

WAH MEDICAL COLLEGE

2021-2025

A photograph of the Wah Medical College building, a large, modern structure with a brown facade. The words "Wah Medical College" are printed in white on the building's exterior. A flagpole with a blue flag stands in front of the building. The sky is blue with some clouds.

Wah
Medical
College

Department of Medical Education

STUDY GUIDE
3rd YEAR MBBS
Y3BVIII

2021-2025

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VISION

National University of Medical Sciences envisions a world with a better quality of life for all by enhancing our contribution to healthcare, education, innovation and research.



MISSION

“To produce competent medical professional graduates equipped with sound knowledge & research capabilities based on scientific principles, imbued with ethics and moral values primed to serve the community through the profession and pursue research & advanced training in any branch of medicine”.

1. Program Learning Outcomes of WMC MBBS Program:

At the end of our five-year MBBS program, the graduates should be able to:

PLO 1: Independently manage common, non-critical clinical problems.

PLO 2: Assist in the management of critically ill patients & demonstrate competency in life saving procedures.

PLO 3: Exhibit the attributes of an ethical professional.

PLO 4: Conduct research which brings relevance to health care practices.

PLO 5: Act as an efficient community health promoter.

PLO 6: Exhibit scientific knowledge in all professional activities.

PLO 7: Demonstrate clear and efficient written & verbal communication skills.

PLO 8: Exhibit the habits of a lifelong learner.

2. Introduction to the Study Guide:

I. Objectives of the Study Guide

Dear Students,

We, at the Department of Medical Education, Wah Medical College, have developed this study guide especially for you. This study guide aims to:

- Inform you about the organization of learning programs in this block which will help you to contact the right person in case of any difficulty.
- Help you in organizing and managing your studies throughout the block
- Guide you on assessment methods, rules, and regulations.
- Define the outcomes which are expected to be achieved at the end of the block.
- Identify the learning strategies that will be implemented to achieve the block outcomes such as lectures, small group discussions, clinical skills, demonstration, tutorial, and case-based learning
- Provide a list of learning resources such as books, and journals for students to consult to maximize their learning.

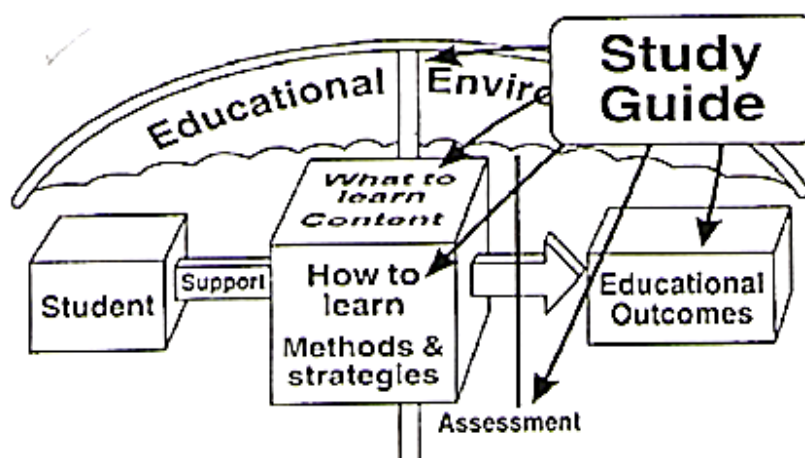


Figure 1. Objectives of the study Guide(HARDEN, J.M. LAIDLAW, E.A. HESKETH, 1999)










II. Commonly used abbreviations & Logos in the study guide

Learning Outcomes:

Learning outcomes are statements that define the expected goal of your course, lesson, or activity in terms of demonstrable skills or knowledge that will be acquired by you as a result of instruction. In simple words, these are the things that you must be able to tell or do with the required attitude after learning a particular topic.

1. Educational Strategies:

These are the methodologies through which you will be taught by your instructors. These can include.

Abbreviation	Logos
LGIS: Large Group interactive session/Lecture	
Flipped Classroom	
CBL: Case based learning.	
Practicals	
Demonstrations	
SGD: Small group discussions	
BST: BedSide Teaching	
Skill Lab	
Clinical Teaching (OPD/ OT/ IPD)	

Large Group Interactive Sessions

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

Flipped classroom

A pedagogical approach in which the conventional notion of classroom-based learning is inverted: students are introduced to the learning material before class with classroom time then being used to deepen understanding through discussion with peers and problem-solving activities facilitated by teachers.

Small Group Discussion

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

Case-Based Learning

This is a small group discussion format where learning is focused around a series of questions based on a clinical scenario. Specifically designed case scenarios and the learning outcomes to be achieved are shared with the student before the session. Students prepare for the CBL and during class they discuss and answer the questions applying relevant knowledge gained in clinical and basic health sciences during the block. Faculty members are present as a guide and an assessor.

Self-Directed Study

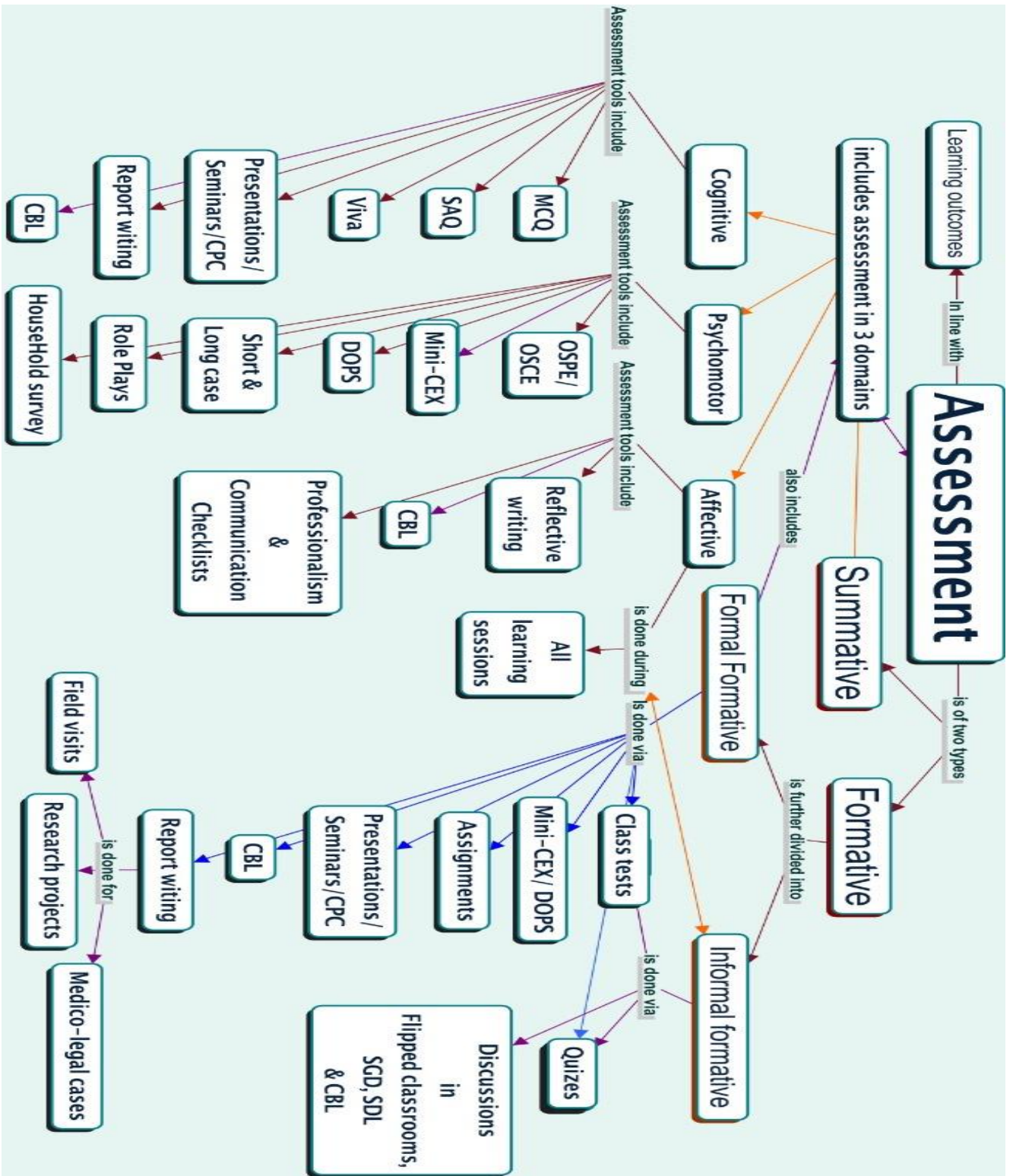
Students assume responsibilities of their own learning through individual study, sharing and discussing with peers, seeking information from learning Resource Center, teachers, and resource persons within and outside the college. Students can utilize the time within the college schedule hours for self-study.

Bedside teaching

Students learn clinical case scenarios/ patient examination firsthand at the patient's bedside with the help of the instructor in case of online teaching, the same cases will be shown to you online with the help of videos and live clinical teaching.

3. Assessment Map & Strategies

Assessment map & strategies should be consulted for detailed format on how assessment take place



4. Formative assessment

Formative assessments are used in the middle of a lesson or year to determine how students are progressing. During the block, students shall be continually formatively assessed in all three learning domains i.e., Cognitive, Psychomotor & Affective. It will include:

1. Class tests, Assignments, Presentations, Quizzes
 2. Assessment of professionalism via checklists provided in logbooks/ practical copies in all learning sessions.
 3. Viva
 4. Subject-specific & Integrated CBL Assessment
 5. Practical Assessment (OSPE)
 6. Ward tests (Mini-CEX, DOPS, OSCE)
- Some of these assessments will be used only to inform students where they stand against benchmarks (Informal Formative) and some will be used in the calculation of internal assessment (Formal Formative).
 - The scores of all formal formative assessments shall be used for calculation of the **internal assessment** according to NUMS curriculum. The weighting of internal assessment shall be **20%** in 3rd professional MBBS Examination. Internal assessment will be submitted to NUMS examination branch at least two weeks prior to the annual exam.
 - The same internal assessment shall be counted both for annual and supplementary examinations. The students who are relegated, however, can improve the internal assessment during subsequent year.

5. Summative Assessment

- In a summative assessment, success is measured at the end of a checkpoint. They will be in the form of End of the block (EBE) exams; theory & practical / OSPE, OSCE, Ward test, pre-annual and professional exams.
- There shall be **three EBE** and one **pre-annual** examination.
 - To be eligible to sit in the pre-annual exam a student must pass at least **50% of all the formal formative assessments** conducted during the year.
 - The final decision of eligibility to sit in the pre-annual exam for the students failing to meet the requirements will be taken by the respective HODs & the departmental board of studies (dBOS). This decision will be on a case-to-case basis depending upon the student's performance in all 3 learning domains throughout the year.
 - **Logbooks** will be maintained to record students' performance during each clinical subject rotation. The ward test will also contribute towards

internal assessment. Failure in clinical assessment will require the student to repeat the end rotation exam.

- The structure of the paper of all the EBE and pre-annual will be the same as that for the annual examination though syllabus will be different.
- The syllabus for EBE will be announced by the department at least 02 weeks prior to examination.
- Pre-annual examination will be from the whole syllabus.
- The date sheet for EBE and pre-annual examinations will be prepared by coordinators of 3rd year while the examinations will be conducted by the respective departments.

Annual Professional Examination:

- A student shall fulfill the following conditions to be eligible to appear in a professional examination:
 - Registered in NUMS and has studied the prescribed courses in the academic year.
 - Have at least **75% cumulative attendance in each subject** at the end of academic year. Students' presence will be marked in all sessions.
 - Paid the prescribed examination fee.
 - Paid all college dues for the current academic year.
 - Have **no major disciplinary case** during the current academic year.
- Annual theory and practical Examination shall be of **300** marks each in Pharmacology & G. Pathology+ Microbiology and **200** in Forensic Medicine & Toxicology.
- The weighting of the professional examination will be 80 %, each for theory and practical, which will contribute towards the final scores of the subject.
- An aggregate of **50% in Theory and 50% in Practical** of that subject will be declared pass in that subject.

Marks Distribution will be as follows:

GENERAL PATHOLOGY & MICROBIOLOGY (300) & PHARMACOLOGY (300)

Total Marks Theory MCQs: 60 (40%) + SEQs:60 (40%) + IA:30 (20%) = 150

Paper 1:

- a. 80 MCQs of 60 marks (0.75 mark each)
- b. Marks of MCQ components shall be rationalized to **40% weightage** out of 150. If a candidate obtains 70 marks in MCQs it will be rationalized as:
 $70/80 \times 60 = 52.50$
- c. Time =80 min

Paper-2:

- a. 9x SEQs (7SEQs of 6 Marks each & 2 SEQs of 9 Marks each= 60 Marks
- b. Time = 100 min
- c. Pass Marks = 75

Internal Assessment

- a. 20% = 30 marks.
- b. Detail of marks distribution for IA is given in the table below.

FORENSIC MEDICINE (200)

Total Marks of theory = 100 = 40MCQs + 40 SEQs+ 20 IA

Paper-1: 40 x MCQs (1 mark each) = 40 marks

Paper-2: 7x SEQs (5x6 Marks & 2x5 Marks) = 40 marks

Time Allowed= 03 hrs

Internal assessment 20% = 20 marks

Pass Marks= 50 % in Theory & 50 % in Practical each

Internal Assessment -Theory		
	Weighting – 20% of 150 = 30 marks	Weighting – 20% of 100 = 20 marks
Items for IA	Weightings	Weightings
Attendance in Lectures: ≥90% = 10 80-89% =7 75-79% = 5	10% of 30 = 3 marks 7% of 30 = 2.1 marks 5% of 30 = 1.5 marks	10% of 20 = 2 marks 7% of 20 = 1.4 marks 5% of 20 = 1 mark
EBE/ Theory exam of clinical rotation	45% of 30 = 13.5 marks	45% of 20 = 9 marks
Continuous assessment: Average score in theory exams (Formal Formative)	20% of 30 = 6 marks	20% of 20 = 4
Pre-annual Exam	25% of 30 = 7.5 marks	25% of 20 = 5
Total	3 + 13.5 + 6 + 7.5 = 30 marks	2 + 9 + 4 + 5 = 20 marks

Internal Assessment -Practical		
	Weighting – 20% of 150 = 30 marks	Weighting – 20% of 100 = 20 marks
Items for IA	Weightings	Weightings
Attendance in Practicals: > 90% = 10 80-89% =7 75-79% = 5	10% of 30 = 3 marks 7% of 30 = 2.1 marks 5% of 30 = 1.5 marks	10% of 20 = 2 marks 7% of 20 = 1.4 marks 5% of 20 = 1 mark
End of Ward rotation (Skill assessment)	45% of 30 = 13.5 marks	45% of 20 = 9 marks
Continuous assessment: Average score in skill assessment (Formal Formative)	20% of 30 = 6	20% of 20 = 4
Pre-annual Exam	25% = 7.5	25% of 20 = 5
Total	3 + 13.5 + 6 + 7.5 = 30 marks	2 + 9 + 4 + 5 = 20 marks

