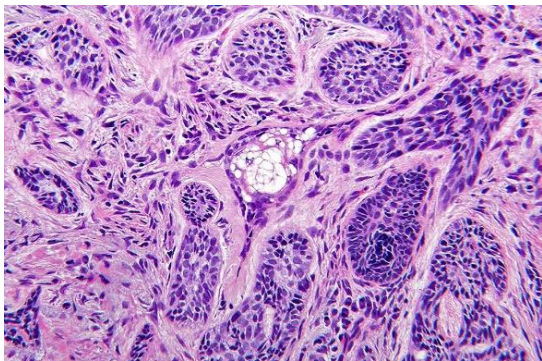


STUDY GUIDE

BLOCK NO - 8

MODULES:

NEOPLASIA
INFECTIOUS DISEASE
MUSCULOSKELETAL & LOCOMOTION – II
FORENSIC MEDICINE & TOXICOLOGY- II



Mission of LMDC

The Lahore Medical & Dental College is committed in its pursuit of excellence to providing the best academic facilities and atmosphere to its students.

Our mission is to: “Train future leaders of medicine who set new standards in knowledge, care and compassion”.

The well qualified and committed faculty of LMDC provides combination of nurturing support and challenge to the students to reach their maximum potential.

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TEACHING FACULTY DEPARTMENT OF PATHOLOGY

		Name	Designation	Qualification
1		Dr. Shazia N. Ibnerasa	Prof. of Histopathology Head of Path Deptt.	MBBS, M.Phil, MHPE
2		Dr. Saadia Chaudhry	Prof. of Microbiology	MBBS, MPhil
3		Dr. Fauzia Sadiq	Prof. of Chemical Pathology	MBBS, M.Phil, CHPE
4		Dr. M. Shahbaz Amin	Prof. of Histopathology	MBBS, DCP, MCPS(Path) FCPS (Histopath),
5		Dr. Nazia Ahmad	Associate Prof. Hematology	MBBS, M.Phil, CMT
6		Dr. Sonia Tahir	Associate Prof. Microbiology	MBBS, M.Phil, CHPE
7		Dr. M. Rizwan	Associate Prof. Histopathology	MBBS, M.Phil, CHPE
8		Dr. Maimoona Aslam	Assistant Prof. Histopathology	MBBS, FCPS (Histo)
9		Dr. Hira Babar	Assistant Prof. Hematology	MBBS, FCPS (Hematology)

List of Abbreviations

Abbreviations	Subjects
A	Anatomy
ABCDE	Airway, Breathing, Circulation, Disability, Exposure
ABG	Arterial Blood Gas
ACS	Acute Coronary Syndromes
Ag	Aging
AKI	Acute Kidney Injury
ALT	Alanine Transaminase
AMI	Acute Myocardial Infarction
AMP	Adenosine Monophosphate
ANA	Antinuclear Antibody
ANCA	Antineutrophil Cytoplasmic Antibodies
ANS	Autonomic Nervous System
AO	Association of Osteosynthesis
APTT	Activated Partial Thromboplastin Clotting Time
ARDS	Acute Respiratory Distress Syndrome
ARVC	Arrhythmogenic Right Ventricular Cardiomyopathy
ASD	Atrial Septal Defect
AST	Aspartate Aminotransferase
ATLS	Advanced Trauma Life Support
Au	Autopsy
AUC	Area Under The Curve
AV	Atrioventricular
B	Biochemistry
BhS	Behavioral Sciences
BHU	Basic Health Unit
BSL	Biological Safety Level
C	Civics
C-FRC	Clinical-Foundation Rotation Clerkship
C. burnetii	Coxiella burnetii
C. neoformans	Cryptococcus neoformans
C. pneumoniae	Chlamydia pneumoniae
C. psittaci	Chlamydia psittaci

C. trachomatis	Chlamydia trachomatis
CA	Cancer
CABG	Coronary Artery Bypass Grafting
CAD	Coronary Artery Disease
CBC	Complete Blood Count
CCR5	Cysteine-Cysteine Chemokine Receptor 5
CD31	Cluster of Differentiation 31
CD34	Cluster of Differentiation 34
CD4	Clusters of Differentiation 4
CF	Cystic Fibrosis
CK	Creatine Kinase
CK	Creatine Kinase
CLED	Cystine Lactose Electrolyte Deficient
CLL	Chronic Lymphocytic Leukemia
CM	Community Medicine
CML	Chronic Myelogenous Leukemia
CMV	Cytomegalovirus
CNS	Central Nervous System
CO	Carbon Monoxide
CO₂	Carbon Dioxide
CODIS	Combined Dna Index System
COPD	Chronic Obstructive Pulmonary Disease
COVID-19	Corona Virus Disease 2019
COX	Cyclooxygenase
CPR	Cardio Pulmonary Resuscitation
CR	Clinical Rotation
CRP	C- Reactive Protein
CSF	Cerebrospinal Fluid
CT	Computed Tomography
CT	Computerized Tomography
CV	Cardiovascular
CVA	Cerebral Vascular Accident
CVDs	Cardiovascular Diseases
CVS	Cardiovascular System
D. medinensis	Dracunculus Medinensis
DALY	Disability-Adjusted Life Year

DCIS	Ductal Carcinoma in situ
DCM	Dilated Cardiomyopathy
DCMLS	Dorsal Column Medial Lemniscus System
DLC	Differential Leukocyte Count
DMARDs	Disease-modifying antirheumatic drugs
DNA	Deoxy Ribonucleic Acid
DOTS	Directly Observed Treatment Short-course
DTP	Diphtheria, Tetanus, Pertussis
DVI	Disaster Victim Identification
DVT	Deep Vein Thrombosis
E. coli	Escherichia coli
ECF	Extra Cellular Fluid
ECG	Electrocardiography
ECG	Electocardiogram
ECP	Emergency contraceptive pills
ED50	Median Effective Dose
EEG	Electroencephalogram
EIA	Enzyme Immunoassay
ELISA	Enzyme Linked Immunosorbent Assay
EnR	Endocrinology & Reproduction
ENT	Ear Nose Throat
EPI	Expanded Programme on Immunization
ER	Emergency Room
F	Foundation
FAST	Focused Assessment with Sonography in Trauma
FEV1	Forced Expiratory Volume 1
FM	Family Medicine
For	Forensics Medicine
FPIA	Fluorescent Polarization Immunoassay
FS	Forensic Serology
FSc	Forensic Science
FVC	Forced Vital Capacity
GCS	Glasgow Coma Scale
GFR	Glomerular Filtration Rate
GIT	Gastrointestinal tract
GL-MS	Gas Liquid Mass Spectrometry

GLC	Gas Liquid Chromatography
GLP	Good Laboratory Practice
GMP	Guanosine Monophosphate
GO	Gynecology and Obstetrics
GP	General Practitioner
GPE	General Physical Examination
GTO	Golgi Tendon Organ
Gynae & Obs	Gynecology and Obstetrics
H & E	Hematoxylin and Eosin
H. influenzae	Haemophilus influenzae
H. pylori	Helicobacter pylori
HAI	Healthcare Associated Infections
HbC	Hemoglobin C
HbS	Sickle Hemoglobin
HbSC	Hemoglobin Sickle C Disease
HCL	Hydrochloric Acid
HCM	Hypertrophic Cardiomyopathy
HHV	Human Herpesvirus
HIT	Hematopoietic, Immunity and Transplant
HIV	Human Immunodeficiency Virus
HL	Hematopoietic & Lymphatic
HLA	Human Leukocyte Antigen
HMP	Hexose Monophosphate
HNSS	Head & Neck and Special Senses
HPLC	High Pressure Liquid Chromatography
ICF	Intra Cellular Fluid
ID	Infectious Diseases
IE	Infective Endocarditis
IL	Interleukin
ILD	Interstitial Lung Disease
IN	Inflammation
INR	International Normalized Ratio
INSTIs	Integrase Strand Transfer Inhibitors
IPV	Inactivated Poliovirus Vaccine
IUD	Intrauterine Device
IUGR	Intra Uterine Growth Restriction

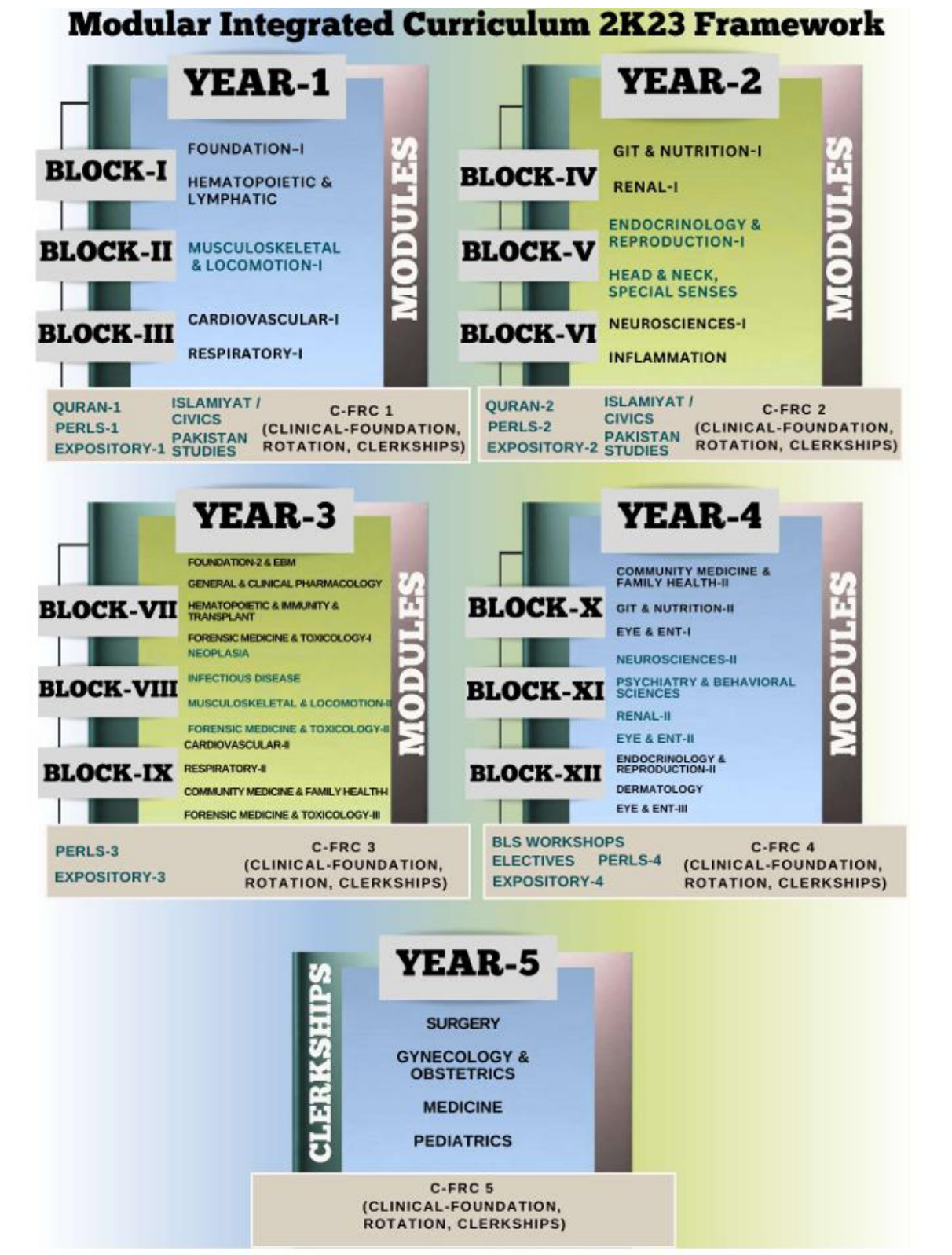
JVP	Jugular Venous Pulse
L	Law
LD50	Median Lethal Dose
LDH	Lactate Dehydrogenase
LSD	Lysergic acid diethylamide
M	General Medicine
MALT	Mucosa Associated Lymphoid Tissue
MBBS	Bachelor of Medicine, Bachelor of Surgery
MCH	Mean corpuscular hemoglobin
MCHC	Mean Corpuscular Hemoglobin Concentration
MCV	Mean Corpuscular Volume
MHO 2001	Mental Health Ordinance 2001
MoA	Mechanism of action
MRI	Magnetic resonance imaging
MS	Musculoskeletal
MSD	Musculoskeletal disorders
MSDS	Minimum Service Delivery Standards
MSK	Musculoskeletal
N	Neoplasia
NEAA	Non-Essential Amino Acids
NK cells	Natural Killer Cells
NMJ	Neuro Muscular Junction
NNRTIs	Non-nucleoside Reverse Transcriptase Inhibitors
NRTIs	Nucleoside Reverse Transcriptase Inhibitors
NS	Neurosciences
NSAIDs	Non-steroidal Anti-Inflammatory Drugs
O	Ophthalmology
OA	Osteoarthritis
OPC	Organophosphate
OPV	Oral poliovirus vaccine
Or	Orientation
Orth	Orthopaedic
P	Physiology
P. jiroveci	Pneumocystis jiroveci
Pa	Pathology
PAD	Peripheral Artery Disease

PAF	Platelet Activating Factor
PBL	Problem Based Learning
PCI	Percutaneous Coronary Intervention
PCR	Polymerase Chain Reaction
PDA	Patent Ductus Arteriosus
PDGF	Platelet Derived Growth Factor
Pe	Pediatrics
PEM	Protein Energy Malnutrition
PERLs	Professionalism, Ethics, Research, Leadership
PET	Positron Emission Tomography
Ph	Pharmacology
pH	potential Hydrogen
PI	Personal Identity
PID	Pelvic inflammatory disease
PIs	Protease inhibitors
PMC	Pakistan Medical Commission
PMDC	Pakistan Medical and Dental Council
PMI	Post-Mortem Interval
PNS	Peripheral Nervous System
PPD	Paraphenylenediamine
PPE	Personal Protective Equipment
Psy	Psychiatry
PT	Prothrombin Time
PVC	Premature Ventricular Contraction
PVD	Peripheral Vascular Diseases
QALY	Quality-Adjusted Life Year
QI	Quran and Islamiyat
R	Renal
Ra	Radiology
RA	Rheumatoid Arthritis
RBCs	Red Blood cells
RCM	Restrictive Cardiomyopathy
RDA	Recommended Dietary Allowance
Re	Respiratory
RF	Rheumatoid factor
RFLP	Restriction Fragment Length Polymorphism

Rh	Rheumatology
RHC	Rural Health Center
RIA	Radioimmunoassay
RMP	Resting Membrane Potential
RNA	Ribonucleic Acid
RTA	Road Traffic Accident
S	General Surgery
S. pneumonia	Streptococcus pneumoniae
SA	Sinoatrial
SCC	Squamous-cell carcinoma
Se	Sexology
Sec	Section
SIDS	Sudden Infant Death Syndrome
SLE	Systemic Lupus Erythematosus
SOP	Standard Operating Procedure
TB	Tuberculosis
TBI	Traumatic Brain Injury
TCA	Tricarboxylic acid cycle
TCBS	Thiosulphate Citrate Bile salts Sucrose
TD50	Median Toxic Dose
TGA	Transposition of the Great Arteries
Th	Thanatology
TLC	Thin Layer Chromatography
TNF	Tumor Necrotic Factor
TNM	Tumour, Node, Metastasis
TOF	Tetralogy of Fallot
Tox	Toxicology
Tr	Traumatology
TSI	Triple Sugar Iron
USG	Ultrasonography
UTI	Urinary Tract Infections
UV	Ultraviolet
VAP	Ventilator-Associated Pneumonia
Vd	Volume of Distribution
VEGF	Vascular Endothelial Growth Factor
VSD	Ventricular Septal Defect

W. bancroft	Wuchereria Bancroft
WBCs	White Blood Cells
WHO	World Health Organization
ZN Staining	Ziehl-Neelsen Staining

CURRICULAR FRAMEWORK



Introduction to Study Guide

UHS has introduced modular integrated MBBS curriculum 2023 from the academic session 2024-2025 and version 3.0 is released in 2025, the study guide for Block -08 is developed in order to introduce the 3rd Year MBBS students to various modules and block in the Year 3. The learning Objectives of all the Subjects included in Block -08 are added to help learners focus on key areas.

Time tables for all the modules in Block -08 are added and total contact hours for each subject are given in a tabulated manner. The book and other reading resources are mentioned to facilitate the students. Assessment tools, policy and schedule are also included. Moreover, table of specifications (TOS) for Block-08 examination is added to facilitate the learners.

INTRODUCTION TO BLOCK MODULES

Block	Module
Block-07	• FOUNDATION & EBM – II • GENERAL & CLINICAL PHARMACOLOGY • HEMATOPOIETIC & IMMUNITY & TRANSPLANT • FORENSIC MEDICINE & TOXICOLOGY – I
Block-08	• NEOPLASIA • INFECTIOUS DISEASE • MUSCULOSKELETAL & LOCOMOTION – II • FORENSIC MEDICINE & TOXICOLOGY – II
Block-09	• CARDIOVASCULAR – II • RESPIRATORY – II • COMMUNITY MEDICINE & FAMILY HEALTH – I • FORENSIC MEDICINE & TOXICOLOGY – III
Spiral	• PERLS – 3 • Expository -3 • C-FRC – 3 (Clinical- Foundation, Rotation, Clerkships)

BLOCK COMMITTEE

The modular committee includes the coordinator, co-coordinator, and departmental representatives from areas such as internal medicine, surgery, pediatrics, and medical education. Together, they work to create an integrated and current curriculum that supports the educational objectives and prepares students for healthcare careers.

