

INTEGRATED BLOCK SPECIFICATIONS

I. BASIC INFORMATION

Block Title: *Infectious Diseases 1*

Block Code: **050102CRS**

Credit Hours: 4

Weeks: 4 weeks

Program (s) in which the BLOCK is given: Bachelor of Medicine & Surgery (MBBCh)

Department(s) offering the BLOCK (course) (Teaching Departments):

Basic Biomedical Departments	Clinical Departments	Others
Medical Microbiology & Immunology	Tropical Medicine	
Medical Parasitology	Internal Medicine	
Clinical Pharmacology	Internal Medicine (chest)	
Community Medicine		

Phase: 1. Pre-clerkship phase

Academic year: Year 3

Semester: semester V

Date of block (course) specifications approval:

II. OVERALL AIMS OF THE BLOCK:

The aim of this block is to provide graduate with the knowledge and skills that make him capable of providing safe healthcare to patients who suffer from common infectious diseases at the primary healthcare level as well as applying preventive services to others in the community.

III. BLOCK Objectives (ILOs):

By the end of the block, the student should be able to:

competency area/ program aims	course objectives
<p>Scholar and scientist</p> <p>1.1. Identify various microbiologic and parasitological causes of infectious diseases and explain</p>	<ol style="list-style-type: none"> 1. Describe bacterial cell structure and requirements for growth 2. Discuss the pathogenesis of bacterial infections 3. Classify viruses and discuss the role of bacteriophages 4. Classify fungi and discuss their medical importance



<p>the ways in which they operate on the body (Pathogenesis).</p> <p>1.2. Describe altered structure and function of the body major organ systems in various infectious diseases.</p> <p>1.3. Demonstrate knowledge of antimicrobial drugs' actions: therapeutics and pharmacokinetics.</p> <p>1.4. Apply knowledge of biomedical sciences relevant to the clinical problem at hand.</p> <p>1.5. Demonstrate basic sciences specific practical skills and procedures relevant to medical practice (Appendix A).</p>	<p>5. Classify antigens and antibodies</p> <p>6. Outline the types and mechanisms of immune response to infectious agents</p> <p>7. Classify parasites and discuss the criteria of each class</p> <p>8. Understand the role of arthropods as vectors of diseases</p> <p>9. Discuss the role of arthropods as disease-causers</p> <p>10. Recommend for the proper sampling and procedures for diagnosis of infectious diseases</p> <p>11. Understand the mechanisms of antimicrobial agents</p> <p>12. Deduce the causes of bacterial resistance to antimicrobial drugs.</p> <p>13. Propose a proper antimicrobial prescription</p> <p>14. Interpret the suitable methods of decontamination</p>
<p>a health care provider</p>	
<p>a professional</p>	
<p>a health promoter</p> <p>4.1.Explain the epidemiological triad, risk factors and the changing concepts of disease causation.</p> <p>4.2.Apply principles of descriptive and analytic epidemiology to study distribution and determinants of their community</p>	<p>15. Design the cycle of infection</p> <p>16. Deduce different methods for prevention of transmission of infectious agents</p>



<p>health problems and plan appropriate prevention and control measures.</p> <p>4.3. Identify the role of health promotion in enabling people to increase control over their own health.</p>	
<p>a member of the health team and a part of the health care system</p> <p>5.1 Apply leadership skills to enhance team functioning, the learning environment, and/or the health care delivery system.</p> <p>5.2 Evaluate his/her work and that of others using constructive feedback.</p>	<p>17. Work in groups with colleagues</p> <p>18. Communicate and share ideas with staff members and colleagues</p> <p>19. Practice self-learning and self-evaluation</p> <p>20. Accept valuable criticism</p>
<p><u>a lifelong learner and researcher</u></p> <p>6.1 Demonstrate a commitment to lifelong learning.</p> <p>6.2 Regularly reflect on and assess his/her performance using various performance indicators and information sources.</p> <p>6.3 Develop, implement, monitor, and revise a personal learning plan to enhance professional practice</p> <p>6.4 Identify opportunities and use various resources for learning.</p>	<p>21. Retrieve, manage, and manipulate information by all means, including electronic means.</p> <p>22. Present information clearly in written, electronic and oral forms.</p> <p>23. Communicate ideas and arguments effectively.</p> <p>24. Work effectively within a team.</p> <p>25. Respect the rules and disciplines for the course attendance, communication with the course instructors and for participation in the end course exams.</p> <p>26. Respect the role of other professionals as technicians and workers.</p> <p>27. Respect the materials used in practical work as the cadavers.</p> <p>28. React properly with his colleagues and staff members and</p>

6.5 Engage in collaborative learning to continuously improve personal practice and contribute to collective improvements in practice. 6.6 Effectively manage learning time and resources and set priorities.	assistant staff.
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IV- Contents & lecture /class objectives