6. Structured Summary of Y3B-VIII M- XVI Hematology & Immunology Module

BLOCKS	BLOCK – VIII
Module	MODULE- XVI Hematology & Immunology Module
DURATION	03 weeks
Prerequisite Module	2 nd Prof. Exam
Pharmacology	Hematology Module <ul style="list-style-type: none"> • Drugs used in Anemia. • Drug used in Malaria & HIV (Blood borne disease) • Autacoids (Prostaglandins, Histamine, Serotonin) NSAIDs, DMARDs, H₁ receptors blockers, Drugs used to treat Gout. • Immunomodulators, Heavy Metal toxicity
Pathology	Medically important blood borne pathogens, Immune system with their clinical manifestations.
Forensic Medicine	Biological specimens, General Toxicology
Community Medicine	General Immunology
Research Methodology	Tests of Significance , Systematic Review & Meta-analysis, Data Collection Tool , Systematic Review & Meta-analysis, Overview of research process, House Hold Survey
Medicine	Anemia and bleeding disorders, hypersensitivity reaction, common neurological symptoms, common pulmonary diseases.
Surgery	Blood Transfusion Reactions I&II, IV cannulation, Trauma and tissue response, Head injury I &II, Ward visits
Pediatrics	Anemias, Bleeding disorders in children. Down Syndrome, Meningitis, Respiratory tract illnesses.
Gynecology	Anemia in pregnancy, thalassemia minor, mode of inheritance of inherited disorder
ENT	Applied anatomy & physiology of oral cavity, pharynx, nose, paranasal sinuses; blood supply, nerve supply and lymphatic drainage of nose PNS, role of air condition of inspired air, olfaction, speech and reflex function of nose and PNS.
Ophthalmology	Uveal Tract, Cornea, Lens, and Glaucoma and neuro Ophthalmology

PCMILE	Research on genetics & Ethics, Ethical issues, and pharmaceutical companies, Accept errors & mistakes- Professionalism, Surveillance for infection control, Practical aspects of infection control, Law in relation to medical ethics, Informed consent, Communicating with patients for counselling & interviewing, Management of exposure to blood-borne pathogens
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7. Block Development Committee

Chairperson	Maj(R) Prof. Dr. Khalida Ajmal	
Block In charge	Dr. Ayesha Afzal	
Members/ Resource persons	Pharmacology:	Dr. Saima Rafique
	Forensic Medicine:	Dr. Muhammad Iqbal
	Pathology:	Dr. Tahira Tehseen
	Community Medicine:	Dr. Robina Mushtaq Rizvi
	Research Methodology	Dr. Robina Mushtaq Rizvi
	Medicine	Dr. Riffat Omer
	Surgery	Dr. Naeem Akhter
	Pediatrics	Dr. Sohail Ashraf
	Gynecology	Dr. Khair-un Nisa
	ENT	Col (R) Muhammad Asad Chughtai
	EYE	Dr. Mariyam Shafi
	P-CMILE	Dr. Ambreen Ansar
Study guide developed By	Department of Medical Education Wah Medical College under Supervision of Prof. Dr. Musarat Ramzan	
Resource person for Study Guide	Dr. Ambreen Ansar	

8. Course content

Pharmacology

Subject Learning Outcomes (SLO)

After completion of the course of Pharmacology & Therapeutics, the students would be able to:

1. Correlate the core concepts of pharmacokinetic and pharmacodynamic parameters of drugs to their therapeutic relevance. (PLO -1, 2, 6)
2. Rationalize the drug treatment strategies for common diseases in our community. (PLO -1,2,5,6)
3. Identify and report the potential adverse drug reactions (ADR), drug- drug interactions during polypharmacy. (PLO-5,6)
4. Demonstrate the foundation skills for safe and effective treatment by prescribing rational generic drugs for a given disease condition. (PLO-1,2, 5, 6)
5. Counsel the patient effectively on the proper use of prescription drugs. (PLO-1,2, 5, 6)
6. Interpret the data of studies designed to observe the effects of various drugs. (PLO-6)

Block Learning Outcomes (BLO):

- **BLO-1:** Justify the drug therapy of anemias, coagulation disorders, migraine and blood borne diseases by correlating to the pathophysiological basis of the diseases. (SLO-2,3,4,5)
- **BLO-2:** Rationalize the clinical applications of NSAIDs, autacoids, immunomodulators and DMARDs. (SLO-2,3,4,5)
- **BLO-3:** Outline the essential pharmacological principles of toxicology. (SLO-3,4)

S#	Topic	Educational Strategy	Instructor	Importance (Must Know Good to Know Nice to Know)
1.	Drugs used in Anemias	LGIS	Asst. Prof Dr. Abeera	Must Know
Learning outcomes:				
<ul style="list-style-type: none"> • Outline treatment of anemias by correlating to their causes & types (BLO-1) <i>MCQ/SEQ (S/F)</i> 				
2.	Drug used in Malaria	Flipped Classroom	Prof Maj® Dr. Khalida Ajmal	Must Know
Learning outcomes:				
<ul style="list-style-type: none"> • Justify the management plan for chemoprophylaxis and treatment of all types of malaria. (BLO-1) <i>MCQ /SEQ (S/F)</i> 				
3.	Eicosanoids	LGIS	Assoc. Prof Dr. Ayesha Afzal	Must Know
Learning outcomes:				
<ul style="list-style-type: none"> • Describe the actions & clinical uses of eicosanoids in regulating different body tissues functions. (BLO-2) <i>MCQ (S/F)</i> 				

4.	H1-Blockers	LGIS	Asst. Prof Dr. Saima	Must Know
Learning outcomes:				
<ul style="list-style-type: none"> Validate the use of antihistamines in various allergic disorders. (BLO-2) <i>MCQ /SEQ (S/F)</i> 				
5.	Migraine, Serotonin agonists & antagonists	LGIS	Asst. Prof Dr. Abeera Sikandar	Must Know
Learning outcomes:				
<ul style="list-style-type: none"> Strategize the management of migraine in accordance with the underlying disease mechanism. (BLO-2) <i>MCQ (S/F)</i> 				
6.	NSAIDs	Flipped Class room	Prof Maj ® Dr. Khalida Ajmal	Must Know
Learning outcomes:				
<ul style="list-style-type: none"> Discuss the clinical pharmacology of Aspirin and other NSAIDs (C) Compare the therapeutic advantages and disadvantages of COX-2 inhibitors with COX-1 inhibitors (C) (BLO-2) <i>MCQ/SEQ (S/F)</i> 				
7.	Gout	Flipped Classroom	Asst. Prof Dr. Saima	Must Know
Learning outcomes:				
<ul style="list-style-type: none"> Rationalize the treatment strategy for the management of acute and chronic gout. (BLO-2) <i>MCQ/SEQ (S/F)</i> 				
8.	DMARDs	LGIS	Assoc. Prof Dr. Ayesha Afzal	Should Know
Learning outcomes:				
<ul style="list-style-type: none"> Describe the role of DMARDs in Rheumatoid arthritis and other autoimmune disorders. (BLO-2) <i>MCQ/ SEQ (S/F)</i> 				
9.	Immunomodulators	LGIS	Asst. Prof Dr. Abeera Sikandar	Good to Know
Learning outcomes:				
<ul style="list-style-type: none"> Justify the use of immunostimulants including probiotics, immunosuppressants, vaccines and sera. (BLO-2) <i>MCQ (F)</i> 				
10.	HIV treatment	LGIS	Prof Maj® Dr. Khalida Ajmal	Good to Know
Learning outcomes:				
<ul style="list-style-type: none"> Describe the pharmacology of commonly used antiviral drugs in HIV infection. (BLO-1) <i>MCQ / Assignment (F)</i> 				
11.	Heavy Metal toxicity	LGIS	Dr. Batool Jahan	Good to Know
Learning outcomes:				
<ul style="list-style-type: none"> Describe the role of chelating agents in various heavy metals toxicities. (BLO-3) <i>MCQ (S/F)</i> 				
12.	Module Test			

Practical Work

Block Learning Outcomes: After completion of module of block, students should be able to:

- Justify the selection of priority drugs for certain indications and prescribe medicine accordingly.
- Counsel the patient on the dosage & adverse effects of prescribed drugs.

S.#	Topic	Educational Strategy	Instructor	Importance (Must Know Good to Know Nice to Know)
1.	Prescription writing on Iron deficiency Anemia & Allergic rhinitis	Simulation & Role play in SGD	Asst Prof. Dr. Saima & Asst Prof. Dr. Abeera All Lecturers	Must Know
Learning outcomes:				
<ul style="list-style-type: none"> • Write a suitable prescription for anemia & allergic rhinitis after justifying the selection of a P- drug. <i>Observed OSPE (F & S)</i> • Counsel the patient on the dosage & adverse effects of Hematinic. <i>Observed OSPE (F & S)</i> 				
2.	Prescription writing on Acute attack of Malaria & Cerebral Malaria	Simulation & Role play in SGD	Asst Prof. Dr. Saima & Asst Prof. Dr. Abeera All Lecturers	Must Know
Learning outcomes:				
<ul style="list-style-type: none"> • Write a suitable prescription for malaria after justifying the selection of a P- drug. <i>Observed OSPE (F & S)</i> • Counsel the patient on the dosage & adverse effects of anti-malarial drugs. <i>Observed OSPE (F & S)</i> 				
3.	Prescription writing on Migraine & Gout	SGD	Asst Prof. Dr. Saima & Asst Prof. Dr. Abeera All Lecturers	Must Know
Learning outcomes:				
<ul style="list-style-type: none"> • Write a suitable prescription for Migraine & Gout after justifying the selection of a P- drug. Observed OSPE (F & S) • Counsel the patient on the dosage & adverse effects of prescribed drugs. Observed OSPE (F & S) 				

Case Based Learning (CBLs)

Time: (1.5 hours)

Mode of Assessment: Quiz, MCQs, Theory & viva voce

Conducted by: All lecturers & Asst. Professors

CBL No: 01 Antimalarials

Case Scenario:

A 27-year-old-man has just returned to Europe from a trip to Southeast Asia. He was advised some drugs for prevention of malaria, but he refused this therapy. Over the past 24 hours, he has developed shaking, chills and high-grade fever of 104 °F. A blood smear reveals ring forms of Plasmodium. He has been prescribed tablet Chloroquine & Paracetamol for 3 days. On revisit after 3 days, he was afebrile, but he was prescribed another drug for 2 weeks.

Learning Outcomes:

- Evaluate the role of various anti-malarial drugs along with WHO recommendations for treatment of malaria.

CBL No: 02 NSAIDs & DMARDs

Case Scenario:

A 68-year-old woman presents with complaints of morning stiffness and pain in her wrist and knee joints which increases on exercise. On physical examination, these joints are slightly swollen. The rest of the examination is unremarkable. Her laboratory findings show anemia, elevated erythrocyte sedimentation rate, and positive rheumatoid factor.

She is given a non-steroidal anti-inflammatory drug (NSAID) which reduced her symptoms. She revisits after two weeks, her symptoms have reduced, but she complains of significant epigastric pain.

Learning Outcome:

- Correlate the mode of action and pharmacological effects of NSAIDs & DMARDs to their therapeutic uses.

CBL No: 03 Gout

Case Scenario:

A 50-year-old male presents to OPD with complaints of rapid onset of pain and swelling in his right big toe. Patient gives history of two similar episodes previously lasting for 4-5 days which was treated successfully by General Practitioner. His drug history reveals hydrochlorothiazide therapy for hypertension. On examination, his right metatarsophalangeal joint is red, hot, and swollen. Lab investigations reveal raised serum uric acid (10 mg/dl).

Learning Outcome:

- Rationalize the treatment strategies for the management of acute & chronic gout.

Learning Resources:

Textbook:

- Basic and Clinical Pharmacology by Bertram G Katzung 15th Edition

Reference Books:

- The Pharmacological Basis of Therapeutics by Goodman & Gilman Latest Edition

1. Online resources:

- <https://www.youtube.com/>
 - Pharmacology lectures by Dr. Najeeb
 - Pharmacology lectures by Kaplan
 - Pharmacology made easy

2. Library resources:

- Tripathy KD, Essentials of Medical Pharmacology, 6th Edition.
- Lippincott Illustrated Reviews Pharmacology 7th Edition
- Current Medical Diagnosis and treatment- latest Edition
- Oxford Handbook of clinical medicine by J.A. B. Collier-latest edition
- Workbook and Casebook for Goodman and Gilman's The Pharmacological Basis of Therapeutics: latest Edition.

• Teaching Faculty:

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General Pathology

Subject Learning Outcomes (SLO):

- Correlate the etiology and morphological changes of prevalent diseases with pathogenesis.
- Devise appropriate plan of lab investigations based on signs & symptoms of patients.
- Correlate cellular responses to stress and toxic insults with clinical presentation and lab reports.
- Order & interpret the relevant lab procedures required to diagnose common diseases..

Block Learning Outcomes (BLO):

Relate the basic pathology of immune system to the common diseases.

S.#	Topic	Educational Strategies	Instructor	Importance (Must Know Good to Know Nice to Know)
1.	<ul style="list-style-type: none"> • Immune system, complement system & Immunoglobulins • Hypersensitivity I & II • Hypersensitivity III & IV • HLA system, Tissue transplantation, tolerance and autoimmunity • Autoimmune diseases • Immune deficiency syndrome, AIDS • Lab diagnosis of immunological diseases 	LGIS / SDL / CBL	Prof. Dr Jamila and all faculty members	Must Know

Learning Outcomes:

- Categorize the components of normal immune system along with various pathological immune responses.
- Classify hypersensitivity reactions with examples.
- Identify the classes of immunoglobulins & their role in immunity.
- Discuss the importance of HLA system
- Recognize types of transplants and importance of tissue transplantation, tolerance & autoimmunity.
- Evaluate the autoimmune diseases and various types of immunodeficient syndromes.
- Lab diagnosis of immunological diseases.

Assessment strategy:

MCQ, SEQ/ SAQ, Viva-Voce

2.	Amyloidosis	LGIS	Prof. Dr Jamila	Good to know
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Learning Outcomes:

- Discuss etiology, pathogenesis and morphology of Amyloidosis

Assessment strategy:

References/ Learning resources:

- Robbins & Cotran Pathologic Basis of Diseases 10th Edition.
- Robbins Basic Pathology 10th Edition

Microbiology

Block Learning Outcomes:

At the end of second block, the student of 3rd year MBBS should be able to:

- Correlate the basic morphological, physiological and genetic characteristics and pathological mechanisms of organisms
- Correlate the mechanisms of disease production with clinical manifestations, diagnostic modalities, treatment and preventive strategies of important bloodborne pathogens causing infections.

	Topic	Educational Strategies	Instructor	Importance (Must Know Good to Know Nice to Know)
1.	Plasmodium Trypanosomes Leishmania	LGIS/ SDL	Prof. Dr Jamila	Must know
2.	Viral hemorrhagic Fever	LGIS / SDL/ CBL	Asst Prof. Dr Naila Iqbal and all faculty members	Must know

Learning Outcomes:

- Classify medically important blood borne pathogens.
- Describe the mechanism of action, mode of transmission into body.
- Clinical manifestation of the disease.
- Suggest Treatment and preventive measures for paper-based clinical scenarios.

Assessment strategy:

- MCQ, SEQ/ SAQ, Viva-Voce

References/ Learning resources:

- Review of Medical Microbiology and Immunology, Warren Levinson, 15th Edition
- Medical Microbiology, Jawetz, Melnick & Adelberg, 27th Edition

Online Resources:

- www.cdc.gov

Library resources

- Foundations in Microbiology 10th edition Kathleen Talaro, Barry Chess

General Pathology Practicals

Learning Outcomes:

.Correlate the histopathological features with the pathological processes of immune system & Amyloidosis.

S.	Topic	Educational Strategies	Instructor	Importance (Must Know Good to Know Nice to Know)
1.	Identify the following slide Amyloidosis	Practical/SGD	All Faculty Members	Must Know

Learning Outcomes:

- Correlate the histopathological features with the pathological process of Amyloidosis.

