



INTEGRATED MODULAR COURSE

STUDENT'S STUDY GUIDE

MBBS YEAR III

2023-2024



BAQAI MEDICAL COLLEGE BAQAI MEDICAL UNIVERSITY

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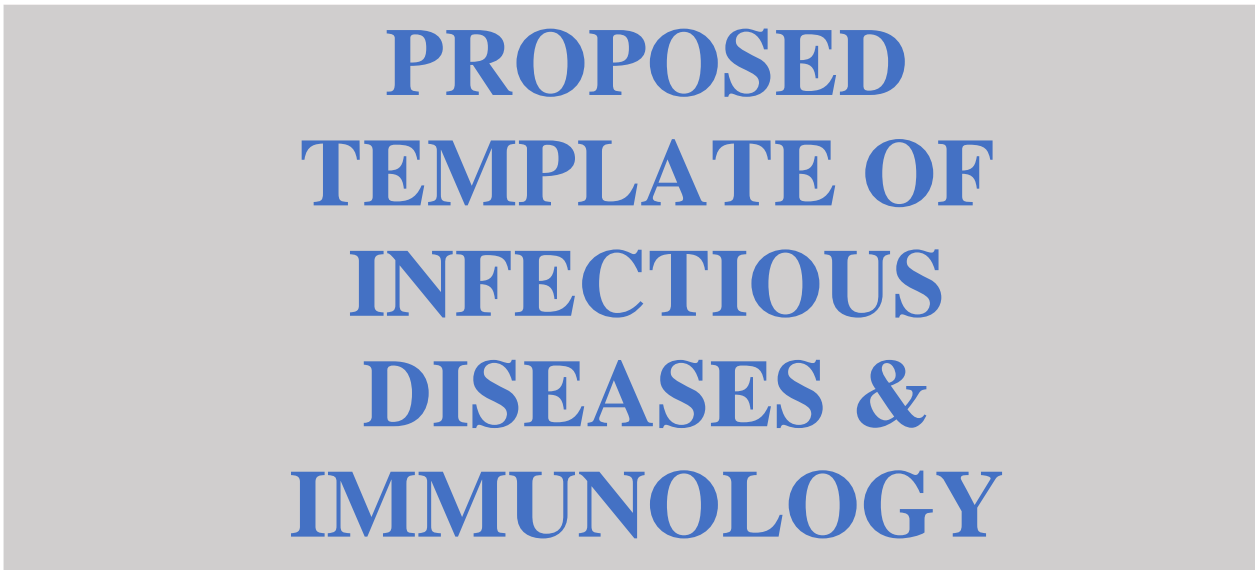
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SPIRAL II



PROPOSED TEMPLATE OF INFECTIOUS DISEASES & IMMUNOLOGY MODULE – II

(Duration: 9 Weeks)



MODULAR COMMITTEE FOR INFECTIOUS DISEASES & IMMUNOLOGY
MODULE

1.	Dr. Khush Bakht Nawaz Khan (Pathology)
2.	Dr. Amara Memon (Community Medicine)
3.	Dr. Faraz Saleem (Pharmacology)
4.	Dr. Rafay A. Siddiqui (Forensic Medicine)
5.	Ms. Maria (Research)
6.	Dr. Azra Shaheen (Behavioral Sciences)
7.	Dr. Bushra Rabbani (Medicine)
8.	Dr. S.M. Abdullah Bukhari (Surgery)
9.	Dr. Nikhat Ahsan (Gynae / Obs.)
10.	Dr. Talal Taheer (Medical Education)

Module Number	Module Name	Dates	Duration	Module In charge	Assessment Date & Pattern
3	Infectious diseases & Immunology Module	Begins: 25 th July, 2023 Ends: 21 st September, 2023	9 weeks		Last week of Infectious Diseases & Immunology module (22 nd September, 2023) <i>(Subject to minor changes)</i> MCQs, SEQs & OSPE

ASSESSMENT TOOLS:

1. Formative assessment
 - Quiz (face to face or online)
2. Summative assessment
 - MODULAR EXAM:
 - A single modular exam will be held at the end of module which will include all the subjects taught in the module.
 - Module will be assessed by MCQ, SEQ and OSPE.