Microbiology		Parasitology		Pharmacology		Community	Clinical
Lectures	Tutorial/ Practical	Lectures	Tutorial/ Practical	Lectures	Tutorial/ Practical	Lectures	Rounds
19	12	9	7	10	3	3	1

Specific objectives/lecture

Topic	SLOs
Microbiology	Statement
Lecture 1: Microbial world and Bacterial cell structure	<ol style="list-style-type: none"> 1. Categorize different microorganisms into Prokaryotes and Eukaryotes. 2. Compare between prokaryotes and eukaryotes 3. Classify medically important bacteria 4. Discuss the normal microbial flora 5. Explain the relation between the 2 groups of normal flora 6. List the beneficial role of resident flora 7. List body sites with normal flora 8. Mark the differences between G+ve and G-ve bacterial cell walls. 9. List the function(s) of each bacterial cell wall component 10. Discuss the importance of bacterial cytoplasmic membrane 11. Discuss the passage of molecules through the outer membrane of G-ve bacteria 12. Distinguish between the structure and functions of the different bacterial cytoplasmic components 13. Support the hypothesis that the bacterial capsule is a virulence factor. 14. Compare between the bacterial extracellular projecting structures.
Lecture 2: Bacterial growth & requirements & Bacterial spores	<ol style="list-style-type: none"> 1. Mention different nutritional requirements for bacterial growth. 2. Classify bacteria according to their oxygen requirement. 3. State how Facultative anaerobes are able to grow in the presence or absence of oxygen. 4. Define halophilic, acidophilic, alkalophilic & neutrophilic organisms. 5. Analyze the different phases of bacterial growth curve.

	<ol style="list-style-type: none"> 6. Deduce the causes of limited growth of bacteria in a given growth medium. 7. Correlate the phases of bacterial growth curve with the clinical course of a disease 8. Discuss the properties of endospores. 9. Identify the features of endospores that allow a microbe to survive extreme conditions. 10. Name different diseases which can be transmitted by bacterial spores. 11. Recognize sequence of events leading to germination of an endospore.
<p>Lecture 3: Pathogenesis of bacterial infection</p>	<ol style="list-style-type: none"> 1. Compare between infection, colonization, infectivity and disease. 2. Classify the types of pathogens and distinguish the criteria of each. 3. Discover the protective role and the harmful effects of commensal bacteria. 4. Determine the conditions where opportunistic pathogens can cause infection. 5. Categorize the properties of true pathogens 6. Deduce the difference between bacterial virulence & transmissibility 7. Compare between bacterial endotoxins and exotoxins
<p>Lecture 4: General features & classification of viruses</p>	<ol style="list-style-type: none"> 1. Relate the structure of viruses to their general properties. 2. Compare viruses with eucaryotic & prokaryotic cells in terms of structure and replication. 3. Contrast naked viruses to enveloped viruses based on their structure and properties. 4. Explain the need of defective viruses for helper viruses. 5. Categorize the effect of physical and chemical agents on viruses. 6. Analyze why viruses are obligate intracellular parasites. 7. Categorize viruses based on various parameters. 8. Label viral structures & list their functions 9. Link viral properties to their use as vectors for therapy or vaccination.
<p>Lecture 5: Viral Replication and Bacteriophages</p>	<ol style="list-style-type: none"> 1. Distinguish viral cell interaction results 2. Outline different steps of the viral replication cycle 3. Explain terms used in the viral replication cycle 4. Analyze how the presence or absence of a viral envelope would affect the way the virus initiates and ends its replicative cycle 5. Interpret how each step of the viral replicative cycle would facilitate the occurrence of the subsequent step 6. Compare between DNA and RNA viruses regarding their strategy of replication 7. Relate how positive and negative sense RNA viruses would utilize different strategies to synthesize mRNA 8. Appraise how viruses could reinitiate a new replicative cycle without being exposed to the extracellular milieu 9. Categorize different types of phages