Assessment strategy:

OSPE

2.	Interpret Blood CP	Practical/SGD	All Faculty Members	Must Know
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Learning Outcomes:

- Correlate the findings in Blood Complete Picture with underlying pathology.

Assessment strategy:

OSPE

- **References/ Learning resources:**

- Robbins & Cotran Pathologic Basis of Diseases 10th Edition.
- Robbins Basic Pathology 10th Edition

Microbiology Practical

Learning Outcomes:

Order and interpret laboratory diagnostic tests for identification of medically important blood borne pathogens.

S.#	Topic	Educational Strategies	Instructor	Importance (Must Know Good to Know Nice to Know)
1.	Malarial parasites LD bodies	Practical/ SGD	All faculty members	Must Know

Learning Outcomes:

Identify and interpretation of report of medically important blood borne pathogens.

Assessment strategy:

- OSPE

2.	Identify different types of blood culture bottles Demonstrate understanding of blood culture collection technique.	Practical/SGD	All faculty members	Good to know
3.	Interpret culture and sensitivity of selected bacteria.	Practical/SGD	All faculty members	Must Know

Learning Outcomes:

- Identify and interpretation of report of blood culture and sensitivity.

Assessment strategy:

- OSPE

**Pathology Case-Based Learning
CBL 1: Viral Hemorrhagic fever**

Learning Outcomes:

Correlate the etiology, morphology and pathophysiological events with the pathological process of Viral Hemorrhagic fever

Case scenario: (A patient with fever, severe myalgia and headache)

History: A 40-year-old male, presented soon after monsoon season with fever, severe myalgia, arthralgia, vomiting and headache for 3 days. The patient had been taking tablet paracetamol but the fever did not resolve.

Physical Examination: Upon physical examination, he had temperature of 39.8°C, hypotension (90/50 mmHg), tachycardia and generalized petechial hemorrhages on the skin.

Laboratory Investigations: Blood complete picture showed mild leukocytosis, normocytic anemia and thrombocytopenia. No malarial parasites were seen. Tests for typhoid were also negative.

Treatment: The patient was admitted and samples were taken for other tests. The patient was continued on Paracetamol.

LEARNING OBJECTIVES:

1. Enlist other tests that could be done to reach a definitive diagnosis.
2. Analyze the scenario to conclude a provisional diagnosis? Justify other differential diagnoses which come to your mind?
3. Paraphrase the term viral hemorrhagic fever? Outline the organisms causing viral hemorrhagic fever.
4. Enumerate common viral hemorrhagic diseases in our setup.
5. Describe Crimean-Congo hemorrhagic fever and the ways it spread?
6. Discuss the laboratory methods of diagnosis of CCHF? Plan the treatment and preventive strategies of CCHF.
7. Describe the pathogenesis of Dengue fever.
8. Explain the diagnostic modalities of a case of dengue fever?
9. Discuss the treatment plans and preventive strategies of dengue?

10. Categorize the Ebola virus? Describe its modes of transmission, clinical features, laboratory diagnosis and preventive measures.

CBL 2: Known Case of HIV/AIDS presents with fever

Learning Outcomes:

Correlate the etiology, morphology and pathophysiological events with the pathological process of HIV/AIDS

Case scenario:

History: A 34-year-old known case of HIV has presented with fever, shortness of breath, bilateral chest pain and non-productive cough. His CD4 count is below 200 cells/ cm³. His chest X ray shows diffuse interstitial/alveolar infiltrates.

Learning Objectives:

- Interpret the scenario to conclude the most probable diagnosis.
- Describe the diagnostic modalities and treatment of this case.
- Enlist other infections which are common in AIDS patients with CD4 count below 200 cells/ cm³.
- Enumerate the common complications in an AIDS patient with CD4 count below 100 cells/ cm³.
- Explain acute retroviral syndrome (ARV).

Learning Resources:

1. Reference Books

- Review of Medical Microbiology and Immunology, Warren Levinson, 15th Edition
- Medical Microbiology, Jawetz, Melnick & Adelberg, 27th Edition

2. Online resources

www.cdc.gov

3. Library resources

- Foundations in Microbiology 10th edition Kathleen Talaro, Barry Chess

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Forensic Medicine

Subject Learning Outcomes (SLO):

At the end of the academic year the students should be able to:

1. Evaluate the role of FM& Toxicology in relationship to public, state and judiciary.
2. Analyze the cause, manner, mode and mechanism of death and differentiate them from general cases.
3. Interpret the laws related to medical man and explain relevant legal / court procedures applicable to medico legal / medical practice.
4. Analyze the autopsy findings to uncover the cause of death and write the comprehensive medico legal report.
5. Differentiate the forensic importance of biological specimens (blood, semen, saliva, etc.) and collect, preserve and dispatch these specimens to forensic science Lab for necessary examination.
6. Plan to manage the toxicological cases in acute and chronic exposure and interpret it in living and dead cases in relationship to law.
7. Apply ethical principles of forensic medicines according to the expectations of the community and maintain the dignity and honor of the medical profession.

Block Learning Outcomes (BLO):

At the end of first module, the student of 3rd year MBBS should be able to:

- Appraise the Forensic importance of biological specimens. (SLO4,5)
- Relate the cases of toxicology to its related laws, plan to manage toxicological cases and apply important concepts of general toxicology. (SLO4,5,6)

Sr#	Topic	Educational Strategies	Instructor	Importance (Must Know Good to Know Nice to Know)
1	Biological Specimens	LGIS	Dr. M. Iqbal	Must Know
Learning Outcomes:				
<ul style="list-style-type: none"> ● Explain Forensic importance of Biological specimens (Blood, Semen, Saliva, Vomitus, Breath, Urine and air) (SEQ,MCQ) ● Describe methods of collection, preservation, dispatch and common laboratory tests of forensic biological importance. (SEQ) 				
2	General Toxicology	LGIS	Dr. M. Iqbal	Must Know
Learning Outcomes:				
<ul style="list-style-type: none"> ● Describe the scope of toxicology's forensic aspect, its classification (SEQ) ● Diagnose acute & chronic toxicological cases in living & dead, its fatal dose, fatal period and its exception. (SEQ, MCQ) ● Utilize general principles of treatment. (SEQ) ● Prepare & interpret the chemical examiner report, autopsy technique. (SEQ) ● Define the different treatments. Techniques like emesis, gastric lavage, rehydration, catharsis & other methods used for treatment of poisoning. (SEQ,MCQ) 				

Practical Work

Block Learning Outcomes:

After completion of block, students should be able to know:

- Appraise the Forensic importance of biological specimens like blood and Hair
- Method of their collection, preservation, dispatch and the common laboratory tests.

S.#	Topic	Educational Strategies	Instructor	Importance (Must Know Good to Know Nice to Know)
1	Slides of Animal and Human blood	SGD	All lecturer	Good to know

Learning Outcomes:

- To identify the difference between animal and human blood and explain their medico legal importance. (VIVA,OSPE)

2	Slides of Animal and Human Hair	SGD	All lecturer	Good to know
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Learning Outcomes:

- To identify the difference between animal and human hair and their medico legal importance. (VIVA,OSPE)

Learning Resources:

1. Reference Books

- Parikh's text book of Forensic medicine and Toxicology Dr C.K parikh.
- Principles and practice of forensic medicine by Prof Dr Naseeb R Awan.
- Simpson's Forensic Medicine Richard Shepherd.

2. Online resources

- <https://youtube.com/C/DRJAVEDIQBALKHOKHARLECTURESFORENSICMEDICIN>

3. Library resources

- Parikh's text book of Forensic medicine and Toxicology Dr C.K parikh
- Principles and practice of forensic medicine by Prof Dr Naseeb R Awan
- Simpson's Forensic Medicine Richard Shepherd

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Community Medicine

Subject Learning Outcomes

- Recommend measures for prevention, protection and education about the common community health problems. (PLO 1,3,5,6,7,8).

Block Learning Outcomes

- Apply epidemiology of common communicable diseases in the global and local context for control and prevention of diseases. (SLO 1, 2)

S.#	Topic	Educational Strategies	Instructor	Importance (Must Know Good to Know Nice to Know)
1.	General Immunology	Flipped Classroom	Prof. Dr. S Sabah Imran	Must Know

Learning Outcomes with Assessment strategy

The students will be able to:

- Interpret the immune reactions, types of immunity, herd immunity
- Describe pre-requisites of vaccination including cold chain, hazards, contra-indications & precautions
- Recommend immunizing agents in various situations.
- Investigate the adverse effect following immunization
- Administer polio vaccine following the protocol.
- Advise mothers for vaccination in different situations

Assessment strategy: MCQ, SEQ, OSPE, Viva

Learning Resources:

1. Text Books

- Park's Textbook of Preventive and Social Medicine
- Public Health and Community Medicine (Shah, Ilyas, Ansari, Irfan's)

2. Reference Books

- Text book of Preventive and Social Medicine by Sunder Lal, Pankaj
- Davidson Principles and Practice of Medicine

3. Online resources

[General Immunology](#)

4. Library resources

- Notes/Handouts by Faculty
- G classroom

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Surgery

Learning outcomes:

. At the end of this module, students should be able to:

- Demonstrate all steps of history taking and examination of patients presenting with hematology and immune disorders in medical and surgical clinics
- Relate the basic pathology of immune system for understanding different clinical disorders.

Sr No.	Topics	Educational strategies	Name of instructor	Importance (Must Know Good to Know Nice to Know)
1.	Blood Transfusion Reactions I&II	LGIS	Asstt. Prof. Dr. Munawer Latif	
<ul style="list-style-type: none"> • Assess the patient for transfusion and its reactions Assessment tool Formative assessment				
2.	IV cannulation	Real Patient/ Skill lab		
<ul style="list-style-type: none"> • Demonstrate correct method of I/V Cannulation • Perform under direct supervision Intravenous Line . Assessment tool Formative assessment				
3.	Ward visits	Bed side teaching/ CBL		
<ul style="list-style-type: none"> • Take history and perform examination of the patients with relevant disorders Assessment tool Formative assessment				

Learning Resource:

[Blood transfusion reactions](#)

[IV cannulation, Video demonstration for IV cannulation](#)

9. Structured Summary of Y3B-VIII M- XVII Genetics and Neurosciences-II module

BLOCKS	BLOCK – VII
Module	MODULE- XIV
DURATION	04 weeks
Prerequisite Module	2 nd Prof. Exam
Pharmacology	Drugs acting on Central Nervous System
Pathology	The important morphological, pathogenic characteristic, lab diagnosis, virulence factors produced by pathogens causing CNS infections .Pathogenesis of genetic and pediatric disease with their clinical manifestations.
Forensic Medicine	Specific Poisons, Forensic Psychiatry, Regional injuries of head (scalp, skull, brain) and face, vertebral column and its contents, neck.
Medicine	Common neurological symptoms,
Surgery	Head injury I &II, Ward visits

10. Course content

Pharmacology

Subject Learning Outcomes (SLO)

After completion of the course of Pharmacology & Therapeutics, the students would be able to:

- Correlate the core concepts of pharmacokinetic and pharmacodynamic parameters of drugs to their therapeutic relevance. (PLO -1, 2, 6)
- Rationalize the drug treatment strategies for common diseases in our community. (PLO -1,2,5,6)
- Identify and report the potential adverse drug reactions (ADR), drug- drug interactions during polypharmacy. (PLO-5,6)
- Demonstrate the foundation skills for safe and effective treatment by prescribing rational generic drugs for a given disease condition. (PLO-1,2, 5, 6)
- Counsel the patient effectively on the proper use of prescription drugs. (PLO-1,2, 5, 6)
- Interpret the data of studies designed to observe the effects of various drugs. (PLO-6)

Block Learning Outcomes (BLO):

BLO-4: Analyze the role of pharmacotherapy in various CNS disorders. (SLO-2, 3,4 ,5,6)

S#	Topic	Educational Strategy	Instructor	Importance (Must Know Good to Know Nice to Know)
1.	Introduction to the Pharmacology of CNS drugs / Central Neurotransmission	LGIS	Dr. Ayesha Afzal (Assoc.Prof)	Should Know
Learning outcomes: <ul style="list-style-type: none">• Summarize the events involved in synaptic neurotransmission in CNS and drugs acting on them. (BLO-4) <i>MCQ/Assignment (S/F)</i>				
2.	Sedative Hypnotics	Flipped Classroom/ LGIS	Prof Maj (R)Dr. Khalida Ajmal	Must Know
Learning outcomes: <ul style="list-style-type: none">• Appraise the pharmacological effects of sedative/Hypnotics to their therapeutics. (BLO-4) <i>MCQ/ SEQ (S)</i>				
3.	Alcohols	LGIS	Dr. Abeera Assist Prof	Must Know
Learning outcomes: <ul style="list-style-type: none">• Recommend the treatment of acute & chronic alcoholism. (BLO-4) <i>MCQ/SEQ (S)</i>				
4	Anti-seizure drugs	LGIS	Dr. Abeera Assist. Prof	Must Know

Learning outcomes:				
<ul style="list-style-type: none"> Analyze the effects of anti-epileptic drugs in relation to neuro-excitatory illnesses. (BLO-4) <i>MCQ/ SEQ (S/F)</i> 				
5	Pre-Anesthetic Medication	LGIS	Dr. Saima Assist Prof	Should Know
Learning outcomes:				
<ul style="list-style-type: none"> Recognize the role of various drugs in pre- anesthetic medications. (BLO-4) <i>MCQ/ Assignment (F)</i> 				
6.	General Anesthetics (Introduction, Intravenous & Inhalational GAs)	Flipped Classroom/LGIS	Prof Maj (R)Dr. Khalida Ajmal	Should Know
Learning outcomes:				
<ul style="list-style-type: none"> Identify the role of inhalational & Intravenous general anesthetic agents. (BLO-4) <i>MCQ/SEQ (S/F)</i> 				
7.	Local Anesthetics	LGIS	Dr. Abeera (Assist. Prof)	Must Know
Learning outcomes:				
Describe the pharmacology of local anesthetic drugs. (BLO-4) <i>MCQ/SEQ (S/F)</i>				
8.	Opioids Agonist & antagonist	LGIS/ Flipped Class room	Prof Maj (R)Dr. Khalida Ajmal	Must Know
Learning outcomes:				
<ul style="list-style-type: none"> Discuss therapeutic uses & adverse effects of various groups of opioids. (BLO-4) <i>MCQ/ SEQ (S/F)</i> 				
9.	Drug Dependence	LGIS	Dr. Abeera (Assist. Prof)	Nice to Know
Learning outcomes:				
<ul style="list-style-type: none"> Outline the mechanisms underlying drug dependence and approaches for its management. (BLO-4) <i>MCQ (S)</i> 				
10.	Anti-Parkinsonian Drugs	Flipped Classroom	Dr. Saima Assist Prof	Should Know
Learning outcomes:				
<ul style="list-style-type: none"> Justify the use of antiparkinsonian drugs based on pathophysiology of the disease. (BLO-4) <i>MCQ/ (S/F)</i> 				
11.	Antidepressant drugs	Flipped Classroom /LGIS	Dr. Saima Assist Prof	Must Know
Learning outcomes:				
<ul style="list-style-type: none"> Evaluate the pharmacological role of various anti-depressants in the management of depression. (BLO-4) <i>MCQ/SAQ (S/F)</i> 				
12.	Antipsychotic Drugs	LGIS/Flipped Classroom	Dr. Ayesha Afzal Assoc. Prof	Should Know
Learning outcomes:				
<ul style="list-style-type: none"> Correlate the patho-physiology of psychiatric illnesses to their management. (BLO-4) 				

<i>MCQ/SEQ (S)</i>				
13.	Drugs used in bipolar disorders & Mania	LGIS	Dr. Ayesha Afzal Assoc. Prof	Should Know
Learning outcomes:				
<ul style="list-style-type: none"> Rationalize the use of drugs in bipolar affective disorders. (BLO-4) <i>MCQ/SEQ (S)</i> 				
14.	CNS Stimulants	LGIS	Dr. Saima Assist Prof	Nice to Know
Learning outcomes:				
<ul style="list-style-type: none"> Outline the uses & adverse effects of CNS stimulants. (BLO-4) <i>MCQ/ Assignment (F)</i> 				
15.	Module Test			

Practical Work

Block Learning Outcomes:

After completion of block, students should be able to:

- Justify the selection of priority drugs for certain indications and prescribe medicine accordingly.
- Counsel the patient on the use/adverse effects of administered drugs.
- Interpret and report the effects of CNS stimulants/depressants on frog.
- Calculate the different biostatistics parameters from the given data.