DEPT. OF PATHOLOGY
LEARNING OBJECTIVES OF INFECTIOUS &
IMMUNOLOGY MODULE
(3rd year MBBS)

By the end of this module, the students of 3rd year MBBS will be able to:

TOPIC	MODE OF TEACHING	TIME (hours)	LEARNING OBJECTIVES
STRUCTURE OF BACTERIA	LECTURE # 1	2	List important features of different pathogenic organisms. Differentiate between eukaryote and prokaryote cells. Compare medically important organisms. Discuss the structure of a typical bacterium. Define spore along with its important features and their medical implications.
BACTERIAL GROWTH & GENETICS	LECTURE # 2	1	Discuss bacterial growth curve Describe aerobic & anaerobic growth. List and describe the type of mutations in bacteria. Describe the role of mutations in drug resistance in infectious diseases. List the methods of DNA transfer in micro-organism. State the significance of DNA transfer in drug resistance.
PATHOGENESIS OF BACTERIA	LECTURE # 3	2	Differentiate between true pathogens, opportunists and commensals. List the routes of transmission of infection. Discuss the microbial mechanism of invasion and virulence Name different type of toxins produced by bacteria. Differentiate between Exotoxins and Endotoxins. List the typical stages of an infectious disease. Enlist the criteria of Koch's postulates.
CLASSIFICATION OF BACTERIA + NORMAL FLORA	LECTURE # 4	1	Classify bacteria, according to its shape, arrangement, gram staining and method of respiration. Define normal flora. Explain harmful effects of normal flora. Describe colonization of normal flora
ANTIMICROBIALS MODE OF ACTION + ANTIMICROBIALS MODE OF RESISTANCE	LECTURE # 5	1	Describe principles of antimicrobial drug stewardship. Explain bacteriostatic and bactericidal activity. Describe the mechanism of action of antimicrobial drugs. Describe the mechanism of resistance against antimicrobial drugs.
G+VE COCCI STAPHYLOCOCCI	LECTURE # 6	1	Describe the important properties of Staphylococcus. Explain its pathogenesis. Discuss briefly the clinical findings. Describe briefly the laboratory diagnosis and prevention.
G+VE COCCI STREPTOCOCCI	LECTURE # 7	1	Describe the important properties of Streptococcus. Classify Streptococci. Discuss its transmission. Explain its pathogenesis and clinical findings. Discuss briefly the laboratory diagnosis and prevention. Discuss post streptococcal infections

G-VE COCCI NEISSERIA	LECTURE # 8	1	Discuss important properties of Neisseria. Describe its pathogenesis and clinical findings. Explain the laboratory diagnosis and prevention.
G+VE RODS SPORE FORMING	LECTURE # 9	1	Classify spore forming bacteria. Discuss transmission and pathogenesis. Describe briefly the laboratory diagnosis and prevention.
G-VE RODS RELATED TO ENTERIC TRACT	LECTURE # 10	1	Explain the pathogenesis and clinical findings. Discuss the laboratory diagnosis. Define urinary tract infection. Explain its pathogenesis. Describe briefly the laboratory diagnosis.
SPIROCHETES + ACTINOMYCETE S + CHLAMYDIA + LEPTOSPIRA	LECTURE # 11	1	Explain the important properties of Spirochetes. Discuss the transmission, epidemiology and pathogenesis. Describe the laboratory diagnosis and prevention briefly. Discuss the important properties of Actinomycetes. Explain its pathogenesis. Describe the clinical findings and laboratory diagnosis. Explain the transmission and epidemiology. Discuss laboratory diagnosis and prevention. Explain the transmission and epidemiology. Discuss laboratory diagnosis and prevention.
G-VE RODS RELATED TO RESPIRATORY TRACT	LECTURE # 12	1	Explain the pathogenesis of disease. Discuss the laboratory diagnosis. Describe briefly the prevention.
ACID FAST BACILLI	LECTURE # 13	1	Classify Mycobacterium associated with human. State the transmission of Mycobacterium Tuberculosis Explain its pathogenesis and laboratory diagnosis
BASIC VIROLOGY STRUCTURE & REPLICATION	LECTURE # 14	2	Define virus Describe the structure of virus Discuss the viral growth cycle
BASIC VIROLOGY CLASSIFICATION & PATHOGENESIS			Classify viruses Discuss their laboratory diagnosis Discuss its pathogenesis
RESPIRATORY VIRUSES	LECTURE # 15	1	Enumerate the etiological factor of these viruses Discuss the mode of transmission & epidemiology Discuss its pathogenesis Explain laboratory diagnosis
HEPATITIS VIRUSES - I	LECTURE # 16	1	Outline the important properties of Hepatitis A, E & G viruses. Describe their mode of transmission Elaborate the pathogenesis and clinical features of these viruses. Discuss their laboratory diagnosis and prevention
HEPATITIS VIRUSES - II	LECTURE # 17	1	Elaborate the important properties of Hepatitis B, C & D viruses. Mention their mode of transmission Explain their pathogenesis and clinical course. Discuss their laboratory diagnosis and prevention
ENTERIC TRACT VIRUSES and HERPES VIRUS + POX VIRUS + PAPILLOMA VIRUS	LECTURE # 18	02	Describe the mode of transmission & epidemiology State the pathogenesis Discuss the laboratory diagnosis