	<ol style="list-style-type: none"> 10. Distinguish how lytic and lysogenic phages would lead to different replicative cycles in their respective bacterial hosts. 11. Evaluate lysogeny results in bacterial host cells 12. Discuss the importance of bacteriophages & how we can make use of it 13. Appraise how bacteriophages could be used in food industry. 14. Label the various components of bacteriophage & conclude their functions
<p>Lecture 6: Bacterial Genetics</p>	<ol style="list-style-type: none"> 1. Demonstrate the structure of bacterial DNA. 2. Compare between chromosome and plasmid. 3. Compare between plasmids and transposable elements as regards their structures and functions. 4. Classify the types of variation in bacteria. 5. Explain what is meant by genetic engineering & determine its tools. 6. Explain the role of genetic engineering in the production of recombinant vaccines
<p>Lecture 7: Mechanisms of Action of Antibacterial Agents</p>	<ol style="list-style-type: none"> 1. Classify different antibacterial agents according to spectrum of activity 2. Compare between bacteriostatic and bactericidal antibacterial agents 3. Explain the selective toxicity of different antibacterial agents 4. List the mechanisms of action of the different classes of antibacterial agents 5. Distinguish the targets of the different antibiotic classes 6. Determine the spectrum of activity of different antibacterial agents occurring after birth.
<p>Lecture 8: Bacterial Resistance to Chemotherapeutic Agents</p>	<ol style="list-style-type: none"> 1. Identify the mechanisms of action by which anti-tuberculous drugs can (inhibit/ kill) Mycobacterium tuberculosis 2. Explain the role of probiotics in the treatment of some diseases 3. List the mechanisms of action of some antibiotics against anaerobic bacteria 4. Determine the possible mechanisms by which bacteria acquire antimicrobial resistance. 5. Locate in the illustration the site/sites of the different mechanisms by which bacteria can resist a chemotherapeutic agent. 6. Distinguish, giving examples, between genetic and non-genetic origin of bacterial drug resistance. 7. Elaborate how genetics plays a role in drug resistance. 8. Categorize the levels of antimicrobial resistance. 9. Propose a treatment solution for patients with either high- or low-level resistance. 10. Deduce a definition, giving examples to the term cross-



	<p>resistance.</p> <p>11. Design a plan to control drug resistance.</p>
<p>Lecture 9: Staphylococci</p>	<ol style="list-style-type: none"> 1. Make use of clinical information and laboratory findings of staphylococci in solving problems. 2. Distinguish coagulase positive from coagulase negative staphylococci. 3. Interpret the results of microbiological investigations of a clinical specimen sent to the laboratory for diagnosis of a staphylococcal infection 4. Select the virulence factor/s of Staphylococcus involved in a given clinical presentation. 5. Identify the clinical significance of a given a Staphylococcus isolate. 6. Compare between S. epidermidis and S. saprophyticus regarding laboratory criteria and clinical findings. 7. Explain the evolution & how to confirm MRSA infections. 8. Design an algorithm for testing antimicrobial susceptibility of S. aureus isolates. 9. Determine the role of each virulence factor in Staphylococcus aureus pathogenicity 10. Mark the importance of Staphylococcus aureus carrier as a source of hospital outbreaks.
<p>Lecture 10: Streptococci</p>	<ol style="list-style-type: none"> 1. Compare between Streptococci and Staphylococci 2. Classify streptococci. 3. Conclude the main antigenic features of Streptococcus pyogenes 4. Mark the toxins and enzymes of Streptococcus pyogenes 5. Discover the main differences between toxins and enzymes of Streptococcus pyogenes and those of Staphylococcus aureus 6. Discuss Pathogenesis and clinical findings of Streptococcus pyogenes 7. Propose an algorithm for the laboratory diagnosis of streptococcal infections
<p>Lecture 11: Gram-negative bacilli of medical importance</p>	<ol style="list-style-type: none"> 1. Categorize Gram negative bacilli according to their habitat, pathogenicity and oxygen requirements. 2. Discover the diseases caused by E.coli, Klebsiella, Proteus, Pseudomonas and Acinetobacter. 3. Determine the cultural characteristics of E.coli, Klebsiella, Proteus, Pseudomonas and Acinetobacter. 4. Compare the different colonial morphologies and biochemical reactions of the discussed Gram-negative bacilli
<p>Lecture 12: Immunogens, antigens and antibodies</p>	<ol style="list-style-type: none"> 1. Define antigens. 2. List the different types of antigens. 3. Compare the different types of antigens. 4. Distinguish between antigens and superantigens. 5. Discover the nature of antibodies.



	<ol style="list-style-type: none"> 6. Illustrate the basic structure of an immunoglobulin molecule. 7. Categorize Immunoglobulin classes. 8. Explain immunoglobulin class switching. 9. Discuss the rate of antibody production. 10. Analyze the protective functions of antibodies. 11. Define monoclonal antibodies. 12. Discuss the methods of production of monoclonal antibodies. 13. Determine the diagnostic and therapeutic applications of monoclonal antibodies.
Lecture 13: The Complement system and Major Histocompatibility Complex (MHC)	<ol style="list-style-type: none"> 1. Define complement and its components 2. Decide the different sites of synthesis of complement 3. Compare the 3 complement pathways 4. Explain the biological functions of complement 5. Distinguish the membrane attack complex of complement 6. Determine the opsonic component of complement 7. Deduce the most chemotactic component of complement 8. Categorize major histocompatibility antigens 9. Define major and minor histocompatibility complex 10. Compare between class I and II MHC complex 11. List 2 methods of MHC typing 12. Explain the significance of MHC
Lecture 14: Immune response to infectious agents: Innate Immunity	<ol style="list-style-type: none"> 1. Explain the pathway and the fate of hematopoietic stem cell 2. Compare between Innate and adaptive immunity 3. Explain mechanisms of innate immunity 4. Distinguish the roles of Toll and NOD like receptors in innate immunity 5. Define PAMPs and how do they act 6. List cells of innate immunity 7. Explain antibody dependent cell mediated cytotoxicity (ADCC) 8. List phagocytic cells and how they are stimulated
Lecture 15: Cytokines and Interferons	<ol style="list-style-type: none"> 1. Define cytokines 2. Explain characteristics and clinical uses of cytokines 3. Define of interferons 4. Distinguish between the two main types of interferons 5. Identify the stimulus for induction of type 1 interferon 6. Explain diagrammatically the antiviral action of interferon. 7. List the clinical uses of interferon 8. What is pegylated interferon <p>List side effects of interferon</p>
Lecture 16: Immune Response to	<ol style="list-style-type: none"> 1. Classify subdivisions of acquired immunity and choose examples for each of them.