S.#	Topic	Educational Strategy	Instructor	Importance (Must Know Good to Know Nice to Know)
1.	Prescription writing on Epilepsy	Simulation & Role play in SGD	Asst Prof. Dr. Saima & Asst Prof. Dr. Abeera All Lecturers	Must Know
Learning outcomes:				
<ul style="list-style-type: none"> Justify the selection of priority drugs for epilepsy and prescribe medicine accordingly. <i>Observed OSPE (F & S)</i> Counsel the patient on the use/adverse effects of anti-epileptic drugs. <i>Observed OSPE (F & S)</i> 				
2.	Prescription writing on Parkinsonism	Simulation & Role Play in SGD	Asst Prof. Dr. Saima & Dr. Abeera All Lecturers	Must Know
Learning outcomes:				
<ul style="list-style-type: none"> Justify the selection of priority drugs for parkinsonism and prescribe medicine accordingly. <i>Observed OSPE (F & S)</i> Counsel the patient on the use/adverse effects of anti-parkinsonism drugs. <i>Observed OSPE (F & S)</i> 				
3.	Effect of CNS stimulants/depressants on frog	Video assisted learning / in-vivo experimental	Asst Prof. Dr. Saima & Dr. Abeera All Lecturers	Must Know

		learning in Practical		
Learning outcomes: Interpret & report the effects of CNS stimulants/depressants on frog. <i>Observed OSPE (F & S)</i>				
4.	Biostatistics	SGD	Asst Prof. Dr. Saima & Dr. Abeera All Lecturers	Must Know
Learning outcomes:				
<ul style="list-style-type: none"> Calculate the different biostatistics parameters for a given data. <i>Unobserved OSPE (S/F)</i> 				

Case Based Learning (CBLs)

Time: (1.5 hours)

Mode of Assessment: Quiz, MCQs, Theory & viva voce

Conducted by: All lecturers & Asst. Professors

CBL No: 01 Sedative Hypnotics

Case Scenario:

A 23-year-old male college student is brought to the ER in a drowsy state by his fellow colleague. The patient has a history of repeated episodes of sudden feelings of intense anxiety and fear that reach a peak within minutes for which he is taking lorazepam. Last night he took double dose of drug to relieve his symptoms. Now in the ER he is being managed with flumazenil intravenously.

Learning Outcomes:

- Correlate the pharmacological effects of sedative/hypnotic drugs to their clinical uses and identify the role of antidote in case of overdose.

CBL No: 02 Anti-epileptics

Case Scenario:

A young male patient Yasir was brought to the emergency department in an unconscious state. His mother said that he was found unconscious in his room with frothing from mouth. She also gave a history of tongue biting and urination. He was unconscious for the last 30 min and had another epileptic fit while her mother was giving the history.

Learning Outcomes:

- Select the anti-epileptics for the treatment of patient on the basis of various types of seizures.

CBL No: 03 Opioids

Case Scenario

A 25-year-old male is brought to the emergency department after having a road traffic accident with complaints of severe pain in right lower limb & inability to walk. There is no head injury, but his right femur is fractured. The attending physician gives him an injection of Morphine (an opioid) to relieve his pain.

Learning Outcomes:

- Correlate the mode of action and pharmacological effects of opioids to their therapeutic uses.

CBL No: 04 Anti-Depressants

Case Scenario:

A 50-year-old obese diabetic & hypertensive patient begins to experience changes in mood. He also suffers from glaucoma and stress urinary incontinence. He is losing interest in his work and lack the desire to play his daily tennis match. He is preoccupied with feelings of guilt, worthlessness and is uncomfortable in social gatherings. He also complains of muscle aches throughout his body. His family reported his increased aggression and one suicidal attempt last week.

Learning Outcomes:

- Relate the therapeutics of antidepressants to the various co-morbidities of depression patients.

Learning Resources:

Textbook:

- Basic and Clinical Pharmacology by Bertram G Katzung 15th Edition

Reference Books:

- The Pharmacological Basis of Therapeutics by Goodman & Gilman Latest Edition

3. Online resources:

- <https://www.youtube.com/>
- Pharmacology lectures by Dr. Najeeb
- Pharmacology lectures by Kaplan
- Pharmacology made easy

4. Library resources:

- Tripathy KD, Essentials of Medical Pharmacology, 6th Edition.
- Lippincott Illustrated Reviews Pharmacology 7th Edition
- Current Medical Diagnosis and treatment- latest Edition
- Oxford Handbook of clinical medicine by J.A. B. Collier-latest edition
- **Workbook and Casebook for Goodman and Gilman's** The Pharmacological Basis of Therapeutics: latest Edition

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General Pathology

Subject Learning Outcomes (SLO):

- Correlate the etiology and morphological changes of prevalent diseases with pathogenesis.
- Devise appropriate plan of lab investigations based on signs & symptoms of patients.
- Correlate cellular responses to stress and toxic insults with clinical presentation and lab reports.
- Order & Interpret the relevant lab procedures required to diagnose common diseases

Block Learning Outcomes (BLO):

- Evaluate the nature and pattern of inheritance disorders involving single and multiple gene complexes.
- Correlate the congenital anomalies and syndromes with their pathophysiology.

S. #	Topic	Educational Strategies	Instructor	Importance (Must Know Good to Know Nice to Know)
1	<ul style="list-style-type: none"> ● Introduction to genetics ● Biochemical & molecular basis of Mendelian disorders. ● Cytogenetic disorders Multifactorial disorders Diagnosis of genetic disorders 	LGIS/SDL /CBL	Asstt. Prof. Lt Col. Dr. Nabeela Khan and all faculty members	Must Know

Learning Outcomes

- Correlate the pathogenesis, laboratory findings, morphological features and clinic-pathologic consequences of genetic disorders.
- Classify different Mendelian disorders and identify respective biochemical and molecular defects.
- Classify cytogenetic disorders in autosomes and sex chromosomes.
- Identify the indications for prenatal and postnatal cytogenetic analysis.
- Interpret the result of cytogenetic tests.

Assessment strategy:

- MCQ, SEQ / SAQ, Viva voce.

References/ Learning resources:

- Robbins & Cotran Pathological Basis of Diseases 10th Edition.
- Robbins Basic Pathology 10th Edition

Microbiology

Block Learning Outcomes:

- Correlate the mechanisms of disease production with clinical manifestations, diagnostic modalities, treatment and preventive strategies of important pathogens causing infections of CN system.

S.#	Topic	Educational Strategies	Instructor	Importance (Must Know Good to Know Nice to Know)
1.	Neisseria meningitidis	LGIS / SDL/CBL	Asstt. ProfDr Tahira Tehseen and all faculty members	Must Know

Learning Outcomes:

- Explain the mechanisms of diseases production by Neisseria meningitidis which causes infections of CNS
- Identify the diseases, complications and laboratory diagnostic methods caused by above mentioned bacteria.

Assessment strategy:

- MCQ, SEQ/ SAQ/Viva voce

2.	Streptococcus pneumoniae	LGIS/SDL/CBL	Asstt. Prof Dr Tahira Tehseen and all faculty members	Must Know
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Learning Outcomes:

- Explain the mechanisms of diseases production by Streptococcus pneumoniae which causes infections of CNS
- Identify the diseases, complications and laboratory diagnostic methods caused by above mentioned bacteria.

Assessment strategy:

- MCQ, SEQ/ SAQ/Viva voce

3.	Hemophilus, Listeria	LGIS/SDL/CBL	Asstt. Prof Dr Lubna Ghazal and all faculty members	Must Know
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Learning Outcomes:

- Explain the mechanisms of diseases production by Hemophilus and Listeria which causes infections of CNS
- Identify the diseases, complications and laboratory diagnostic methods caused by above mentioned bacteria. .

Assessment strategy:

	• MCQ, SEQ/ SAQ/OSPE			
4.	Clostridium tetani, Clostridium botulinum	LGIS	Asstt. Prof Dr Lubna Ghazal	Must Know
Learning Outcomes:				
<ul style="list-style-type: none"> • Explain the mechanisms of diseases production by Clostridium tetani and Clostridium botulinum which causes infections of CNS • Identify the diseases, complications and laboratory diagnostic methods caused by above mentioned bacteria. 				
Assessment strategy:				
• MCQ, SEQ/ SAQ/Viva voce				
5.	Cryptococcus and Naegleria	LGIS	Asstt. Prof Dr Lubna Ghazal	Must Know
Learning Outcomes:				
<ul style="list-style-type: none"> • Explain the mechanisms of diseases production by Cryptococcus and Naegleria which causes infections of CNS • Identify the diseases, complications and laboratory diagnostic methods caused by above mentioned parasite. 				
Assessment strategy:				
• MCQ, SEQ/ SAQ/Viva voce				
6.	Viruses causing meningitis and encephalitis, Polio, Enteroviruses, Measles and mumps	LGIS/SDL/CBL	Asstt. Prof Dr Lubna Ghazal All faculty members	Must Know
Learning Outcomes:				
<ul style="list-style-type: none"> • Describe the Viruses causing meningitis and encephalitis. • Explain the mechanisms of diseases production by Viruses causing meningitis. • Identify the diseases, complications and laboratory diagnostic methods caused by above mentioned viruses. 				
Assessment strategy:				
• MCQ, SEQ/ SAQ/Viva voce				
7.	Herpes simplex Viruses	LGIS	Asstt. Prof Dr Tahira Tehseen	Must Know
Learning Outcomes:				
<ul style="list-style-type: none"> • Describe the Herpes simplex virus. • Explain the mechanisms of diseases production by Herpes simplex virus. • Identify the diseases, complications and laboratory diagnostic methods caused by above mentioned viruses. 				
Assessment strategy:				
MCQ, SEQ/ SAQ/Viva voce				
8.	Prions and slow virus	LGIS	Asstt. Prof Dr Lubna Ghazal	Must Know
Learning Outcomes:				
<ul style="list-style-type: none"> • Describe the Prions and slow virus. • Explain the mechanisms of diseases production by Prions and slow virus. 				

- Identify the diseases, complications and laboratory diagnostic methods caused by above mentioned viruses.

References/ Learning resources:

- Review of Medical Microbiology and Immunology, Warren Levinson, 15th Edition
- Medical Microbiology, Jawetz, Melnick & Adelberg, 27th Edition

Microbiology Practicals

Learning Outcomes:

Perform and interpret laboratory diagnostic tests for identification of medically important pathogens causing infections of CNS.

S.#	Topic	Educational Strategies	Instructor	Importance (Must Know Good to Know Nice to Know)
1.	Identify bacteria based on their biochemical tests: <ul style="list-style-type: none"> • Motility Test. • Oxidase Test 	Practical	All faculty members	Must Know
2.	Identify anaerobic jars used for growth of anaerobic bacteria.			

Learning Outcomes:

- Perform and interpret biochemical tests for identification of medically important bacteria.

Assessment strategy:

- OSPE

General Pathology & Microbiology Case-Based Learning

CBL 1:Genetic Disorders-I (Down Syndrome)

Scenario:

A clinician is called to evaluate the cause of weight loss and fever in a six years old female child with limited intelligence. On examination the child is found to have epicanthic folds, depressed nasal bridge with macroglossia. Examination of hands show short, broad hands and a single palmar crease. She has generalized lymphadenopathy with hepato-splenomegaly. Vital signs are normal except temperature that is 101 F.

Laboratory investigations:

Trisomy 21 on chromosomal analysis

WBC's: $100 \times 10^9/L$

Peripheral film: blasts 23 % on peripheral examination

Bone marrow examination: replacement of normal bone marrow cells by blasts

Learning outcomes:

- Analyze the above scenario and conclude the diagnosis.
- Figure out the karyotypes which can be seen in this disease

- Describe the most likely cause of chromosomal abnormalities.
- Enumerate the other clinical features found in these cases.
- Enlist the common complications seen in this disease.
- Explain noninvasive method for prenatal diagnosis that can be used for this disease.

CBL 2:Genetic Disorders-II

History: A-3-year-old child was brought to emergency department with severe pain in legs and fever for 01 day. He had similar episodes in the past. He has received narcotic analgesics and blood transfusion in the past.

Examination: On examination he was pale and spleen was not palpable

Investigation: Blood CP was done and peripheral film showed sickle shaped cell.

Learning outcomes:

- Analyze the above scenario and conclude the diagnosis?
- Justify his spleen was not palpable?
- Describe the genetic defect in this case?
- Discuss the mode of inheritance in this case?
- Draw a pedigree of this type of inheritance.
- Enlist the laboratory investigations which can be carried out in this case?
- Explain laboratory results in such a case?
- Enlist other complications which can occur in such a case?

CBL 3:Meningitis

Case scenario: (A patient with fever, headache and vomiting)

History: A 15 years old male was admitted to the hospital with history of fever, headache and vomiting for two days and was in semiconscious state. A few days back he had suffered from upper respiratory infection.

Examination: On examination temperature was 102°F with a pulse rate of 120/min. Bilateral sub-conjunctival hemorrhages were noted bilaterally. There was neck rigidity and Kerning's sign was positive. His breathing was laborious. Considering the diagnosis of meningitis, lumber puncture was carried out.

Laboratory examination:

- Blood complete picture yielded leukocytosis
- Cerebrospinal fluid analysis
 - On gross examination the fluid was turbid.
 - Chemically yielding a high protein and low glucose content.
 - Microscopy showed increased cell count, mostly neutrophils
 - Gram stain showed gram negative diplococci.
- Cerebrospinal fluid culture was carried out and blood for culture was requested.

Treatment:

- Considering meningitis, empirically injectable Cefotaxime was started. Dexamethasone was also given. The patient was treated with the antibiotic for seven days.

Learning Outcomes:

1. Analyze the case scenario to conclude a diagnosis.
2. Describe the pathogenesis of the disease in above mentioned scenario.
3. Explain the type of precautions you will adopt during his stay in hospital.
4. Enlist other pathogens which can cause meningitis.
5. Give the reason of turbidity of cerebrospinal fluid.
6. Enumerate the culture media which you will use for the culture of CSF.
7. Interpret other methods for the diagnosis of meningitis.
8. Justify the need of blood culture in this case.
9. Outline the treatment options in such patient.
10. Describe the prophylaxis for close contacts of this patient.
11. Discuss the possible complications of this infection.
12. Describe the preventive measures for this disease.

Learning Resources:**1. Reference Books****Learning Resources:****2. Reference Books**

- Review of Medical Microbiology and Immunology, Warren Levinson, 15th Edition
- Medical Microbiology, Jawetz, Melnick & Adelberg, 27th Edition

Online resources

- www.cdc.gov

Library resources

- Foundations in Microbiology 10th edition Kathleen Talaro, Barry Chess .

