



Module Description

University of AL-Kafeel / College..... Academic Year (2020-2021)

Stage:	Second
Specialization:	Pharmaceutical sciences
Name of the Course in Arabic	احياء مجهرية طبية 1
Name of the Course in English	Medical microbiology I
Goals:	Provide a basic understanding of the morphology, anatomy, physiology and genetics of bacteria in addition, the methods of handling, visualizing, characterizing identifying of bacterial disease
Description	
Number of Theoretical lectures	3
Number of Practical lectures	1
Credits	4
Name of Instructor in Arabic	عبدالله عيسى الحاتمي
Name of Instructor in English	Abdulla issa
Title	Assistant professor
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Curriculum / Theoretical:

Week	Syllabus
1	Importance of microbiology, History of microbiology
2	Anatomy of bacteria: Surface appendage, Capsule, Cell wall of G +ve & G -ve bacteria, Cytoplasmic membrane.
3	Bacterial physiology: Physical and chemical growth determinate, growth and growth curves, bacterial reproduction.
4	Genetics: Definition, genetic, element, mutation (spontaneous, gene transfer, transformation, conjugation, and gene transduction).
5	Recombinant DNA biotechnology.
6	Sporulation and germination.
7	Sterilization (chemical + physical Methods).
8	Chemotherapy.
9	Morphology of Bacteria, Staining and Classification.
10	Staphylococci species: <i>Streptococcus pyogenes</i> ; <i>Streptococcus pneumoniae</i> .
11	Aerobic Spore-forming bacteria Bacillus species (<i>B. anthracis</i> , <i>B. subtilis</i> , <i>B. ceseus</i>).
12	<i>Clostridium perfringens</i> ; <i>Clostridium tetani</i> ; <i>Clostridium botulium</i>
13	<i>Corynebacterium diphtheriae</i>
14	<i>Propionibacterium acnes</i> , <i>Listeria</i>
15	<i>Mycobacterium tuberculosis</i> ; <i>M. leprae</i>
16	Chlamydiae; Actinomycetes
17	Identification & classification of G -ve bacteria
18	Enterobacteriaceae: <i>E. coli</i> ; <i>Klebsiella</i> spp.; <i>Cilrobacte</i> , <i>Sertalia</i> , <i>Hafmia</i> , <i>Enterobacter</i>
19	<i>Shigella</i> spp; <i>Salmonella</i> spp; <i>Proteus</i> spp , <i>Pseudomonas</i> spp
20	<i>Vibrio Cholerae</i> ; <i>Brucella</i> spp; <i>Haemophilus</i> spp; <i>Campylobacter</i> spp.
21	<i>Helicobacter</i> spp; <i>Bordetella pertusis</i> ; <i>Trepanoma pallidum</i> (Spirochates); <i>Yersinia pestis</i> ; <i>Pasteruella multocida</i> .
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Curriculum / Practical:

Week	Syllabus
1	Orientation to the laboratory. Rules of conduct and general safety. Microscopic techniques. Bright-field light microscope.
2	Examination of stained microorganisms; Smear preparation and simple staining; Gram staining.
3	The hanging drop slide and bacterial motility; Acid-fast staining procedure.
4	Bacterial spores and endospores staining; Microbiological culture media and sterilization; Methods of inoculation and isolation of pure culture.
5	Action of dyes and antibiotics; Enzymes assays for some specific microbial enzymes.
6	Assays for specific metabolic activities; Acid and gas production from: Carbohydrate fermentation; Triple sugar iron agar test; IMVIC tests.
7	Systemic bacteriology: Staphylococci spp.
8	Streptococci species.
9	Salmonella species.
10	Shigella species.
11	Pseudomonas species.
12	Proteus species.
13	<i>Escherichia coli</i>
14	Klebsiella species.
15	<i>Candida albicans</i> .

References :

Main References :

[1] *Medical Microbiology, seventeenth edition E. Jawetz, J. L. Melnick, E.A. Adel (Latest edition)*

[2] *Principles of Microbiology by Roland M. (Latest edition)*

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Secondary References:

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