<p>Infectious Agents: Adaptive (Acquired) Immunity</p>	<ol style="list-style-type: none"> 2. Discuss the cells involved in the specific immune response. 3. List the major events taking place in the specific immune response. 4. Illustrate the interaction between the antigen presenting cell and T helper cell leading to its activation. 5. Explain the sequence of events in the adaptive immune response, its outcome and down-regulation. 6. Analyze the interaction between innate and adaptive immune responses.
<p>Lecture 17: Vaccines</p>	<ol style="list-style-type: none"> 1. Explain principle of vaccination 2. Discuss the achievements of immunization programs 3. List different types of vaccines 4. Choose appropriate vaccine for certain situations based on advantages and limitations of vaccines studied. 5. Distinguish and define the difference between various types of vaccines 6. Explain the preparation concept of each type of vaccine 7. List advantages and disadvantages of vaccines studied
<p>Lecture18: Herpesviruses</p>	<ol style="list-style-type: none"> 1. Describe the structure and morphology of Herpesviruses 2. Classify this group of viruses 3. Appraise how the different members of herpesviruses have different sites of latency 4. Interpret how the site of latency may affect the nature of the recurrent illness 5. Distinguish how recurrent infection with these viruses may be clinically different than primary infections 6. Compare between the clinical syndromes occurring in immunocompetent versus immunocompromised individuals 7. Outline the methods of laboratory diagnosis of this group of viruses 8. Identify the antivirals that could be used for treating infections caused by some herpesviruses
<p>Lecture 19: Introduction to Medical Mycology</p>	<ol style="list-style-type: none"> 1. Compare between bacterial & fungal cell walls. 2. Elaborate the natural habitat of fungi & the atmospheric requirements 3. Explain the medical importance of fungi 4. Discover the toxic effect of aflatoxins on liver. 5. Categorize the different morphological features of fungi 6. Explain the diseases caused by Aspergillus and Candida. 7. Determine the cultural characteristics of Aspergillus and Candida. 8. Identify the methods of laboratory diagnosis of Aspergillus and Candida.
<p>Parasitology</p>	<p>Statement</p>

<p>Lecture 1: General Introduction to Medical Parasitology</p>	<ol style="list-style-type: none"> 1. Explain the different terminology used in Medical Parasitology. 2. Compare between different types of hosts and different types of parasites. 3. Design different types of parasite life cycles. 4. Identify the different sources of parasitic infections. 5. List the different portals of entry and exist of parasites. 6. Predict the mode of transmission of parasitic infections. 7. Propose the different mechanisms of pathogenesis of parasitic infections.
<p>Lecture 2: Introduction to Medical Helminthology: Trematoda</p>	<ol style="list-style-type: none"> 1. Classify parasitic organisms. 2. Mention the classification of Helminthology. 3. Compare the morphological features of the different classes of helminths 4. Categorize the general characters of Trematoda. 5. Compose life cycle of Trematoda. 6. Predict the diagnostic and infective stages of Trematoda and their mode of infection 7. Justify the presence of snails in the life cycle of Trematoda.
<p>Lecture 3: Introduction to Medical Helminthology: Cestoidea.</p>	<ol style="list-style-type: none"> 1. Describe the general diagnostic morphology and habitat of cestodes. 2. Correlate the morphological character of trematodes and cestodes. 3. Determine the broad lines of the life cycle of cestodes in the human body & the intermediate host(s). 4. Deduce the diagnostic stage, the infective stage and the mode of infection. 5. Compare the life cycle of cestodes to other helminths.
<p>Lecture 4: Introduction to Medical Helminthology: Nematoda.</p>	<ol style="list-style-type: none"> 1. Identify the general characters of Phylum Nematoda. 2. Classify nematodes according to their habitat. 3. Distinguish the diagnostic stages of nematode. 4. Categorize nematodes according to the modes of transmission and infective stages. 5. Design the general life cycle of intestinal and tissue nematodes. 6. Interpret the role of arthropod vector in the life cycle of tissue nematodes
<p>Lecture 5: Introduction to Medical Protozoology.</p>	<ol style="list-style-type: none"> 1. Explain what is meant by protozoa. 2. List the general characteristic features of protozoa. 3. Identify the structure of a protozoon cell. 4. Justify the importance of protozoon cytoplasm. 5. Classify protozoa according to the organs of locomotion. 6. List the characteristic features of subphylum sarcodina. 7. List the criteria of subphylum mastigophora. 8. Determine the criteria of ciliophora. 9. Determine the criteria of apicomplexa. 10. Criticize the complicated life cycle of coccidia
<p>Lecture 6: Introduction to Medical Entomology.</p>	<ol style="list-style-type: none"> 1- Discuss the term “Medical Entomology”. 2- Compare different types of arthropod development. 3- Classify medically important arthropods. 4- Categorize arthropods according to their medical importance. 5- Interpret the type of disease transmission by arthropods. 6- Compose how arthropods can convey infections. 7- Deduce the role of arthropods as causers of diseases.