BLOCK INCHARGE

PROF. SHAZIA IBNERASA

BLOCK COORDINATOR /CLASS INCHARGE

DR. SONIA TAHIR

DEPARTMENTS RESPONSIBLE

MAJOR SUBJECTS	ALLIED/MINOR SUBJECTS
Pathology	Community Medicine
Pharmacology	Medicine
Forensic medicine	Surgery
	Gynecology
	Psychiatry
	Pediatrics
	Radiology
	Orthopedics

Module Committees Block – 8

Module :- Neoplasia

Committees Members :-

- Coordinator 01: Prof. Dr. Shazia Ibne- Rasa (Pathology Dept.)
- Coordinator 02: Dr. Sonia Tahir (Assistant Prof. Pathology Dept.)

Departmental Representatives: -

- Prof. Dr. Shazia Ibne- Rasa (Pathology Dept.)
- Prof. Dr. Ajaz Fatima (Pharmacology Dept.)
- Assoc. Prof. Dr. Asia Firdous (Pharmacology Dept.)
- Prof. Dr. Seema Daud (Community Medicine Dept.)
- Assoc. Prof. Dr. Humayun Mirza (Community Medicine Dept.)
- Prof. Dr. Amir Bashir (Forensic Medicine Dept.)
- Prof. Dr. Waseem Amir (Medicine Dept.)
- Dr. Sara (Medicine Dept.)
- Prof. Dr. Hasnat (Surgery Dept.)
- Dr. Sidra Shoaib (Surgery Dept.)
- Prof. Dr. Maqbool (Psychiatry Dept.)
- Miss. Ramla (Behavioral Sciences.)
- Prof. Dr. Rizwan (Peads Dept.)

Module:- INFECTIOUS DISEASE.

Committees Members:-

- Coordinator 01: Prof. Dr. Shazia Ibne- Rasa (Dept.)
- Coordinator 02: Dr. Sonia Tahir (Assistant Prof. Pathology Dept.)

Departmental Representatives: -

- Prof. Dr. Shazia Ibne- Rasa (Pathology Dept.)
- Prof. Dr. Sonia (Pathology Dept.)
- Prof. Dr. Seema Daud (Community Medicine Dept.)
- Dr. Humayun Mirza (Community Medicine Dept.)
- Prof. Dr. Amir Bashir (Forensic Medicine Dept.)
- Prof. Dr. Waseem Amir (Medicine Dept.)
- Dr. Sara (Medicine Dept.)
- Prof. Dr. Hasnat (Surgery Dept.)
- Dr. Sidra Shoaib (Surgery Dept.)
- Prof. Dr. Maqbool (Psychiatry Dept.)
- Miss Ramla (Behavioral Sciences)

Module:- MUSCULOSKELETAL & LOCOMOTION -2

Committees Members:-

- Coordinator 01: Prof. Dr. Shazia Ibne- Rasa (Pathology Dept.)
- Coordinator 02: Dr. Sonia Tahir (Assistant Prof. Pathology Dept.)

Departmental Representatives: -

- Prof. Dr. Ajaz Fatima (Pharmacology Dept.)
- Assoc. Prof. Dr. Asia Firdous (Pharmacology Dept.)
- Prof. Dr. Seema Daud (Community Medicine Dept.)
- Dr. Humayun Mirza (Community Medicine Dept.)
- Prof. Dr. Amir Bashir (Forensic Medicine Dept.)
- Prof. Dr. Waseem Amir (Medicine Dept.)
- Dr. Sara (Medicine Dept.)
- Prof. Dr. Hasnat (Surgery Dept.)
- Dr. Sidra Shoaib (Surgery Dept.)
- Prof. Dr. Maqbool (Psychiatry Dept.)
- Miss. Ramla (Behavioral Sciences.)
- Prof. Dr. Rizwan (Peds Dept.)

Module:- Forensic Medicine & Toxicology-1

List of Committees Members:-

- Coordinator 01: Prof. Dr. Amir Bashir (Forensic Medicine Dept.)
- Coordinator 02: Assist. Prof. Dr. Roman Ashraf (Forensic Medicine Dept.)

Departmental Representatives: -

- Prof. Dr. Shazia Ibne- Rasa (Pathology Dept.)
- Prof. Dr. Sonia (Pathology Dept.)
- Prof. Dr. Ajaz Fatima (Pharmacology Dept.)
- Assoc. Prof. Dr. Asia Firdous (Pharmacology Dept.)
- Prof. Dr. Seema Daud (Community Medicine Dept.)
- Dr. Humayun Mirza (Community Medicine Dept.)
- Prof. Dr. Waseem Amir (Medicine Dept.)
- Dr. Sara (Medicine Dept.)
- Prof. Dr. Hasnat (Surgery Dept.)
- Dr. Sidra Shoaib (Surgery Dept.)
- Prof. Dr. Maqbool (Psychiatry Dept.)
- Miss. Ramla (Behavioral Sciences.)

BLOCK TIMETABLE

3rd YEAR M.B.B.S TIMETABLE SESSION 2023-2024 w.e.f. 01-06-2026 to 11-09-2026

Block - 8 (Module 16, 17, 18 & 19) 11 WEEKS

DAYS & TIME	08:00 a.m. to 08:45 a.m.	08:45 a.m. to 09:00 a.m.	09:00 a.m. to 10:15 a.m.	10:15 a.m. to 10:30 a.m.	10:30 a.m. to 12:00 p.m.		12:00 p.m. to 12:45 p.m.	12:45 p.m. to 01:30 p.m.	01:30 p.m. to 02:15 p.m.	02:15 p.m. to 03:00 p.m.
MONDAY	Pathology Lecture Theatre No. 10	Travel to GTTH	Ward / SDL	Travel to LMDC & Break	Pathology Pract For Med Pract ¹ PharmaPract/CFRC/Radio Pharma/FM/tutorial Pathology Tutorial	A+B C+D E+F G+H	Pathology Lecture Theatre No. 10	Pharmacology Lecture Theatre No. 10	² Rheumatology / Int. Medicine Lecture Theatre No. 10	Community Medicine Lecture Theatre No. 10
TUESDAY	Pharmacology Lecture Theatre No. 10				Pathology Pract For Med Pract ¹ PharmaPract/CFRC/Radio Pharma/FM/tutorial Pathology Tutorial	C+D E+F G+H A+B	Orthopedics Lecture Theatre No. 10	Pathology Lecture Theatre No. 10	³ Oncology/ Evidence based Medicine/ Paediatrics Lecture Theatre No. 10	Pathology Lecture Theatre No. 10
WEDNESDAY	Medicine (Rheumatology) Lecture Theatre No. 10				Pathology Pract For Med Pract ¹ PharmaPract/CFRC/Radio Pharma/FM/tutorial Pathology Tutorial	E+F G+H A+B C+D	Forensic Medicine Lecture Theatre No. 10	Pharmacology Lecture Theatre No. 10	Pathology Lecture Theatre No. 10	Pathology Lecture Theatre No. 10
THRUSDAY	Pathology Lecture Theatre No. 10				Pathology Pract For Med Pract ¹ PharmaPract/CFRC/Radio Pharma/FM/tutorial Pathology Tutorial	G+H A+B C+D E+F	Forensic Medicine Lecture Theatre No. 10	Surgery Lecture Theatre No. 10	Pathology / Biosafety Lecture Theatre No. 10	⁴ Pharmacology/ PERL/Forensic Medicine Lecture Theatre No. 10
FRIDAY	08:00 a.m. to 08:45 a.m.	08:45 a.m. to 10:15 a.m.		10:15 a.m. to 10:45 a.m.		10:45 a.m. to 11:30 a.m.		11:30 a.m. to 12:15 p.m.	12:15 a.m. to 01:00 p.m.	
	Pathology Lecture Theatre No. 10	GRAND TUTORIAL Pathology (1,5, 7 week) Pharmacology (3,9 week) Forensic Med (2,6,10 week) Combined Test (4,8,11 week) Lecture Theatre No. 10		BREAK		⁵ Neurosurgery / Orthopedics / Radiology Lecture Theatre No. 10		⁶ Beh Sci / Biochem Gynaecology Lecture Theatre No. 10	Pathology Lecture Theatre No. 10	

CC:-

- Principal, LMDC
- Vice Principal, LMDC
- Heads of All Departments, LMDC/GTTH
- HOD Medical Education, LMDC
- Chief Administrative Officer / Director F&A, LMDC
- Director HR, LMDC
- Director Skills Lab, LMDC
- Director IT, LMDC
- Medical Superintendent, GTTH
- Chairperson Timetable Committee, LMDC
- Assessment & Examination Cell, LMDC
- Transport Incharge, LMDC
- Audio Visual Department (HOD) / (Lecture Theatre Incharge), LMDC
- Warden / Assistant Warden Hostels (Boy/Girl)
- Security Supervisor, LMDC

- 1st 2 weeks Pharma Prac, 3rd - 5th week Forensic Med tutorial, 6th - 9th week CFRC, 10th week Radiology Prac, and 11th week Pharma tutorial.
 - 1st 6 weeks Rheumatology, 7th - 11th week Internal Medicine
 - 1st 5 weeks Oncology, 6th-8th week EBM, 9th-11th week Pediatrics
 - 1st 3 weeks Pharmacology, 4th - 8th week PERL, 9th - 11th week Forensic Medicine
 - 1st 4 weeks Neurosurgery, 5th-8th week Orthopedics, 9th -11th week Radiology.
 - 1st 5 weeks Behavioral Sciences, 6th-8th week Biochemistry, 9th-11th week Gynaecology
- Clinical Foundation Rotation Clerkship (C-FRC) will be held in Ward / Skill Lab in practical time and issued separately.
 - In ward time of CFRC, students should be relieved 15 min before time to travel back to LMDC.
 - Expository writing to be managed by Pharmacology, Pathology & Forensic Medicine.
 - SDL for 30 mins practical time.
 - SDL for 1 hour ward time
 - Every Friday SDL from 01:00 p.m. to 02:00 p.m. and Library time from 02:00 p.m. to 03:00 p.m.

DISTRIBUTION AND DURATION OF TEACHING ACTIVITIES-

Course Name: Block -08
Year: Year -03
Level of Students: Third Year MBBS
Duration of Block -08:

- **Breaks:** 4 weeks summer break from
- **Remedial classes:** In summer break
- **Block exam:** ??
-

	Name of Module	Duration (weeks)
1	Musculoskeletal & Locomotion – II	4
2	Infectious Disease	3
3	Neoplasia	1
4	Forensic Medicine – II	1
5	CIA/PERL/Expository	2
	TOTAL	11

TEACHING CONTACT HOURS

	Subject	Teaching Hours
1.	Microbiology	53
2.	Infection Control	8
3.	Bio-Safety	5
4.	Special Pathology	8
5.	General Pathology	15
6.	Pharmacology	34
7.	Forensic Medicine	20
8.	Orthopedics	14
9.	Surgery & Surgical Trauma	15
10.	Medicine & Rheumatology	34 (14 + 17)
11.	Gynecology	2
12.	Pediatrics	4
13.	Radiology	2
14.	Community Medicine	9
15.	Behavioral Sciences (Psychiatry)	3
16.	Biochemistry	2
17.	PERL	14

IMPLEMENTATION TORs

1. The time calculation for completion of modules and blocks **is based on 35 hours per week**. Total hours of teaching, learning and formative/summative **internal assessment to be completed in a year are 1200**.
2. The hours mentioned within each module are the mandatory minimum required. The rest of the hours are left to the discretion of the institution that can be used in teaching, learning and assessment as per decision of the institutional academic council.
3. The content and the intended learning outcomes written are mandatory, to be taught, at the level required, as the end year assessment will be based on these.
4. However, the level of cognition can be kept at a higher level by the institution.
5. The Table of Specifications provided will be used for the three papers of the first professional examination. The same table of specifications should be used for the respective three block exams for internal assessment.

DETAILED LECTURE SCHEDULE

BLOCK 8 (1-6-26 to 11-9-26)

PATHOLOGY LECTURES

From:1-6-26 to 12-9-26

Monday	8:00 – 8:45 am 12:00 – 12:45 pm
Tuesday	12:45 – 1:30 pm 2:15 – 3:00 pm
Wednesday	1:30 – 2:15 pm 2:15 – 3:00 pm
Thursday	8:00 – 8:45 am 1:30 – 2:15 pm
Friday	8:00 – 8:45 am 12:15 – 1:00 pm

PATHOLOGY PRACTICALS

Week	Dates	Day	
1 – 11	1-6-26 to 12-9-26	Monday – Thursday	Practical
1 – 11	1-6-26 to 12-9-26	Monday – Thursday	Tutorial

PHARMACOLOGY LECTURES

Week	Dates	Day
1 - 11	1-6-26 to 12-9-26	Monday 12:45 – 1:30 pm
		Tuesday 8:00 – 8:45 am
		Wednesday 12:45 – 1:30 pm
1 – 3	4-6-26 11-6-26 18-6-26	Thursday 2:15 – 3:00 pm

PHARMACOLOGY PRACTICALS/TUTORIAL

Week	Dates	Day	
1	1-6-26 to 4-6-26	Monday – Thursday	Practical
2	8-6-26 to 11-6-26	Monday – Thursday	Practical
11	7-9-26 to 10-9-26	Monday – Thursday	Tutorial

FORENSIC MEDICINE LECTURES

Week	Dates	Day
1 - 11	1-6-26 to 12-9-26	Wednesday 12:00 – 12:45 pm
		Thursday 12:00 – 12:45 pm
9, 10, 11	27-8-26 2-9-26 10-9-26	Thursday 2:15 – 3:00 pm

FORENSIC MEDICINE PRACTICAL/TUTORIAL

Week	Dates	Day	
1 – 11	1-6-26 to 12-9-26	Monday – Thursday	Practical 10:30 – 12:00
3, 4, 5	15-6-26 to 18-6-25 22-6-26 to 25-6-26* 29-6-26 to 2-7-26 *Ashura (23-24)	Monday – Thursday	Tutorial 10:30 – 12:00

PERL LECTURES

Week	Dates	Day	Time
4 - 8	25-6-26 2-7-26	Thursday	2:15 – 3:00 pm

	6-8-26		
	13-8-26		
	20-8-26		

SURGERY/Neurosurgery LECTURES

Week	Dates	Day	Time	Department
1 – 11	1-6-26 to 12-9-26	Thursday	12:45 – 1:30 pm	Surgery
1, 2, 3, 4	5-6-26 12-6-26 19-6-26 26-6-26	Friday	10:45 – 11:30 am	Neurosurgery

ORTHOPEDICS LECTURES

Week	Dates	Day	Time
1 - 11	1-6-26 to 12-9-26	Tuesday	12:00 – 12:45 pm
5,6,7,8	3-7-26 7-8-26 14-8-26* 21-8-26 *Independence Day Holiday	Friday	10:45 – 11:30 am

RADIOLOGY LECTURES

Week	Dates	Day	Time
9, 10, 11	28-8-26 4-9-26 11-9-26	Friday	10:45 – 11:30 am

RADIOLOGY PRACTICAL

Week	Dates	Day	Time
10	31-8-26 to 3-9-26	Monday - Thursday	10:30 – 12:00 SKILLS LAB

COMMUNITY MEDICINE LECTURES

Week	Dates	Day	Time
1 – 11	1-6-26 to 12-9-26	Monday	2:15 – 3:00 pm

INTERNAL MEDICINE / RHEUMATOLOGY LECTURES

Week	Dates	Day	Time	Department
1 – 11	1-6-26 to 12-9-26	Wednesday	8:00 – 8:45 am	Medicine/ Rheumatology
1 – 6	1-6-26 8-6-26 15-6-26 22-6-26 29-6-26 3-8-26	Monday	1:30 – 2;15 pm	Rheumatology
7 – 11	10-8-26 17-8-26 24-8-26 31-8-26 7-9-26	Monday	1:30 – 2;15 pm	Internal Medicine

ONCOLOGY / EVIDENCE BASED MEDICINE

Week	Dates	Day	Time	Department
1 – 5	2-6-26 9-6-26 16-6-26 23-6-26* 30-6-26 *Ashura Holiday	Tuesday	1:30 – 2;15 pm	Oncology
6, 7, 8	4-8-26 11-8-26 18-8-26	Tuesday	1:30 – 2;15 pm	Evidence Based Medicine

PEDIATRICS LECTURES

Week	Dates	Day	Time
9, 10, 11	25-8-26* 1-9-26 8-9-26 * Eid Milad-Un-Nabi Holiday	Tuesday	1:30 – 2:15 pm

BEHAVIOUR SCIENCE LECTURES

Week	Dates	Day	Time
1 – 5	5-6-26 12-6-26 19-6-26 26-6-26 3-7-26	Friday	11:30 – 12:15 pm

BIOCHEMISTRY LECTURES

Week	Dates	Day	Time
6, 7, 8	7-8-26 14-8-26* 21-8-26 *Independence Day Holiday	Friday	11:30 – 12:15 pm

GYNECOLOGY LECTURES

Week	Dates	Day	Time
9, 10, 11	28-8-26 4-9-26 11-9-26	Friday	11:30 – 12:15 pm

GRAND TUTORIAL DATES

FRIDAY 8:45 – 10:15

Weeks	Date	Department
1	5-6-26	Pathology
2	12-6-26	Forensic Medicine
3	19-6-26	Pharmacology
4	26-6-26	COMBINED TEST – 1
5	3-7-26	Pathology
6	7-8-26	Forensic Medicine
7	14-8-26	INDEPENDENCE DAY Holiday
8	21-8-26	COMBINED TEST – 2
9	28-8-26	Pharmacology
10	4-9-26	Forensic Medicine
11	11-9-26	COMBINED TEST – 3