MEASSLES + MUMPS + RUBELLA + RABIES	LECTURE # 19	1	Discuss the mode of transmission and epidemiology. Elaborate the pathogenesis and clinical course of these viral illnesses Describe the laboratory diagnosis and prevention
HUMAN IMMUNO- DEFICIENCY VIRUS	LECTURE # 20	1	Define Acquired immunodeficiency syndrome (AIDS) Describe its structure and replication. Outline its mode of transmission and epidemiology. Explain its pathogenesis and clinical course. Discuss the laboratory diagnosis of HIV infection and AIDS.
BASIC MYCOLOGY + CUTANEOUS & SUBCUTANEOUS MYCOLOGY	LECTURE # 21	1	Describe the structure and growth of fungi Explain the pathogenesis of fungal infection. Discuss fungal toxins and allergies. Describe the laboratory diagnosis of fungi. Summarize anti-fungal therapy for the management of fungal infections Describe cutaneous mycotic agents like Dermatophytoses, Tinea Versicolor and Tinea Nigra. Discuss subcutaneous mycotic agents i.e. Sporotrichosis, Chromomycosis and Mycetoma.
SYSTEMIC MYCOSES	LECTURE # 22	1	Describe the pathogenesis, clinical findings and lab diagnosis of different systemic mycotic agents i.e. Coccidioides, Histoplasma, Blastomyces & Paracoccidioides.
OPPORTUNISTIC MYCOSES	LECTURE # 23	1	Describe the pathogenesis, clinical findings and lab diagnosis of different opportunistic mycotic agents i.e. Candida, Cryptococcus, Aspergillus, Mucor and Rhizopus and Pneumocystis
INTESTINAL & UROGENITAL PROTOZOA	LECTURE # 24	1	State the transmission and epidemiology of intestinal and urogenital nematodes. Discuss their pathogenesis and laboratory diagnosis.
CESTODES	LECTURE # 25	1	Discuss the lifecycle and transmission of Cestodes. Explain their pathogenesis and clinical findings. Describe their laboratory diagnosis.
TREMATODES + NEMATODES	LECTURE # 26	1	Discuss their transmission, epidemiology and pathogenesis. Describe the laboratory diagnosis. Discuss their routes of transmission. Explain the pathogenesis of these parasites. Describe the clinical findings and laboratory diagnosis. State the transmission and epidemiology of intestinal nematodes. Discuss their pathogenesis and laboratory diagnosis.
BLOOD AND TISSUE PROTOZOA	LECTURE # 27	1	Discuss the transmission and life cycle of protozoa. Explain the pathogenesis and clinical features of protozoa. Describe their laboratory diagnosis. State its complications and prevention.
INNATE IMMUNITY	LECTURE # 28	1	Define and classify immunity Describe the role of various cells and tissues involved in innate immunity. Discuss how cytokines regulate leukocyte production.
ADAPTIVE IMMUNITY + ANTIBODY & CELL MEDIATED IMMUNE RESPONSES	LECTURE # 29	1	Classify adaptive immunity Differentiate between innate and acquired immunity. Distinguish active and passive immunity with examples List the different types of antibodies. Classify antibodies on the basis of their structure and function. Describe the various mechanisms of antibody mediated immune responses. Define cell- mediated immunity List different types of T cells and their role in immunity
COMPLEMENT SYSTEM & ANTIGEN ANTIBODY INTERACTIONS	LECTURE # 30	1	Define and classify hypersensitivity reactions. Discuss the types of hypersensitivity reactions with examples. Discuss the significance of immunological diagnosis of disease. Define specificity and sensitivity of a test. Explain the basic principles of serological tests, and their application in the diagnosis of various pathological conditions.

MHC AND TRANSPLANT	LECTURE # 31	1	<p>Define major histocompatibility complex (MHC)</p> <p>Describe its role in immunity and transplant reaction.</p> <p>Discuss MHC on the basis of its classes, structure, expression and gene defects</p>
CONGENITAL IMMUNODEFICIENCY DISORDERS	LECTURE # 32	1	<p>Classify immunodeficiency states.</p> <p>Discuss congenital immunodeficiency's on the basis of their molecular defects and clinical features.</p>
IMMUNOTOLERANCE AND AUTOIMMUNE DISEASES	LECTURE # 33	1	<p>Define autograft, homograft, allograft and xenograft.</p> <p>Describe immunotolerance and immunoparalysis.</p> <p>Discuss the mechanism involved in allograft rejection and steps that can be taken to combat rejection.</p> <p>Explain the basis of autoimmunity.</p> <p>Comprehend the classification and pathogenesis of amyloidosis</p>

By the end of this module, the students of 3rd year MBBS will be able to:

TOPIC	MODE OF TEACHING	TIME (hours)	LEARNING OBJECTIVES
SPECIMEN COLLECTION & TRANSPORT + MICROSCOPE + SIMPLE STAINING	PRACTICAL # 1	2.25	Discuss the rules for collection and transport of specimens. Relate its importance in clinical laboratory. Describe the different parts of the microscope. Handle and focus the microscope independently. Discuss the uses of a microscope Prepare slide from the given sample for staining independently. Perform Simple Staining and interpret its result independently. Describe Simple staining technique and its significance.
GRAM STAINING	PRACTICAL # 2	2.25	Discuss the Gram staining principle. Discuss the technique of Gram staining and its significance. Prepare slide from the given sample for Gram staining independently. Perform Gram staining and interpret its microscopic findings independently. State the differentiating characteristics of Gram positive and Gram-negative bacteria. List the Medically important bacteria that cannot be seen in the Gram stain, reasons and the alternative microscopic approach.
LABORATORY DIAGNOSIS + STERILIZATION & DISINFECTION	PRACTICAL # 3	2.25	Discuss the approach towards the diagnosis of bacterial infection. Discuss methods of laboratory diagnosis. Define sterilization and disinfection. List various methods used for sterilization. Describe various methods used for sterilization and disinfection and their application in hospitals, OTs, Labs and health related institutions. Differentiate between sterilization and disinfection. Explain the different processes involved in sterilization and disinfection and their significance. Explain the principle of working of autoclave, hot air oven and incubator.
G+VE COCCI STAPHYLOCOCCI + STREPTOCOCCI	PRACTICAL # 4	2.25	Identify staphylococci by Gram staining. Perform the biochemical test. Discuss its cultural characteristics. Recognize streptococci by Gram staining. Perform the biochemical test. Explain its cultural characteristics. Identify Streptococcus Pneumoniae by Gram staining. Perform optochin sensitivity test.
CLOSTRIDIUM + ESCHERICHIA + KLEBSIELLA	PRACTICAL # 5	2.25	Identify Clostridium on Gram staining. Perform biochemical tests. Discuss the cultural characteristics. Recognize E. coli on Gram staining. Perform biochemical tests. Describe the cultural characteristics. Identify Klebsiella on Gram staining. Discuss cultural characteristics.
ZN STAINING	PRACTICAL # 6	2.25	Prepare slide from the given sample for ZN staining independently Perform ZN staining and interpret its microscopic findings independently. Discuss the technique of ZN staining and its clinical significance.
STOOL SLIDE PREPARATION BY NORMAL SALINE & IODINE + STOOL EXAMINATION	PRACTICAL # 8	2.25	Perform stool preparation by normal saline and iodine. Describe its reagents, equipment and procedure. Relate its importance in clinical laboratory. Perform physical, chemical and microscopic examination of stool specimen Discuss its significance. Identify Ascaris Lumbricoides and Ankylostoma Duodenale by microscopic and physical examination of stool.

OF ASCARIS & ANKYLOSTOMA + ENTAMOEBA HISTOLYTICA &			Relate its importance in clinical laboratory Identify Entamoeba Histolytica, Entamoeba Coli and Giardia Lambia on physical, chemical and microscopic findings of stool analysis. Perform stool for occult blood and discuss its significance.
BLOOD PROTOZOA	PRACTICAL # 9	2.25	Recognize the blood protozoa on examination of peripheral blood film, bone marrow and skin scrapings. Discuss their significance.
ELISA + PCR	TUTORIAL # 1	2.25	Describe the principle and procedure of ELISA Discuss its significance in laboratory testing of various viruses. Discuss the significance of Polymerase chain reaction (PCR) in relation to viral infections like HBV, HCV and HIV.

DEPT. OF PHARMACOLOGY & THERAPEUTICS

LEARNING OBJECTIVES OF INFECTIOUS DISEASES & IMMUNOLOGY MODULE - II

(3rd year MBBS)

LEARNING OBJECTIVES OF LECTURES

By the end of this session, the students of 3rd year MBBS will be able to :

TOPIC	MODE OF TEACHING	TIME HOURS	LEARNING OBJECTIVES
PRINCIPLES OF ANTIMICROBIALS	LECTURE # 1	1 HOUR	<ul style="list-style-type: none">• Define Optimal antimicrobial prescription.• List reasons of appropriate antimicrobial use• Identify selection criteria of antimicrobial drugs.• Classify antimicrobial drugs according to mode of action, spectrum of activity and origin.• Define anti-microbial susceptibility testing.• List recommended common combinations of antimicrobial drugs.
PENICILLINS & OTHER BETA LACTAM ANTIBIOTICS	LECTURE # 2	1 HOUR	<ul style="list-style-type: none">• Define beta lactam antibiotics.• Classify beta lactams antibiotics• Explain mechanism of action of Amoxicillin, Imipenem-cilastatin, Aztreonam, Vancomycin and Daptomycin.• List the pharmacokinetic properties of these drugs• List clinical uses of these drugs• List common adverse effects and contraindications of these drugs
CEPHALOSPORINS	LECTURE # 3	1 HOUR	<ul style="list-style-type: none">• Classify cephalosporin with respect to generation of drug.• Explain mechanism of action of Cephalosporins.• List the pharmacokinetic properties of these drugs.• 1st generation: Cefradine and Cefadroxil.• 2nd generation: Cefaclor and Cefuroxime.• 3rd generation: Ceftriaxone and Cefixime.• 4th generation: Cefepime and Cefpirome.• List the clinical uses of these drugs.• List the common adverse effects and contraindications of these drugs.