<p>Lecture 7: Toxaemia and Allergy Caused by Arthropods.</p>	<ol style="list-style-type: none"> 1. Identify the symptoms of scorpion sting. 2. Determine how to diagnose a case of toxaemia caused by scorpion sting. 3. Discuss how to treat a case of toxaemia caused by scorpion sting. 4. Explain what is meant by tick dermatosis. 5. Explain what is meant by tick paralysis. 6. Classify the arthropods causing allergic reactions in the skin and the respiratory tract. 7. Identify the mechanisms by which <i>Sarcoptes scabiei</i> mites produce pruritus. 8. Discover the types of lesions produced by <i>Sarcoptes scabiei</i> mites and the usual sites involved.
<p>Lecture 8: Myiasis.</p>	<ol style="list-style-type: none"> 1- Discuss the term “Myiasis” as regards the causative agent and risks of infestation. 2- Elaborate the different types of Myiasis according to the type of tissues invaded by maggots. 3- Classify the flies causing myiasis and their biological habits. 4- Discuss the mechanisms of cutaneous myiasis. 5- Deduce the clinical picture and complications of each type of myiasis. 6- Interpret the suitable treatment of each type of myiasis. 7- Design a plan to prevent myiasis. 8- Justify the statement “Larvae of higher Diptera are beneficial”
<p>Lecture 9: Laboratory Diagnosis of Parasitic Infections.</p>	<ol style="list-style-type: none"> 1. Determine the recommended criteria for different samples applied for parasitological examination. 2. Recommend suitable laboratory diagnostic techniques for different classes of parasites. 3. Discuss different samples used in direct parasitological diagnosis. 4. Comprehend the role of each laboratory technique in diagnosis of parasitic infections. 5. Discuss how to manipulate stool sample for detection of parasitic ova and protozoa. 6. Compare between different techniques used to diagnose parasites in blood. 7. Justify the use of immunological techniques in diagnosis of parasitic infections. 8. Deduce the appropriate concentration technique for scanty parasitic infections in different samples. 9. Compare the principles of different serological techniques used in diagnosis of parasitic infections.
<p>Pharmacology</p>	<p>Statement</p>
<p>Lecture 1: Principles of antimicrobial therapy</p>	<ol style="list-style-type: none"> 1. Identify the general principles of use of antimicrobial drugs for treatment of common infectious diseases. 2. Categorize the goals of antimicrobial therapy. 3. Distinguish the proper empiric antimicrobial therapy. 4. Correlate the selection of antimicrobial therapy to definite patient’s and drug’s related factors. 5. Defend about the rationale use of antimicrobial drugs combinations and chemoprophylaxis. 6. Discriminate between rationale use and the misuse of antimicrobial drugs.