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Forensic Medicine

Subject Learning Outcomes (SLO):

At the end of the academic year the students should be able to:

1. Evaluate the role of FM& Toxicology in relationship to public, state and judiciary.
2. Analyze the cause, manner, mode and mechanism of death and differentiate them from general cases.
3. Interpret the laws related to medical man and explain relevant legal / court procedures applicable to medico legal / medical practice.
4. Analyze the autopsy findings to uncover the cause of death and write the comprehensive medico legal report.
5. Differentiate the forensic importance of biological specimens (blood, semen, saliva, etc.) and collect, preserve and dispatch these specimens to forensic science Lab for necessary examination.
6. Plan to manage the toxicological cases in acute and chronic exposure and interpret it in living and dead cases in relationship to law.
7. Apply ethical principles of forensic medicines according to the expectations of the community and maintain the dignity and honor of the medical profession.

Block Learning Outcomes (BLO):

- Describe medico legal aspects and other signs symptom, treatment plan of poisons of specific poisons/drugs prevailing in our society. (SLO2,3,6,7)
- Distinguish between different types of insanity and limitations to civil and criminal responsibilities'. (SLO3,7)
- Differentiate among various possible etiologies of regional injuries. (SLO2,3)

S.#	Topic	Educational Strategies	Instructor	Importance (Must Know Good to Know Nice to Know)
1.	Special Toxicology	LGIS	Dr. M.Iqbal	Must Know
Learning Outcomes:				
<ul style="list-style-type: none"> • Explain sign and symptoms of Alcohol, opiates, hypnotics and sedative,stimulants,cannabis,venomous insects (snakes) (SEQ,MCQ) • Discuss the treatment plans of specific poisons. (SEQ,MCQ) 				
2.	Forensic Psychiatry	LGIS	Dr. M.Iqbal	Good to Know
Learning Outcomes:				
<ul style="list-style-type: none"> • Explain True and feigned insanity(SEQ,MCQ) • Describe Procedure of restrain of mentally ill(SEQ,MCQ) • Discuss Limitations to civil and criminal responsibilities of mentally ill. (SEQ,MCQ) 				

<ul style="list-style-type: none"> ● Employee the moral and ethical implications of medical procedures. (SEQ) ● Euthanasia (SEQ) 				
3.	RTA	LGIS	Dr.Babur Rashid Chughtai	Must Know
Learning Outcomes: <ul style="list-style-type: none"> ● Explain various possible regional injuries due to road traffic accidents including head, face, vertebral column its contents, neck, abdomen, limbs, bones, joints. (SEQ,MCQ) 				

Forensic Medicine and Toxicology Practical's

Learning Outcomes: After completion of block, students should be able to know:

1. Autopsy types, objective, rules, techniques and procedure of post mortem examination.
2. How to write a certification of death.

S.#	Topic	Educational Strategies	Instructor	Importance (Must Know Good to Know Nice to Know)
1.	Visit to THQ hosp Taxila	Prac/Demo	All lecturer	Must know
Learning Outcomes: <ul style="list-style-type: none"> ● To describe ideal autopsy room and process of medico legal examination. (VIVA,OSPE) 				
2.	PM 1 death due to poisoning. THQ hosp	Prac/Demo	All lecturer	Must know
Learning Outcomes: <ul style="list-style-type: none"> ● To describe the procedure of PM examination in case of poisoning and write the report. (VIVA,OSPE) 				
3.	PM 2 death due to burn. THQ hosp	Prac/Demo	All lecturer	Must know
Learning Outcomes: <ul style="list-style-type: none"> ● To describe the procedure of PM examination in case of burn and write the report. (VIVA,OSPE) 				
4.	PM 3 death due to firearm. THQ hosp	Prac/Demo	All lecturer	Must know
Learning Outcomes: <ul style="list-style-type: none"> ● To describe the procedure of PM examination in case of firearm injury and write the report. (VIVA,OSPE) 				

Learning Resources:

5. Reference Books

- Parikh's text book of Forensic medicine and Toxicology Dr C.K parikh.
- Principles and practice of forensic medicine by Prof Dr Naseeb R Awan.
- Simpson's Forensic Medicine Richard Shepherd.

2. Online resources

- <https://youtube.com/C/DRJAVEDIQBALKHOKHARLECTURESFORENSICMEDICIN>

6. Library resources

- Parikh's text book of Forensic medicine and Toxicology Dr C.K parikh
- Principles and practice of forensic medicine by Prof Dr Naseeb R Awan
- Simpson's Forensic Medicine Richard Shepherd

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Community Medicine

S.#	Topic	Educational Strategies	Instructor	Importance (Must Know Good to Know Nice to Know)
1.	Poliomyelitis	Flipped Classroom	Associate Prof. Dr. Khola Waheed	Must Know

Learning Outcomes with Assessment strategy

The students will be able to:

- Identify cases of Poliomyelitis, its epidemiology and prevention.

Assessment strategy: MCQ, SEQ, OSPE, Viva

2.	Prevention of Snake Bite	Flipped Classroom	Associate Prof. Dr. Khola Waheed	Must Know
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Learning Outcomes with Assessment strategy

The students will be able to:

- Identify a snake bite and snake type
- Suggest appropriate First Aid that should be given to a snake bite victim
- Recommend Public Health measures to prevent snake bites.

Assessment strategy: MCQ, SEQ, OSPE, Viva

Learning Resources:

1. Text Books

- Park's Textbook of Preventive and Social Medicine
- Public Health and Community Medicine (Shah, Ilyas, Ansari, Irfan's)

2. Reference Books

- Text book of Preventive and Social Medicine by Sunder Lal, Pankaj
- Davidson Principles and Practice of Medicine

3. Online resources

[Prevention of Snake Bite](#)

[Poliomyelitis](#)

4. Library resources

- Notes/Handouts by Faculty
- G classroom

Teaching Faculty:

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Medicine

Subject Learning Outcomes:

- Diagnose common Medical conditions, suggest and formulate appropriate investigations, rationalize treatment plan and if appropriate, refer patient for specialist opinion/ management.
- Suggest preventive measure for the common Public Health Problem in the community.
- Perform relevant bedside procedures.
- Convey relevant information and explanations accurately to patients, families, colleagues and other professionals.
- Understand medical ethics and its application pertaining to medicine and maintain the confidentiality of the patient.
- Adapt research findings appropriately to the individual patient situation or relevant patient population

Block Learning outcomes:

At the end of this block, third year student should be able to

- Evaluate clinically and make differential diagnosis of patients presenting with Anemia and bleeding disorders.
- Assess the patient with hypersensitivity reaction and suggest management in emergency.
- Assess clinically and make differential diagnosis of patients presenting with common neurological symptoms.
- Perform clinical evaluation and make differential diagnosis of patients presenting with common pulmonary diseases.

Sr No.	Topics	Educational Strategies	Name of instructor	Importance (Must know Should know Could know)
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At the end of lecture, third year student should be able to :

1.	Approach to patient with Anemia	LGIS	Dr. Asim Ali Shah	Must know
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Class Learning outcomes:

- Differentiate between various types of Anemia based on etiology, underlying pathology, symptoms and signs.
- Evaluate the patient on the basis of signs and symptoms and differential diagnosis.
- Outline management plan.

Mode of Assessment: MCQs/SEQs

2.	Approach to patient with Bleeding disorders	LGIS	Dr. Wajahat Sultan	Should know
Class Learning outcomes: <ul style="list-style-type: none"> • Differentiate between various types of bleeding disorders. • Correlate abnormalities in physiology of coagulation with etiology and clinical features of ITP/ Bleeding disorders/DIC. • Outline relevant investigations and management plan. Mode of Assessment: MCQs/SEQs				
3.	Clinical features and management of Hypersensitivity Reactions/Angioedema	LGIS	Dr. Sadia Babu	Must know
Class Learning outcomes: <ul style="list-style-type: none"> • Relate the clinical presentation of hypersensitivity reaction to its pathophysiology. • Enlist key management steps in emergency. Mode of Assessment: MCQs/SEQs				
4.	Clinical features and diagnosis of Movement Disorders	LGIS	Dr. Ayesha Rani	Should Know
Class Learning outcomes: <ul style="list-style-type: none"> • Differentiate between different types of tremors and movement disorders based on clinical features. • Outline the workup and management of patients with gait disorders. Mode of Assessment: MCQs/SEQs				
5.	Approach to patient with headache	LGIS	Prof. Muzamil Jamil	Should Know
Class Learning outcomes: <ul style="list-style-type: none"> • Assess the patient with headache on the basis of etiology and pathophysiology. • Differentiate various types of headache on the basis of clinical presentation. • Elaborate pharmacologic treatment of acute condition. Mode of Assessment: MCQs/SEQs				
6.	Approach to patient with loss of consciousness	LGIS	Dr. Turab Fatima Abidi	Must know
Class Learning outcomes: <ul style="list-style-type: none"> • Differentiate between awake and unconscious state • Describe pathophysiological mechanism leading to unconsciousness • Generate differential diagnosis of unconscious patient • Enlist the investigations • Outline emergency management of unconscious patient Mode of Assessment: MCQs/SEQs				

7.	Meningitis clinical features and diagnosis	LGIS	Dr. Sadia Fatima	Should know
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Class Learning outcomes:

- Identify the clinical features of meningitis
- Identify warning signs in CNS infection
- Describe pathogenesis of meningitis
- Outline the investigations and drugs used in meningitis

Mode of Assessment: MCQs/SEQs

8.	Approach to patient with fits	LGIS	Dr. Turab Fatima Abidi	Should know
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Class Learning outcomes:

- Differentiate between different types of seizures on the basis of pathophysiology.
- Identify the cause and trigger factors associated with seizures.
- Recognize the clinical features of seizures
- Enlist the investigations of patient with suspected epilepsy
- Outline the drug treatment in emergency (status epilepticus) and later

Mode of Assessment: MCQs/SEQs

9.	Bacterial pneumonia clinical features and diagnosis	LGIS	Dr. Farhat Ul Ain	Should know
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Class Learning outcomes:

- Identify the clinical features of bacterial pneumonia
- Correlate clinical features with its etiology and pathophysiology
- Enlist the relevant investigation
- Devise management plan

Mode of Assessment: MCQs/SEQs

10.	Asthma clinical features and diagnosis	LGIS	Dr. Asim Ali Shah	Should know
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Class Learning outcomes:

- Relate abnormalities of physiology of ventilation and respiration to obstructive pulmonary diseases
- Identify the clinical features of asthma
- Discuss the incidence, etiology and risk factors associated with asthma
- Correlate the clinical features with pathophysiology of asthma
- Enlist the investigations
- Outline drugs used for treatment of asthma

Mode of Assessment: MCQs/SEQs

Learning resources:

1. Reference Books

- Davidson's Principles and practice of Medicine
- Kumar and Clarks Clinical Medicine
- Macleod' Clinical Examination
- Hutchison's clinical methods

2. Online resources

www. Medscape.com

3. Library resources

- Harrison's Principals of Internal Medicine 20th Edition (2018). McGraw Hill Education

Teaching faculty and Student hours

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Assessment formats

Assessment strategies (Formative)	Assessment strategies (Summative)
MCQs/SEQs	MCQs/SEQs

Surgery

Learning Outcomes:

At the end of this module, students should be able to:

- Apply their theoretical learning about genetics and neurosciences in relevant clinical scenarios encountered in subsequent years of training and practice

Sr No.	Topics	Educational strategies	Name of instructor	Importance (Must Know Good to Know Nice to Know)
1	Trauma and tissue response	LGIS	Assoc. Prof. Dr. Naeem Akhtar	MK
Learning outcomes: <ul style="list-style-type: none"> • Discuss the response of tissue to trauma. Assessment tool: Formative assessment				
2.	Head injury I &II	LGIS	Asstt. Prof. Dr. M. Mehboob Alam	GK
Learning outcomes: <ul style="list-style-type: none"> • Assess the patient with head injury and score as per GCS. Assessment tool: Formative assessment				
3.	Ward visits	Bed side teaching/ CBL		MK
Learning outcomes: <ul style="list-style-type: none"> • Take history and perform examination of the patients with relevant disorders Assessment tool: OSCE				

Y3B-VIII M- XVIII Respiratory System Module

BLOCKS		BLOCK – VII
Module	M- XVIII Respiratory System Module	
DURATION	03 weeks	
Prerequisite Module	2 nd Prof. Exam	
Pharmacology	Anti-tuberculosis drugs, Drugs used for obstructive pulmonary disorders (Asthma, COPD), Expectorants & Anti-tussive	
Pathology	The important morphological, pathogenic characteristic, lab diagnosis, virulence factors produced by pathogens causing respiratory infections. Pathogenesis of common respiratory diseases with their clinical manifestations.	
Forensic Medicine	Specific poisons, Regional Injuris, Heat, Cold, Electrical injuries, Violent deaths due to Asphyxia.	
Medicine	Bleeding disorders, hypersensitivity reaction, common neurological symptom, common pulmonary diseases.	
Surgery	Blood Transfusion Reactions I&II, IV cannulation, Trauma and tissue response, Head injury I &II, Ward visits	

12. Course content

Pharmacology

Subject Learning Outcomes (SLO)

After completion of the course of Pharmacology & Therapeutics, the students would be able to:

- Correlate the core concepts of pharmacokinetic and pharmacodynamic parameters of drugs to their therapeutic relevance. (PLO -1, 2, 6)
- Rationalize the drug treatment strategies for common diseases in our community. (PLO -1,2,5,6)
- Identify and report the potential adverse drug reactions (ADR), drug- drug interactions during polypharmacy. (PLO-5,6)
- Demonstrate the foundation skills for safe and effective treatment by prescribing rational generic drugs for a given disease condition. (PLO-1,2, 5, 6)
- Counsel the patient effectively on the proper use of prescription drugs. (PLO-1,2, 5, 6)
- Interpret the data of studies designed to observe the effects of various drugs. (PLO-6)

Block Learning Outcomes (BLO):

- **BLO-5:** Discuss the pharmacotherapy of obstructive pulmonary disorders (Asthma & COPD) and Tuberculosis (TB). (SLO-2, 3,4,5)

S.#	Topic	Educational Strategy	Instructor	Importance (Must Know Good to Know Nice to Know)
1.	Anti-Tuberculosis Drugs	LGIS	Maj (R) Dr. Khalida Ajmal (Prof)	Must know
Learning outcomes:				
<ul style="list-style-type: none"> • Justify the management plan of tuberculosis according to mode of action, resistance patterns and regional current practices. (BLO-5) <i>MCQ/SEQ(S/F)</i> 				
x	Drugs used for obstructive pulmonary disorders (Asthma, COPD)	LGIS	Assoc. Prof Dr. Ayesha Afzal	Must Know
Learning outcomes:				
<ul style="list-style-type: none"> • Develop a management plan for obstructive pulmonary disorders (Asthma, COPD) with justification. (BLO-5) <i>MCQ/ SEQ (S/F)</i> 				
3.	Expectorants & Anti-tussives	LGIS	Assist Prof Dr. Abeera	Must Know
Learning outcomes:				

Outline the pharmacotherapy of productive & non-productive cough. (BLO-5)

MCQ/SEQ(S/F)

Practical Work

Block Learning Outcomes: After completion of block, students should be able to:

- Justify the selection of priority drugs for certain indications and prescribe medicine accordingly.
- Counsel the patient on the use/adverse effects of administered drugs.