AMINOGLYCOSIDES	LECTURE # 4	1 HOUR	<ul style="list-style-type: none"> • Classify protein synthesis inhibitors. • Classify aminoglycosides • Explain mechanism of action of aminoglycosides • List the pharmacokinetic properties of Amikacin, Gentamicin and Streptomycin. • List the clinical uses of these drugs. • List common adverse effects and contraindications of these drugs.
TETRACYCLINES	LECTURE # 5	1 HOUR	<ul style="list-style-type: none"> • Classify tetracyclines. • Explain mechanism of action of tetracyclines. • List the pharmacokinetic properties of tetracyclines. • List the clinical uses of tetracyclines. • List the adverse effects & contraindications of tetracyclines.
MACROLIDES	LECTURE # 6	1 HOUR	<ul style="list-style-type: none"> • Classify Macrolides. • Explain mechanism of action of Macrolides. • List the pharmacokinetic properties of Erythromycin, Azithromycin and Clarithromycin. • List clinical uses of these drugs. • List common adverse effects and contraindications of these drugs.
CHLORAMPHENICOL AND CLINDAMYCIN	LECTURE # 7	1 HOUR	<ul style="list-style-type: none"> • Explain mechanism of action of Chloramphenicol and Clindamycin. • List the pharmacokinetic properties of these drugs. • List the clinical uses of these drugs. • List the common adverse effects and contraindications of these drugs.
FLUOROQUINOLONES	LECTURE # 8	1 HOUR	<ul style="list-style-type: none"> • Classify Fluoroquinolones. • Explain the mechanism of action of Fluoroquinolones. • List the pharmacokinetic properties of Ofloxacin, Ciprofloxacin and levofloxacin. • List the clinical uses of these drugs. • List the common adverse effects and contraindications of these drugs.

<p align="center">FOLIC ACID ANTAGONISTS</p>	<p align="center">LECTURE # 9</p>	<p align="center">1 HOUR</p>	<ul style="list-style-type: none"> • Classify Antifolate drugs. • Explain the mechanism of Sulfonamides, Trimethoprim and Sulphamethoxazole • List the pharmacokinetic properties of these drugs. • List the clinical uses of these drugs. • List the common adverse effects and contraindications of these drugs.
<p align="center">DRUGS FOR TUBERCULOSIS</p>	<p align="center">LECTURE # 10</p>	<p align="center">1 HOUR</p>	<ul style="list-style-type: none"> • Classify drugs used to treat tuberculosis. • Explain Mechanism of action of Isoniazid, Rifampin, Ethambutol and Pyrazinamide. • List the pharmacokinetic properties of these drugs. • List common adverse effects and contraindications of these drugs.
<p align="center">DRUGS FOR HEPATIC VIRAL INFECTIONS</p>	<p align="center">LECTURE # 11</p>	<p align="center">1 HOUR</p>	<ul style="list-style-type: none"> • Define virus • List the Types of viruses • Classify drugs used to treat hepatitis • Explain mechanism of action of Ribavirin & Interferon alpha. • List the pharmacokinetic properties of these drugs. • List the clinical uses of these drugs • List common adverse effects and contraindications of these drugs.
<p align="center">DRUGS FOR HIV INFECTIONS</p>	<p align="center">LECTURE # 12</p>	<p align="center">1 HOUR</p>	<ul style="list-style-type: none"> • Classify drugs used to treat HIV infections • Explain mechanism of action of Zidovudine, Abacavir (NRTIs), Efavirenz (NNRTI), Ritonavir (PI) • List the clinical uses of these drugs. • List the pharmacokinetic properties of these drugs. • List common adverse effects and contraindications of these drugs.
<p align="center">PHARMACOLOGICAL MANAGEMENT OF COVID-19</p>	<p align="center">LECTURE # 13</p>	<p align="center">1 HOUR</p>	<ul style="list-style-type: none"> • Define COVID-19 • Outline pathophysiology of COVID-19 • List drugs used to treat COVID-19. • Describe the role of anti-viral agents, Macrolide antibiotics and Immunosuppressants in the treatment of COVID-19. • List the Vaccines used against COVID 19 • Differentiate between the different Vaccines used against COVID 19
<p align="center">ANTI FUNGALS</p>	<p align="center">LECTURE # 14</p>	<p align="center">1 HOUR</p>	<ul style="list-style-type: none"> • Outline types of mycotic infections. • Classify antifungal drugs. • Explain the mechanism of action of Amphotericin B, Flucytosine and Griseofulvin. • List the pharmacokinetic properties of these drugs. • List indications, common adverse effects and contraindications of these drugs.