Summer Break 06-07-26 to 03-08-26

CFRC SCHEDULE

(Monday – Thursday) 10:30 – 12:00

Weeks	Dates	Task/Skill	Department	Venue
6	3-8-26 to 6-8-26	CFRC3-038 Application/removal of plaster slab Apply and remove a plaster slab or back slab under supervision. CFRC3-039 Splint application Demonstrate proper technique for splint application and limb immobilization.	Orthopedics	Skills Lab
7	10-8-26 to 13-8-26	CFRC3-041 X-ray interpretation of bones and joints Interpret X-rays of long bones, joints, and spine to identify common fractures or dislocations.	Radiology	Skills Lab
8	17-8-26 to 20-8-26	CFRC3-043 Sputum Collection for TB Culture and Sensitivity Observe and narrate the procedure for collection, labeling, transport, and storage of sputum specimens for tuberculosis culture and sensitivity, highlighting aseptic technique and biosafety measures.	Pathology	Skills lab
9	24-8-26 to 27-8-26	CFRC3-045 Post-Exposure Prophylaxis Observe post-exposure management steps for needle-stick injuries or other occupational exposures. CFRC3-046 Protocol for Pus specimen collection Collection, Transport and Storage of Pus Specimen for Culture & Sensitivity	Pathology	Skills lab
10	31-8-26 to 3-9-26	MS2-Ra 001 Interpret imaging tests to evaluate musculoskeletal disorders. Xray, CT, Ultrasound, Bone Scan	Radiology Practical	Skills Lab

BATCHES :

Monday – E+F, Tuesday – G+H, Wednesday – A+B, Thursday – C+D

WARD TEACHING DETAIL

Task/Skill	Department	Venue
CFRC3-023 Oncological History Taking Take history from patients with suspected or confirmed malignancy, including presenting complaints, duration, and associated symptoms (e.g., weight loss, fatigue, bleeding). CFRC3-024 Self Examination of Breast Perform and demonstrate personal self examination of Breast as primary screening and prevention. CFRC3-026 Breast examination Perform a systematic breast examination by inspecting for asymmetry, skin dimpling, nipple retraction, discharge, ulceration, or peau d'orange.	Surgery	Ward
CFRC3-027 Examination of lump Inspect and palpate a lump, and describe its characteristics based on parameters: site, size, shape, surface, margin, consistency, tenderness, mobility, temperature, transillumination, fluctuation, pulsatility, and regional lymphadenopathy. CFRC3-028 Lymph node palpation Palpate and describe lymph nodes; cervical, axillary, epitrochlear, and inguinal for site, size, shape, consistency, tenderness, mobility, and matting. CFRC3-029 Biopsy procedure Observe the steps of biopsy procedure for cancer diagnosis. Identify indications and precautions.	Surgery	Ward
CFRC3-044 Interpretation of vital signs Measure and interpret vital signs (temperature, pulse, respiratory rate) in patients with acute febrile illness. CFRC3-042 Personal Protective Equipment (PPE) Demonstrate donning and doffing personal protective equipment (PPE) while managing infectious disease patients. CFRC3-030 Chemotherapy and Palliative Care Identify common chemotherapy-related adverse effects and initial management. Observe and assist in palliative and comfort care, including pain relief, nutritional support, and psychological care for terminal patients.	Medicine	Ward

Task/Skill	Department	Venue
CFRC3-031 Breaking bad news Observe a clinician delivering bad news to a patient diagnosed with malignancy, noting communication techniques and emotional handling. Practice the communication skill of breaking bad news to a patient diagnosed with malignancy. CFRC3-032 Effective counselling techniques Demonstrate empathy and effective communication when counseling oncology patients and their families.	Psychiatry/BS	Ward
CFRC3-033 Examination of hip joint Perform hip joint examination, including Trendelenburg test. CFRC3-034 Examination of knee joint Examine knee joint using ligament stability tests, meniscal tests, patellar tap, and bulge sign. CFRC3-035 Examination of foot Examine ankle and foot using Thompson test for Achilles tendon rupture. CFRC3-040 Steroid injection administration Observe and assist in joint aspiration or local steroid injection under aseptic conditions.	Orthopedics	Ward
CFRC3-036 Examination of hand Inspect patients' hands to identify and describe common deformities such as swan neck, boutonnière, and claw hand.	Orthopedics	Ward
CFRC3-037 Lumbar spine examination Demonstrate lumbar spine examination, including straight leg raise (SLR) and femoral stretch tests. Inspect and palpate for spinal deformities such as kyphosis, scoliosis, and lordosis	Orthopedics	Ward

MODULE AIMS AND OUTCOME

NEOPLASIA

Aim of this module is to provide MBBS students with a comprehensive understanding of neoplasia, preparing them to diagnose, treat, and prevent cancer effectively in their future clinical practice.

Outcome Objectives

1. Understand the basic concept of neoplasia, including benign and malignant tumors. •
2. Describe the molecular and cellular mechanisms of carcinogenesis, including the role of genetic mutations, oncogenes, tumor suppressor genes, and environmental factors
3. Understand the classification of tumors based on histology, site of origin, and grading/staging systems (TNM classification).
4. Explain the biological mechanisms of tumor growth, invasion, angiogenesis, and metastasis
5. Explain the role of the immune system in tumor recognition and immune evasion mechanisms by cancer cells.
6. Understand the general principles of cancer treatment, including surgery, chemotherapy, radiotherapy, immunotherapy, and targeted therapy.
7. Understand how to utilize diagnostic tools, such as imaging and pathology (biopsy), to identify and assess neoplasms.
8. Communicate effectively with patients and families about cancer diagnosis, treatment

Subjects Integrated In The Module

1. Behavioral Sciences
2. Biochemistry
3. Community Medicine
4. Oncology
5. Pathology
6. Pharmacology
7. Radiology
8. Surgery

INFECTIOUS DISEASE

AIM of this module is to equip students with essential knowledge of common infections, including their transmission, clinical presentation, diagnosis, and treatment, while emphasizing the importance of infection control and biosafety. This module provides the foundation for effective cancer diagnosis, management, and prevention, it guarantees that our future doctor is well prepared to address one of the most pressing healthcare challenges of our time.

Outcome Objectives

1. Demonstrate a systematic approach to assessing patients with suspected infections, including pyrexia of unknown origin and sepsis, while adhering to biosafety protocols to minimize the risk of infection transmission during patient evaluation.

2. Diagnose common viral infections such as measles, chickenpox, rubella, mumps, influenza, COVID-19, and dengue based on clinical features and diagnostic tools, applying biosafety measures during sample collection and handling.
3. Outline treatment options, including antiviral therapies, supportive care, and preventive measures (e.g., immunization) for viral infections.
4. Diagnose and manage gram-positive and gram-negative bacterial infections such as pharyngitis, pneumonia, enteric fever, and meningitis.
5. Describe the clinical features, diagnosis, and management of clostridial infections (botulism, gas gangrene) and sexually transmitted infections like syphilis.
6. Recognize the clinical features and management strategies for mycobacterial infections, with a focus on pulmonary and abdominal tuberculosis.
7. Identify and manage common fungal infections, including diagnosis, treatment, and preventive measures.
8. Explain the clinical features, investigations, and treatment of protozoal infections such as amoebiasis and helminthic infections like ascariasis and hookworm.
9. Describe the life cycle of helminths and explain how infections like hookworm contribute to anemia, along with prevention and treatment strategies.
10. Demonstrate a systematic approach to assessing patients with suspected infections, including pyrexia of unknown origin and sepsis, while adhering to biosafety protocols to minimize the risk of infection transmission during patient evaluation.
11. Diagnose common viral infections such as measles, chickenpox, rubella, mumps, influenza, COVID-19, and dengue based on clinical features and diagnostic tools, applying biosafety measures during sample collection and handling.
12. Outline treatment options, including antiviral therapies, supportive care, and preventive measures (e.g., immunization) for viral infections.
13. Diagnose and manage gram-positive and gram-negative bacterial infections such as pharyngitis, pneumonia, enteric fever, and meningitis.
14. Describe the clinical features, diagnosis, and management of clostridial infections (botulism, gas gangrene) and sexually transmitted infections like syphilis.
15. Recognize the clinical features and management strategies for mycobacterial infections, with a focus on pulmonary and abdominal tuberculosis.
16. Identify and manage common fungal infections, including diagnosis, treatment, and preventive measures.
17. Explain the clinical features, investigations, and treatment of protozoal infections such as amoebiasis and helminthic infections like ascariasis and hookworm.
18. Describe the life cycle of helminths and explain how infections like hookworm contribute to anemia, along with prevention and treatment strategies.

Subjects Integrated in the module

1. Bio-risk management (Biosafety)
2. Clinical Pharmacology & Therapeutics
3. Community Medicine
4. Gynecology
5. Infection Control
6. Internal Medicine

7. Microbiology (Pathology)
8. Paed's Medicine.
9. Surgery
10. Clinical Rotation (CR)

MUSKULOSKELETAL AND LOCOMOTION - II

Aim of Musculoskeletal & Locomotion II module is designed to deepen medical students' understanding of the musculoskeletal system, integrating knowledge from multiple disciplines to enhance the management of musculoskeletal disorders and injuries. This module emphasizes the interconnectedness of various fields, including orthopedics, surgical traumatology, forensic traumatology, and rheumatology, while also incorporating essential subjects such as pathology, pharmacology, community medicine, behavioral sciences, radiology, and evidence-based medicine.

Outcome Objectives

1. Explain the pathology and underlying mechanisms of common musculoskeletal disorders and injuries, including septic arthritis, osteomyelitis, fractures, and degenerative conditions.
2. Identify key features of various musculoskeletal disorders, including their clinical presentations, epidemiology, and impact on community health.
3. Perform thorough musculoskeletal examinations to assess joint mobility, strength, and functional capabilities.
4. Interpret relevant imaging studies (e.g., X-rays, MRI, CT scans) to aid in the diagnosis and management of musculoskeletal conditions.
5. Apply appropriate first aid measures for common musculoskeletal injuries, including immobilization techniques and pain management strategies.
6. Integrate knowledge from orthopedics, surgical traumatology, forensic traumatology, and rheumatology to develop comprehensive management plans for patients with musculoskeletal conditions.
7. Collaborate effectively with healthcare professionals from diverse specialties, including pathology, pharmacology, community medicine, behavioral sciences, and radiology, to enhance patient care.
8. Critically evaluate and apply current evidence-based guidelines and research findings to inform clinical decision-making in the management of musculoskeletal disorders.
9. Formulate treatment plans that incorporate pharmacological and non-pharmacological interventions based on best practices and individual patient needs.
10. Demonstrate empathy and effective communication skills when interacting with patients suffering from musculoskeletal disorders, ensuring a patient-centered approach to care.
11. Educate patients about their conditions, treatment options, and the importance of adherence to management plans for optimal outcomes.
12. Recognize the ethical considerations and challenges in the management of musculoskeletal disorders, including issues related to informed consent, patient autonomy, and resource allocation.
13. Exhibit professionalism in all interactions with patients, families, and healthcare team members, promoting a culture of respect and trust.

SUBJECTS INTEGRATED IN THE MODULE

1. Behavioral Sciences
2. Community Medicine
3. Evidence-Based Medicine
4. Forensic Traumatology
5. Orthopedics
6. Pathology
7. Pharmacology
8. Radiology
9. Rheumatology
10. Surgery/ Traumatology

FORENSIC MEDICINE & TOXICOLOGY - II

AIM of this module is to train 3rd year MBBS students to handle social issues like violence, and sexual exploitation, they can identify injuries and give an inference on their cause. It equips them with skills to provide accurate medical evaluation and contribute to justice.

Outcome Objectives

1. Explain the biomechanics of wound production
2. Determine the manner of injury
3. Describe the pathophysiology of injuries and their effects on the body
4. Define & Explain puberty, Impotence in males, frigidity in females, Sterility and medico legal importance.
5. Reproduce different sections of law relevant to sexual offenses.

Subjects Integrated in the Module

1. Gynae / Obs.
2. Pathology
3. Surgery

LEARNING OBJECTIVES:
MODULE NO.16 – Neoplasia

PATHOLOGY		
CODE	TOPIC	SPECIFIC LEARNING OUTCOMES
N-Pa-001	Introduction of neoplasia	Define neoplasia. Describe the nomenclature of tumors. Differentiate between benign and malignant tumors based on morphological and functional characteristics. Explain the epidemiology of cancer.
N-Pa-002	Neoplasia	Discuss the mechanisms of cell cycle dysregulation, apoptosis evasion, and angiogenesis in tumor progression. Explain the molecular basis of cancer. Describe the pathogenesis of neoplasia, including the role of genetic mutations, oncogenes, and tumor suppressor genes. Explain the process of metastasis. Differentiate between carcinomas, sarcomas, and lymphoreticular neoplasms.
N-Pa-003	Carcinogenic agents	Enlist the different types of carcinogenic agents. Describe the cellular mechanisms by which these carcinogenic agents induce neoplastic transformation.
N-Pa-004	Tumor markers	Describe the role of biopsy and histopathology in the diagnosis of neoplasia. Explain the application of immunohistochemistry (IHC) and special stains in tumor diagnosis. Discuss the role of molecular diagnostics and common tumor markers in cancer detection and classification.

N-Pa-005	Grading and Staging Invasion and metastasis	Explain the tumor grading and staging. Describe treatment strategies for neoplasia in relation to grade and stage. Differentiate the processes of invasion and metastasis. Enlist common tumor markers with their clinical relevance.
N-Pa-006	Molecular basis of cancer	Discuss the molecular basis of cancer.
N-Pa-007	Paraneoplastic syndrome	Define paraneoplastic syndrome. Describe the clinical features of common paraneoplastic syndromes. Correlate specific paraneoplastic syndromes with their corresponding neoplastic lesions.
BEHAVIOURAL SCIENCES		
CODE		SPECIFIC LEARNING OUTCOMES
	TOPIC	
N-BhS-001	Mental Health and Support in Cancer Patients	Discuss strategies to improve quality of life and provide holistic care for terminal cancer patients. Explain the principles of palliative care, including pain management and psychological support. Describe the importance of mental health support in the care of cancer patients.

BIOCHEMISTRY		
CODE		SPECIFIC LEARNING OUTCOMES
	TOPIC	
N-B-001	Molecular Alterations in Cancer	Discuss molecular alterations in oncogenes and tumor suppressor genes. Describe the role of epigenetic modifications in cancer initiation and progression.

RADIOLOGY		
CODE	SPECIFIC LEARNING OUTCOMES	
	TOPIC	
N-Ra-001	Radiology modalities	Explain the principles, applications, and limitations of common radiological imaging techniques: X-rays, ultrasound, CT scans, MRI, PET scans, and mammography.
N-Ra-002		Explain basic principles of ionizing and non-ionizing radiation. Describe radiation protection measures and legal/ethical considerations in medical imaging. Identify common hazards of imaging and strategies to minimize patient and staff exposure. Recognize the consequences of inappropriate or wasteful imaging.
N-Ra-003	Role of Imaging in Cancer Detection and Diagnosis	Identify radiological signs of cancer across different imaging modalities. Explain how imaging aids in the detection of primary tumors and metastases. Compare the sensitivity and specificity of various imaging techniques (e.g., CT vs. MRI for brain tumors) in cancer diagnosis.
N-Ra-004	Radiological Signs of Cancer Complications.	Identify radiological findings associated with complications like: i. Tumor obstruction ii. Bone metastasis iii. Brain metastasis iv. Vascular invasion or thrombosis

PHARMACOLOGY		
CODE	SPECIFIC LEARNING OUTCOMES	
	TOPIC	
N-Ph-001	Cell cycle	Explain the pathophysiology of the cell cycle.
		Describe how abnormalities in the cell cycle lead to oncogenesis.

N-Ph-002	Cell Cycle specific and non-specific anti-tumour agent	Explain the mechanism of action, adverse effects, indications, and drug interactions of various classes of cell cycle-specific and non-specific antitumour agents. Describe the drugs used for palliative therapy in various tumours. Discuss the drugs related to rehabilitation. Explain the drugs used during phases of radiotherapy, e.g., in tumour lysis syndrome. Describe the drugs used beside surgical resection of various tumours to treat complications. Explain the role of glucocorticoids as part of various anti-cancer cocktails.
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SURGERY		
CODE		SPECIFIC LEARNING OUTCOMES
	TOPIC	
N-S-001	Principles of oncologic surgery	Describe the basic principles and role of surgery in cancer management, including its use for curative and palliative purposes.

COMMUNITY MEDICINE		
CODE		SPECIFIC LEARNING OUTCOMES
	TOPIC	
N-CM-001	Cancer Screening	Define cancer screening and explain its importance. Describe the methods of screening for common cancers. Identify the major risk factors for cancer. Explain the preventive and control measures for cancer.

MEDICAL ONCOLOGY		
CODE		SPECIFIC LEARNING OUTCOMES
	TOPIC	
N-M-001	Presenting Complain	Describe the common presenting complain of cancer patients and the approach to clinical examination during cancer treatment. Identify important clinical signs in patients with cancer.

N-M-002	Risk factors	Identify the risk factors for cancer development. Discuss the role of environmental and genetic factors in cancer development.
N-M-003	Investigations	Discuss the role of various investigations in the diagnosis and management of cancer patients.
N-M-004	Oncological Emergencies & Paraneoplastic syndrome	Describe the common oncological emergencies. Explain the clinical implications of tumour metastasis. Discuss the types and features of paraneoplastic syndromes.
N-M-005	Therapeutics in Oncology	Discuss the role of surgery, radiotherapy, chemotherapy, and palliative care in cancer management.