<p>Lecture 2: Cell Wall Synthesis Inhibitors I</p>	<ol style="list-style-type: none"> 1. Relate penicillin relevant pharmacokinetics to their clinical uses. 2. Correlate the antibacterial spectrum of different types of penicillin to their therapeutic uses. 3. Relate the therapeutic uses of penicillin/beta-lactamase inhibitors combination to the mechanism of bacterial resistance. 4. Correlate the serious adverse reactions of penicillin to their therapeutic uses. 5. Solve a virtual clinical scenario by choosing the proper antimicrobial agent for a specific bacterial infection.
<p>Lecture 3: Cell Wall Synthesis Inhibitors II</p>	<ol style="list-style-type: none"> 1. Relate the relevant pharmacokinetics of cephalosporins to their therapeutic uses. 2. Classify cephalosporins according to their antibacterial spectrum. 3. Correlate the antibacterial spectrum of cephalosporins to their therapeutic uses. 4. Differentiate between the therapeutic uses of different generation of cephalosporins. 5. Describe the adverse reactions of cephalosporins. 6. Solve a virtual clinical scenario by choosing the proper antimicrobial agent for a specific bacterial infection.
<p>Lecture 4: Cell Wall Synthesis Inhibitors III</p>	<ol style="list-style-type: none"> 1. Relate the relevant pharmacokinetics of carbapenems and monobactams to their therapeutic uses. 2. Correlate between the antibacterial spectrum of carbapenems and monobactam and their therapeutic uses. 3. Correlate the pharmacokinetics, adverse reactions, and drug interactions of glycopeptides (vancomycin and teicoplanin) to their therapeutic uses. 4. Differentiate between pharmacokinetics and therapeutic uses of different vancomycin formulations. 5. Define antibacterial spectrum and therapeutic uses of bacitracin. 6. Solve a virtual clinical scenario by choosing the proper antimicrobial agent for a specific bacterial infection.
<p>Lecture 5: Protein synthesis inhibitors I</p>	<ol style="list-style-type: none"> 1. Relate the relevant pharmacokinetics of aminoglycosides and macrolides to their therapeutic uses. 2. Correlate the antibacterial spectrum of aminoglycosides and macrolides to their therapeutic uses. 3. Correlate the adverse reactions and drug interactions of aminoglycosides and macrolides to their therapeutic uses. 4. Solve a virtual clinical scenario by choosing the proper antimicrobial agent for a specific bacterial infection.
<p>Lecture 6: Protein synthesis inhibitors II</p>	<ol style="list-style-type: none"> 1. Correlate the antibacterial spectrum of tetracyclines to their therapeutic uses. 2. Relate the adverse reactions and drug interactions of tetracyclines to their pharmacokinetics. 3. Describe the antibacterial spectrum, pharmacokinetics, therapeutic uses, and adverse reactions of chloramphenicol, clindamycin, and linezolid. 4. Solve a virtual clinical scenario by choosing the proper antimicrobial agent for a specific bacterial infection.
<p>Lecture 7:</p>	<ol style="list-style-type: none"> 1. Correlate the antibacterial spectrum of DNA synthesis inhibitors



<p>DNA synthesis inhibitors, bacterial metabolism inhibitors and Specific urinary antiseptics</p>	<p>(fluoroquinolones and metronidazole) to their therapeutic uses.</p> <ol style="list-style-type: none"> 2. Relate the classification of fluoroquinolones to their antibacterial spectrum and therapeutic uses. 3. Relate the adverse reactions of fluoroquinolones and metronidazole to their therapeutic uses. 4. Describe the antibacterial spectrum, therapeutic uses, adverse reactions, drug interactions, and contraindications of inhibitor of bacterial metabolism (folate antagonists). 5. Relate the pharmacokinetics of urinary antiseptics to their specific use. 6. Explain the antibacterial spectrum, therapeutic uses, adverse reactions, and drug interactions of urinary antiseptics. 7. Solve a virtual clinical scenario by choosing the proper antimicrobial agent for specific bacterial infection.
<p>Lecture 8: Antifungal drugs</p>	<ol style="list-style-type: none"> 1. Classify antifungal drugs according to their mechanism of action. 2. Classify antifungal drugs according to their clinical use. 3. Describe the antifungal spectrum, pharmacokinetics, clinical uses, adverse effects, and drug interactions of antifungal drugs. 4. Differentiate between different antifungal azoles. 5. Solve a virtual clinical scenario by choosing the proper antifungal agent for a specific fungal infection.
<p>Lecture 9: Antitherpetic drugs</p>	<ol style="list-style-type: none"> 1. Correlate the antibacterial spectrum of anti-herpetic drugs to their therapeutic uses. 2. Explain the mechanism of action, therapeutic uses, and adverse reactions of anti-herpetic drugs. 3. Solve a virtual clinical scenario by choosing the proper antiviral agent for a specific viral infection.
<p>Lecture 10: Anthelmintic drugs</p>	<ol style="list-style-type: none"> 1. Relate the relevant pharmacokinetics and antiparasitic spectrum of anthelmintic drugs to their therapeutic uses. 2. Explain the mechanism of action of anthelmintic drugs. 3. Link the adverse reactions of anthelmintic drugs to their proper choice. 4. Solve a virtual clinical scenario by choosing the proper anthelmintic drug for specific parasitic infection.
<p>Community Medicine</p>	<p>Statement</p>
<p>Lecture 1: Terminology relevant to infectious diseases</p>	<ol style="list-style-type: none"> 1. Define the terminology relevant to infectious diseases and their transmission 2. State the differences between contagious and non-contagious disease 3. Describe the levels of diseases in the population: sporadic, endemic, epidemic, outbreak, pandemic 4. Distinguish between isolation and quarantine 5. Define herd immunity and herd immunity threshold 6. Infer on the factors affecting the threshold of herd immunity based on COVID-19 pandemic



