bone diseases
Pharmacology		
Uric acid lowering agents	MSS-PHA-01	The student should be able to: 1. Understand the treatment of gout, pharmacological basis of treatment of acute attack & pharmacological basis of prevention of recurrent acute attacks 2. Comprehend pharmacology of uric acid lowering agents
Analgesics (Narcotic analgesics)	MSS-PHA-03	1. Comprehend: classification of analgesics, classification of opioids, common mechanism of action of opioid analgesics, properties of clinically important opioids 2. Discuss organ system effects of morphine and its surrogates 3. Understand mechanisms of actions, contra-indications, dosage form of morphine and its surrogates 4. Correlate pharmacological actions and uses, untoward effects of morphine and its surrogates

Subjects (Topics)	Code	Learning outcome
Ethics and Professionalism		
Introduction to basic principle of communication	MSS-ENP-02	Able to develop good rapport with patients, whilst eliciting and delivering information through verbal and non-verbal communications, convey empathy and caring
Social and Behavioral Science		
Basic human Psychology	MSS- SBS-01	The student should be able to: Understanding normal human psychological development across the lifespan, and recognize deviations requiring further evaluation and intervention.

List of Practical

Subjects (Topics)	Code	Learning outcome
Anatomy		
Gluteal region, posterior aspect of Thigh & popliteal fossa	MSS- ANA-34*	To dissect, identify and demonstrate gluteal region & posterior aspects of thigh & popliteal fossa
Pathology		
Arthritis	MSS-PAT-03**	To know the morphology of Rheumatoid arthritis, Osteoarthritis, Gouty arthritis

* Scores will be carried for Continuous Assessment (OSPE)

** Scores will be carried for Continuous Assessment (Assignment)

List of SGD

Subjects (Topics)	Code	Learning outcome
Anatomy		
Gluteal region	MSS- ANA-32	To understand the structures of gluteal region
Popliteal fossa & its clinical application	MSS- ANA-33	To understand the anatomy of popliteal fossa and its clinical application
Biochemistry		
Markers of bone forming and resorption	MSS-BCH-06	To state the bone forming and bone resorption markers and their significances
Physiology		
Muscle adaption & Bone density changes to exercise	MSS- PHY-04	To apply the muscle adaption and bone density changes to exercise
Pain Transmission	MSS-PHY-06 *	To explain how pain sensation can be modified

Subjects (Topics)	Code	Learning outcome
Pharmacology		
Mineral supplement for bone and joints and Drugs used in osteoporosis	MSS-PHA-02	1. Understand drugs used in osteoporosis 2. Apply commonly used mineral & supplement for bone and joints disease
Ethics and Professionalism		
Introduction to basic principle of communication	MSS-ENP-03	Able to develop good rapport with patients, whilst eliciting and delivering information through verbal and non-verbal communications, convey empathy and caring

*** Scores will be carried for Continuous Assessment (Discussion with case scenarios and SBA)**

Theme 3 – Fractures and Injuries of Limbs

List of Lectures

Subjects (Topics)	Code	Learning outcome
Anatomy		
Development of vertebral column	MSS- ANA-42	To acquire the knowledge of the development and congenital abnormalities of vertebral column
Pathology		
Healing of fracture bone and complications of fracture healing	MSS-PAT-04	To understand the healing of fracture bone and its complication
Pharmacology		
Analgesics (non-narcotic and adjuvant analgesics)	MSS-PHA-04	The student should be able to: 1. Understand Classification of NSAIDs based on COX selectivity, Mechanism of action of NSAIDs 2. Correlate pharmacological actions and uses, side effects of salicylates 3. Comprehend mechanisms of actions, contra-indications, dosage form of Salicylates (aspirin) 4. Comprehend pharmacology of other specific NSAIDs
Peripheral muscle relaxant	MSS-PHA-07	Understand pharmacology of Neuromuscular blocking agents
Clinical Skill Module		
Basic clinical approach to musculoskeletal disorder	MSS-CSM-01	The student should be able to: 1. know common clinical presentations of musculoskeletal disorder patients 2. to take history for musculoskeletal disorder patients
Common fractures of upper limb and lower limb	MSS-CSM-02	Able to know underlying causes of back pain and to differentiate between mechanical and pathological back pain.
		Able to know clinical features of limb fractures and what fractures are common at upper and lower limbs.
Ethics and Professionalism		
Introduction to ethics and professionalism	MSS-ENP-04	To recognize ethics and professionalism as an integral part of doctor patient relationship
Radiology		
Imaging of lower limbs	MSS-RAD-02	To know the imaging methods and imaging features of lower limb
Research Culture & Skill		
Basic research terminology	MSS-RCS-01	To understand the basic terminology of scientific research

