

دكتوراه احياء مجهرية بيطرية

كيمياء حياتية وفسلجة جراثيم	علم الاحياء المجهرية العام
Cell organelles and their role in bacterial physiology: lysozymes, nucleus, mitochondria, endoplasmic reticulum, Golgi apparatus, vacuoles, Nissel's bodies, inclusion bodies Bacterial respiration Aerobic respiration Anaerobic respiration	Introduction and history of microbiology Microscopy and Bacterial Classification General properties of bacteria, cell wall, cytoplasmic membrane, capsule and flagella Normal Flora Bacterial nutrition and dynamic of growth Bacterial metabolism Determination of microbial pathogenicity Enzymes and bacterial toxins Bacterial genetics
الاحياء الجزيئي	علم الاحياء المجهرية الخاص
Prokaryotic and Eukaryotic cell membrane Nucleus and cytoplasmic organelles DNA properties and DNA structure gene-arrangement gene sequence gene regulation DNA replication Restrictions and recombinant DNA Molecular basis of mutation Plasmid and genetic engineering Protein synthesis	Micrococcaceae and Streptococaceae Brucellaceae Mycobacteriaceae Corynebacteriaceae Bacillaceae and Lactobacillaceae Clostridiaceae Enterobacteriaceae Pseudomonadaceae Bacteroidaceae Spirochaetaceae Pasteurellaceae Actinomycetaceae Campylobacteraceae
علم المناعة	علم الفايروسات
Principle of immunity and immune response (specific and nonspecific) Immunoglobulin: Structure, variation, Function and synthesis Immunology of T and B cells Complement: Nature, Function and pathways Cell mediated immunity, antigen recognition by T cells Immunological tolerance Types of Hypersensitivity, Mechanisms Auto-immunity Transplantation Principle of immune genetics Immunoanaphylaxis reaction Immunity of infection	Viruses: structures chemistry, morphology and classification types and multiplication Viral of propagation Viral genetic, interaction between viruses Interferon and its formation and use theory and viruses Oncogenic oncogenicity of viruses DNA and RNA viruses

	علم الفطريات و المايكوبلازما
	<p> Mycological techniques, isolation and identification  Cryptococcosis and Histoplasmosis  Dermatophytes  Aspergillosis  Mycotic Abortion, mastitis  Mycotoxin  Immunity and antifungal drugs  Introduction to Mycoplasma history, taxonomy, morphology, ultrastructure  Cultivation, identification, physiology of  Mycoplasma Host-parasite relationship, pathogenicity, immunology and main animal  Mycoplasma  Rickettsiales  Chlamydiaceae  . </p>