PRACTICALS / LAB WORK		
PATHOLOGY		
CODE		SPECIFIC LEARNING OUTCOMES
	TOPIC	
N-Pa-008	Gross and Microscopic Identification of Benign and Malignant Tumours	Identify and differentiate between benign and malignant tumours based on gross and microscopic characteristics.
		Identify lipoma, leiomyoma, and fibroadenoma of the breast under the microscope and on gross specimens.
		Identify and differentiate the gross and microscopic features of carcinoma in situ, including ductal carcinoma in situ (DCIS) and Bowen's disease.
		Identify and describe the gross and microscopic features of adenocarcinoma.
		Identify and describe the gross and microscopic features of squamous cell carcinoma.

MODULE 17: INFECTIOUS DISEASE SYLLABUS:

MICROBIOLOGY		
CODE	TOTAL HOURS = 53	SPECIFIC LEARNING OUTCOMES
	TOPIC	
ID-Pa-001	Bacterial infectious agents	Explain the morphological, pathological and diagnostic aspects of Staphylococci, Streptococci, Clostridia, Bacillus, Corynebacterium, Listeria, and Gardnerella.
		Explain the morphological, pathological, and diagnostic aspects of <i>Neisseria gonorrhoeae</i> (gonococci), <i>Neisseria meningitidis</i> (meningococci), <i>Escherichia coli</i> , <i>Salmonella</i> , <i>Shigella</i> , <i>Vibrio</i> , <i>Proteus</i> , <i>Pseudomonas</i> , <i>Helicobacter pylori</i> , <i>Campylobacter</i> , spirochetes, <i>Mycobacterium</i> , <i>Chlamydia</i> , <i>Rickettsia</i> , and <i>Actinomyces</i> .
ID-Pa-002	Parasitic infectious agents	Explain the life cycles and diagnostic aspects of <i>Wuchereria bancrofti</i> , <i>Dracunculus medinensis</i> , <i>Loa loa</i> , <i>Taenia saginata</i> , <i>Taenia solium</i> , <i>Echinococcus granulosus</i> , <i>Diphyllobothrium latum</i> , <i>Hymenolepis nana</i> , <i>Giardia lamblia</i> , <i>Entamoeba histolytica</i> , <i>Plasmodium</i> species, <i>Leishmania</i> , <i>Toxoplasma gondii</i> , <i>Trypanosoma</i> species, <i>Schistosoma</i> , liver fluke, and <i>Naegleria fowleri</i> .
ID-Pa-003	Fungal infections	Explain the morphological, pathological, and diagnostic aspects of dermatophytes, <i>Malassezia furfur</i> , <i>Sporothrix schenckii</i> , and <i>Histoplasma capsulatum</i> .
		Explain the morphological, pathological, and diagnostic aspects of <i>Coccidioides</i> , <i>Paracoccidioides</i> , <i>Blastomyces</i> , <i>Candida</i> , <i>Mucor</i> , <i>Aspergillus</i> , and <i>Cryptococcus</i> .
ID-Pa-004	Viral infectious agents	Explain the morphological, pathological, and diagnostic aspects of adenoviruses, papillomaviruses, polyomaviruses, poxviruses, herpesviruses,
		hepadnaviruses, picornaviruses, hepeviruses, caliciviruses, and reoviruses.
		Explain the morphological, pathological, and diagnostic aspects of retroviruses, flaviviruses, togaviruses, coronaviruses, deltaviruses, paramyxoviruses, rhabdoviruses, orthomyxoviruses, and filoviruses.
ID-Pa-005	Microorganism s causing CNS infections	Enlist the organisms causing central nervous system (CNS) infections. Compare the CSF findings of viral and bacterial meningitis.

		Correlate the clinical features of CNS infections with the virulence factors, transmission, pathogenesis, and laboratory diagnosis of <i>Streptococcus pneumoniae</i> , <i>Streptococcus agalactiae</i> , <i>Neisseria meningitidis</i> , <i>Haemophilus influenzae</i> , <i>Escherichia coli</i> , <i>Listeria monocytogenes</i> , and <i>Mycobacterium tuberculosis</i> .
		Correlate the clinical aspects of CNS infections with the virulence factors, transmission, pathogenesis, and laboratory diagnosis of enteroviruses, mumps virus, herpes simplex virus, adenoviruses, <i>Cryptococcus neoformans</i> , rabies virus, <i>Plasmodium</i> species (malaria), <i>Toxoplasma gondii</i> , and <i>Naegleria fowleri</i> .
ID-Pa-006	Microorganism s causing GIT infections	Enlist organisms causing diarrhea & food poisoning.
		Correlate the clinical aspects of gastrointestinal (GIT) infections with the virulence factors, transmission, pathogenesis, and laboratory diagnosis of <i>Escherichia coli</i> , <i>Bacillus cereus</i> , <i>Salmonella</i> species, <i>Shigella</i> species, <i>Vibrio cholerae</i> and other <i>Vibrio</i> species, <i>Helicobacter pylori</i> , <i>Campylobacter jejuni</i> , <i>Clostridium</i> species, and <i>Entamoeba histolytica</i> .
		Correlate the clinical aspects of gastrointestinal (GIT) infections with the virulence factors, transmission, pathogenesis, and laboratory diagnosis of <i>Giardia lamblia</i> , <i>Cryptosporidium parvum</i> , <i>Diphyllobothrium latum</i> , <i>Hymenolepis nana</i> , <i>Ancylostoma duodenale</i> , <i>Necator americanus</i> , <i>Ascaris lumbricoides</i> , <i>Enterobius vermicularis</i> , <i>Trichuris trichiura</i> , <i>Trichinella spiralis</i> , poliovirus, hepatitis A and E viruses, norovirus, and rotavirus.
		Correlate clinically the following viruses via their virulence factors, transmission, pathogenesis, laboratory diagnosis in acute & chronic hepatitis; Hepatitis A, B, C, D, E, G
		Correlate clinically the virulence factors, transmission, pathogenesis, laboratory diagnosis of <i>Entamoeba</i> & <i>Echinococcus</i> in liver infections.
ID-Pa-007	Sexually transmitted infections	Correlate clinically the virulence factors, transmission, pathogenesis, and laboratory diagnosis of organisms causing genital tract infections, including <i>Neisseria gonorrhoeae</i> , <i>Treponema pallidum</i> , <i>Chlamydia trachomatis</i> , <i>Mycoplasma hominis</i> , <i>Candida albicans</i> , <i>Trichomonas vaginalis</i> , <i>Gardnerella vaginalis</i> , hepatitis B virus, HIV, and herpes simplex virus type II.
ID-Pa-008	Zoonotic infections	Describe and identify the key features, pathogenicity, and diagnostic aspects of the causative organisms of anthrax, plague, and selected bacterial zoonoses, including <i>Rickettsia</i> , <i>Leptospira</i> , <i>Brucella</i> , <i>Bacillus anthracis</i> , <i>Yersinia pestis</i> , <i>Francisella</i> , and <i>Bartonella</i> .
PHARMACOLOGY		

CODE	TOTAL HOURS = 18	SPECIFIC LEARNING OUTCOMES
	TOPIC	
ID-Ph-001	Cell Wall Inhibitors	Classify cell wall synthesis inhibitors. Discuss the mechanism of action of beta lactam antibiotics. Outline the mechanism of resistance to beta lactam antibiotics. Differentiate the clinical uses of beta lactam antibiotics. Enlist the major adverse effects of penicillin
		Discuss the mechanism of action and clinical significance of beta lactamase inhibitors.
		Classify cephalosporin generations. Describe their antibacterial spectrum and clinical uses. Enumerate the clinical uses and enlist major adverse effects of cephalosporin generations.
		Describe important features of the carbapenems and monobactam.
		Enumerate the membrane active antibiotics. Describe the mechanism of action of membrane, clinical uses, adverse effects of active antibiotics, Describe the mechanism of resistance of membrane active antibiotics.
		Describe antibacterial spectrum, mechanism of action, resistance, clinical uses, and toxicity of vancomycin. Describe clinical features of Redman Syndrome.
		Enlist antibacterial spectrum of vancomycin. Discuss mechanism of action, resistance, clinical uses, and toxicity of vancomycin. Describe the pharmacological significance of Redman Syndrome.
ID-Ph-002	Protein Synthesis Inhibitors	Explain briefly the steps of protein synthesis. Classify protein synthesis inhibitors. Discuss mechanism of action, resistance, antibacterial spectrum, clinical uses, adverse effects of tetracyclines. Classify macrolide Describe the mechanism of action and pharmacokinetics, antimicrobial spectrum, clinical uses, adverse effects of macrolides. Enlist mechanism of resistance and drug interactions of macrolides. Discuss mechanism of action, pharmacokinetics, clinical uses and adverse effects of clindamycin. Explain mechanism of action, resistance, antibacterial spectrum, pharmacokinetics, clinical uses and adverse effects of chloramphenicol. Describe pharmacological significance of Gray Baby Syndrome. Enlist major pharmacokinetic characteristics of streptogramins.

		Classify antifolate drugs. Classify sulfonamides. Describe mechanism of action, clinical uses, and adverse effects. Outline clinical features of Steven Johnsons Syndrome. Explain mechanism of actions, resistance, antibacterial spectrum, pharmacokinetics, clinical uses and adverse effects of trimethoprim and cotrimoxazole.
		Classify aminoglycosides. Describe the mechanism of action of aminoglycosides Describe the mechanism of resistance of aminoglycosides. Discuss the clinical uses, adverse effects of aminoglycosides.
		Classify Flouroquinolones. Describe the mechanism of action, resistance, clinical uses, and adverse effects of Flouroquinolones.
ID-Ph-003	Antituberculosis Therapy (ATT)	Classify antituberculosis drugs into 1st line and 2nd line agents with examples. Describe the characteristic pharmacodynamics and pharmacokinetic properties of Rifampin, Isoniazid, Ethambutol and Pyrazinamide. Discuss the adverse effects of 1st line antituberculosis drugs. Describe standard protocols (WHO recommendation) for management of newly diagnosed pulmonary tuberculosis, multidrug-resistant tuberculosis, latent tuberculosis. Describe how to monitor patients during antituberculosis drug therapy. Discuss 2nd line drugs used in treatment of multidrug resistant tuberculosis with their therapeutic and adverse effects.
ID-Ph-004	Drugs used in Leprosy	Enumerate the drugs for leprosy. Explain standard protocols (WHO recommendation) for management of leprosy. Describe their mechanism of action and adverse effects.
ID-Ph-005	Antiprotozoal Drugs	Classify antiprotozoal drugs. Classify antimalarial drugs. Describe the mechanism of action and mechanism of resistance, clinical uses, adverse effects of Antimalarial drugs. Discuss mechanism of action, pharmacokinetics, clinical uses and adverse effects of antiprotozoal drugs used for the treatment of amoebiasis, giardiasis, Leishmaniasis, and Trypanosomiasis.
ID-Ph-006	Anti-Helminthic Drugs	Classify anti-helminthic drugs. Discuss mechanisms of action, clinical uses, adverse effects of anthelmintic drugs.

ID-Ph-007	Antifungal Drugs Classification	Classify antifungal drugs. Discuss drugs used for systemic mycotic infections. Discuss mechanisms of action and resistance, pharmacokinetics, clinical uses, adverse effects of antifungal drugs.
ID-Ph-008	Antiviral Agents	Classify antiviral drugs. Discuss the main steps of viral replication that are targets for antiviral drugs. Describe drugs used in treatment of herpes simplex, varicella zoster, and cytomegalovirus virus infection with their pharmacological properties, mechanism of action and adverse effects. Explain the mechanism of action, pharmacodynamics and adverse effects of acyclovir, valacyclovir, and famciclovir. Classify antiretroviral agents. Discuss their mechanism of action, resistance, pharmacokinetics, clinical uses, and adverse effects. Classify drugs for treatment of Hepatitis B & C. Discuss their mechanism of action, resistance, pharmacokinetics, clinical uses, and adverse effects. Enumerate the drugs used to treat coronavirus Describe their mechanism of action and their adverse effects.

COMMUNITY MEDICINE		
CODE	TOTAL HOURS = 06	SPECIFIC LEARNING OUTCOMES
	TOPIC	
		Identify the risk factors of TB
		Analyze the local and global burden of Tuberculosis
ID-CM-001	Tuberculosis	Discuss prevention and control measures for Pulmonary TB in line with WHO strategies to control TB
		Explain significance of TB DOTS therapy for TB control
ID-CM-002	Hepatitis	Explain the global burden of hepatitis.
		Discuss the importance of awareness and screening of hepatitis.
		Explain effective prevention methods for each type of hepatitis.
		Discuss role of vaccination and public health initiatives
		for prevention and control of hepatitis. Describe the measures for prevention of vertical
		transmission (from mother to child) of Hepatitis B virus.

ID-CM-003	Polio	Describe the global polio eradication initiative.
		Discuss the historical and current global impact of
		poliomyelitis vaccination efforts.
		Evaluate the effectiveness of different poliovirus
		vaccines (OPV and IPV) and outline the vaccination
		schedules.
		Discuss community health strategies for poliovirus
		surveillance, outbreak response, and vaccination
		campaigns.
		Describe 'end game strategy' by WHO for polio
		eradication.
		Discuss the global distribution of measles, mumps,
		rubella, and their occurrence in different population
		groups.
		Describe the mode of transmission and the highly
		contagious nature of measles, mumps, and rubella.
ID-CM-004	Measles, Mumps, Rubella	Discuss the role of vaccination coverage and herd immunity in controlling outbreaks of measles, mumps, and rubella.
		Explain public health strategies for prevention and
		control of measles, mumps, and rubella including
		vaccination campaigns, surveillance, and outbreak
		response.
		Describe the goals and objectives of the Expanded
		Program of Immunization (EPI) in Pakistan.
		List the key vaccines included in the EPI schedule.
		Identify the strategies employed to implement the EPI
		in various communities.

ID-CM-005	EPI	Evaluate the role of healthcare workers, community leaders, and families in promoting immunization.
		Identify the common barriers to immunization coverage in Pakistan.
		Describe enhance vaccination uptake.
		Discuss recent developments in the EPI, Pakistan.
ID-CM-006	Diphtheria	Describe the role of DTP vaccination in preventing diphtheria.
		Identify the recommended vaccine schedule for children and adults. Analyze community-based vaccination campaigns.
		Analyze public awareness programs & school health initiatives to control its transmission.
ID-CM-007	Tetanus	Identify the global distribution of tetanus, including endemic areas and populations at higher risk. Describe the role of tetanus vaccination (Td or Tdap) in children and adults. Explain the importance of booster doses and timely immunization after potential exposure to contaminated wounds. Discuss the importance of seeking medical attention for injuries and educating the community about wound care.

INTERNAL MEDICINE		
CODE	TOTAL HOURS = 05	SPECIFIC LEARNING OUTCOMES
	TOPIC	
		Define pyrexia of unknown origin and state the diagnostic criteria.
ID-M-001	Pyrexia of unknown origin	Classify the major etiological groups of PUO. Describe briefly the initial clinical approach to a patient with PUO.
		Define sepsis and septic shock.
		Identify common causes of sepsis.
		Describe the key clinical signs and red flags of systemic infection.
ID-M-002	Sepsis	Outline basic laboratory and bedside investigations to diagnose sepsis.
		Plan the initial management and discuss preventive strategies.
		Define meningitis.
ID-M-003	Meningitis	Identify the common signs and symptoms of meningitis. Describe the clinical importance of meningeal signs (Kernig's and Brudzinski's).
		Outline the key investigations used in the diagnosis of meningitis.

ID-M-004	Respiratory tract infections	Diagnose and differentiate between upper and lower respiratory tract infections based on clinical presentation. Identify common causative organisms. Identify warning signs. Outline basic investigations to establish diagnosis and plan the management.
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GYNAECOLOGY		
CODE	TOTAL HOURS = 02	SPECIFIC LEARNING OUTCOMES
	TOPIC	
ID-GO-001	HPV	Describe the routes of transmission of Human Papillomavirus. Diagnose HPV infection based on clinical presentation. Explain the role of HPV vaccination, including recommended age groups, vaccine types, and schedules. Describe preventive strategies and predict the possible outcomes of HPV infection.
ID-GO-002	Pelvic inflammatory disease	Define pelvic inflammatory disease. Identify common causative organisms and risk factors. Diagnose PID based on clinical presentation. Outline the diagnostic approach and plan the management.

PEDIATRICS MEDICINE		
CODE	TOTAL HOURS = 02	SPECIFIC LEARNING OUTCOMES
	TOPIC	
ID-Pe-001	Fever in children	Define fever in children and differentiate it from hyperthermia. Identify common causes of fever in pediatric age group.
		Identify danger signs in a febrile child. Outline the steps of initial management and preventive measures including immunization and parental guidance.
ID-Pe-002	Diarrhea in children	Identify common infectious causes of diarrhea in children. Differentiate between mild, moderate, and severe dehydration in children based on clinical assessment findings. Outline the management plan and explain preventive measures.

SURGERY		
CODE	TOTAL HOURS = 02	SPECIFIC LEARNING OUTCOMES
	TOPIC	

ID-S-001	Surgical site infections	List the common risk factors that predispose to surgical site infections. Identify early clinical features suggestive of a surgical site infection. Outline steps of initial management and prevention strategies. Describe the potential outcomes of untreated or poorly managed SSI.
ID-S-002	Antibiotic prophylaxis	Define surgical antibiotic prophylaxis and its role in preventing infection. Explain the principles of timing, choice, and duration of prophylaxis. Recognize the consequences of inappropriate use. Discuss the role of prophylaxis as part of a wider infection control strategy.