List of Practical

Subjects (Topics)	Code	Learning outcome
Anatomy		
Leg & Foot	MSS- ANA-39 *	To dissect, identify and demonstrate the structures (muscles, nerves and vessels) of anterior, lateral and posterior aspects leg, and foot To get the comprehensive understanding of anatomical relationships in the leg and foot
Pathology		
Healing of fracture bone and complications of fracture healing	MSS-PAT-07	To understand the Morphological changes in steps of fracture bone

* Scores will be carried for Continuous Assessment (OSPE)

List of SGD

Subjects (Topics)	Code	Learning outcome
Anatomy		
Hip joint & its applied	MSS- ANA-36	To understand and apply the hip joint & its clinical application
Knee joint & its applied	MSS- ANA-37	To know knee joint & its clinical application
Ankle joint & arches of foot & its applied	MSS- ANA-38	To understand and apply the ankle joint, arches of foot and their clinical application
Nerve lesions of lower limb	MSS- ANA-40	To describe the motor and sensory deficits that occur with the lesions of nerves of lower limb along their course
Blood supply of thigh, leg & foot muscles and Lymphatic drainage of lower limb & clinical importances	MSS- ANA-41	To mention the course and branches of arteries supplying to thigh, leg & foot muscles and lymphatic drainage of lower limb To identify superficial and deep veins of Lower Limb To describe the great saphenous vein To describe the clinical correlate of great saphenous vein
Pathology		
Healing of fracture bone and complications of fracture healing	MSS-PAT-06 *	To understand the healing of fracture bone and its complication with case bases
Pharmacology		

Subjects (Topics)	Code	Learning outcome
Analgesics	MSS-PHA-05	Discuss rational prescribing of opioid analgesics (WHO 6 step approach) in a given case scenario
Central muscle relaxant	MSS-PHA-06	Discuss pharmacology of drugs used for acute muscle spasm
Analgesic	MSS-PHA-08**	The student should be able to know the rational use of analgesics

*** Scores will be carried for Continuous Assessment (MCQ/SBA)**

**** Scores will be carried for Continuous Assessment (Discussion with Case Scenarios, problem solving activities / MEQ)**

List of SDL

Subjects (Topics)	Code	Learning outcome
Pathology		
Healing of fracture bone	MSS-PAT-05	To understand the healing of fracture bone and its complication with case bases

Theme 4 – Infections of Muscles, Bones and Joints

List of Lectures

Subjects (Topics)	Code	Learning outcome
Anatomy		
Development of Limb	MSS- ANA-43	To describe the development of limb buds To describe the stages of limb development To explain the congenital anomalies of limbs
Microbiology		
Causal organisms, mode of transmission, pathogenesis, clinical presentation of infection of muscles, bones and joints	MSS-MIC-01	To list common organisms causing infection in muscles, bones and joints To acquire knowledge on etiology, pathogenesis, laboratory diagnosis, mode of transmission of common microorganisms causing infection in muscles, bones and joints
Bacterial infection of skin and soft tissue	MSS-MIC-03	To acquire knowledge on common bacteria causing infection in skin and soft tissue To comprehend laboratory diagnosis of bacterial skin and soft tissue infections
Pathology		
Infection of Bone	MSS-PAT-08	To understand pathology of infection of bone- Pyogenic and tuberculous osteomyelitis
Bone tumors	MSS-PAT-10	To understand Classification of bone tumor, Bone forming tumor and Cartilage forming tumors and pathology of osteosarcoma
Pharmacology		
General principle of Antibiotics	MSS-PHA-09	The student should be able to: 1. Define Antimicrobial Chemotherapy, Selective Toxicity 2. Understand terms for Antimicrobial Therapy and the objectives of antimicrobial therapy 3. Comprehend the general principles of antimicrobial chemotherapy 4. Understand classification of anti-microbial agents based on their mechanism of actions
Relevant Antibiotics for Infections of bones & joints	MSS-PHA-10	Recognize pharmacology of commonly used antimicrobial agents in bone & joints infections
Community and Family Health		
Environmental Health: Healthful housing,	MSS-CFH-05	Realize environmental health related to prevention and control of diseases