DRUGS FOR MALARIA	LECTURE # 15	1 HOUR	<ul style="list-style-type: none"> Outline the lifecycle of Malarial parasites Classify antimalarial drugs Explain the mechanism of action of Chloroquine, Artemeter & Quinine List the pharmacokinetic properties of these drugs. List common adverse effects and contraindications of these drugs.
AMEBICIDAL DRUGS	LECTURE # 16	1 HOUR	<ul style="list-style-type: none"> Classify amoebicidal drugs according to site of action. Explain the mechanism of action of Metronidazole, Diloxanide furoate and Emetine. List clinical uses of these drugs List the pharmacokinetic properties of these drugs List its common adverse effects and contraindications of these drugs
ANTI HELMINTHIC DRUGS	LECTURE # 17	1 HOUR	<ul style="list-style-type: none"> Classify anti-helminthic drugs. Explain mechanism of action of Albendazole, Mebendazole and Ivermectin. List the pharmacokinetic properties of these drugs. List clinical uses of these drugs List common adverse effects and contraindications of these drugs.
ANTI-SEPTICS AND DISINFECTANTS	LECTURE # 18	1 HOUR	<ul style="list-style-type: none"> Define disinfectants and antiseptics. List properties of standard Antiseptics and Disinfectants. List common Antiseptics and Disinfectants. Explain mechanism of action of an Antiseptic and a Disinfectant. List common uses of Anti-septics and Disinfectants.
IMMUNOMODULATORS	LECTURE # 19	1 HOUR	<ul style="list-style-type: none"> Define immunomodulators. Classify immunomodulators. Explain mechanism of action of Cyclosporin, Prednisone and Azathioprine as Immunosuppressants. Explain mechanism of action of Interferons as Immune potentiators. List the pharmacokinetic properties of these drugs. List clinical uses of these drugs List common adverse effects and contraindications of these drugs.
IMMUNIZATION & VACCINATION	LECTURE # 20	1 HOUR	<ul style="list-style-type: none"> Define immunization. Differentiate between active and passive immunization.

			<ul style="list-style-type: none"> • Define a vaccine. • List the types of vaccines with examples.
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LEARNING OBJECTIVES OF TUTORIALS **(SGS)**

By the end of this session, the students of 3rd year MBBS will be able to:

TOPIC	MODE OF TEACHING	TIME HOURS	LEARNING OBJECTIVES
INFECTIVE ENDOCARDITIS	TUTORIAL# 1	2 HOURS	<ul style="list-style-type: none"> • Define Infective Endocarditis. • List drugs used to treat Infective Endocarditis. • Write down the prescription of the given case.
TUBERCULOSIS	TUTORIAL# 2	2 HOURS	<ul style="list-style-type: none"> • Classify 2nd line drugs used to treat TB. • Discuss the pharmacodynamics and pharmacokinetics of 2nd line drugs used to treat TB. • Describe the pharmacological management of multidrug-resistant tuberculosis. • Write down the prescription of the given case.
MALARIA	TUTORIAL# 3	2 HOURS	<ul style="list-style-type: none"> • List the drugs used for the prophylaxis of malaria • Discuss the pharmacodynamics and pharmacokinetics of Mefloquine & Primaquine. • List the drugs used to treat malaria during pregnancy. • Define cerebral malaria. • List drugs used to treat cerebral malaria. • Write down the prescription of the given case.
AMOEBIC DYSENTERY	TUTORIAL# 4	2 HOURS	<ul style="list-style-type: none"> • Define Amoebic Dysentery • List drugs used to treat Amoebic Dysentery • Write down the prescription of the given case.
FUNGAL INFECTIONS	TUTORIAL# 5	2 HOURS	<ul style="list-style-type: none"> • List the topical drugs for superficial fungal infections. • Define candidiasis. • Discuss the pharmacodynamics and pharmacokinetics of Fluconazole & Nystatin. • Write down the prescription of the given case.
TYPHOID FEVER	TUTORIAL# 6	2 HOURS	<ul style="list-style-type: none"> • Define Typhoid fever. • List the drugs used to treat Typhoid fever • Write down the prescription of the given case.

HERPES VIRAL INFECTIONS	TUTORIAL# 7	2 HOURS	<ul style="list-style-type: none">• List drugs used to treat herpes viral infections• Explain mode of action of Acyclovir.• List indications, common adverse effects and contraindications of the drug.• Write down the prescription of the given cases.
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LEARNING OBJECTIVES OF PRACTICALS

By the end of this session, the students of 3rd year MBBS will be able to:

TOPIC	MODE OF TEACHING	TIME HOURS	LEARNING OBJECTIVES
Overview of Ointments + Preparation & Dispensing of Zinc Oxide Ointment	PRACTICAL# 1	2 HOURS	<ul style="list-style-type: none">• Define Ointments• List the ingredients of Ointments.• List the common uses of Ointments• List the properties of a standard ointment.• Demonstrate the steps of preparation and dispense of Zinc Oxide Ointment• List the uses of Zinc Oxide Ointment
Overview of Solutions + Preparation & Dispensing of Compound sodium chloride mouthwash.	PRACTICAL# 2	2 HOURS	<ul style="list-style-type: none">• Define Mouthwash• List the types of Mouthwashes• List the ingredients of an antiseptic mouthwash.• Demonstrate the steps of preparation and dispensing of Compound sodium chloride mouthwash.• List the uses of sodium chloride mouthwash.