S.#	Topic	Educational Strategy	Instructor	Importance (Must Know Good to Know Nice to Know)
1.	Pulmonary Tuberculosis	Simulation & Role Play in SGD	Asst Prof. Dr. Saima & Asst Prof. Dr. Abeera All Lecturers	Must Know
Learning outcomes: <ul style="list-style-type: none">• Write a suitable prescription for treatment of Pulmonary Tuberculosis (TB).• Counsel the patient on the use/adverse effects of anti-TB drugs.				
2.	Acute attack of Asthma	Simulation & Role Play in SGD	Asst Prof. Dr. Saima & Dr. Abeera All Lecturers	Must Know
Learning outcomes: <ul style="list-style-type: none">• Write a suitable prescription for asthma after justifying the selection of a P- drug.• Counsel the patient on the use/adverse effects of anti-asthmatics.				
3.	End-block OSPE Y3B2 exam			

Case Based Learning (CBLs)

Time: (1.5 hours)

Mode of Assessment: Quiz, MCQs, Theory & viva voce

Conducted by: All lecturers & Asst. Professors

CBL No: 01 Anti-tuberculous Drugs

Case Scenario:

A 45-year-old male has been diagnosed as a case of acute pulmonary tuberculosis. His treatment regimen included multiple first line anti-TB drugs. He reports back to medical unit after one year and x-ray chest reveals active lesion, indicating the resistance to treatment.

Learning Outcomes:

The students should be able to:

- Rationalize the treatment strategies for the management of latent tuberculosis, pulmonary tuberculosis and multi-drug resistance tuberculosis.

CBL No: 02 Asthma

Case Scenario:

A known case of asthma presents to emergency with acute shortness of breath. She

appears frightened and refuses to lie down but is not cyanotic. Her pulse is 120 bpm and respiratory rate is 32/min. On chest auscultation, there is both inspiratory and expiratory wheeze. She is already using albuterol inhaler frequently without improvement in her symptoms.

Learning Outcomes:

The students should be able to:

Evaluate the treatment strategy for the management of acute attack and chronic asthma.

Learning Resources:

Textbook:

- Basic and Clinical Pharmacology by Bertram G Katzung 15th Edition

Reference Books:

- The Pharmacological Basis of Therapeutics by Goodman & Gilman Latest Edition

5. Online resources:

- <https://www.youtube.com/>
- Pharmacology lectures by Dr. Najeeb
- Pharmacology lectures by Kaplan
- Pharmacology made easy

6. Library resources:

- Tripathy KD, Essentials of Medical Pharmacology, 6th Edition.
- Lippincott Illustrated Reviews Pharmacology 7th Edition
- Current Medical Diagnosis and treatment- latest Edition
- Oxford Handbook of clinical medicine by J.A. B. Collier-latest edition
- **Workbook and Casebook for Goodman and Gilman's The Pharmacological Basis of Therapeutics: latest Edition**

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General Pathology

Subject Learning Outcomes (SLO):

- Correlate the etiology and morphological changes of prevalent diseases with pathogenesis.
- Devise appropriate plan of lab investigations based on signs & symptoms of patients.
- Correlate cellular responses to stress and toxic insults with clinical presentation and lab reports.
- Order & interpret the relevant lab procedures required to diagnose common diseases

Block Learning Outcomes (BLO):

- Justify the environmental factors contributing in common respiratory diseases.

S. #	Topic	Educational Strategies	Instructor	Importance (Must Know Good to Know Nice to Know)
1.	<ul style="list-style-type: none"> • Harmful effects of smoking and alcohol • Harmful effects of radiation • Occupational hazards 	LGIS / CBL/SDL	Asstt. Prof. Dr Lubna Ehtizaz and all faculty members	Must Know
Learning Outcomes: <ul style="list-style-type: none"> • Identify causes of environmental diseases and their effects on human body. 				
Assessment strategy <ul style="list-style-type: none"> • MCQ, SEQ/SAQ, Viva Voce 				

References/ Learning resources:

- Robbins & Cotran Pathological Basis of Diseases 10th Edition.
Robbins Basic Pathology 10th Edition

Microbiology

Block Learning Outcomes:

At the end of first block, the students of 3rd year MBBS should be able to

- Correlate the mechanisms of disease production with clinical manifestations, diagnostic modalities, treatment and preventive strategies of important pathogens causing infections of respiratory system.

S. #	Topic	Educational Strategies	Instructor	Importance (Must Know Good to Know Nice to Know)
1.	Mycobacterium tuberculosis	LGIS/SDL/ /CBL	Asstt Prof. Dr Tahira Tehseen and all faculty members	Must know
Learning Outcomes:				

- Explain the mechanisms of diseases production by Mycobacterium tuberculosis.
- Identify the diseases, complications and laboratory diagnostic methods caused by above mentioned Bacteria.

Assessment strategy:

MCQ, SEQ/ SAQ/ Viva voce

2.	Mycobacterium leprae	LGIS	Asstt Prof. Dr Tahira Tehseen	Must Know
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Learning Outcomes:

- Explain the mechanisms of diseases production by Mycobacterium leprae.
- Identify the diseases, complications and laboratory diagnostic methods caused by above mentioned Bacteria.

Assessment strategy:

MCQ, SEQ/ SAQ/ Viva voce

3.	Atypical mycobacterium	LGIS/SDL/ CBL	Asstt Prof. Dr Tahira Tehseen and all faculty members	Must Know
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Learning Outcomes:

- Explain the mechanisms of diseases production by atypical mycobacterium.
- Identify the diseases, complications and laboratory diagnostic methods caused by above mentioned Bacteria.

Assessment strategy:

MCQ, SEQ/ SAQ/ Viva voce

4.	Bacillus anthracis	LGIS	Asstt Prof. Dr Tahira Tehseen	Must Know
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Learning Outcomes:

- Explain the mechanisms of diseases production by Bacillus anthracis.
- Identify the diseases, complications and laboratory diagnostic methods caused by above mentioned Bacteria.

Assessment strategy:

- MCQ, SEQ/ SAQ/ Viva voce

5.	Corynebacterium diphtheria	LGIS	Asstt Prof. Dr Luba Ghazal	Must Know
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Learning Outcomes:

- Explain the mechanisms of diseases production by Corynebacterium diphtheria.
- Identify the diseases, complications and laboratory diagnostic methods caused by above mentioned Bacteria.

Assessment strategy:

- MCQ, SEQ/ SAQ/ Viva voce

6.	Bordetella pertussis and Legionella	LGIS	Asstt Prof. Dr Luba Ghazal	Must Know
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Learning Outcomes:

- Explain the mechanisms of diseases production by Bordetella pertussis and Legionella.

- Identify the diseases, complications and laboratory diagnostic methods caused by above mentioned Bacteria.

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Assessment strategy:

MCQ, SEQ/ SAQ/ Viva voce

7.	Mycoplasma	LGIS	Asstt Prof. Dr Tahira Tehseen	Must Know
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Learning Outcomes:

- Explain the mechanisms of diseases production by Mycoplasma.
- Identify the diseases, complications and laboratory diagnostic methods caused by above mentioned Bacteria.

Assessment strategy:

- MCQ, SEQ/ SAQ/ Viva voce

8.	Influenza, parainfluenza, Rubella and other respiratory viruses	LGIS	Asstt Prof. Dr Luba Ghazal	Must Know
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Learning Outcomes:

- Explain the mechanisms of diseases production by Influenza, parainfluenza, Rubella and other respiratory viruses.
- Identify the diseases, complications and laboratory diagnostic methods caused by above mentioned Viruses.

Assessment strategy:

- MCQ, SEQ/ SAQ/ Viva voce

9.	Aspergillus and Mucor	LGIS	Asstt Prof. Dr Luba Ghazal	Must Know
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Learning Outcomes:

- Explain the mechanisms of diseases production by Aspergillus and Mucor.
- Identify the diseases, complications and laboratory diagnostic methods caused by above mentioned Fungi.

Assessment strategy:

- MCQ, SEQ/ SAQ/Viva voce

References/ Learning resources:

Review of Medical Microbiology and Immunology, Warren Levinson, 15th Edition

Medical Microbiology, Jawetz, Melnick & Adelberg, 27th Edition

General Pathology Practical's

Learning Outcomes:

- Correlate the histopathological features of granuloma with the environmental disorders.

S.#	Topic	Educational Strategies	Instructor	Importance (Must Know Good to Know Nice to Know)
1.	Identify the following slide: Granuloma	Practical/ SGD	All Faculty members	Must Know

Assessment strategy:

- OSPE

References/ Learning resources:

- Robbins & Cotran Pathological Basis of Diseases 10th Edition.
- Robbins Basic Pathology 10th Edition.

Microbiology Practicals**Learning Outcomes:**

Practical Application of protective measures against environmental diseases.

S.#	Topic	Educational Strategies	Instructor	Importance (Must Know Good to Know Nice to Know)
1.	Perform steps of hand hygiene Perform donning and doffing of PPE.	Practical	All faculty members	Must know

Learning Outcomes: Perform steps of hand hygiene and perform donning and doffing of PPE.

Assessment strategy: OSPE

General Pathology & Microbiology Case-Based Learning

CBL 1: Pneumonia

Scenario: A 52 years old male presented to a local clinic with history of worsening productive cough of 05 days duration and breathlessness, fever with rigors for the last two days. The patient is a chronic smoker with history of 20 cigarettes /day for the last twenty years.

- **Examination findings:** temp 101 F, pulse: 110/min, rales are auscultated at right lung base.
- **Investigations:**
 - Complete blood counts
 - Sputum for routine examination (RE) and culture
 - Chest X-ray PA view
 - Blood culture
- **Treatment:** After collection of samples, he was empirically started on Inj. levofloxacin 500 mg IV once daily (OD) with antipyretics and supportive therapy
- **Results of investigations:**
 - WBC: 15000/mm with 85 % neutrophils on differential leucocyte count (DLC)
 - X-Ray chest showed consolidation in right lower lobe
 - Sputum RE showed blood-stained sputum with numerous pus cells and gram positive lancet shaped cocci arranged mostly in short chains and pairs
 - Culture yielded growth of small alpha hemolytic colonies, while there was no growth on MacConkey agar. There was a zone of inhibition around Optochin disk on primary culture plate. The organisms were soluble in 2% bile.
 - Sensitivity testing showed the following antibiogram:
 - Penicillin (oxacillin)-S
 - Cotrimoxazole - S
 - Erythromycin - R
 - Clindamycin -S (S=Sensitive, R=Resistant)

Learning outcomes:

1. Identify the pathogen based on clinical and Laboratory data.
2. Enumerate the probable source of infection in this patient.
3. Describe the pathogenesis of the bacterium under discussion.
4. Enlist the risk factors which predispose to infection caused by above mentioned pathogen.
5. Explain the management of this patient.
6. Discuss different methods used for the prevention of this disease.
7. Enlist other clinical conditions which can be caused by the above-mentioned pathogen.

CBL 2: Tuberculosis

History: A 30 years old male presented in medical outpatient department with complains of anorexia and evening rise of fever for the last three months. He also gave history of productive

cough and weight loss of two kg during this period. He was prescribed antibiotics and antimalarials by local doctor but no improvement occurs.

On examination he has temperature of 100°F and pulse rate of 100 beats/ minute.

Investigations revealed Hb 9.8 g/dl, WBC's: 6500/mm and platelet count: 100,000. ESR is 120 mm fall at the end of 1st hour. X-ray chest was advised which showed opacities in the right upper lobe.

He was put on antituberculosis therapy and his symptoms improved in 2 months.

Learning Outcomes:

The students will be able to

- i. Analyze the mentioned case to reach the provisional as well as differential diagnosis.
- ii. Enlist the culture medias of different types used for the growth of pathogen in the laboratory.
- iii. Correlate the pathogenesis and histopathological changes in affected organ.
- iv. Describe the growth requirements of the pathogen.
- v. Enumerate the organs involved in disseminated tuberculosis.
- vi. Interpret the intradermal test which is used in the diagnosis of tuberculosis.
- vii. Comprehend the significance of multidrug resistant and extremely drug resistant tuberculosis.

CBL 3: Sore Throat

Case scenario: (A patient with sore throat)

HISTORY:

A four-year-old child is brought to OPD. His mother says that for the last two days, the child has high grade fever and he is finding it difficult to swallow, however there is no history of cough.

GENERAL PHYSICAL EXAMINATION:

On general physical examination, he has 102°F temperature. His pulse is rapid 110 beats /minute. His throat is congested, tonsils are enlarged and there are whitish yellow exudates on throat and tonsils. He has enlarged tender cervical lymph nodes.

INVESTIGATIONS:

Blood sample was taken for complete picture. His throat swab was also taken and sent to laboratory for culture and sensitivity.

RESULTS OF INVESTIGATIONS:

On blood CP, White blood cell count was 12,000/ μ l (normal 4000-11000/ μ l). Neutrophils were 90% (normal 40 to 60%) while Platelets were 280000/ μ l (normal 150,000 to 300,000/ μ l). His throat swab yielded the growth of beta hemolytic mucoid colonies of 1 -2 μ m in diameter over blood agar. However, there was no growth on Mac Conkey agar. On gram stain, gram positive cocci were seen in chains. The organism showed the following antibiogram

- BAC - sensitive
- AMC- sensitive
- Ery - sensitive
- Pen - sensitive
- Cip - sensitive

(BAC= Bacitracin, AMC= Amoxicillin clavulanate, Ery= Erythromycin, Pen= Penicillin, Cip= Ciprofloxacin)

LEARNING Outcomes:

1. Identify the bacterium that caused sore throat in this child.
2. Enumerate other microorganisms that can cause sore throat.
3. Explain the basis of classification of the bacterium asked in the above scenario.
4. Enumerate the protein produced by the bacterium which has a role in therapeutics.
5. Enlist other suppurative infections which can be caused by the above mentioned bacterium.
6. Enumerate immunological complications which can result as sequelae of current infection.
7. Enlist the toxin mediated diseases caused by the bacterium.
8. Discuss the management of this patient.

CBL 4:Environmental Diseases

Case Scenario:

A 62 years old rickshaw driver having chronic obstructive pulmonary disease (COPD) and peripheral arterial disease presents with cough and hemoptysis to medical OPD. He is a chain smoker for the last 40 years and smokes 20-30 cigarettes in a day. He also gives history of unexplained weight loss and shortness of breath on mild exertion for the last 1 month.

Examination:

His physical exam showed finger clubbing and right basilar crackles in lungs on auscultation. Pulmonary function tests revealed moderately severe COPD without any restriction or gas transfer defect. His oxygen saturation was <96%.

A computerized tomographic (CT) scan revealed a right upper lobe mass (3.3 x 2.4 cm)

Histopathological examination of a transthoracic needle biopsy showed bronchogenic carcinoma of the lung. Patient was referred to oncology department for treatment

Learning Outcomes:

1. Discuss the adverse effects of smoking
2. State the effects of Nitrosamine, tar and Benzopyrene in Tobacco smoke
3. Explain the effects associated with environmental tobacco smoke (passive smoke inhalation)
4. Enumerate the malignant lesions associated with smoking.
5. Enumerate some of the pharmacotherapies for cessation of smoking.

Learning Resources:

1. Reference Books

- a. Greenwood Medical Microbiology, 18th Edition

b. Manual of Clinical Microbiology, 12th Edition

2. Online resources

www.cdc.gov

3. Library resources

- Foundations in Microbiology 10th edition Kathleen Talaro, Barry Chess

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Forensic Medicine

Subject Learning Outcomes (SLO):

At the end of the academic year the students should be able to:

1. Evaluate the role of FM& Toxicology in relationship to public, state and judiciary.
2. Analyze the cause, manner, mode and mechanism of death and differentiate them from general cases.
3. Interpret the laws related to medical man and explain relevant legal / court procedures applicable to medico legal / medical practice.
4. Analyze the autopsy findings to uncover the cause of death and write the comprehensive medico legal report.
5. Differentiate the forensic importance of biological specimens (blood, semen, saliva, etc.) and collect, preserve and dispatch these specimens to forensic science Lab for necessary examination.
6. Plan to manage the toxicological cases in acute and chronic exposure and interpret it in living and dead cases in relationship to law.
7. Apply ethical principles of forensic medicines according to the expectations of the community and maintain the dignity and honor of the medical profession.