Subjects (Topics)	Code	Learning outcome
excreta and refuse sanitary disposal		
Occupational Health: Occupational hazards and prevention	MSS-CFH-07	Realize the epidemiology and prevention of occupational diseases
Social and Behavioral Science		
Concepts of perception	MSS-SBS-02	The student should be able to: Understanding normal human psychological development across the lifespan, and recognize deviations requiring further evaluation and intervention.
Theories of emotion	MSS-SBS-03	The student should be able to: Understanding normal human psychological development across the lifespan, and recognize deviations requiring further evaluation and intervention.
Stages of cognitive development across life span	MSS-SBS-04	The student should be able to: Understanding normal human psychological development across the lifespan, and recognize deviations requiring further evaluation and intervention.

List of Practical

Subjects (Topics)	Code	Learning outcome
Anatomy		
Spine and Back muscles	MSS- ANA-44 *	To acquire the knowledge of spine and back muscles
Pathology		
Infection of Bone	MSS-PAT-09**	To know the morphology of tuberculous osteomyelitis, pyogenic osteomyelitis

* Scores will be carried for Continuous Assessment (OSPE)

** Scores will be carried for Continuous Assessment (Assignment)

List of SGD

Subjects (Topics)	Code	Learning outcome
Common SGD		
Acute gouty arthritis	MSS-combined SGD*	Discuss about pathophysiology of gout and inflammatory pathway

Subjects (Topics)	Code	Learning outcome
		Choose appropriate drugs to correct the symptoms of gouty arthritis patient Draw the concept map for rationale use of drug by correlation of its mechanism of actions with molecular basic and pathophysiologic process of the disease
Microbiology		
Infection of muscles, bones and joints	MSS-MIC-02 **	To discuss common organisms causing infection in muscles, bones and joints To apply knowledge on etiology, pathogenesis, laboratory diagnosis, mode of transmission of common microorganisms causing infection in muscle, bones and joint
Community and Family Health		
Environmental Health: urban health	MSS-CFH-06	Realize environmental health related to prevention and control of diseases
OH: Ergonomic in occupation	MSS-CFH-08	Realize the epidemiology and prevention of occupational diseases
Research Culture & Skill		
Research terminology	MSS-RCS-02	To understand the basic terminology of scientific research

* Scores will be carried for Continuous Assessment

** Scores will be carried for Continuous Assessment (In class activities & post SGD quiz)

List of SDL

Subjects (Topics)	Code	Learning outcome
Microbiology		
Bacterial infection of skin and soft tissue	MSS-MIC-04	To comprehend common bacteria causing infections in skin and soft tissue To review laboratory diagnosis of bacterial skin and soft tissue infections
Pharmacology		
Antibiotics	MSS-PHA-11	Recognize the application of general principles of rational use of antimicrobials

Theme 5 – Integumentary System

TBL Preparation and TBL

Subjects (Topics)	Code	Learning outcome
TBL Preparation and TBL		
Painful swelling of joint	MSS-TBL*	Differential diagnosis of joint pain (Approach to patient with joint pain) Pathophysiology of Osteoarthritis Etiology & Risk factors for Osteoarthritis Clinical features of Osteoarthritis Diagnosis of Osteoarthritis