DEPT. OF FORENSIC MEDICINE
LEARNING OBJECTIVES OF INFECTIOUS DISEASES &
IMMUNOLOGY MODULE - II
(3rd year MBBS)

By the end of this module, the students of 3rd year MBBS will be able to:

TOPIC	MODE OF TEACHING	TIME (hours)	LEARNING OBJECTIVES
Injuries	Lecture # 1	01	Define Injury, Hurt, Wound, Assault & Battery according to Pakistan Penal Code / Qisas & Diyat Act Classify Mechanical Trauma or Physical Injuries Describe the Blunt Force Trauma
Injuries	Lecture # 2	01	Describe the Firearms & Explosive Injuries (Wound Ballistics) Describe Explosive Injuries Describe Thermal Injuries Express Dating / Age & Sub-classification of every Injury / Wound.
Injuries 3	Lecture	01	Describe Types & Healing Phenomena of every Injury / Wound. Differentiate Antemortem Wounds / Fractures from Postmortem Wounds / Fractures. Describe Types & Healing Phenomena of every Injury / Wound. Differentiate Antemortem Wounds / Fractures from Postmortem Wounds / Fractures.
Injuries 4	Lecture	01	Enlist ML Classification of Injuries Differentiate b/w Suicidal, Homicidal, Accidental wounds Describe Defense Wounds, Sports Injury Define Head Injury as per National Advisory Neurological Diseases & Stroke Council. Classify Cranio-Cerebral Injury (Scalp , Skull & Brain).
Injuries 5	Lecture	01	Classify Brain Injury Explain Mechanism of production of brain injury

			Describe Coup & Contre-Coup Injury. Enlist Bone Fragmentation / Skull Fractures.
Injuries 6	Lecture	01	Discuss Intracranial Hemorrhages/Hematomas, & Brain Swelling (Cerebral Edema). Express Diffuse Axonal Injury (DAI), Diffuse Neuronal Injury (DNI), Diffuse Vascular Injury (DVI).
Injuries 7	Lecture	01	Discuss Penetrating Wounds / Firearm Wounds Explain Injury to Neck & Neck Structures / Cervical Trauma, specially Causes, Mechanism, Signs Symptoms & Autopsy findings of Whiplash Injury. Explain Cerebral Concussion, Contusions & Lacerations
Injuries 8	Lecture	01	Describe Fabricated / Fictitious / Forged Wounds (Self-Inflicted & Self-Suffered). Explain Injury to Chest / Thorax & Thoracic Structures Explain Injury to Limb Skeletal Bone Injuries (Fractures, etc.), & Joint Injuries
Injuries 9	Lecture	01	Enlist the Complications of injuries like DIC, Shock, Thromboembolism, Hemorrhage , etc. Describe iatrogenic injuries Discuss Transportation Injuries to Pedestrians Discuss Transportation Injuries Drivers

By the end of this module, the students of 3rd year MBBS will be able to:

TOPIC	MODE OF TEACHING	TIME (hours)	LEARNING OBJECTIVES
Medicolegal Reports 1	Practical # 1	2.25	Write the Medico-legal Reports of: <ul style="list-style-type: none"> • Age Certification • Drunk / Alcoholic Poisoning
Medicolegal Reports 2	Practical # 2	2.25	Write the Medico-legal Reports of: <ul style="list-style-type: none"> • Assault • Burns Vitriolage
Medicolegal Reports 3	Practical # 3	2.25	Write the Medico-legal Reports of: <ul style="list-style-type: none"> • Victim of Rape • Alleged Rapist
Medicolegal Reports 4	Practical # 4	2.25	Write the Medico-legal Reports of: <ul style="list-style-type: none"> • Non-habitual Passive Agent of Sodomy • Habitual Passive Agent of Sodomy Active Agent of Sodomy
<u>SEXUAL JURISPRUDENCE</u>	Practical # 5	2.25	Define Natural Sexual Offences Define Unnatural Sexual Offences
	Practical # 6	2.25	Give Legal Definition of Rape Define Indecent Assault Detail Feigned Rape & ML Questions on Rape
	Practical # 7	2.25	Define Incest & its ML importance Enlist & Classify Sexual Perversions Define Adultery & its ML importance.
	Practical # 8	2.25	Enlist signs of pregnancy Define Describe the methods of abortion