Block Learning Outcomes (BLO):

- Describe medico legal aspects and other signs symptom, treatment plan of poisons of specific poisons/drugs prevailing in our society. (SLO2,3,4,6,7)
- Differentiate among various possible etiologies of regional injuries of chest. (SLO2,3)
- Differentiate heat, cold and electrical injuries with emphasis on their medico legal aspects. (SLO2, 3, 4)
- Interpret concepts of violent deaths due to asphyxia and their medico legal implications. (SLO2,3,4,5)

S.#	Topic	Educational Strategies	Instructor	Importance (Must Know Good to Know Nice to Know)
1.	Special Toxicology	LGIS,SDL	Dr. M. Iqbal	Must Know
Learning Outcomes:				
<ul style="list-style-type: none"> • Discuss the signs and symptoms and treatment plan of volatile poisons and corrosives and their medico legal aspects. (SEQ,MCQ) 				
2.	Regional Injuries	LGIS	Dr. Sarah Pervez khan	Must Know
Learning Outcomes:				
<ul style="list-style-type: none"> • Explain etiologies of regional injuries of chest and their medicolegal aspects. (SEQ,MCQ) 				

3.	Heat, Cold, electrical injuries. DEA	LGIS	Dr. Sarah Pervez khan	Good to Know
Learning Outcomes:				
<ul style="list-style-type: none"> Describe its classification, causes and medico legal aspects. (SEQ) Describe injuries due to burn, temperature, Electrocutions, lightening its types and medicolegal aspects. (SEQ,MCQ) 				
4.	Violent deaths due to Asphyxia	LGIS,CBL	Dr. M. Iqbal	Good to Know
Learning Outcomes:				
<ul style="list-style-type: none"> Define, classify and describe causes of asphyxia. (SEQ) Detect the anatomical, physiological, pathological signs of violent asphyxial deaths and its medico legal importance. (SEQ,MCQ) Differentiate between drowning, immersions, sea water & fresh water drowning, café-coronary syndrome, sexual asphyxia. (SEQ,MCQ) 				

Forensic Medicine and Toxicology Practicals

Learning Outcomes:

S.#	Topic	Educational Strategies	Instructor	Importance (Must Know Good to Know Nice to Know)
1.	PM 4 death due to suicidal hanging. THQ hosp	Prac /demo	All lecturer	Must know
Learning Outcomes:				
<ul style="list-style-type: none"> To describe the procedure of PM examination in case of suicidal hanging and write the report. (VIVA,OSPE) 				
2.	PM 5 death due to firearm injury. THQ hosp	Prac /demo	All lecturer	Must know
Learning Outcomes:				
<ul style="list-style-type: none"> To describe the procedure of PM examination in case of firearm injury and write the report. (VIVA,OSPE) 				
3.	PM 6 death due to drowning. THQ hosp	Prac /demo	All lecturer	Must know
Learning Outcomes:				
<ul style="list-style-type: none"> To describe the procedure of PM examination in case of drowning and write the report. (VIVA,OSPE) 				

Forensic Medicine and Toxicology CBL/PBL-1

Dead body of a 45-years-old male is recovered from a canal is brought to you for autopsy, wearing grey shalwar kameez ,eyes semi opened, mouth filled with muddy water, hypostasis is not obvious, rigor mortis is developing.

1) What is the classification of Drowning?

- 2) What is the cause of death in drowning?
- 3) What is immersion syndrome?
- 4) How you will prove that it is a case of AM drowning?

Learning Outcome: To know about classification, causes, medico legal aspect of asphyxia due to drowning and difference between AM & PM drowning.

Learning Resources:

1. Reference Books

- Parikh's text book of Forensic medicine and Toxicology Dr C.K parikh.
- Principles and practice of forensic medicine by Prof Dr Naseeb R Awan.
- Simpson's Forensic Medicine Richard Shepherd.

2. Online resources

- <https://youtube.com/C/DRJAVEDIQBALKHOKHARLECTURESFORENSICMEDICIN>

3. Library resources

- Parikh's text book of Forensic medicine and Toxicology Dr C.K parikh
- Principles and practice of forensic medicine by Prof Dr Naseeb R Awan
- Simpson's Forensic Medicine Richard Shepherd

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Community Medicine

S.#	Topic	Educational Strategies	Instructor	Importance (Must Know Good to Know Nice to Know)
1.	Respiratory diseases & IMCI guidelines for Pneumonia	Flipped Classroom	Assistant Prof. Dr. Sadia Nadeem Assistant Prof. Dr. Khola Waheed	Must Know

Learning Outcomes with Assessment strategy

The students will be able to:

Compare and contrast the epidemiological determinants, mode of transmission, spectrum, clinical presentations and investigations of respiratory diseases.

Suggest strategies for disease control and prevention for every specific disease and in different scenarios.

Assessment strategy: MCQ, SEQ, OSPE, Viva

Learning Resources:

1. Text Books

- Park's Textbook of Preventive and Social Medicine
- Public Health and Community Medicine (Shah, Ilyas, Ansari, Irfan's)

2. Reference Books

- Text book of Preventive and Social Medicine by Sunder Lal, Pankaj
- Davidson Principles and Practice of Medicine

3. Online resources

[Respiratory infections](#)

[Respiratory tract infections](#)

[IMCI guidelines for Pneumonia](#)

4. Library resources

- Notes/Handouts by Faculty
- G classroom

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Surgery

At the end of this module, students should be able to:

- Apply the knowledge of this module in relevant clinical scenarios encountered in subsequent years training and practice

S.#	Topic	Educational Strategies	Instructor	Importance (Must Know Good to Know Nice to Know)
1.	Chest trauma I &II	LGIS	Asstt. Prof. Brig Dr. Muhamamd Ali	GK
<p><u>Learning outcomes</u></p> <ul style="list-style-type: none"> • Differentiate between different types of chest injuries based on mechanism of pathophysiology findings, and management <p>Assessment strategy</p> <ul style="list-style-type: none"> • Formative assessment 				
2.	Ward visits	Bed side teaching/ CBL		MK
<p><u>Learning outcomes</u></p> <ul style="list-style-type: none"> • Take history and perform examination of the patients with relevant disorders <p>Assessment strategy</p> <p style="text-align: center;">OSCE</p>				
3.	Role of radiology in respiratory diseases	LGIS	Assoc. Prof. Dr. Nadia Gull	GK
<p><u>Learning outcomes</u></p> <ul style="list-style-type: none"> • Identify common radiological abnormalities on chest x-rays <p>Assessment strategy</p> <ul style="list-style-type: none"> • Formative assessment 				

Pediatrics

Subject Learning Outcomes (SLO):

Pediatrics								
Program Learning Outcomes	1	2	3	4	5	6	7	8
Subject learning Outcomes								
1. Apply the principles of evidence based medicine for health promotion, disease prevention, infection control management of common diseases in children & neonates.(PLO 1,5)								
2. Demonstrate clinical skills of history taking & physical examination of children and neonates.(PLO 1 ,2,6)								
3. Perform basic pediatric procedures to handle common pediatric emergencies under supervision. (PLO 2)								
4. Display a compassionate and ethical attitude toward the patient and parents (PLO 3,7)								

Block Learning Outcomes (BLO):

By the end of Y3B2, students shall be able to:

- Classify anemias and outline management plan.
- Generate differential diagnosis and outline treatment of bleeding disorders in children
- Diagnose Down Syndrome
- Identify signs & symptoms and outline management plan of:
 - Meningitis
 - Respiratory tract illnesses.

Sr#	TOPIC	Teaching Strategy	Instructor	Importance (Must Know Should Know Could Know)
1	Anemias	LGIS	Dr Kiran Israr	Must Know
Learning Outcomes: <ul style="list-style-type: none"> • Explain classification and causes of anemias in children • List investigations and outline management of anemias in children 				
2	Bleeding disorders	LGIS	Dr Qurat Ul Ain	Must Know
Learning Outcomes: <ul style="list-style-type: none"> • Classify bleeding disorders in children • List investigations and outline management of bleeding disorders 				

3	Common genetic disorder/malformation	LGIS	Dr Rakshanda	Must know
Learning Outcomes:				
<ul style="list-style-type: none"> • Discuss patterns of inheritance • Diagnose Down Syndrome and common malformations 				
4	Meningitis	LGIS	Dr Tahir Mehmood	Must know
Learning Outcomes:				
<ul style="list-style-type: none"> • List organisms causing meningitis. • Recognize signs & symptoms of meningitis • Plan investigations and outline management of meningitis 				
5	Respiratory diseases in children	LGIS	Dr Sohail Ashraf	Must know
Learning Outcomes:				
<ul style="list-style-type: none"> • List organisms causing respiratory tract infections • Discuss the clinical presentation of acute respiratory infections • List investigations and enumerate management steps 				

Learning Resource:

1. Reference Books:

- Basis of Pediatrics by [Parvez Akbar Khan](#)

2. Online resources:

[Google class room](#)

3. Library Resources:

- Textbook of Pediatrics by PPA
- Current Pediatric Diagnosis & Treatment
- Harriet & Lane Handbook of Pediatrics
- Pediatrics illustrated text book by Tom Lissauer

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Gynecology

Subject Learning Outcomes (SLO):

The student of Obstetrics & Gynaecology is expected to achieve these subject learning outcomes at the end of 3 years teaching while demonstrating professionalism and observing the principles of medical ethics in all academic activities;

- Triage /refer women with OBGYN problems to the appropriate facility of care.
- Manage common obstetrics & gynaecological illnesses of women with evidence-based care.
- Assist in management of critical obstetric and gynaecological cases as a member of health care team.
- Suggest preventive measures for the common public health problems related to OBGYN.
- Counsel women and families effectively about the related OBGYN condition & its possible management taking into account their personal beliefs, socio-economic and cultural background.

By the end this block students of 3rd Year must have introduction to Gynae/Obs and integration with other subjects.

1. Select proper treatment option for anemia in pregnancy according to gestational age.
2. Make prenatal diagnosis in case of thalassemia minor couples.
3. Explain mode of inheritance of different inherited disorder to patients in simulated environment.

S.#	Topic	Educational Strategies	Instructor	Importance (Must Know Good to Know Nice to Know)
1.	Anemia in Pregnancy 1	LGIS	Dr. Khairun Nisa	Must Know
Learning Outcomes with Assessment strategy Formative Assessment (End of Block) <ul style="list-style-type: none"> • To identify common causes of anemia in pregnancy. • To discuss nutritional deficiency anemia. • To select proper treatment option for anemia in pregnancy according to gestational age. 				
2.	Anemia in Pregnancy 2	LGIS	Dr. Khairun Nisa	Must Know
Learning Outcomes with Assessment strategy Formative Assessment (End of Block) <ul style="list-style-type: none"> • To outline haemoglobinopathies in pregnancy. • To make prenatal diagnosis in case of thalassemia minor couples. • To recognize the importance of diagnosing thalassemia in pre conception clinic. 				

3.	Genetic Counselling 1	LGIS	Dr. Sadia Ijaz	Good to Know
Learning Outcomes with Assessment strategy Formative Assessment (End of Block) <ul style="list-style-type: none"> • Enlist disease that needs genetic counselling. • To recognize the importance of pre-conception clinic. • To explain mode of inheritance of different inherited disorder. 				
4.	Genetic Counselling 2	LGIS	Dr. Ayesha Irfan	Good to Know
Learning Outcomes with Assessment strategy Formative Assessment (End of Block) <ul style="list-style-type: none"> • Outline the basic steps in diagnosing genetic disorders. • To choose the investigation for diagnosing certain disorders. • To select proper place for refreshing the couple for proper counselling and management. 				
5.	Respiratory disease in pregnancy	LGIS	Dr. Iram Mushtaq	Nice to Know
Learning Outcomes with Assessment strategy Formative Assessment (End of Block) <ul style="list-style-type: none"> • To appreciate the physiological changes of pregnancy in respiratory system. • To identify symptoms and signs of viral and bacterial pneumonia and able to prescribe treatment. • To employ multidisciplinary approach in managing asthma in pregnancy. • To predict signs of life-threatening asthma. • To recognize steps in the management of acute exacerbation of asthma. 				

Learning Resources:

Reference books:

- Obstetrics by ten teachers 20th edition
- Gynaecology by ten teachers 20th edition

Recommended Readings:

- Hacker and Moore's essential obstetrics 6th edition
- High risk pregnancy 5th edition
- Shaw's textbook of gynaecology 17th edition

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Ophthalmology

Subject Learning Outcomes (SLO):

To equip doctors with essential knowledge, skills and attitude in order to enable them to:

1. Provide primary eye care for various ophthalmic diseases including emergencies and if required, refer the patients to appropriate centers **(PLO 1,6)**
2. Perform various ophthalmic examination methods essential for all Practitioners **(PLO 1,2,6)**
3. Communicate effectively with the patient, family and community regarding eye diseases and their related issues **(PLO 1,2,6)**
4. Perform essential minor surgical procedures **(PLO 1,2)**
5. Apply principles of medical ethics pertaining to Ophthalmology **(PLO 3)**
6. Provide awareness regarding prevention of common public ophthalmic health problems **(PLO 5)**

Block Learning Outcomes (BLO):

At the end of block-2 the students of 3rd year MBBS should be able to:

- Co-relate pathophysiological facts of Uveal Tract, Cornea, Lens, and Glaucoma and neuro Ophthalmology with their clinical presentation to solve different clinical problems. **(SLO 1,2)**

Sr. #	Topic	Educational Strategy	Faculty Name	Importance (Must Know Good to Know Nice to Know)
1.	Uveal Tract	LGIS	Dr. Major. Haroon Sarfaz	Should Know
Learning Outcomes:				
<ul style="list-style-type: none"> • Explain the anatomy of the uveal tract. • Describe basic physiological aspects. • Classify uveitis. 				
2.	Neuro ophthalmology	LGIS	Dr. Asma Aftab	Should know
Learning Outcomes:				
<ul style="list-style-type: none"> • Recall the anatomy of visual pathway. • Describe different visual field defects caused by lesions of visual pathway. 				
3.	Introduction to Lens	LGIS	Dr. Yaseen Lodhi	Must Know
Learning Outcomes:				
<ul style="list-style-type: none"> • Explain related anatomy and physiology. 				

- Describe basic pathophysiological facts necessary to solve different clinical problems.
- Recognize related symptoms.

4.	Introduction to Cornea	LGIS	Dr. Marrium Shafi	Should Know
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Learning Outcomes:

- Explain basic anatomy and pathophysiological aspects necessary to solve different diseases of cornea.
- Identify usual signs and symptoms of corneal diseases.

5.	Glaucoma	LGIS	Prof. M. Akmal Khan	Should know
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Learning Outcomes:

- Describe related anatomy and physiology.
- Explain pathogenesis of different types of glaucoma.