* Scores will be carried for Continuous Assessment

List of Lectures

Subjects (Topics)	Code	Learning outcome
Anatomy		
Structure and histology of skin and fascia	MSS- ANA-45	To describe structure and histology of skin and fascia
Dermatomes of upper and lower limb	MSS- ANA-48	To acquire the knowledge of the dermatomes of upper and lower limbs
Biochemistry		
Chemical composition and biochemical functions of skin	MSS-BC-08	To describe the biochemical importance of components of skin
Physiology		
General function of skin	MSS- PHY-07	To understand general functions of skin
Body temperature and Heat loss & heat gain mechanisms	MSS-PHY-08	To explain body temperature and thermal balance
Thermoregulation	MSS-PHY-09	To explain the regulation of body temperature
Pathology		
Pigmented lesions of skin	MSS-PAT-11	To understand the Pathology of Pigmented lesions of the skin and melanoma

List of Practical

Subjects (Topics)	Code	Learning outcome
Anatomy		
Histology of thin & thick skin	MSS- ANA-47 *	To comprehend & apply the histology of thin and thick skin
Physiology		
Body temperature measurement	MSS-PHY-10	To demonstrate body temperature measurement
Pathology		
Pigmented lesions of skin	MSS-PAT-13	To understand the Morphology of Pigmented lesions of the skin and melanoma

* Scores will be carried for Continuous Assessment (OSPE)

List of SGD

Subjects (Topics)	Code	Learning outcome
Anatomy		
Walking mechanism and gait of body	MSS- ANA-49	To know the walking mechanism and gait of body
Biochemistry		
Biological theories of aging	MSS- BCH-09*	To describe the biological theories of aging and explain their interrelated concepts
Physiology		
Thermoregulatory response to heat /cold stress	MSS- PHY-12**	To apply the knowledge of thermoregulation in real life thermo-regulatory disorders
Pathology		
Pigmented lesions of skin	MSS-PAT-12***	To understand the Differential diagnosis of Pigmented lesions of the skin and melanoma
Pharmacology		
Antibiotics for bone and joints infection	MSS-PHA-12	Discuss rational prescribing of antimicrobial agents in bone & joints infections in a given case scenario

* Scores will be carried for Continuous Assessment (SAQ)

** Scores will be carried for Continuous Assessment (Discussion with case scenarios and SBA)

*** Scores will be carried for Continuous Assessment (Assignment)

List of SDL

Subjects (Topics)	Code	Learning outcome
Anatomy		
Histology of skin & fascia	MSS- ANA-46	To comprehend & apply the knowledge of structure and histology of skin and fascia
Physiology		
Thermoregulation at different ages	MSS-PHY-11	To understand the thermoregulatory mechanisms at different ages

Visit

Subjects (Topics)	Code	Learning outcome
Community and Family Health		
EH: Site Visit 1	MSS-CFH-09*	Realize environmental and occupational health related to prevention and control of diseases

* Scores will be carried for Continuous Assessment (Visit report writing and submission)

*** Visit to work sites

1. Individual participation in work site visit is mandatory
2. Writing report for each assigned visit must include:
 - Objectives of visit, contents (Organization , Functions, Objectives and Services of the work site)
 - Finding and Discussion, Recommendations/Suggestion
 - Special tasks: Activities taken by students at the visit if necessary
3. Photos taken for presentation
4. Timely submission of report for each assigned visit

Theme 6 – Infections of Skin

List of Lectures

Subjects (Topics)	Code	Learning outcome
Microbiology		
Micro-organisms (virus, fungus, parasites) causing skin infections	MSS-MIC-05	To state common viral, fungal and parasitic pathogens causing infection in skin and soft tissue To acquire knowledge on etiology, pathogenesis, laboratory diagnosis, mode of transmission of common microorganisms causing infections in skin and soft tissue
Pathology		
Tumors of skin	MSS-PAT-14	To understand the Classification of Tumors of skin and Pathology of Squamous cell carcinoma
Pharmacology		
Autacoid and their antagonist	MSS-PHA-13	The student should be able to: 1. Understand classification of H ₁ receptor antagonists, mechanism of action, caution of first and second generation antihistamines 2. Correlate pharmacological actions and therapeutic uses, adverse effects of H ₁ Rc blockers 3. Compare and contrast of first and second generation antihistamines 4. Understand the pharmacology of Ecosanoids
Drugs used in leprosy	MSS-PHA-14	Apply and discuss Pharmacological basis of drugs used in Leprosy
Anti-fungal	MSS-PHA-15	Understand Pharmacological basis of uses of anti-fungal agents in skin dermatophyte infections
Clinical Skill Module		
Approach to patients with skin lesions	MSS-CSM-03	To know how to approach the patients with skin lesions To know proper history taking and dermatological examination To recognize basic dermatological descriptive terms
Community and Family Health		
Epidemiology: Definition and uses of epidemiology, Trials of disease causation and distribution	MSS-CFH-10	Realize the general principles of basic epidemiology
Dynamic of disease transmission, Disease measurement	MSS-CFH-12	Realize the general principles of basic epidemiology