<p>Lecture 2: Cycle of Infection</p>	<ol style="list-style-type: none"> 1. Identify the elements of the cycle of infection of a communicable disease 2. Compute the rates of pathogenicity, infectivity and virulence of infectious agents 3. Explain the difference between the second attack frequency and secondary attack rate 4. List the types of reservoir of infection of a communicable disease 5. Classify carriers and explain their public health importance in disease transmission 6. Explain with examples the different modes of transmission of communicable diseases 7. Discuss the factors that affect the susceptibility of the host to communicable diseases 8. Explain the means by which a host acquire resistance to communicable diseases 9. Draw a diagram of the cycle of infection to a given communicable disease
<p>Lecture 3: Principles of Prevention and Control of Communicable Diseases</p>	<ol style="list-style-type: none"> 1. List the control measures that should be applied to the agent of a disease, reservoir, carriers, and susceptible host 2. Outline the different approaches to interrupt the chain of transmission of a communicable disease 3. Distinguish between sterilization and disinfection and between concurrent and terminal disinfection and between isolation and quarantine 4. State the aim of primordial, primary, secondary and tertiary prevention 5. Relate each level of disease prevention to the natural history of the disease 6. Explain the intervention relevant to each level of disease prevention 7. Apply appropriate measures of prevention and control in relation to the natural history of a disease

Specific objectives/Tutorial(practical)

Microbiology	Statement
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<p>1-Sampling for Microbiological Diagnosis</p>	<ol style="list-style-type: none"> 1. Decide the appropriate sample for diagnosis of different infections 2. Explain different sampling procedures 3. Discuss precautions for different sampling procedures 4. List causes of rejection for different samples
<p>2-Laboratory Diagnosis of Bacterial infections</p>	<ol style="list-style-type: none"> 1. Outline direct laboratory tests for diagnosis of bacterial infections 2. Identify the role of gram staining in bacterial identification 3. Formulate systematic approach for laboratory diagnosis of common bacterial infections 4. Outline appropriate diagnostic tools for bacterial infections 5. Differentiate between different culture media used for bacterial isolation regarding the type and use of this media 6. Explain importance of antibiotic susceptibility testing (AST) 7. List different methods of antibiotic susceptibility testing 8. Interpret AST results
<p>3-Laboratory Diagnosis of Staphylococci and Streptococci</p>	<ol style="list-style-type: none"> 1. Distinguish important Staphylococcal species. 2. Classify important Streptococci species. 3. Compare between Staphylococci & Streptococci. 4. Determine colonial morphology of Staphylococcus species on appropriate culture media. 5. Identify microscopic and cultural findings for staphylococci and streptococci. 6. Distinguish colonial morphology of alpha & beta hemolytic Streptococci.
<p>4-DECONTAMINATION</p>	<ol style="list-style-type: none"> 1. Define decontamination 2. Differentiate between cleaning, disinfection, and sterilization. 3. Apply Spaulding classification in reprocessing of medical items. 4. Assess the level of hazard each item carries for transmission of infection 5. Choose the appropriate disinfectant according to the required procedure. 6. Choose the appropriate sterilization technique according to the item. 7. Evaluate the effectiveness of sterilization procedure
<p>5-Serological Tests</p>	<ol style="list-style-type: none"> 1. Discuss the role of serological tests in diagnosing infectious diseases 2. Elaborate on different serological tests 3. Label components of various serological tests 4. Interpret serological test results
<p>6-Laboratory Diagnosis of Viral infections</p>	<ol style="list-style-type: none"> 1. Propose an algorithm for lab diagnosis of viral infections 2. List different cell lines used for viral isolation 3. Assess effects of viral growth on Tissue Culture Cells 4. Recommend techniques used for viral identification. 5. Recommend appropriate diagnostic tools for viral infections 6. Compare between different cultural techniques for bacterial, viral and fungal. 7. Examine the laboratory finding and deduce organism
<p>7. Laboratory Diagnosis of</p>	<ol style="list-style-type: none"> 1. Propose an algorithm for lab diagnosis of fungal infections 2. Outline appropriate diagnostic tools for fungal infections

Fungal infections	<ol style="list-style-type: none"> 3. Identify fungal culture media and the type of fungal growth 4. Compare between different cultural techniques for bacterial, viral and fungal. 5. Examine the laboratory finding and deduce organism
Parasitology	Statement
Diagnostic features of Helminths	<ol style="list-style-type: none"> 1. Discriminate between different classes of helminths according to their general morphology. 2. Compare the diagnostic stages of different classes of helminths. 3. Recognize the intermediate hosts of trematodes. 4. Identify the larval stages of cestodes. 5. Differentiate the types of segments in the strobila of adult cestodes. 6. Compare organs of attachment used by trematodes and cestodes.
Diagnostic features of Protozoa	<ol style="list-style-type: none"> 1. Recognize the organ of locomotion in protozoa. 2. Categorize protozoa according to their general morphology. 3. Differentiate the trophic and cystic stages in Sarcodina and intestinal flagellates. 4. Identify examples of apicomplexan parasites in stained smears. 5. Determine the type of nucleus in protozoan parasites. 6. Deduce the infective and diagnostic stages of different classes of protozoa
Diagnostic features of Arthropods and Examples of Diseases caused by them.	<ol style="list-style-type: none"> 1. Discriminate classes of arthropods according to the general morphology. 2. Identify different arthropods and interpret their medical importance. 3. Discuss the relation between the morphology of scorpion and the mechanism of its envenomation. 4. Correlate between the morphology of hard ticks and the consequences of their bites. 5. Identify flies causing myiasis. 6. Recognize maggots in different host tissues. 7. State the type of myiasis according to type of tissue