INFECTION CONTROL		
CODE	TOTAL HOURS = 08	SPECIFIC LEARNING OUTCOMES
	TOPIC	
ID-IC-001	Transmission-based precautions	Differentiate between contact, droplet, and airborne precautions for infection prevention and control. Discuss appropriate isolation and patient-care practices to prevent the spread of infectious agents. Explain the importance of adherence to transmission-based precautions in reducing healthcare-associated infections.
	Cleaning, disinfection, and sterilization.	Distinguish between cleaning, disinfection, and sterilization. Describe the levels of disinfection and their relevance in clinical practice. Identify commonly used sterilization methods and their indications. Explain the importance of proper instrument handling to prevent hospital-acquired infections and surgical site infections. Discuss the consequences of inadequate cleaning and sterilization.
	Ventilator-associated pneumonia	Define ventilator-associated pneumonia (VAP). Identify the common risk factors for VAP in critically ill and mechanically ventilated patients. Describe the typical clinical features and warning signs suggestive of VAP. Outline the basic diagnostic approach to suspected VAP. Explain the principles of prevention and discuss the potential outcomes and consequences of VAP. Identify the role of the surgical/clinical team in early recognition and prevention of VAP.
	Hospital acquired infections	Define hospital-acquired infections and enlist its types. Describe the major risk factors for developing HAIs in hospitalized patients.
		Identify the warning signs and clinical features suggestive of HAIs. Explain the principles of prevention and control of HAIs. Discuss the consequences of HAIs for patients, healthcare providers, and the healthcare system. Relate the importance of rational antibiotic use in preventing antimicrobial resistance linked to HAIs. Outline the role of the surgical team in preventing HAIs.

	Safe work practices in healthcare settings	Discuss the safe work practices that reduce the risk of infection transmission in healthcare settings. Describe the safe disposal of sharps and waste. Explain aseptic technique and safe handling of invasive devices, in infection prevention.
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PATIENT SAFETY		
CODE	TOTAL HOURS = 05	SPECIFIC LEARNING OUTCOMES
	TOPIC	
ID-PS-001	Bio-risk management (BRM)	Define biosafety and biosafety levels according to WHO. Describe biosafety levels. Enlist the bio risk organisms in each of biosafety levels. Discuss the safety protocols of BSL 1. Discuss the safety protocols of BSL 2. Discuss the safety protocols of BSL 3. Discuss the safety protocols of BSL 4.
		Define biological waste. Categorize the biological wastes. Describe procedures for segregation, storage, treatment and disposal of biological waste.
		Define spill management. Discuss the steps for the management of a laboratory spill.
		Define personal protective equipment.
		Discuss the situations under which PPE should be
		used by the health care professionals.
		Discuss the SOP of transportation of biological samples
		Define bio risk management.
		Explain its relevance in healthcare and laboratory
		settings.
		Identify common biological hazards encountered in
		clinical, surgical, and laboratory environments.
		Describe key components of biorisk management.
		Outline the steps of proper specimen handling, safe
		waste disposal, and correct use of protective
		equipment in healthcare facilities.
		Explain the role of institutional policies, training, and
		emergency preparedness in ensuring effective biorisk management

PRACTICALS / LAB WORK	
MICROBIOLOGY	
CODE	SPECIFIC LEARNING OUTCOMES
ID-Pa-009	Identify the stained slides of Gram-positive organisms (Staphylococci, Streptococci, Streptococcus pneumoniae), Gram-negative organisms (Neisseria, Escherichia coli, Proteus), and acid-fast bacilli under microscope. <i>(If slides are not available, photographic slides should be used)</i>
ID-Pa-010	Interpret the culture sensitivity reports and antibiogram of gram positive and gram-negative bacteria.
ID-Pa-011	Identify and describe the growth characteristics of organisms on common culture media: Blood agar, Chocolate agar, Nutrient agar, TCBS, MacConkey agar, LJ medium, CLED agar, TSI, Urease, Citrate, blood culture bottles, and in anaerobic jars.
ID-Pa-012	Identify the ova, cysts, and trophozoites of protozoans, helminths, cestodes and schistosomes under microscope. Perform the urine complete examination.
ID-Pa-015	Perform and interpret the catalase test, coagulase test, and oxidase test.

PHARMACOLOGY	
ID-Ph-009	Prepare and dispense 4 doses of APC Powder. Prepare and dispense doses of carminative mixture. Write prescription for the following clinical conditions: Urinary Tract Infection, Acute Bacillary Dysentery, Malaria, Amoebiasis, Helminthic infections, Hepatitis B, and C, Dengue, COVID, Typhoid fever, Community acquired pneumonia and Pulmonary Tuberculosis

MODULE 18: MUSKULOSKELETAL SYSTEM

RHEUMATOLOGY		
CODE		SPECIFIC LEARNING OUTCOMES
MS2-Rh-001	Rheumatoid Arthritis	Explain the immunopathogenesis and underlying mechanisms leading to Rheumatoid Arthritis (RA). Diagnose RA based on characteristic clinical features. Differentiate RA from other causes of polyarthritis based on clinical and laboratory findings. Interpret relevant investigations. Discuss the diagnostic criteria for confirming RA. Outline the management plan.
MS2-Rh-002	Osteoarthritis (OA)	Identify risk factors for contributing to the development and progression of osteoarthritis. Describe the clinical features and typical pattern of joint involvement in OA. Differentiate OA from other types of arthritis based on clinical presentation and investigation. Interpret relevant diagnostic investigations. Outline management plan. Identify the complications and functional limitations associated with OA.
MS2-Rh-003	Crystal Arthritis (Gout/Pseudo gout)	Define crystal arthritis. Differentiate between gout and pseudogout. Describe the pathophysiology of monosodium urate and calcium pyrophosphate crystal deposition in joints. Identify risk factors and precipitating causes associated with gout and pseudogout. Describe clinical features and stages of gout. Interpret relevant laboratory and imaging findings. Discuss management strategies. Identify potential complications.
MS2-Rh-004	Systemic Inflammatory Vasculitis	Define systemic inflammatory vasculitis and classify its major types. Describe the pathophysiological mechanisms underlying systemic vasculitis. Identify common etiological factors and associations of systemic vasculitis. Identify the characteristic clinical features and organ involvement in different types of vasculitis. Discuss the diagnostic approach including relevant laboratory tests, imaging, and biopsy findings. Differentiate between major types of vasculitis on the basis of clinical and diagnostic features. Outline principles of management including

		pharmacological and supportive therapies. Discuss potential complications and long-term outcomes of systemic inflammatory vasculitis.
MS2-Rh-005	Ankylosing spondylitis.	Describe the genetic predisposition and immunopathogenesis of ankylosing spondylitis. Identify the cardinal clinical features of ankylosing spondylitis. Interpret the diagnostic criteria and characteristic radiological findings. Differentiate ankylosing spondylitis from mechanical back pain and other spondyloarthropathies. Outline treatment principles including pharmacological, physical therapy, and lifestyle modifications. Describe its complications, disability risks, and long-term prognosis.
MS2-Rh-006	Systemic Lupus Erythematosus (SLE)	Define SLE and describe its immunopathogenesis. List common risk factors and triggers (genetic, environmental, hormonal). Identify the clinical manifestations involving skin, joints, kidneys, hematological and nervous systems. Describe diagnostic criteria and relevant laboratory investigations. Outline the principles of management including pharmacological and supportive measures.
MS2-Rh-007	Systemic sclerosis	Define systemic sclerosis and classify its major types. Describe the pathophysiological changes in it. Identify the key clinical features including skin thickening, Raynaud's phenomenon, and internal organ involvement.
		Identify diagnostic tests and autoantibodies associated with systemic sclerosis. Outline the management strategies including symptomatic treatment and prevention of complications.
MS2-Rh-008	Polymyositis and dermatomyositis	Define polymyositis and dermatomyositis, highlighting their autoimmune basis. Identify characteristic clinical features. Discuss laboratory and diagnostic investigations. Outline the management approach including immunosuppressive therapy and physiotherapy.

MS2-Rh-009	Sjögren's syndrome	Define Sjögren's syndrome and differentiate between primary and secondary forms. Describe the pathophysiology involving lymphocytic infiltration of exocrine glands. Recognize typical clinical features including xerostomia, keratoconjunctivitis sicca, and systemic manifestations. Discuss relevant diagnostic investigations (Schirmer's test, salivary gland biopsy, autoantibodies). Outline management strategies including symptomatic relief and immunosuppression when indicated.
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ORTHOPEDICS & TRAUMA		
CODE		SPECIFIC LEARNING OUTCOMES
	TOPIC	
MS2-Orth-001	Fracture Classification and Healing	Explain the classification of fractures using the AO system. Describe principles of fracture healing. Differentiate between complete and incomplete fractures.
MS2-Orth-002	Pediatric Fractures	Discuss pediatric fractures and their management. Explain Salter-Harris classification for growth plate injuries.
MS2-Orth-003	Osteoporotic Fractures	Define osteoporotic fractures and their clinical features. Identify common sites of osteoporotic fractures. Discuss risk factors for osteoporosis.
MS2-Orth-004	Pathological Fractures	Define pathological fractures and differentiate from traumatic fractures. Identify causes of pathological fractures. Describe diagnostic approaches for pathological fractures. Explain management options for pathological fractures.
MS2-Orth-005	Sports Injuries	Classify sports injuries and their management. Describe common sports injuries in upper and lower limbs. Discuss pathophysiology of muscle strains and ligament sprains. Explain biomechanics of gait and malalignment injuries. Outline injury prevention strategies in sports. Analyze rehabilitation processes for sports injuries. Discuss use of assistive devices in rehabilitation. Explain psychological impact of sports injuries. Describe nutritional roles in recovery from sports injuries. Outline surgical intervention in severe sports injuries.

MS2-Orth-006	Achondroplasia	Define achondroplasia as the most common skeletal dysplasia and describe its effect on bone growth. Identify the characteristic skeletal features. Identify musculoskeletal complications due to achondroplasia. Interpret characteristic radiographic findings relevant to diagnosis and follow-up. Outline management principles. Discuss the role of surgical and non-surgical interventions in improving function and quality of life.
MS2-Orth-007	Scoliosis	Define scoliosis and its types. Identify clinical features and screening methods for scoliosis. Discuss treatment options for scoliosis. Describe multidisciplinary approach in managing scoliosis.
MS2-Orth-008	Osteogenesis Imperfecta	Define osteogenesis imperfecta and describe its genetic basis and abnormal collagen formation. Identify the key skeletal manifestations. Identify associated musculoskeletal complication. Interpret characteristic radiological features of OI used for diagnosis and monitoring. Discuss the principles of management.
MS2-Orth-009	Marfan syndrome	Define Marfan syndrome and describe its genetic basis. Identify the characteristic skeletal features. Identify orthopedic complications. Interpret relevant clinical and radiological findings used in diagnosing skeletal involvement. Outline principles of management.
MS2-Orth-010	Septic Arthritis	Define septic arthritis and identify its etiological agent. Explain the pathogenesis of joint infection and subsequent cartilage destruction. Identify the clinical features of acute septic arthritis in children and adults. Identify key diagnostic investigations. Outline the management plan. Discuss its potential complications.
MS2-Orth-011	Clubfoot (Congenital Talipes Equinovarus – CTEV)	Define clubfoot and describe its anatomical deformities. Explain the embryological and etiological basis of clubfoot. Describe the clinical presentation and methods of clinical assessment. Outline the principles of management with emphasis on non-surgical correction. Describe indications for surgical intervention and explain operative correction.
		Discuss prognosis and importance of early detection and compliance with treatment.

MS2-Orth-012	Osteomyelitis	Differentiate acute, subacute, and chronic forms of osteomyelitis. Identify its risk factors and describe its pathophysiology. Describe radiological features of osteomyelitis. Identify typical clinical features of osteomyelitis. Outline management strategies and discuss complications.
MS2-Orth-013	Early Assessment and Management of Severe Trauma	Define severe trauma and recognize its impact on morbidity and mortality. Describe the concept of the “golden hour” and its relevance in trauma care. Apply the principles of primary survey (ABCDE) for rapid assessment and stabilization. Identify immediate life-threatening conditions requiring urgent intervention. Outline the steps of secondary survey for detailed evaluation after initial stabilization. Discuss the role of resuscitation, monitoring, and adjunct investigations in trauma management. List the indications for urgent surgical referral and definitive management.
MS2-Orth-014	Traumatic Brain Injury	Define traumatic brain injury and classify it by severity and type. Describe the pathophysiology of primary and secondary brain injury. Identify the clinical features of TBI, including altered consciousness, focal neurological deficits, and signs of raised intracranial pressure. Apply the principles of initial assessment using ATLS framework with emphasis on Glasgow Coma Scale. Identify red flag signs that indicate urgent neurosurgical referral. Discuss the role of imaging in diagnosis and follow-up. Outline plan for acute management and identify potential complications.
MS2-Orth-015	Neck and spine trauma	Classify spinal and cervical spine trauma injuries by mechanism and level. Describe the pathophysiology of spinal cord injury, including primary and secondary injury processes. Identify the clinical features of cervical and thoracolumbar spine trauma. Apply the principles of initial assessment and stabilization. Identify key radiological investigations for diagnosis and assessment of stability. Plan initial management and enumerate

		complications of spine trauma. Identify indications for surgical versus conservative management of spinal injuries.
MS2-Orth-016	Maxillofacial trauma	Classify common facial fractures. Describe key clinical features and complications, including airway compromise. Explain initial assessment and stabilization in facial injuries.
		Identify appropriate diagnostic investigations, especially imaging. Outline plan for definitive management and multidisciplinary care.
MS2-Orth-017	Thoracic trauma	Define thoracic trauma and classify it into blunt and penetrating types. Describe life-threatening chest injuries including tension pneumothorax, massive hemothorax, flail chest, cardiac tamponade. Apply the principles of initial assessment and stabilization using the ATLS approach. Identify key diagnostic tools for evaluation. Outline principles of acute management
MS2-Orth-018	Abdominal trauma	Classify abdominal trauma based on mechanism and organ involvement. Identify the clinical presentation and red flag signs indicating severe intra-abdominal injury. Discuss the role of bedside and imaging investigations in diagnosis. Outline the early surgical and supportive management plan to prevent morbidity and mortality.
MS2-Orth-019	Extremity trauma	Describe the common types and mechanisms of extremity trauma. Identify life- and limb-threatening conditions. Apply principles of initial assessment and stabilization. Outline indications for urgent referral to orthopedic/trauma specialists. Educate patients and attendants regarding basic care, need for follow-up, and complications.

PATHOLOGY, PHARMACOLOGY, COMMUNITY MEDICINE		
CODE		SPECIFIC LEARNING OUTCOMES
	TOPIC	
MS2-Pa-001	MSK Diseases & Tumors	Describe the morphological features of acute and chronic osteomyelitis.
		Discuss the etiology, pathophysiology, morphology, clinical manifestations and diagnostic criteria of Rheumatoid Arthritis (RA)

		Discuss the etiology, pathophysiology, morphology, clinical manifestations and diagnostic criteria of Osteoarthritis (OA)
		Discuss the etiology, pathophysiology, morphology, clinical manifestations and diagnostic criteria of Crystal Arthritis (Gout/Pseudogout).
		Describe the pathophysiology and morphology of Paget disease
		Classify bone, cartilaginous and soft tumors.
		Discuss the etiology, pathophysiology, morphology, clinical manifestations and radiological findings of bone, cartilaginous and soft tumors.
MS2-Ph-001	Anti-gout drugs	Classify the drugs used in acute and chronic gout. Describe key pharmacokinetic parameters of commonly used anti-gout drugs. Explain the mechanism of action, clinical uses, and important adverse effects of NSAIDs, colchicine, corticosteroids, xanthine oxidase inhibitors, uricosurics, and uricase in the management of acute and chronic gout. Recognize major toxicities and contraindications of anti-gout drugs
MS2-Ph-002	Drugs for Rheumatoid arthritis	Classify the drugs used in RA (NSAIDs, corticosteroids, DMARDs, biologics, targeted therapies, opioids) Describe key pharmacokinetic aspects of major drug groups. Explain the mechanism of action of NSAIDs, corticosteroids, conventional DMARDs, biologics, and JAK inhibitors in context of Rheumatoid arthritis. Discuss the clinical role of major drug categories in the management of rheumatoid arthritis and other rheumatologic disorders. Identify important adverse effects, major toxicities, precautions, and contraindications of RA drugs
MS2-CM-001	School Ergonomics and Student Health	Define ergonomics and explain its relevance in the school environment. Identify common ergonomic risk factors in schools. Recognize health problems associated with poor school ergonomics. Explain methods to assess ergonomic hazards in the school setting. Propose preventive strategies and ergonomic interventions.