Subjects (Topics)	Code	Learning outcome
Principles of Prevention and Control of CDs	MSS-CFH-13	Realize the general principles of basic epidemiology

List of Practical

Subjects (Topics)	Code	Learning outcome
Microbiology		
Skin Infections	MSS-MIC-08 *	To identify common pathogens causing skin infections To interpret wound swab smear and skin scraping smear To relate common pathogens and types of skin infections
Pathology		
Tumors of skin	MSS-PAT-16 **	To know the Squamous cell carcinoma, skin

* Scores will be carried for Continuous Assessment (Post practical quiz)

** Scores will be carried for Continuous Assessment (Assignment)

List of SGD

Subjects (Topics)	Code	Learning outcome
Microbiology		
Micro-organisms (virus, fungus, parasites) causing skin infections	MSS-MIC-07 *	To distinguish common viral, fungal and parasitic pathogens causing infection in skin and soft tissue To appraise constructed knowledge on etiology, pathogenesis, laboratory diagnosis, mode of transmission of common microorganisms (non-bacterial) causing infection in skin and soft tissue
Community and Family Health		
Principles of Prevention and Control of CDs	MSS-CFH-14	Realize the general principles of basic epidemiology

* Scores will be carried for Continuous Assessment (In class activities & post SGD quiz)

List of SDL

Subjects (Topics)	Code	Learning outcome
Microbiology		
Micro-organisms (virus, fungus, parasites) causing skin infections	MSS-MIC-06	To review common viral, fungal and parasitic pathogens causing infection in skin and soft tissue To organize knowledge on etiology, pathogenesis, laboratory diagnosis, mode of transmission of common

Subjects (Topics)	Code	Learning outcome
		microorganisms (non-bacterial) causing infection in skin and soft tissue
Pathology		
Tumors of skin	MSS-PAT-15	To understand the classification of tumors of skin and pathology of squamous cell carcinoma skin

Visit

Subjects (Topics)	Code	Learning outcome
Community and Family Health		
EH: Visit 2	MSS-CFH-11*	Realize environmental and occupational health related to prevention and control of diseases

*** Scores will be carried for Continuous Assessment (Visit report writing and submission)**

***** Visit to work sites**

1. Individual participation in work site visit is mandatory
2. Writing report for each assigned visit must include:
 - Objectives of visit, contents (Organization , Functions, Objectives and Services of the work site)
 - Finding and Discussion, Recommendations/Suggestion
 - Special tasks: Activities taken by students at the visit if necessary
3. Photos taken for presentation
4. Timely submission of report for each assigned visit

Group Presentation & Discussion

Subjects (Topics)	Code	Learning outcome
Community and Family Health		
Presentation and discussion of all site visits	MSS-CFH-15*	Realize environmental and occupational health related to prevention and control of diseases

*** Scores will be carried for Continuous Assessment (Participate in presentation and discussion)**

***** Group presentations and discussions**

1. Individual attendance in the presentation session is mandatory
2. Participation as the presenter (a representative for each group)
3. Presentation contents – Name of the work site; Objectives of visit, Organization, Functions, Objectives and Services of the work sites; Finding and Discussion; Recommendations/Suggestion; Activities taken at the visits; Photos displays
4. Flow discussion (Questions and Answers) about the presentation topics