<p>Examples of laboratory techniques and equipment used in diagnosis of parasitic infections</p>	<ol style="list-style-type: none"> 1. Interpret results of immunological tests used in diagnosis of parasitic diseases. 2. Compare between types of blood smears and uses of each one. 3. Recognize signs of parasitic diseases in a urine sample. 4. State the criteria of stool sample acceptable to parasitological testing. 5. Identify the importance of Entero-test in diagnosis of parasitological diseases.
<p>Pharmacology</p>	<p>Statement</p>
	<ol style="list-style-type: none"> 1. Develop a systematic approach to determine the proper antimicrobial drug in different clinical scenarios for common infectious diseases. 2. Use national or international pharmacopeia for prescribing antimicrobial drugs. 3. Write a proper prescription for common infectious diseases. 4. Provide the patients with appropriate counselling information about the prescribed antimicrobial drugs in their future practice. 5. Discern common antimicrobial prescribing errors and avoid them in their future practice.
<p>Community Medicine</p>	<p>Statement</p>
<p>Lecture 1: Terminology relevant to infectious diseases</p>	<ol style="list-style-type: none"> 1. Define the terminology relevant to infectious diseases and their transmission 2. State the differences between contagious and non-contagious disease 3. Describe the levels of diseases in the population: sporadic, endemic, epidemic, outbreak, pandemic 4. Distinguish between isolation and quarantine 5. Define herd immunity and herd immunity threshold 6. Infer on the factors affecting the threshold of herd immunity based on COVID-19 pandemic
<p>Lecture 2: Cycle of Infection</p>	<ol style="list-style-type: none"> 1. Identify the elements of the cycle of infection of a communicable disease 2. Compute the rates of pathogenicity, infectivity and virulence of infectious agents 3. Explain the difference between the second attack frequency and secondary attack rate



	<ol style="list-style-type: none"> 4. List the types of reservoir of infection of a communicable disease 5. Classify carriers and explain their public health importance in disease transmission 6. Explain with examples the different modes of transmission of communicable diseases 7. Discuss the factors that affect the susceptibility of the host to communicable diseases 8. Explain the means by which a host acquire resistance to communicable diseases 9. Draw a diagram of the cycle of infection to a given communicable disease
<p>Lecture 3: Principles of Prevention and Control of Communicable Diseases</p>	<ol style="list-style-type: none"> 1. List the control measures that should be applied to the agent of a disease, reservoir, carriers, and susceptible host 2. Outline the different approaches to interrupt the chain of transmission of a communicable disease 3. Distinguish between sterilization and disinfection and between concurrent and terminal disinfection and between isolation and quarantine 4. State the aim of primordial, primary, secondary and tertiary prevention 5. Relate each level of disease prevention to the natural history of the disease 6. Explain the intervention relevant to each level of disease prevention 7. Apply appropriate measures of prevention and control in relation to the natural history of a disease
Clinical skills	Statement
	Recognize general rules of abdominal examination

V. TEACHING AND LEARNING METHODS:

Teaching/Learning Methods	No. of Hours
- Lectures	41
- Tutorials/Small group discussions/Practical	23
- Self-directed learning (SDL):	
• E-learning	16
- Clinical training:	
Clinical training sessions	
• Clinical skills	1
Total (contact hours)	81

VI. STUDENT ASSESSMENT METHODS:

6.1. Written Exam:

6.1.1 Objective written to assess ILOs knowledge & intellectual activity in Scholar and scientist competency

6.1.2 Essay Questions to assess ILOs knowledge & intellectual activity in Scholar and scientist competency

6.2. **OSPE:** to assess practical skills in Scholar and scientist competency

6.4. Assessment schedule

Assessment 1: end of block MCQ exam

Assessment 2: end of block practical exam

Assessment 3: End of semester written exam

6.5. Weighing of assessments

End of block examination 37%

Semester work (ILA, Tutorial classes)

Final-term examination 36%

Practical & clinical exams 27 %

Total 100%

Formative assessments (interactive lectures, practical classes, Mock E-exam)

VII. LEARNING MATERIALS:

7a. Block study guide & handouts: Notes on Module Infectious Diseases 1

7b. e-learning portal of the faculty: <http://www.med.alexu.edu.eg/me/login/index.php>

VIII. FACILITIES REQUIRED FOR TEACHING AND LEARNING:

Data show

Computers

IX BLOCK Coordinator:

Ass. Prof. Radwa Galal

Mobile: 01005286226

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