PRACTICAL / LAB WORK		
PATHOLOGY, PHARMACOLOGY, RADIOLOGY		
CODE	TOPIC	SPECIFIC LEARNING OUTCOMES
MS2-Pa-002	Test Interpretation	Interpret various investigations related to joint diseases including: i. Complete Blood Count (CBC) ii. Erythrocyte Sedimentation rate (ESR) iii. C-reactive protein (CRP) iv. Creatine Kinase (CK) v. Rheumatoid factor (RF) vi. Antinuclear antibody (ANA) vii. Anti-Neutrophil Cytoplasmic Antibodies (ANCA) viii. Serum uric acid level
		Identify morphological features of Osteomyelitis (Pictorial/slide).
		Identify morphological features of Osteogenic sarcoma (Pictorial/slide). Identify morphological features of lipoma and hemangioma.
		Interpret related cultures for diagnosis for infections
MS2-Ra-001		Interpret imaging tests to evaluate various musculoskeletal disorders including: i. X-rays ii. Computed tomography (CT) Scans iii. Ultrasound Scans iv. Bone Scans
MS2-Ph-003	MSK & locomotion	Analyze and interpret different drugs (Neuromuscular blockers) on animals through online videos / simulations / graphs / practical performance.
		Analyze and interpret different concentrations of drugs (atracurium or skeletal muscle relaxant) on Frog's rectus muscle through online videos / simulations / graphs / practical performance.
		Prescription writing for the following clinical conditions: Rheumatoid Arthritis, Gout (acute and chronic), Osteoarthritis

MODULE 19 - FORENSIC MEDICINE & TOXICOLOGY – II

THEORY		
TRAUMATOLOGY		
CODE		SPECIFIC LEARNING OUTCOMES
	TOPIC	
For2-Tr-001	Injury	Define injury, wound and hurt. Classify injuries on the basis of causative weapons. Classify injuries as per Qisas and Diyyat Act.
For2-Tr-002	Wound production	Explain mechanism of wound production with reference to subject, object and contact.
For2-Tr-003	Abrasion	Define and classify abrasions. Describe mechanism of production of abrasions. Differentiate between different types of abrasions. Explain medicolegal importance of abrasions.
For2-Tr-004	Bruise	Define and classify bruises. Explain pathophysiology of color changes in the bruise. Assess the age of wound from color changes of wound. Distinguish between bruise, artificial bruise and hypostasis. Explain medico legal importance of bruises.
For2-Tr-005	Laceration	Define and classify lacerated wound. Differentiate between a lacerated wound and incised wound on gross examination. Explain its medico legal importance.
For2-Tr-006	Fractures	Describe different types of fractures of bones. Interpret the age of fractures from radiological findings. Illustrate stages of healing of fractures of bones. Interpret and document the nature of the fracture in the injury certificate as per Qisas and Diyat act. Explain medico-legal importance of fracture of bone/tooth.
For2-Tr-007	Strangulation / Hanging	Differentiate between ligature marks due to hanging and strangulation. Describe nonspecific and specific autopsy findings of hanging. Explain the process to remove and preserve the ligature material used.
For2-Tr-008	Throttling	Define throttling. Identify external and internal autopsy findings of death due to throttling. Determine the position of assailant and victim from external marks on neck.
For2-Tr-009	Asphyxia	Define smothering, gagging, choking, and traumatic asphyxia. Explain the mechanisms and sequence of events leading to death due to asphyxia. Enumerate common causes and situations where asphyxia occur. Identify characteristic external findings and typical internal autopsy findings.

		Differentiate between smothering, gagging, choking, and other forms of mechanical asphyxia based on postmortem findings.
SPECIAL TRAUMATOLOGY		
CODE		SPECIFIC LEARNING OUTCOMES
	TOPIC	
For2-Tr-010	Pathophysiology of injuries	Describe the pathophysiology of injuries. Explain effects of injuries on the body.
For2-Tr-011	Timing of injury / ante mortem, post mortem nature of wound	Describe methods to determine age of wound. Describe different methods of determination of ante mortem/post mortem nature (vital reaction) of a wound.
For2-Tr-012	Ewing's postulates	Link sequelae of trauma to its original cause and search for the relationship of sequelae to pre-existing disease.
For2-Tr-013	Battered baby syndrome	Explain battered baby or Caffey syndrome from a medicolegal point of view. Diagnose a case of a battered baby on the basis of different injuries sustained.
For2-Tr-014	Torture	Define torture. Explain reasons, types and complications of torture. Describe medicolegal aspects of torture.
For2-Tr-015	Medicolegal Certification of injury	Examine and prepare medico-legal report of an injured person with different etiologies in a simulated/supervised environment.
For2-Tr-016	Internal ballistics	Define fire arms and ballistics. Classify fire arm. Explain different parts of fire arm weapons. Describe ammunition used in firearms. Explain chain of events of firing.
For2-Tr-017	External Ballistics	Explain the factors affecting the trajectory of bullet after its exit from the muzzle end.
For2-Tr-018	Terminal Ballistics	Interpret wound complex produced by a rifled and non-rifled weapons at different ranges. Calculate the distance of fire from the wound examination. Differentiate between entry and exit wounds of fire arms. Explain medicolegal importance of fire arm injuries.
For2-Tr-019	Gun powders	Identify gun powders and ammunition used through different methods.
For2-Tr-020	Blast injuries	Describe mechanics of blast injuries. Explain effects of blast injuries on human body. Describe medicolegal aspects of blast injuries.
For2-Tr-021	Regional Injuries	Explain mechanism of injuries to soft and bony tissues of head, neck, chest, abdomen and limbs.
		Describe effects of injuries to head, neck, chest, abdomen and limbs. Describe medicolegal aspects of regional injuries.
For2-Tr-022	Transportation Injuries	Classify transport accidents. Describe different factors involved in the causation of RTA. Classify and describe different patterns of injuries sustained by pedestrians and occupants of the

		vehicles. Explain medicolegal significance and prevention of RTA.
For2-Tr-023	Thermal Injuries / Burn	Define thermal injuries. Classify thermal injuries-flame burns and scalds. Describe degree of burns according to different classifications. Calculate percentage of burnt surface area and their effects on the body. Describe management of the burnt patient clinically. Appraise causes of death due to burn. Determine age of burn and ante-mortem/post mortem nature of burn. Describe autopsy findings and medico legal importance of burns.
For2-Tr-024	Electrocution Lightening	Classify electrical injuries injuries-low voltage and high voltage. Explain factors affecting electrocution. Describe mechanism and causes of death in electrocution. Interpret different patterns of electrical injuries due to low and high voltage current and lightening. Describe autopsy findings and medico legal importance of electrocution
For2-Tr-025	Hyper / Hypothermia/ Starvation	Explain deaths from exposure to high environmental temperature like heat stroke, heat cramps and heat exhaustion.
		Explain deaths from exposure to low environmental temperature like frost bite, trench foot, immersion foot. Describe their mechanism of development, autopsy findings and medicolegal importance. Interpret starvation, causes, clinical findings, autopsy findings and medicolegal importance.
For2-Tr-026	Chemical Burns	Describe chemical burns. Explain mechanism of development of chemical burns. Describe autopsy findings. Summarize the chemical buns as per qisas and diyat act. Describe medicolegal importance of chemical burns.
For2-Tr-027	Drowning	Define and classify drowning. Explain mechanism of death in wet and dry drowning. Describe external and internal autopsy findings in wet and dry drowning. Interpret biochemical and diatom tests. Emphasize medicolegal importance of drowning.
MEDICOLEGAL ASPECTS OF SEXUAL OFFENCES		
CODE		SPECIFIC LEARNING OUTCOMES
	TOPIC	
For2-Se-001	Impotency frigidity and sterility	Define terms: impotency, frigidity in females, and sterility. · Explain their causes. · Describe their medico legal importance.
For2-Se-002	Virginity and defloration	Explain signs of virginity and defloration. Interpret medico legal importance.

For2-Se-003	Pregnancy	Describe presumptive, probable and sure signs of pregnancy in living and dead.
For2-Se-004	Delivery	Explain recent and old signs of delivery in living and dead.
For2-Se-005	Abortion/Miscarriage	Define and classify abortions. Explain motives for criminal abortions.
		Reproduce different methods of inducing criminal abortion. Outline complications and causes of death due to abortion. Describe findings in living and dead after abortion. Examine the aborted material to assess the age and viability. Apply sections of Qisas and Diyat act relevant to abortion.
For2-Se-006	Sexual Offences	Classify sexual offenses and explain their medico legal importance. Describe sexual perversions and identify the traits. Explain different sections of law relevant to sexual offenses. Write a report on medico-legal examination of a victim of sexual assault. Describe the medico-legal examination in unnatural sexual offence. Outline collection, preservation and dispatch of specimens in cases of sexual assaults to chemical examiner. Interpret psycho-pathology of assailant. Interpret Psycho-pathology of victim. Plan initial management & referral of victim.
For2-Se-007	Infanticide	Define infanticide. Describe status of infants-still born/dead born/live born. Describe autopsy findings to determine whether live born or not, cause of death, age of new born and others.

LEARNING OBJECTIVES - PRACTICAL/LAB WORK

- Class will be divided into 8 batches (A – H). These batches will be used for clinical rotation and Practical work.
- Practicals will be conducted from Monday to Thursday
- For practicals, batches will be distributed as follows
 - Pathology lab
 - Pharma lab
 - Forensic lab
 - Pathology Tutorial

	Code	Pathology Practical Topics
	MS2-Pa 002	Interpret various investigations related to joint diseases including: - Complete Blood Count (CBC) - Erythrocyte Sedimentation rate (ESR) - C-reactive protein (CRP) - Creatine Kinase (CK) v. Rheumatoid factor (RF) - Antinuclear antibody (ANA) - Anti-Neutrophil Cytoplasmic Antibodies (ANCA) - Serum uric acid level Pathology
	MS2-Pa 003	Interpret related cultures for diagnosis for infections Microbiology, Pathology
	ID-Pa 011	Identify the stained slides* of gram positive and gram negative bacteria (staphylococci, streptococci, Neisseria, Strept. pneumoniae, E. coli, proteus and acid fast bacilli). (*if slides will not be available, photographic slides should be used)
	ID-Pa 012	Interpret the culture sensitivity reports and antibiogram of gram positive and gram-negative bacteria.
		ID-Pa 013 Identify and describe the organisms that grow on the Blood agar, Chocolate agar, nutrient agar, TCBS, MacConkey media, LJ media. CLED, TSI, UREASE, CITRATE. blood culture bottle and anaerobic jar
	ID-Pa 014	Identify the ova, cysts and trophozoites of protozoans, helminths, cestodes and schistosomes.
	ID-Pa 015	Perform and interpret the catalase test, coagulase test and oxidase test.
	N-Pa-008	Morphological features of Benign and Malignant tumours (Gross and Microscopic features) Pathology Nomenclature, Difference between benign and malignant tumours Common Benign tumours (Lipoma, Leiomyoma, Fibroadenoma of Breast) Carcinoma in situ (DCIS & Bowens disease) Common Malignant tumours (Adenocarcinoma, Squamous cell carcinoma)
	N-Pa-009	Tumour grade and stage in malignant tumours Adenocarcinoma / Squamous cell carcinoma (including tumour invasion and metastasis)

Code	Forensic Medicine Practical Topic
For2-Tr 026	Recognize and identify common conventional blunt objects, sharp objects, firearms, electrical instruments and chemicals and their medico- legal aspects. (lathi, knife, axe, gandasa, sickle, dagger, razor
For2-Tr 026	Recognize and identify common conventional blunt objects, sharp objects, firearms, electrical instruments and chemicals and their medico- legal aspects. (lathi, knife, axe, gandasa, sickle, dagger, razor Forensic medicine Mechanical injuries 192 & stick, fire arms
For2-Tr 027 For2-Tr 028 For2-Tr 029	Differentiate between different types of abrasions Assess the age of a bruise on the basis of color changes. Differentiate between a bruise and post mortem staining Differentiate between a lacerated and incised wound on naked eye examination
For2-Tr 030	Assess the age of fracture by recognition of healing stages on x rays Apply different sections of Qisas and Diyat Act from examination of fractures on x rays
For2-Tr 031 For2-Tr 032	Identify hurt and apply relevant section of Qisas and Diyat Act for: i. Itlaf-udw ii. Itlaf -slahiat-udw iii. Shajja iv. Jurh Hurt / Qisas N Diyat Act Demonstrate appropriate examination of an injured person and issue the report in a simulated/supervised environment correctly
For2-Tr 033	Identify different types of fire arm weapons Identify different parts of fire arm Identify different parts of ammunition. Determine the type of fire arm weapon from the examination of fire arm wound complex. Calculate the firing range of the weapon from appearance of wound. Identify characteristics of entry and exit fire arm wounds.
For2-Tr 034 For2-Tr 037	Differentiate between dry burn and wet burn. Calculate burnt surface area Determine age and nature of burn on naked eye examination Recognize different patterns of Chemical burns over body. Apply relevant sections of Qisas And Diyat Act.
For2-Tr 035 For2-Tr 036 For2-Tr 036	Recognize between entry and exit wounds of electric currents on body. Describe different pathways of electric currents through human body. Recognize different patterns of electrical injuries. Recognize different patterns of effects of high/low environmental temperature on the body. Appreciate clinical and autopsy findings of death due to starvation
For2-Tr 038 For2-Tr 039	Identify different kinds of ligature materials used for hanging Recognize different types of hanging Appreciate nonspecific and specific autopsy findings of hanging. Know how to remove and preserve the ligature material used.

	Differentiate between ligature marks due to hanging and strangulation. Appreciate nonspecific and specific autopsy findings of hanging. Know how to remove and preserve the ligature material used.
For2-Tr 026	Recognize and identify common conventional blunt objects, sharp objects, firearms, electrical instruments and chemicals and their medico- legal aspects. (lathi, knife, axe, gandasa, sickle, dagger, razor Forensic medicine Mechanical injuries 192 & stick, fire arms
For2-Tr 027 For2-Tr 028 For2-Tr 029	Differentiate between different types of abrasions Abrasion Assess the age of a bruise on the basis of color changes. Differentiate between a bruise and post mortem staining Bruise Differentiate between a lacerated and incised wound on naked eye examination
For2-Tr 030	Assess the age of fracture by recognition of healing stages on x rays Apply different sections of Qisas and Diyat Act from examination of fractures on x rays
For2-Tr 031 For2-Tr 032	Identify hurt and apply relevant section of Qisas and Diyat Act for: i. Itlaf-udw ii. Itlaf -slahiat-udw iii. Shajja iv. Jurh Hurt / Qisas N Diyat Act Demonstrate appropriate examination of an injured person and issue the report in a simulated/supervised environment correctly
For2-Tr 033	Identify different types of fire arm weapons Identify different parts of fire arm weapons Identify different parts of ammunition. Firearm Determine the type of fire arm weapon from the examination of fire arm wound complex. Calculate the firing range of the weapon from appearance of wound. Identify characteristics of entry and exit fire arm wounds.
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For2-Tr 035 For2-Tr 036	Recognize between entry and exit wounds of electric currents on body. Describe different pathways of electric currents through human body. Recognize different patterns of electrical injuries. Recognize different patterns of effects of high/low environmental temperature on the body. Appreciate clinical and autopsy findings of death due to starvation
For2-Tr 040 For2-Tr 041	Appreciate external and internal autopsy findings of death due to throttling. Determine the position of assailant and victim from external marks on neck Appreciate external and internal autopsy findings of death due to smothering, choking, gagging and traumatic asphyxia
For2-Tr 042	Appreciate external and internal autopsy findings of death due to drowning.
For2 Se-008	Replicate Medico-legal examination of a victim of sexual assault and issue report.

	Demonstrate Medico-legal examination of the alleged accused of rape and issue report. Copy the Medico-legal examination in unnatural sexual offence. Perform collection, preservation and dispatch of specimens in cases of sexual assaults to chemical examiner.
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Code	Pharmacology Practical Topic
MS2-Ph 002	Analysis and interpretation of Drugs (atracurium or skeletal muscle relaxant) on animal through online videos / simulations / graphs / practical performance.
	Analysis and interpretation of different Concentrations of Drugs (atracurium or skeletal muscle relaxant) on Frog's rectus muscle through online videos / simulations / graphs / practical performance.

Code	Radiology Practical
MS2-Ra 001	Interpret imaging tests to evaluate various musculoskeletal disorders including: - X-rays - Computed tomography (CT) Scans - Ultrasound Scans - Bone Scans

TEACHING ACTIVITIES OPERATIONAL DEFINITIONS

Large Group Interactive Session (LGIS)

Lecture format is the most widely used approach to teaching especially in a large class size with average attention span of 20-30 mins. Interactive lecturing involves a two-way interaction between the presenter and the participants. Interactive methods like brainstorming, buzz group, simulation, role play, and clinical cases can be used.

Significance of its usage

- Relaxed environment, diverse opinions, active involvement
- Increase attention and motivation.
- Independence and group skills.
- Cost effective.
- Suitable for taking advantage of available audiovisual technologies.

Problem based learning (PBL)

It is an instructional student-centered approach in which students work in small groups on a health problem, identifying their own educational needs and being responsible for the acquisition of the knowledge required to understand the scenario.

Significance of its usage

- Teamwork
- Critical evaluation of literature
- Self-directed learning and use of resources
- Presentation skills
- Leadership
- Respect for colleagues' views

Case based learning (CBL)

It is an inquiry structured learning experience utilizing live or simulated patient cases to solve, or examine a clinical problem, with the guidance of a teacher and stated learning objectives.

Significance of its usage

- Induce a deeper level of learning by inculcating critical thinking skills.
- Flexibility on use of case
- Helps students acquire insightful information.
- Stay abreast with novel advancements in healthcare

Tutorials

Tutorial is a class or short series of classes, in which one or more instructors provides intensive instruction on some subject to a small group. Its purpose is to explore students' point of view, allowing time for discussion, and inculcating self-directed, reflective learning skills.

Significance of its usage

- Develop and assess the extent of background knowledge of students, which enables them to properly understand concepts which may not have been understood in lectures.
- Develop problem-solving skills.
- Develop practice of self-learning.
- Reduced time to understand the topic.

Bedside Teaching

Teaching and learning that occurs with actual patient as the focus. It occurs in wards, emergency departments, operating rooms, and high dependency units.

Significance of its usage

- Stimulus of clinical contact
- Psychomotor skills
- Communication skills
- Language skills
- Interpersonal skills
- Professional attitudes and empathy
- Role modelling

Simulation

Person, device or set of conditions, which attempts to present education and evaluation of problems authentically. The student or trainee is required to respond to the problems as s/he would under natural circumstances.