DEPT. OF COMMUNITY MEDICINE
LEARNING OBJECTIVES OF INFECTIOUS DISEASES &
IMMUNOLOGY MODULE - II
(3rd year MBBS)

By the end of this module, the students of 3rd year MBBS will be able to:

TOPIC	MODE OF TEACHING	TIME (hours)	LEARNING OBJECTIVES
Introduction to infectious diseases	Lecture # 1	1	<ul style="list-style-type: none">• Define infectious diseases• Explain the key definitions associated with infectious diseases.• Discuss different preventive measures for common infectious diseases in Pakistan
Introduction to Immunization	Lecture # 2	1	<ul style="list-style-type: none">• Define immunization• Explain the types of immunization• Discuss the EPI schedule in Pakistan

DEPT. OF RESEARCH
LEARNING OBJECTIVES OF INFECTIOUS DISEASES &
IMMUNOLOGY MODULE - II
(3rd year MBBS)

By the end of this module, the students of 3rd year MBBS will be able to:

TOPIC	MODE OF TEACHING	TIME (hours)	LEARNING OBJECTIVES
How to develop an informed consent form	Lecture # 1	2.25	Detail the contents of an informed consent form.
	Lecture # 2	2.25	Arrange the contents of an informed consent form.

DEPT. OF BEHAVIORAL SCIENCES
LEARNING OBJECTIVES OF INFECTIOUS DISEASES &
IMMUNOLOGY MODULE - II
(3rd year MBBS)

By the end of this module, the students of 3rd year MBBS will be able to:

TOPIC	MODE OF TEACHING	TIME (hours)	LEARNING OBJECTIVES
Psychosocial theory of personality	Lecture # 1	1	Eight stages of Erick Erikson's theory
Death & dying	Lecture # 2	1	Definition of grief and bereavement Stages of grief after death Reaction to terminal illness by Kubler-Ross

DEPT. OF SURGERY
LEARNING OBJECTIVES OF INFECTIOUS DISEASES &
IMMUNOLOGY MODULE - II
(3rd year MBBS)

By the end of this module, the students of 3rd year MBBS will be able to:

TOPIC	MODE OF TEACHING	TIME (hours)	LEARNING OBJECTIVES
Tropical infections and infestations	Lecture # 1	2	<p>To be able to list the common surgical infections and infestations that occur in the tropics</p> <p>To appreciate that many patients do not seek medical help until late in the course of the disease because of socioeconomic reasons</p> <p>To be able to describe the emergency presentations of the various conditions, as patients may not seek treatment until they are very ill</p> <p>To be able to diagnose and treat these conditions, particularly as emergencies.</p> <p>To realize that the ideal management involves a multidisciplinary approach between the surgeon, physician, radiologist, pathologist and microbiologist</p>

DEPT. OF MEDICINE
LEARNING OBJECTIVES OF INFECTIOUS DISEASES &
IMMUNOLOGY MODULE - II
(3rd year MBBS)

By the end of this module, the students of 3rd year MBBS will be able to:

TOPIC	MODE OF TEACHING	TIME (hours)	LEARNING OBJECTIVES
Common manifestations of Staphylococcus infection in clinical practice	Lecture # 1	1	Recall classification of bacteria Identify different staphylococcal infection characteristic Enlist skin conditions associated with staphylococcal infection Record physical finding in staph infection Define toxic shock syndrome; complication of staph infection Identify other systemic condition which occur in staph infection Enlist Predisposing factors for staphylococcal infections Discuss methods to diagnose staphylococcal infection Discuss preference of antibiotic use in staph infection
Pneumonia – a leading cause of morbidity and mortality	Lecture # 2	1	Understand impact of respiratory infection on general population Classify different types of Pneumonia Enlist typical organism causing community acquired pneumonia Define hospital acquired pneumonia (HAP) and enlist organism causing HAP Record different mode of transmission of infection Identify predisposing factors in pneumonia Discuss clinical features in pneumonia Identify important clinical signs in pneumonia Enlist test used to diagnose pneumonia infection Enlist antibiotics use to treat pneumonia

DEPT. OF GYNAECOLOGY & OBSTETRICS

LEARNING OBJECTIVES OF INFECTIOUS DISEASES & IMMUNOLOGY MODULE - II

(3rd year MBBS)

By the end of this module, the students of 3rd year MBBS will be able to:

TOPIC	MODE OF TEACHING	TIME (hours)	LEARNING OBJECTIVES
Gynecological infections	Lecture # 1	1	Classify the different gynecological infections

DEPT. OF MEDICAL EDUCATION

PEARLS LEARNING OBJECTIVES OF INFECTIOUS DISEASES & IMMUNOLOGY MODULE - II

(3rd year MBBS)

By the end of this module, the students of 3rd year MBBS will be able to:

TOPIC	MODE OF TEACHING	TIME (hours)	LEARNING OBJECTIVES
Team Building	Lecture # 1	1	Discuss the pre-requisites for team building. Identify types of team members.