Theme 7 – Applied Pharmacology

In this module, students will have to learn about applied Pharmacology, so that student will understand the principles and practice of pharmacokinetic and therapeutic of drugs used for diseases of all system modules

List of Lectures

Subjects (Topics)	Code	Learning outcome
Pharmacology		
Sums on Pharmacokinetics	MSS-PHA-16	The student should be able to: 1. Understand the role of clinical pharmacology in therapeutics 2. Apply pharmacokinetic principles to calculate plasma drug concentrations achieved
Solutions	MSS-PHA-20	Perform simple calculation for making up drug solutions obtaining required doses from given concentrations; and the calculation of dosage

List of SGD

Subjects (Topics)	Code	Learning outcome
Pharmacology		
Kinetic sums 1	MSS-PHA-17*	1. Make dosage adjustments to achieve optimal clinical effects 2. Calculate optimal dosages of drugs based on pharmacokinetic principles
Kinetic sums 2	MSS-PHA-18*	
Kinetic sums 3	MSS-PHA-19*	
Sums on Solutions	MSS-PHA-21*	Perform simple calculation for making up drug solutions obtaining required doses from given concentrations; and the calculation of dosage

*** Scores will be carried for Continuous Assessment (Pharmacokinetic calculation and dispensing of drugs)**

List of SDL

Subjects (Topics)	Code	Learning outcome
Pharmacology		
Solutions	MSS-PHA-22	Perform simple calculation for making up drug solutions obtaining required doses from given concentrations; and

Subjects (Topics)	Code	Learning outcome
		the calculation of dosage

Test

Subjects (Topics)	Code	Learning outcome
Pharmacology		
Applied Pharmacology Test	MSS-PHA-23 *	Applied Pharmacology Test

*** Scores will be carried for Continuous Assessment (Written test)**

Books and Other Reading Resources

Anatomy	<ol style="list-style-type: none"> 1. Netter`s “Atlas of Human Anatomy-6th Edition 2. Gray`s Anatomy-4th Edition 3. Cunningham`s “Textbook of Anatomy”-12th Edition 4. Snell`s Clinical Anatomy by regions-9th Edition 5. Snell`s Clinical Neuroanatomy-7th Edition 6. Langman`s Medical Embryology-14th Edition 7. The Developing Human “by Keith L Moore”-10th Edition 8. Junqueira`s Basic Histology: Text book and Atlas- 13th Edition
Biochemistry	<ol style="list-style-type: none"> 1. Rodwell, V, Bender, D, Kennelly, P. Weil, P, 2018. Harper's Illustrated Biochemistry. 31st ed. New York: Mc Graw Hill Education. 2. Baynes, J. and Dominiczak, M., 2019. Medical Biochemistry. Philadelphia: Elsevier. 3. Janson, L. and Tischler, M., 2012. The Big Picture: Medical Biochemistry. 1st ed. New York: McGraw-Hill. 4. Kang, S., Amagai, M., Bruckner, A., Enl, A., Margolis, D. and Orringer, J., 2019. Fitzpatrick's Dermatology. 9th ed. New York: McGraw-Hill Education. 5. Janson, L. and Tischler, M., 2012. The Big Picture: Medical Biochemistry. 1st ed. New York: McGraw-Hill.
Physiology	<ol style="list-style-type: none"> 1. Barrett, K.E., Barman, S.M., Brooks, H.L. and Yuan, J. (2019) Ganong`s Review of Medical Physiology. 26th Ed.,McGraw-Hill Education, New York 2. Hall, J.E. (2016) Guyton and Hall Textbook of Medical Physiology. 13th Ed., Elsevier Saunders, Pennsylvania 3. Constanzo, L.S. (2019) Book Review Series: Physiology. 7th Ed., Wolters Kluwer Health, Philadelphia 4. Constanzo, L.S. (2018) Physiology. 6th Ed., Elsevier, Philadelphia 5. Medical Year 1, Lecture Notes from Physiology Department 6. Medical Year 1, Practical Manual Book
Pathology	<ol style="list-style-type: none"> 1. Kumar V, Abbas AK and Aster JC (2014) Neoplasia. In: Robbins and Cotran Pathologic Basis of Disease, 9th Ed. Philadelphia: Elsevier Saunder. 265-274
Pharmacology	<ol style="list-style-type: none"> 1. Basic and Clinical Pharmacology (14th. Edition), 2018. B G Katzung, Appleton Lange, USA 2. Lecture notes on Pharmacology 8th edition (2020) volume 1& 2, UM1,2,UMM,UMMG,UMTG & DSMA 3. Applied Pharmacology (2020) UM1 & 2,UMM,UMMG,UMTG & DSMA