Significance of its usage

- Safety for patients
- Liberty to make mistakes.
- Manageable/variable complexity of tasks
- Opportunity to develop self-efficacy before real patient encounter.
- Repeatability of tasks
- Learning at different pace is permissible

Skill laboratories

It refers to specifically equipped practice rooms functioning as training facilities offering hands on training for the practice of clinical skills within non-threatening environment prior to their real-life application. This applies to both basic clinical skills as well as complex surgical skills.

Significance of its usage

- Controlled, anxiety-free, and risk-free learning environment to students.
- A platform for repeated practice for mastery in relevant clinical skills
- Increase the preparedness of student learners before transitioning to the real hospital setting.
- Build strong communication skills.
- Enable learners to make critical decisions.

Clinical Case based Conference

Clinical Case based conferences allow clinicians and medical students to present difficult case material and include discussions of diagnostic, clinical formulation, and/or treatment issues.

Significance of its usage

- Provides detailed (rich qualitative) information.
- Provides insight for further research.
- Permitting investigation of otherwise impractical (or unethical) situations.

Laboratory Practical

Lab practical involve things like identifying a structure, a type of stain through a microscope, a problem with a preparation, reading biochemical test results and answering safety questions. These simulations allow students to attempt the experiments in the laboratory in a risk-free way that provides the opportunity to make mistakes and learn how to correct them using the immediate feedback generated.

Significance of its usage

- Enhance mastery of subject matter.
- Develop scientific reasoning.
- Develop practical skills.
- Develop teamwork abilities.

UHS ASSESSMENT POLICY:-

1. Professional examination shall be open to any student who: -
 - a. has been enrolled/registered and completed one academic year preceding the concerned professional examination in a constituent/affiliated college of the University.
 - b. has his/her name submitted to the Controller of Examinations, for the purpose of examination, by the Principal of the college in which he / she is enrolled & is eligible as per all prerequisites of the examination.
 - c. has his/her marks of internal assessment in all the Blocks/Clinical Clerkships sent to the Controller of Examinations through office of the Principal of the concerned college, at the end of each Block/Clinical Clerkships, as well as at the conclusion of the academic session along with the admission form for the professional examination.
 - d. Has been certified by the principal of his/her college:
 - (i) of good character;
 - (ii) of having attended not less than cumulative 75%* of the full course of lectures delivered, practical and clinical rotations conducted in the particular academic session, while maintaining 75 % attendance in each Block/Clinical Clerkship,
 - (iii) of having appeared at the Block/Clinical Clerkship Examinations conducted by the college of enrolment with at least 50 % marks* in each Block/Clinical Clerkship examination, as well as in aggregate score of all Blocks/Clinical Clerkships examinations for the concerned year;
2. Written/Theory paper in all Professional Examinations in Modular Integrated MBBS or BDS Curricula shall consist of MCQs alone, with effect from Annual 2026 Examinations. (Ref: No. UHS/REG-25/2379, dated 17.11.2025)
3. The minimum number of marks required to pass the professional examination for each Block/Clinical Clerkship shall be fifty percent (50%) in Written and fifty percent (50%) in the 'Oral/Practical/Clinical' examinations and fifty percent (50%) in aggregate, independently and concomitantly, at one and the same time.
4. A candidate failing in one or more Blocks/Clinical Clerkships in the annual examination shall be provisionally allowed to join the next professional class till the commencement

of supplementary examinations. The candidate, however, shall have to pass the failed Block/s or Clinical Clerkship in this supplementary examination failing which he / she shall be detained in the professional year. Under no circumstances, a candidate shall be promoted to the next professional class till he/she has previously passed all the Blocks/Clinical Clerkships in the preceding professional examination.

If a student appears in the Supplementary Examination for the first time as he/she did not appear in the annual examination for any reason and failed in any Block/Clinical Clerkship in the Supplementary Examination, he/she will be detained in the same class and will not be promoted to the next class.

**Notification No.UHS/REG-25/2351 Dated 13-11-2025*

5. Only one annual and one supplementary of each Professional Examination shall be allowed in a particular academic session. However, in exceptional situations, i.e., national calamities, war or loss of solved answer books in case of accident, special examination may be arranged after having observed due process of law. This will require permission of relevant authorities, i.e., Syndicate and Board of Governors.
6. Any student who fails to clear the First or Second Professional MBBS / First Professional BDS Examination, in four consecutive attempts, each, inclusive of both availed as well as un-availed attempts, after becoming eligible for the examination, and has been expelled on that account shall not be eligible for continuation of studies and shall not be eligible for admission as a fresh candidate in either MBBS or BDS.
7. The application for admission of each candidate to the professional examination shall be submitted to the Controller of Examination, through the Principal of the College, on the prescribed format, as per notified schedule, accompanied by the prescribed fee.
8. The candidates shall pay their fee through the principal of their respective Colleges, who shall forward the Examination Forms along with the duly paid challan of the examination fee generated from the Online Examination Form.
9. The continuous internal assessment through the Block/Clinical Clerkship, conducted by the college of enrollment, shall carry 20% weightage in the total allocated marks for the concerned Block/Clinical Clerkship in the Professional Examination conducted by the university. The score will be equally distributed to the Written and "Oral/Practical/Clinical" Examinations.
10. The marks of internal assessment through Blocks/Clinical Clerkships examination and attendance record shall be submitted to Controller of Examinations, along with question

papers and keys for the Block/Clinical Clerkship examination, within two weeks of completion of each Blocks/Clinical Clerkships examination.

Further, parent-teacher meetings shall be arranged by the colleges after every Block/Clinical Clerkship examination to share feedback on the progress of students with their parents. Minutes of parent teacher meetings, academic timetables/schedule of Blocks/Clinical Clerkships and academic year study guides shall be submitted to the Department of Medical Education UHS, as well.

11. It is emphasized that fresh internal assessment or a revision of assessment for supplementary examination shall not be permissible. However, a revised internal assessment for the detained students can be submitted. The internal assessment award in a particular year will not be decreased subsequently detrimental to the detainee candidate. A proper record of the continuous internal assessment shall be maintained by the concerned department/s in the colleges.
12. The colleges may arrange remedial classes and one re-sit for each Block/Clinical Clerkship examination after fulfillment of prescribed requirements given below. The remedial classes and re-sit examination can be conducted during summer vacation/weekends, before or during preparatory leave for the concerned professional examination, subject to the following conditions:

Block/Clinical Clerkship Attendance	Remedial Classes
<75%, ≥ 50% (50-74%)	i. Principal of the college may conduct remedial classes and submit result to the Examination Department, UHS, independently. ii. Principal of the college may conduct remedial classes for detained students, who have short attendance in the first Block/Clinical Clerkship of a professional year after detention. The college may submit record of the remedial classes to the Examination Department, UHS, independently.
<50%	i. Principal of the college may submit attendance record of such students to Department of Medical Education, UHS, seeking permission for conduct of remedial Classes. The conduct of remedial classes in such cases shall be arranged only after permission from the Competent Authority in the university.

	ii. The colleges shall also have to provide the university with the reasons submitted by the candidates for short attendance along with documentary evidence for the same duly verified by the principal. iii. The following shall be considered as valid reasons for short attendance of the students for consideration of permission for remedial classes: • Illness/accident/surgery of the student or sickness/death of an immediate relative/being afflicted by a natural/man-made calamity or disaster or detained students (missed the first Block/Clinical Clerkship of the year), students clearing their preceding professional examination in supplementary, or late admitted students who have been permitted for joining by UHS
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Marks in Block/ Clinical Clerkship Examination	Re-sit Examination
<50% Marks/ Absence from Block /Clinical Clerkship Examination	i. Principal of the college may submit record of such students to Department of Medical Education, UHS, seeking permission for conduct of re-sit examination. ii. The conduct of re-sit examination in all cases shall be arranged only after permission from the Competent Authority in the university. iii. The colleges shall also have to provide the university with the reasons submitted by the candidates for absence from the Block/Clinical Clerkship examination, along with documentary evidence for the same duly verified by the principal. iv. The following shall be considered as valid reasons for absence of a student from Block/Clinical Clerkship examination, and for consideration of permission for re-sit examination: • Illness/accident/surgery of the student or sickness/death of an immediate relative/being afflicted by a natural/man-made calamity or disaster or detained students (missed the first Block/Clinical Clerkship of the year), students clearing their

	preceding professional examination in supplementary, or late admitted students who have been permitted for joining by UHS
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13. The following policy shall be applicable for transition of students From Traditional Subject-Based Scheme to the Modular Integrated Curriculum Scheme:
- The students who fail in all subjects of the professional examination, either by taking the examination or due to non-appearance, and are detained in the respective professional year, shall follow the Modular Integrated Curriculum Scheme for their teaching and assessment.
 - The students who fail in one or more subjects but not all the subjects of a professional examination, either by taking the examination or due to non-appearance, and are detained in the respective professional year, shall attend classes with students following the Modular Integrated Curriculum Scheme, but they will be examined in the failed subject/s according to their parent scheme, i.e., the Traditional Subject-Based Curriculum Scheme.

UHS EXAMINATION PATTERN

BLOCK 8 Modules (Neoplasia + Infectious Diseases + Musculoskeletal & Locomotion-II + Forensic Medicine & Toxicology- II)	Part I MCQs (90)	90 Marks	Practic al / Clinical Examination	11 OSPE 01 OSCE 03 OSVE	Marks 88 10 42	350
	Internal Assessment 10%	35 Marks	Internal Assessment 10%	35 Marks		
	Total	175	Total	175		

INTERNAL ASSESSMENT

It shall constitute 20% of the total assessment at the end of the academic year.

	Scoring Parameter	Weightage (Percentage)
Theory 10 %	Attendance	75% attendance -1 % >85% attendance -2 %
	Block Exam	5 %
	Continuous assessment	3 %
Practical 10 %	Attendance	75% attendance -1 % >85% attendance -2 %
	Block Exam (OSCE / OSPE / OSVE / Short case)	5 %
	Portfolio-clinical logbooks (CFRC / PERLs / Clinical Clerkship)	3 %

Eligibility Criteria for Appearing in UHS Annual Examination.

- a. Minimum 85% attendance (in each Block and in aggregate)
 - b. Minimum 55% aggregate Marks all Test
2. **Retake of institutional block examination/ s will be allowed only under Special Circumstances**
 3. Candidates falling short of attendance requirement shall not be admitted to the annual examination but may be permitted to appear at the supplementary examination if they make up the deficiency up to the commencement of next examination by remaining on rolls of a college as regular student, subject to fulfillment of all other mandatory requirements to appear at the examination
 4. College may arrange remedial classes and one re-sit for each block examination, either with the subsequent block examination or before completion of the subsequent block, and before or during preparatory leave in case of terminal block of the professional year, before issuance of date sheet for the concerned professional examination.
 5. The students can appear in Re-sit of a block examination, along with the subsequent block, and before or during preparatory leave for the terminal block of the professional year, once the requirement of attendance is met with. However, conduct of remedial classes shall be permitted only in the cases of students, who shall have attended at least 50% of the total attendance of the concerned block in the first instance.
 6. The valid reason for short attendance in block or absence from a block examination may include major illness/ accident/ surgery of the student or death of an immediate relative, being afflicted by nature calamity or disaster.

ASSESSMENT METHODS & TOOLS

Formative Assesment:

COMBINED CLASS TESTS (After every 2 weeks)

1. On Friday during Grand Tutorial
2. On all topics covered during the past 2 weeks.
3. Venue: Pathology Department Labs
4. Weightage and Grading will be as follows

TOS FOR COMBINED TESTS

(According to UHS weightage)

Total Marks: 100

Pass Marks: 50

Subject	% weightage	MCQs
Pathology - Microbiology - Special Pathology - General Pathology	40%	40 (20+10+10)
Forensic Medicine	10%	10
Pharmacology	15%	15
Allied Subjects - Medicine/Rheumatology - Surgery/Orthopedics - Beh. Science - Patient safety - Com. Med	35%	30 (15+15+2+2+1)
TOTAL questions	100	100

INTERNAL ASSESSMENT CRITERIA

BLOCK – 7, 8, 9

Attendance	5
Test average	10
Copy	5
Behavior	5
TOTAL	25

Attendance criteria

90% and more	5
80 – 89	4
70 – 79	3
60 – 69	2
Below 60	1

Test criteria

75% and above	5
65 – 74	4
55 – 64	3
45 – 54	2
Below 45	1

BLOCK TOS

MBBS 3 rd Professional						
Block-8						
Subject	Written Exam		Oral/Practical/Clinical Exam			
	MCQ (1 mark)	Marks	OSPE /OSCE (8 marks each observed)	OSCE (10 marks each observed)	OSVE (14 marks each observed)	Marks
Pharmacology	22	22	03	-	01	38
Pathology	55	55	04	-	02	60
Community Medicine	04	04	-	-	-	-
Surgery	20	20	01	-	-	08
Medicine	20	20	01	-	-	08
Forensic	15	15	01	-	-	08
Behavioral	02	02	-	-	-	-
Patient Safety	02	02	-	-	-	-
CFRC	-	-	01	-	-	08
PERLs + ExposITory	-	-	-	01	-	10
Total	140	140	11 stations x 08 = 88	01 stations x 10 = 10	03 stations x 14=42	140

READING MATERIAL

Pathology:-

TEXT BOOKS

1. Pathological Basis of Disease by Kumar, Cortan and Robbins, 10th Ed., W.B. Saunders.
2. Basic Pathology by Cotran & Kumar 11th edition (Medium Robbins)
3. Review of Medical Microbiology and Immunology by Lewinson
4. Medical Microbiology and Immunology by Levinson and Jawetz 9th Ed., Mc Graw-Hill.
5. Medical Genetics by Jorde, 3rd Ed., Mosby.

REFERENCE BOOKS

6. Illustrated Pathology
7. Pathology Practical Book by Harsh Mohan
8. Concise Pathology for Exam Preparation by Bhattacharya
9. District Laboratory Practice in Tropical Countries, Part 1 & 2 by Monica
10. Walter and Israel General Pathology

WEBSITES

11. <https://www.webpathology.com/>
12. <http://www.pathguy.com/>
13. <https://www.osmosis.org/>
14. <https://ilovepathology.com/>

Pharmacology:-

1. Goodman & Gilman's - The Pharmacological Basis of Therapeutics
2. Basic & Clinical Pharmacology by Bertram G, Katzung
3. Clinical Pharmacology by DR Lawrence, PN Bennett & MJ Brown
4. Essentials of Medical Pharmacology by K.D. Tripathi
5. Lippincott Illustrated Review Pharmacology

Forensic medicine

1. G. Principles and Practice of Forensic Medicine by Prof.Nasibh. Awan .
2. Parikh s Text book of Medical Jurisprudence, Forensic Medicine and Toxicology 8th edition; CBS Publisher.
3. Knight B.Simpsons Forensic Medicine.
4. Knights Forensic Pathology by Barnard knight 3rd edition.

Behavioral Sciences:-

1. Handbook of behavioral Sciences by Prof. Mowadat
2. Medical and Psychosocial Aspects of Chronic illness and Disability

Community Medicine:-

1. Parks Test book of Preventive and Social Medicine
2. Public Health and Community Medicine Ilyas

Surgery:-

1. Bailey & Love' short practice of surgery

Medicine:-

1. Davidson's Principles and Practice of Medicine

Anatomy:-

2. Langman's Medical Embryology
3. Snell's Clinical Anatomy
4. Snell's Clinical Neuroanatomy
5. Laiq H.S Medical Histology
6. Laiq H.S General Anatomy

Physiology:-

1. Guyton AC and Hall JE. Textbook of Medical Physiology
2. Essentials of Medical Physiology by Mushtaq Ahmad

Biochemistry:-

1. Harper's Biochemistry
2. Lippincott's illustrated reviews biochemistry
3. ABC of clinical genetics by H.M Kingston

COUNSELLING

CAREER COUNSELLING

- Senior Faculty members provide necessary career counselling to students as per their need.
- Help and guidance is provided to students who wish to apply for their elective rotations both in the country and abroad.
- Students are facilitated on the development of their student curriculum vitae.

PSYCHOLOGICAL COUNSELLING

- Psychological support and guidance is provided in a systematic way.
- Struggling students, Students under stress and students in need of psychological support are pointed out by class tutors.
- These students are called for an initial assessment by respective senior faculty member.
- Depending on student's need, either the student is counselled and is actively monitored by a tutor or if needed, the student is referred to Colleges' nominated student councilor.

ANNEXURE – I

CFRC LEARNING OBJECTIVES

BLOCK-08	
CFRC Code	Task/Skill
CFRC3-023	Oncological History Taking Take history from patients with suspected or confirmed malignancy, including presenting complaints, duration, and associated symptoms (e.g., weight loss, fatigue, bleeding).
CFRC3-024	Self Examination of Breast Perform and demonstrate personal self examination of Breast as primary screening and prevention.
CFRC3-026	Breast examination Perform a systematic breast examination by inspecting for asymmetry, skin dimpling, nipple retraction, discharge, ulceration, or peau d'orange.
CFRC3-027	Examination of lump Inspect and palpate a lump, and describe its characteristics based on parameters: site, size, shape, surface, margin, consistency, tenderness, mobility, temperature, transillumination, fluctuation, pulsatility, and regional lymphadenopathy.
CFRC3-028	Lymph node palpation Palpate and describe lymph nodes; cervical, axillary, epitrochlear, and inguinal for site, size, shape, consistency, tenderness, mobility, and matting.
CFRC3-029	Biopsy procedure Observe the steps of biopsy procedure for cancer diagnosis. Identify indications and precautions.
CFRC3-030	Chemotherapy and Palliative Care Identify common chemotherapy-related adverse effects and initial management. Observe and assist in palliative and comfort care, including pain relief, nutritional support, and psychological care for terminal patients.
CFRC3-031	Breaking bad news Observe a clinician delivering bad news to a patient diagnosed with malignancy, noting communication techniques and emotional handling. Practice the communication skill of breaking bad news to a patient diagnosed with malignancy.
CFRC3-032	Effective counselling techniques Demonstrate empathy and effective communication when counseling oncology patients and their families.
CFRC3-033	Examination of hip joint Perform hip joint examination, including Trendelenburg test.
CFRC3-034	Examination of knee joint Examine knee joint using ligament stability tests, meniscal tests, patellar tap, and bulge sign.
CFRC3-035	Examination of foot Examine ankle and foot using Thompson test for Achilles tendon rupture.