Learning Resources:

1. Text books:

- Clinical Ophthalmology, Jatoi S M
- Basic Ophthalmology, Jogi R

2. Reference Books:

- General Ophthalmology, Vaughan and Asbury
- Kanski's Clinical Ophthalmology A Systematic approach, Bowling

3. Online resources:

- <https://www.medscape.com/ophthalmology>

4. Library resources:

- Basic Ophthalmology, Jogi R
- General Ophthalmology, Vaughan and Asbury
- Clinical Ophthalmology, Jatoi S M
- Parson's Diseases of the eye, Sihota R
- Kanski's Clinical Ophthalmology A Systematic approach, Bowling

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Assessment formats:

Assessment Strategies (Formative)	Assessment Strategies (Summative)
Quiz, Class discussion	

ENT

Block Learning Outcomes (BLO):

➤ At the end of block1, 3rd year MBBS students should be able to:

- Recall the applied anatomy & physiology of oral cavity & pharynx, anatomy physiology of anatomy & physiology of nose.
- Recall the applied anatomy & Physiology of oral cavity & pharynx.
- Explain development and gross anatomy of nose and paranasal sinuses.
- Describe in detail the blood supply, nerve supply and lymphatic drainage of nose, PNS.
- Describe the nasal and sinus physiology and role of air condition of inspired air, olfaction, speech and reflex function of nose and PNS.

Sr. No.	Educational Strategy	Topic	Faculty Name	Importance (Must Know Good to Know Nice to Know)
1.	LGIS	Anatomy of the Nose	HOD/Prof Dr. Muhammad Asad Chughtai	Must know
Learning Outcomes: <ul style="list-style-type: none"> • Explain embryology of the bronchial arches and outcome in normal and anomalies. • Describe the anatomy of the nose (gross anatomy of external nose and nasal cavities, lining mucous membrane, vascular and nerve supply and lymphatic drainage from surgical point of view. 				
2.	LGIS	Physiology of the Nose & paranasal Sinuses (PNS)	HOD/Prof Dr. Muhammad Asad Chughtai	Must know
Learning Outcomes: <ul style="list-style-type: none"> • Describe the nasal physiology, especially its role on air condition, olfaction, speech and various reflex mechanisms. 				
3.	LGIS	Anatomy of the oral Cavity & Pharynx	HOD/Prof Dr. Muhammad Asad Chughtai	Must know
Learning Outcomes: <ul style="list-style-type: none"> • Recall the anatomy of oral cavity and pharynx including tonsils, adenoids, and salivary glands. • Recall knowledge of Waldeyer,s ring and its significance. • Discuss the anatomy of oral cavity and site classification of oral cavity. • Discuss anatomy of pharynx & mechanism of deglutition • Discuss anatomy of nasopharynx and anatomy of adenoids • Discuss the anatomy of minor and major salivary glands 				
4.	LGIS	Physiology of the oral Cavity & Pharynx	Dr Anum Ajmal	Must know

Learning Outcomes:

- Explain the functions of the oral cavity and its role in swallowing, taste phonation and respiration. Role of lymphoid tissue in immunity and saliva in swallowing and articulation.

5.	LGIS	Anatomy & Physiology of the Larynx	HOD/Prof Dr. Muhammad Asad Chughtai
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Learning Outcomes:

- Explain the anatomy of larynx and difference between male, female and infantile larynx. Division of larynx and its sites with surgical importance in oncology knowledge of vascularity, nerve supply and lymphatic drainage.

6.	LGIS	Anatomy of Neck Spaces	Dr Aeimen Fatima
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Learning Outcomes:

- To describe the anatomy of the different compartments of Neck along with their relation.

Learning Resources:**Reference Books:**

- Diseases of Ear, Nose, and Throat Head and Neck Surgery by PL Dhingra. Shruti Dhingra 8th Edition.
- Logan Turner's Diseases of the Nose Throat and Ear Head and Neck Surgery by S. Musheer Hussain 11th Edition.
- Essentias of ENT Examination by JT Shah

Text books:

- Ballenger's Otorhinolaryngology, Head & Neck Surgery 17th edition.
- Scott Brown's Otorhinolaryngology 8th edition.

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Assessment formats:

Assessment Strategies (Formative)	Assessment Strategies (Summative)
Bed Side Case Presentation, CBL,	MCQs, SEQs, OSPE & VIVA

Research Module/Evidence-Based Medicine

Learning Outcomes for 3rd Year Students

Subject Learning Outcomes

1) Apply relevant statistic to conduct a house hold survey and a mini research project. (PLO 3,4,6,7,8)

Block Learning Outcomes

- Apply relevant statistics to conduct a house hold survey. (SLO 4,5)

S.#	Topic	Educational Strategies	Instructor	Importance (Must Know Good to Know Nice to Know)
1.	Tests of Significance	LGIS	Assoc. Prof Dr. Robina Mushtaq	Must Know
Learning Outcomes with Assessment strategy The students will be able to: <ul style="list-style-type: none"> • Apply appropriate test of significance for the given scenario • Interpret results/p-value Assessment strategy: MCQ/SEQ/OSPE/Viva				
2.	Systematic Review & Meta-analysis	LGIS	Prof. Dr. S Sabah Imran	Good to Know
Learning Outcomes with Assessment strategy The students will be able to: <ul style="list-style-type: none"> • Describe the rationale for systematic reviews • Explain steps of systematic review • Identify the steps involved in conducting a systematic review • Develop an answerable question using PICO framework • Explain meta-analysis and why are they conducted • Interpret result of meta-analysis Assessment strategy: SAQ/SEQ				
3.	Data Collection Tool	LGIS	Assoc. Prof Dr. Robina Mushtaq	Must Know
Learning Outcomes with Assessment strategy The students will be able to: <ul style="list-style-type: none"> • Outline types of data collection tools and types of questions • Formulate data collection tool Assessment strategy: MCQ/SEQ				
4.	Validity of research design and data collection tool	LGIS	Assoc. Prof Dr. Robina Mushtaq	Good to Know
Learning Outcomes with Assessment strategy The students will be able to: <ul style="list-style-type: none"> • Discuss validity of research design and data collection tool 				

Assessment strategy: SAQ/SEQ				
5.	Overview of research process	LGIS	Assistant Prof. Dr. Ambreen Ansar	Good to Know
Learning Outcomes with Assessment strategy				
The students will be able to:				
<ul style="list-style-type: none"> • Formulate research question and research objectives • Select study design according to research objectives 				
Assessment strategy: SAQ/SEQ				
6.	House Hold Survey	SGD	All Faculty	Must Know
Learning Outcomes with Assessment strategy				
The students will be able to:				
<ul style="list-style-type: none"> • Collect data independently maintaining confidentiality and exhibiting good communication skills. • Complete the household survey booklet accurately & independently provided by the department 				
Assessment strategy: Report writing.				

Learning Resources:

1. Text Books

- Park's Textbook of Preventive and Social Medicine
- Public Health and Community Medicine (Shah, Ilyas, Ansari, Irfan's)

2. Reference Books

- Basic Methods of Medical Research (Indrayan)
- Basic statistic for the Health Sciences (Jan. W. Kuzma)
- How to design & evaluate research in education (Jack R. Fraenkel)

3. Online resources

[Tests of significance](#)

[Data collection tool](#)

4. Library resources

- Notes/Handouts by Faculty
- G classroom

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P-CMILE

Subject Learning Outcome

At the end of content, the student will be able to:

1. Identify factors associated with Infection transmission in healthcare.

S.#	Topic	Educational Strategies	Instructor	Importance (Must Know Good to Know Nice to Know)
1.	Research on genetics & Ethics	LGIS	Pathology	Nice to Know
Learning Outcomes with Assessment strategy The student should be able to reflect upon the complex interaction between genetics and ethics and discuss how to update the ethical zeitgeist or this era. <ul style="list-style-type: none"> • Reflective writing (500- 1000 words) 				
2.	Ethical issues and pharmaceutical companies	LGIS	Pharmacology	Nice to Know
Learning Outcomes with Assessment strategy <ul style="list-style-type: none"> • The student should be able to critically analyse, and categorise the factors related to ethical & unethical behaviour of pharmaceutical companies. • MCQ based Quiz 				
3.	Accept errors & mistakes- Professionalism	LGIS	BS	Good to Know
Learning Outcomes with Assessment strategy <ul style="list-style-type: none"> • The student should be able to discuss the ethical implications of admitting or not admitting mistakes/ medical errors. • SEQ 				
4.	Surveillance for infection control	LGIS	CM	Good to Know
Learning Outcomes with Assessment strategy The students will be able to: <ul style="list-style-type: none"> • Explain surveillance cycle and its importance • Identify various methods and types of surveillance • Calculate health care associated infection rate • Explain role of surveillance in the control of health care associated infections 				
5.	Practical aspects of infection control-	LGIS + Workshop	Medicine	Good to Know
Learning Outcomes with Assessment strategy <ul style="list-style-type: none"> • The student should be able to explain Types of IPC precautions, and demonstrate infection control measures in routine patient care e.g., Hand washing, Injection safety, Safe catheterization. • MCQ, OSCE 				
6.	Informed consent	Skill demonstration	BS	

Learning Outcomes with Assessment strategy

- ..

7.	Communicating with patients for counselling & interviewing	Demonstration	EYE/ ENT/ Patho/ Pharma (Integrated component to be shown in timetables please)	Must Know
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Learning Outcomes with Assessment strategy

- The student should be able to demonstrate interviewing and counseling techniques in simulated environment.
- OSCE

8.	Management of exposure to blood-borne pathogens	LGIS	Pharmacology	Must Know
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Learning Outcomes with Assessment strategy

- Identify the role of preventive measures in management of blood borne pathogens. (LGIS)

9.	Informed consent	Demonstration	BS	Must Know
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Learning Outcomes with Assessment strategy

- The student should be able to
 1. Demonstrate informed consent process in simulated environment. OSCE
 2. Differentiate between Implied, Explicit, Active, Passive and Opt-out consent. SAQ, MCQ

Learning Resources:**Online resources**

1. https://www.nih.org.pk/wp-content/uploads/2020/04/Complete_IPC_Guideliens.pdf
2. Genetics and ethics: a possible and necessary dialogue
3. Ethical issues concerning the relationships between medical practitioners and the pharmaceutical industry
4. Admitting mistakes: ethics says yes, instinct says no
5. How to engage in effective client counselling - iPleaders
6. Types of consent

Teaching Faculty:

Name	Email address
Dr. Ambreen Ansar	ansarambreen@wahmedicalcollege.edu.pk
Miss. Zunaira Naveed	naveedzunie@gmail.com

13. Rules & regulations:

I. Student's code of conduct

The Student Code of Conduct sets out the standards of conduct expected of students. It holds individuals and groups responsible for the consequences of their actions. Failure to fulfill these responsibilities may result in the withdrawal of privileges or the imposition of sanctions.

Wah Medical College is a community of students, faculty and staff involved in learning, teaching, research and other activities. All members of WMC community are expected to conduct themselves in a manner that contributes positively to an environment in which respect, civility, diversity, opportunity and inclusiveness are valued, so as to assure the success of both the individual and the community. The Student Code of Conduct reflects a concern for these values and tries to ensure that members of the WMC can make use of and enjoy the activities, facilities and benefits of WMC without undue interference from others.

WMC STUDENT CODE OF CONDUCT

- Discipline
- Decent dress
- Good Manners
- Smart Turn Out
- Healthy Activities
- No smoking
- No Abusive Language
- Cooperative Attitude
- Respect for All

i. Attendance policy

- a. Students are required to mark attendance for every class.
- b. The attendance is compiled by respective department and submitted to student affairs by the 10th of each month.
- c. Students Affairs Department will compile the absent report and fine of Rs. 500/- for a lecture or for the whole day will be imposed on absent students. It is pertinent to mention here that fine is imposed on students to compel them to attend classes regularly and not to generate the funds.
- d. A compiled attendance state of all students along with those having attendance less than 75% duly highlighted will be submitted to the Students Affairs Department on monthly as well as quarterly basis by the concerned departments.
- e. At the end of academic year, a consolidated state of attendance of students will be submitted to Students Affairs Department.
- f. Departments will submit the list of those students having attendance less than 75% at the end of academic year.
- g. Admission forms of students having attendance less than 75% will NOT be submitted to NUMS for appearing in Annual University Exams.

14. Study tips

Dear Students,

Becoming a doctor is a tough job, but you can make it easier for yourself by adopting some time-tested techniques or habits. It's never too early – or too late – to develop good study habits. The sooner you get into a good self-study pattern, the easier everything will be and the more your chances of getting good marks will improve. Here are our top tips for getting the most out of your self-directed study time. And remember **Perseverance is the Key to Success!**



Review the material regularly, create a study schedule

Write it down



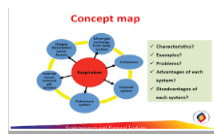
Test yourself

Find an effective learning environment with limited distractions and some fresh air



Improve memorization with Mnemonics

Incorporate auditory methods; use online podcasts



Use visuals, images, concept maps & illustration charts

Consider forming a study group or find an accountability buddy



TAKE A STUDY BREAK!

Take strategic breaks

15. Feedback on the Study Guide

We value your feedback and will use it for improvement of this Study guide. Kindly provide feedback for this study guide. At the email: dme@wahmedicalcollege.edu.pk
dmewahmedicalcollege@gmail.com

16. References:

HARDEN, J.M. LAIDLAW, E.A. HESKETH, R. M. (1999). AMEE Medical Education Guide No 16: Study guides-their use and preparation. *Medical Teacher*, 21(3), 248–265.
<https://doi.org/10.1080/01421599979491>.

17. Time Table Template:

Date & Time		8:00-08:50		8:50-9:40		9:40-10:30		10:45 - 12:30		12:30-03:00	
Monday	Pathology	LGIS	Pharma	LGIS	Medicine	LGIS	Practical Pathology: Batch-I Pharma: Batch-II F. Medicine: Batch-III	Clinical Rotation X 6 Weeks	Medicine I = A Medicine II = B Surgery I = C Surgery II = D EYE/ENT = E	Prayer 1:15-2:00	BSNIC
	Pharma	LGIS	Forensic Medicine	Pathology	LGIS						
Tuesday	Forensic Medicine	LGIS	Research Methadolo	LGIS	Pharmacology	SD	Practical Pathology: Batch-I Pharma: Batch-II F. Medicine: Batch-III	Clinical Rotation X 6 Weeks	Medicine I = A Medicine II = B Surgery I = C Surgery II = D EYE/ENT = E	Prayer 1:15-2:00	BSNIC
	ENT/EYE	SDI	Pathology	LGIS	Pharmacology	CBL					
Wednesday	ENT/EYE	SDI	Pathology	LGIS	Pharmacology	SD	Practical Pathology: Batch-I Pharma: Batch-II F. Medicine: Batch-III	Clinical Rotation X 6 Weeks	Medicine I = A Medicine II = B Surgery I = C Surgery II = D EYE/ENT = E	Prayer 1:15-2:00	BSNIC
	ENT/EYE	SDI	Pathology	LGIS	Pharmacology	CBL					
Thursday	8:00-08:50	8:50-9:40	9:40-10:30	Break 10:30-10:45		10:45-11:35	11:35-12:25	12:25-1:15	Prayer 1:15-2:00		2:00-3:00
	Surgery	LGIS	Pharmacology	LGIS	Paeds/ Gynae	LGIS	Community Medicine	SDI	Pathology	SDI	Pathology
Friday	8:00-08:50	8:50-9:40	9:40-10:30	Break 10:30-10:45		10:45-11:35	11:35-12:25	12:25-1:15	Prayer 1:15-2:00		2:00-3:00
	Surgery	LGIS	Pharmacology	LGIS	Paeds/ Gynae	LGIS	Community Medicine	SDI	Pathology	SDI	Pathology



Theme: _____

Waa Medical College
3rd Year MBBS Session -2023
Time Table Form

Course Code: _____
Academic Week: _____

Professor
Dr. Tariq Measeed MANSUR
Chairperson Basic Committee V23B1

Professor
Dr. Babur Rasool Chughtai
Coordinator Pre-Clinical Dept

Prof. Dr. Nuzarat Razaan
Dean / Vice Principal
Waa Medical College Waa Cantt