	<p>4. Tripathi K D (2019), Essentials of Medical Pharmacology, 8th Edition, Jaypee Brothers Medical Publishers (P) Ltd, India.</p> <p>5. Brenner, G.M. & Stevens, C.W (eds.) (2018) Pharmacology, 5th Edition; Philadelphia, Saunders</p> <p>6. Brunton, L.L., Dandan, R.H. & Knollmann, B.C. (eds.) (2018) Goodman & Gilman's: The Pharmacological Basis of Therapeutics, 13th Edition; USA, The McGraw-Hill Companies Inc.</p>
Microbiology	<p>1. Richard Goering, Hazel Dockrell, Mark Zuckerman, Peter L. Chiodini (2018) Mims' Medical Microbiology and Immunology</p> <p>2. Jawetz, Melnick, & Adelberg's Medical Microbiology, 28 Edition (2019) by Stefan Riedel, Jeffery A. Hobden, Steve Miller, Stephen A. Morse, Timothy A. Mietzner, Barbara Detrick, Thomas G. Mitchell, Judy A. Sakanari, Peter Hotez, Rojelio Mejia</p> <p>3. Warren Levinson, Review of Medical Microbiology & Immunology: A guide to Clinical Infectious Diseases, 15th Edition (2018)</p>
Clinical Skill Module	<p>1. Bailey & Love's Short Practice of Surgery, 27th Edition 27th Edition</p> <p>2. Apley and Solomon's Concise System of Orthopaedics and Trauma 4th Edition</p> <p>3. Fitzpatrick's Dermatology in general medicine 9th edition</p> <p>4. Andrew's Disease of the skin, Clinical Dermatology, 12th edition</p> <p>5. David J Gawkrödger Dermatology Illustrated color text, 3rd edition</p>
Community and Family Health	<p>1. Departmental P&SM Handout for Final Part 1</p> <p>2. Guide book for Urban visits</p> <p>3. Myanmar National Health Plan, 2017-2021</p> <p>4. Celentano, DD and Szklo, M (6th Edition) <i>Gordis Epidemiology</i>. Philadelphia.</p> <p>5. Daniel, WW and Cross, CL (10th Edition) <i>BIOSTATISTICS A Foundation for Analysis in the Health Sciences</i>. USA.</p> <p>6. Park, K (26th Edition) <i>K Park's Textbook of Preventive and Social Medicine</i></p> <p>7. Community medicine: https://ksumsc.com/download_center/Archive/3rd/437/Teamwork/4-Community Medicine/1st Semester/1-Introduction To Community Medicine.pdf</p> <p>8. Community health: Guidelines for Preventive and Social Medicine/Community Medicine/Community Health Curriculum in the Undergraduate Medical Education (WHO)</p> <p>9. Web site: WHO, MOHS:</p>
Ethics and Professionalism	<p>1. A handbook of Communication Skill by Owen Hargie (1993), ISBN 0-415-03457-4</p> <p>2. Health Communication-Strategies for Health Professionals (1998), 3rd Edition, Appleton and Large press, Stamford</p> <p>3. Medical Ethics Manual by WMA (2009), 2nd edition, ISBN 92-990028-1-9</p>