CFRC3-036	Examination of hand Inspect patients' hands to identify and describe common deformities such as swan neck, boutonnière, and claw hand.
CFRC3-037	Lumbar spine examination Demonstrate lumbar spine examination, including straight leg raise (SLR) and femoral stretch tests. Inspect and palpate for spinal deformities such as kyphosis, scoliosis, and lordosis
CFRC3-038	Application/removal of plaster slab Apply and remove a plaster slab or back slab under supervision.
CFRC3-039	Splint application Demonstrate proper technique for splint application and limb immobilization.
CFRC3-040	Steroid injection administration Observe and assist in joint aspiration or local steroid injection under aseptic conditions.
CFRC3-041	X-ray interpretation of bones and joints Interpret X-rays of long bones, joints, and spine to identify common fractures or dislocations.
CFRC3-042	Personal Protective Equipment (PPE) Demonstrate donning and doffing personal protective equipment (PPE) while managing infectious disease patients.
CFRC3-043	Sputum Collection for TB Culture and Sensitivity Observe and narrate the procedure for collection, labeling, transport, and storage of sputum specimens for tuberculosis culture and sensitivity, highlighting aseptic technique and biosafety measures. (<i>see annexure 2</i>)
CFRC3-044	Interpretation of vital signs Measure and interpret vital signs (temperature, pulse, respiratory rate) in patients with acute febrile illness.
CFRC3-045	Post-Exposure Prophylaxis Observe post-exposure management steps for needle-stick injuries or other occupational exposures.
CFRC3-046	Protocol for Pus specimen collection Collection, Transport and Storage of Pus Specimen for Culture & Sensitivity

CFRC - ANNEXURES

Annexure I

Collection, Transport and Storage of Sputum Specimen for TB Culture & Sensitivity

Learning Outcomes

The students will be able to:

1. Describe why the accurate sputum collection, transport, and storage are essential for reliable TB culture and drug sensitivity testing (DST).
2. Describe how to prepare and instruct patients for proper sputum (not saliva) collection.
3. Describe the characteristics of an ideal sputum specimen (volume, appearance, timing).
4. Describe the time limits and temperature conditions for transporting sputum specimens to the laboratory.
5. Understand and describe the triple packaging system used for specimen safety and infection control during transport.
6. Specify the optimal storage temperature and maximum duration for sputum before processing
7. Recognize biosafety measures (e.g., PPE, sealed containers) during sputum handling.
8. Understand the importance of correct labeling and documentation to accompany the sample to the lab.
9. Explain how proper specimen management supports early and accurate diagnosis, especially in detecting MDR-TB/XDR-TB

Collection of Sputum Specimen:

Give the patient a clean (need not be sterile), dry, wide-necked, leak-proof container, and request him or her to cough deeply to produce a sputum specimen. The best time for collection of sputum specimen is early morning.

Instructions for the Patient:

Use a wide-mouthed, sterile, leak-proof plastic container with a tight-fitting screw cap. Volume: At least 3–5 mL of sputum (not saliva)

1. Instruct the Patient to his/her their mouth with water (not any mouthwash) to reduce contamination.
2. Take a deep breath
3. Cough deeply from the chest (not saliva)
4. Expectorate sputum into the container
5. Avoid saliva or nasal discharge
6. Tighten the cap of the container to avoid contamination and spillage
7. For accurate and reliable detection of *Mycobacterium Tuberculosis*, three consecutive specimens on three consecutive days should be collected.

Transport of sputum Specimen to Microbiology laboratory:

1. Transport the specimen to the Microbiology laboratory within 1-2 hours
2. If delay is expected, the specimen can be stored at **2–8°C** for **up to 48–72 hours**
3. Do not Freeze the specimen
4. The sputum specimen for TB culture should be transported in triple packaging system
 - Sealed Sputum container with sputum specimen
 - Specimen should be sealed in Biohazard Zipper bag
 - The biohazard zipper bag should be placed in a Biohazard transport box
 - The specimen should be properly labelled with patient name, unique ID, date and time of collection

ANNEXURE II

Collection, Transport and Storage of Pus Specimen for Culture & Sensitivity) Learning Outcomes

The students will be able to:

1. Understand the importance of proper Pus collection techniques in an aseptic manner to avoid contamination
2. Describe the steps involved in collecting PUS, including patient preparation, site preparation and sample handling.
3. Select the appropriate tubes/containers for Pus collection and transport media and understand the importance of viability of organisms in the specimen
4. Understand the importance of proper labelling and documentation to ensure patient safety and sample tracking
5. Understand the importance of timely transport of specimen to the Microbiology laboratory to ensure timely analysis.
6. Understand how factors like sample handling, storage and transportation can affect test results

Collection and Transport of Pus Specimen

Pus specimen should be collected by a medical officer or an experienced nurse. Pus from an abscess is best collected at the time, the abscess is incised and drained, or after it has ruptured naturally. When collecting pus from abscesses, wounds, or other sites, special care should be taken to avoid contaminating the specimen with commensal organisms from the skin. As far as possible, a specimen from a wound should be collected before an antiseptic dressing is applied.

1. Using a sterile technique, aspirate or collect from a drainage tube up to 5 ml of pus. Transfer to a leak-proof sterile container.
2. When pus is not being discharged, use a sterile cotton-wool swab to collect a sample from the infected site. Immerse the swab in a container of Amies transport medium.

Label the specimen and as soon as possible deliver it with a completed request form to the laboratory.

Do not transport the Pus swab without transport medium

3. When mycetoma is suspected, obtain a specimen from a draining sinus tract using a sterile hypodermic needle to lift up the crusty surface over the sinus opening. This method of specimen collection has the advantage that the pus obtained is usually free from secondary organisms and the draining granules can usually be seen clearly and removed for microscopical examination. Transfer the pus to a sterile container.
4. When tuberculosis is suspected: Aspirate a sample of the pus and transfer it to a sterile container. The container should be packed into a biohazard bag to prevent its transmission to others.
5. When the tissue is deeply ulcerated and necrotic (full of dead cells) aspirate a sample of infected material from the side wall of the ulcer using a sterile needle and syringe. Transfer to a sterile container.
6. Fluid from pustules, buboes, and blisters: Aspirate a specimen using a sterile needle and syringe. Transfer to a sterile container.
7. Serous fluid from skin ulcers, papillomas, or papules, that may contain treponemes collect a drop of the exudate directly on a clean cover glass and invert it on a clean slide. Immediately deliver the specimen to the laboratory for examination by dark-field microscopy.

Transport of Pus Specimen to Microbiology Laboratory

1. Collect the specimen using a sterile cotton wool swab. Insert it in a container of Amies transport medium
2. When the material is aspirated fluid from a pustule, transfer the fluid to a sterile, leak-proof container.
3. Send the specimens with a completed request form to reach the microbiology laboratory within 6 hours (Amies transport Medium). The Aspirated Pus should be transported to the Microbiology laboratory within 1 hour of collection.

ANEXXURE – II

PERL CONTENT BLOCK – 8

NEOPLASIA				
*Proposed Sequence of Topics Mentioned below. Medical Colleges are at liberty to manage according to their resources. Topics can switch within each Block				Total Hours = 1.5
* Research (R) in the PERL curriculum will be delivered by the Department of Community Medicine as a longitudinal component from the first to the fourth year of the MBBS program. At the end of the fourth year, students' research projects will be assessed through a dedicated PERL station.				
Code	Domain	Topic	Specific Learning Objectives	Proposed Portfolio Entry
PERLs-3-015	Ethics	Cultural/religious views on Do Not Resuscitate	Explore the diverse cultural and religious perspectives on Do Not Resuscitate (DNR) orders and understand how these views influence end-of-life decisions in the context of neoplasia care.	Submit your hospital Protocol for Do-Not-Resuscitate.
PERLs-3-017	Research	Sample Selection	- Describe the principles of population selection in medical research. - Calculate sample size in medical research. - Evaluate how population and sample size affect validity and generalizability.	

INFECTIOUS DISEASES				
*Proposed Sequence of Topics Mentioned below. Medical Colleges are at liberty to manage according to their resources. Topics can switch within each Block				Total Hours = 06
* Research (R) in the PERL curriculum will be delivered by the Department of Community Medicine as a longitudinal component from the first to the fourth year of the MBBS program. At the end of the fourth year, students' research projects will be assessed through a dedicated PERL station.				
Code	Domain	Topic	Specific Learning Objectives	Proposed Portfolio Entry
PERLS-3-018	Professionalism	Professional Responsibility in Public Health	- Recognize the professional duty of healthcare workers to protect vulnerable patients, colleagues, and the community by adhering to infection control protocols and promoting public health measures. - Effectively communicate the risks and management strategies related to contagious diseases to patients and their families (i.e Tuberculosis) balancing public health concerns with individual patient rights and privacy.	Make a public awareness poster on infection control.
PERLS-3-019	Ethics	End-of-life decisions, ventilator use	Explore the ethical considerations involved in end-of-life decisions, including using ventilators, balancing patient autonomy, family wishes, and medical judgment in making these decisions.	Write a case analysis on end-of-life decisions, particularly regarding ventilator use, and propose an ethically sound approach to decision-making.
PERLS-3-020	Research	Developing Research Hypotheses and Questions	- Understand the process of formulating research hypotheses and developing research questions, with a focus on creating clear, testable, and relevant questions using PICO - Formulate a research question and corresponding	Evidence of submitted research hypothesis/question to assigned Research Mentor.

			hypothesis based on a gap identified in the existing literature related to the research problem identified previously. • Submit a research proposal with a problem statement supported by a brief literature review, a well-defined research question and a hypothesis.	
PERLS-3-021	Research	Research Design	• Classify various study designs with examples. • Explain the strengths and limitations of common study designs in medical research. • Evaluate and select an appropriate study design based on the research question.	

MUSCULOSKELETAL AND LOCOMOTION-II				
*Proposed Sequence of Topics Mentioned below. Medical Colleges are at liberty to manage according to their resources. Topics can switch within each Block				Total Hours = 06
* Research (R) in the PERL curriculum will be delivered by the Department of Community Medicine as a longitudinal component from the first to the fourth year of the MBBS program. At the end of the fourth year, students' research projects will be assessed through a dedicated PERL station.				
Code	Domain	Topic	Specific Learning Objectives	Proposed Portfolio Entry
PERLS-3-022	Research	Research approaches	Differentiate between qualitative, quantitative, and mixed-methods research approaches.	
PERLS-3-023	Professionalism	Adapting to the Physician's Role	Appreciate the skills to adapt to the physician's role, including managing stress, handling uncertainty, and making clinical decisions, while demonstrating professionalism in diverse clinical settings. (skills include emotional resilience, critical thinking, communication, and time management)	Submit a reflective essay on a clinical experience where you applied these skills to manage stress, handle uncertainty, and make clinical decisions, proposing strategies to develop your adaptability further.
PERLS-3-024	Ethics	Autonomy in rehabilitation, Informed consent	- Discuss the process of obtaining informed consent, ensuring patients are fully aware of their treatment options, risks, and potential outcomes. - Ensure the patient's autonomy is respected throughout the decision-making process.	Develop an Informed consent Sheet for patients undergoing rehabilitation after trauma.
PERLS-3-025	Leadership	Entrepreneurship in Healthcare	Discuss the basic principles of entrepreneurship in healthcare, including identifying gaps in healthcare services, understanding innovation, and exploring how	Propose an innovative solution that could address the gap or improve patient care, with a focus on how entrepreneurial thinking can be applied.

			entrepreneurial thinking can improve patient care and healthcare delivery. • Identify a gap or unmet need in the healthcare system (e.g., a service or technology that could improve patient outcomes) and suggest an innovative solution or approach.	
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Year 3: Expository Writing III Research writing, data handling, and presentation skills			
THEORY			
Code	Subject: Expository writing & IT		Total Hours =10
	Specific Learning Outcome	Integrating Disciplines	Topics
EXP-03	Expository Writing Focus: 1. To use Advanced grammar for, sentence structure, and writing persuasive essays and case reports with medical evidence. 2. To write full-length review articles and case studies. IT Integration: IT Skills: 3. To use Excel & SPSS for Making tables, graphs, pie charts of medical data 4. To use AI Tools for creating professional presentations. Writing Application: 5. Learn to use tools (e.g., Excel) & SPSS for making managing patient data. 6. To create clear, visually appealing presentations for research projects using AI tools.	PERLS, Pharmacology, Community Medicine, Pathology, Forensic Medicine	• Writing essays and case reports with differential diagnosis • Introduction to Excel & SPSS for making tables, graphs, pie charts of medical data • Making Presentations with AI tools.

ANNEXURE – III

MANDATORY WORKSHOPS – YEAR 3

Workshop Schedule for MBBS students

The Following **Skill Acquisition Workshops** are included in the “Modular Integrated Curriculum 2K23”:

Sr. No.	Course Name	Academic Year	Duration	Eligibility
1.	Basic Life Support	1 st Year / 2 nd Year	2 days	Eligibility requirement for appearing in the 4 th Professional Examination
2.	Advanced Life Support	3 rd Year / 4 th Year	1 day	Eligibility requirement for appearing in the Surgical Clerkship examination
3.	Cardiac First Response	3 rd Year / 4 th Year	1 day	Eligibility requirement for appearing in the Medicine Clerkship examination
4.	Trauma first responders	3 rd Year / 4 th Year	1 day	Eligibility requirement for appearing in the Surgical Clerkship examination
5.	Emergency Neonatal Resuscitation	3 rd Year / 4 th Year	1 day	Eligibility requirement for appearing in the Pediatrics Clerkship examination
6.	Emergency Obstetrics Resuscitation	3 rd Year / 4 th Year	1 day	Eligibility requirement for appearing in the Gynecology / Obstetrics Clerkship Examination

ANNEXURE – 1V
DEPARTMENTS AND FACULTY INVOLVED IN BLOCK 8
TEACHING

Department Of Pathology

- Prof. Dr. Shazia Nilofar Ibne Rasa (HOD/Professor Histopathology)
- Prof. Dr. Saadia Chaudhary (Professor Microbiology)
- Prof. Dr. Fauzia Sadiq (Professor Chemical Pathology)
- Prof. Dr. Muhammad Shahbaz Amin (Professor Histopathology)
- Dr. Nazia Ahmad (Associate Professor Hematology)
- Dr. Muhammad Rizwan (Associate Professor Histopathology)
- Dr. Sonia Tahir (Associate Professor Microbiology)
- Dr. Maimoona Aslam (Assistant Professor Histopathology)
- Dr. Hira Baber (Assistant Professor Hematology)

Department Of Biochemistry

- Prof. Dr. Rubina Bashir (HOD/Professor)
- Prof. Dr. Sobia Imtiaz (Professor)
- Dr. Mahwish Shahzad (Assistant Professor)
- Dr. Khaulah Qureshi (Assistant Professor)

Department Of Forensic Medicine

- Prof. Dr. Amir Bashir (HOD/Professor)
- Dr. Roman Ashraf (Assistant Professor)

Department Of Pharmacology

- Prof. Dr. Ajaz Fatima (HOD/Professor)
- Prof. Dr. Shazia Asim (Professor)
- Dr. Asia Firdous (Associate Professor)
- Dr. Quratulain Mehdi (Assistant Professor)
- Dr. Ovais Qarni (Senior Lecturer)

Department Of Community Medicine

- Prof. Dr. Seema Daud (HOD/Professor)
- Dr. Humayun Mirza (Associate Professor)
- Dr. Umbreen Navied (Assistant Professor)
- Dr. Saadia Maqbool (Assistant Professor)

Department Of Medicine

- Prof. Dr. Asad Ullah Ijaz (HOD/Professor)
- Prof. Dr. Sarah Shoaib (Professor)
- Prof. Mehreen (Professor)

Department of Orthopedics

- Prof. Amer Aziz (HOD/Professor)
- Prof. Dr. Ijaz Ahmed (Professor OPS)
- Prof. Dr. Rizwan Akram (Professor OPS)
- Prof. Dr. Atiq-Uz-Zaman (Professor OPS)
- Dr. Abdullah Shah (Associate Professor OPS)

Department Of Surgery

- Prof. Dr. Saquib Zahoor (HOD/Professor)
- Prof. Zahid Mehmood (Professor)
- Dr. Sidra Shoaib (Assistant Professor)

Department Of Behavioral Sciences

- Prof. Dr. Maj. R . Maqbool Ahmad (HOD/Professor)

Department Of Radiology

Prof. Dr. Khalid Farooq (HOD/Professor)

Department Of Pediatrics

Prof. Rizwan Waseem (HOD/Professor)

Department of Gynecology

Prof. Fauzia (HOD/Professor)

Department Of Medical Education

Prof. Nighat Nadeem (HOD/ Professor)