	<p>4. Module for teaching Medical Ethics to Undergraduates by WHO (2009), SEA-HSD-321</p> <p>5. Principles of biomedical ethics by Tom L Beauchamp and James F Childress (2009), 7th Edition, Oxford University press, Oxford</p> <p>6. Reflective Teaching by Andrew Pollard (2002), Continuum press, New York</p> <p>7. Skilled Interpersonal Communication-Research, Theory and Practice by Owen Hargie and David Dreken, 4th Edition, Taylor and Francis press, London</p>
Research Culture & Skill	<p>1. Department of Medical Research,2018, Lecture guide on research methodology</p> <p>2. Kumar.R,1999, Research Methodology, A step by step guide for beginner, Addison Wesley Longman Australia Pty Limited</p> <p>3. Handout for research culture and skill module</p> <p>4. Research methodology course for postgraduate students, University of Medicine</p> <p>5. Research papers</p>
Social and Behavioral Science	<p>1. Bernstein Psychology, 9th edition</p>

Assessment

During the 8 weeks teaching of MSS module, there will be two types of assessment: in-class assessment and module end test.

In-class assessment means assessment in small group discussions, TBL sessions, Practical sessions and project presentations.

Students have to prepare for in-class assessment sessions which are well described as *, **, *** in lesson plans.

Overall scores of in-class assessment will contribute for **60%** of continuous assessment of this module.

Module end test: after completing of MSS module, there will be **2-hr written test** of single Best answer (SBA) and extended matching questions (EMQ). Score of the module end test contribute for **40%** of the continuous assessment of this module.

There will be ***no chance to take module end test again***, so it is a compulsory to sit for module end test. It is student's responsibility to compensate for getting good scores in upcoming modules of the medical year-1, if student fail in the MSS module end test, because overall score of all module end tests count in to final exam. So please make sure your score of continuous assessment (in-class assessments + Module end test) is more than 50% of total score.

Sample Question Type

Single Best Answer

1. Which nerve is most likely to be affected in the fracture of mid-shaft of humerus?

- A. Axillary nerve
- B. Median nerve
- C. Musculocutaneous nerve
- D. Radial nerve
- E. Ulnar nerve

Key: D. Radial nerve

2. A 40 year-old man came to the emergency department following an accident. He was found to have a fracture in the mid-shaft of the humerus. Which nerve is most likely to be affected in this patient?

- A. Axillary nerve
- B. Median nerve
- C. Musculocutaneous nerve
- D. Radial nerve
- E. Ulnar nerve

Key: D. Radial nerve

3. A 40 year-old man came to the emergency department following an accident. He was found to have a fracture in the mid-shaft of the humerus. Which deformity would he likely to be suffered from?

- A. Ape's hand
- B. Median claw hand
- C. Pianist hand
- D. True claw hand
- E. Wrist drop

Key: E. Wrist drop

4. A 40 year-old man came to the emergency department following an accident. He was found to have a fracture in the mid-shaft of the humerus. Physical examination revealed the presence of wrist drop. Where might he suffer loss of sensation in the hand if at all?

- A. Lateral 2/3 of the dorsum of the hand
- B. Lateral 2/3 of the palmar surface of the hand
- C. Medial 1/3 of the dorsum of the hand
- D. Medial 1/3 of the palmar surface of the hand

E. No sensory loss

Key: A. Lateral 2/3 of the dorsum of the hand

Extended Matching Questions (EMQ)

Nerve supply of the arm

For each anatomical description, choose the single most likely nerve from the list of options below. Each option may be used once, more than once, or not at all.

- A. Anterior interosseous nerve
- B. Axillary nerve
- C. Medial cutaneous nerve of forearm
- D. Median nerve
- E. Musculocutaneous nerve
- F. Posterior interosseus nerve
- G. Radial nerve
- H. Superficial radial nerve
- I. Ulnar nerve

1. It is found medial to the coracoid process and in close relationship to the conjoint tendon. It supplies the biceps brachii and muscles of the anterior compartment of the upper arm.
2. It is the motor supply of the extensor compartment of the forearm and wrist.
3. It is at risk from injury on the medial border of the elbow. It supplies the small muscles of the hand.
4. It is found in close relationship to the humeral head. It can be injured by glenohumeral joint dislocation.
5. It lies in close relationship to the humeral diaphysis in the spiral groove. It is at risk in humeral shaft fractures.

Answers

- 1. E
- 2. F
- 3. I
- 4. B
- 5. G

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