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| **General Subject** | **Medical Microbiology (جراثيم)** |
| **Theory** | **90 hours/year** |
| **Practical** | **60 hours/year** |
| **Units** | **8 Units annually** |
| **Teaching and learning methods:** |
| 1. Powerpoint Lectures |
| 2. Posters |
| 3. Videos |
| 4. Laboratory work. |
| 5. Small groups seminars |
| **Educational Goals:**(Goals are broad and often difficult to measure in an objective sense. They tend to focus on big picture issues.) |
| 1. **The teaching of theoretical and practical sides of clinical and basic sciences such as medical biology for first stage and parasitology and microbiology for third stage of medicine student.**
 |
| **2. The establishment of courses in the diagnosis of bacterial, fungal and parasitic diseases.** |
| **3. The Contribution to work in the field of laboratory diagnosis, through the placement of the branch employees to work in the laboratories of governorate hospitals.**  |
| **4. Enrollment of some branch members to complete their higher studies in the precise sub specialty to get master's and doctorate degrees.**  |
| **5. Participation in many scientific and medical conferences in the field of clinical and pure sciences inside and outside the country.**  |
| **6. Seeking to establish a specialized center for the early diagnosis of cancer diseases and prenatal congenital deformities.** |
| **7. The contribution with other researchers in the completion of scientific research that desperately needed in the upgrading of health in our geographical region.** |
| 1st Part of Microbiology | Medical Immunology |
| Theory | 18 hours |
| Practical | 8 hours |

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**Microbiology department** in Medical college- Thi-Qar niversity is an one branch of basic science branches which deals with students in first and third stages as this branch takes care of many of the scientific activities enhancing these students to go through regular scientific plan putted in a clear schedule increasing their theoretical knowledge given in simple way to be applied practically. There are many important objectives that govern all efforts of lecturers in this department and directing them toward the main aims of the medical college.

**Objectives of Medical Immunology** : The objective of this course is to learn the structural features of the components of the immune system as well as their functions during the immune response and its involvement in health and disease. The primary aim of this course is understanding mechanisms involved in immune system development and responsiveness.

**Program of Medical Immunology for the 3rd year medical students in College of Medicine at University of Thi-Qar include:**

**I- 18 hours lectures: 1 hour for 18 weeks including the following topics:**

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| Week No. | Lecture Title | Objectives | Lecturer |
| 1st week  | The Nature of Host Defenses | To understanding of The series of defenses that protect us against invasion by harmful microbes and other foreign matter.• Defenses development and specificity.•Three lines of defenses: 1st line chemical, physical and genetic barriers. second line defenses such as phagocytosis, inflammation, complement system, and interferon and third line defenses: acquired immunity  | Dr. Talib Hasan Ali |
| 2nd week  | Systems Involved in immune | To understanding of * The systems that are most involved in immune function (the blood, lymphoid organs and tissues, and theRES).
* White blood cells, types and formation in the red bone marrow.
* Some of their complex functions relating to phagocytosis ,inflammation, antibody production, and pathogen killing.

• The lymphoid organs (spleen, lymph nodes, thymus, GALT, MALT) their importance insurveillance and immune reactions. | Dr. Talib Hasan Ali |
| 3rd week  | Nonspecific Immune Reactions | To understanding of • Inflammation as protective response to injury.•Types of chemical mediators, that releasedby cells during inflammation and other immune responses.• Interferon is a nonspecific immune mediator that inhibits the replicationof viruses and regulates a variety of immune responses.• The complement system sequentially reaction to lyse cells and viruses. | Dr. Talib Hasan Ali |
| 4th week  | Phagocytes  | To understanding of • Phagocytes as specialized cells that function in engulfment andclearance of foreign molecules, cells, viruses, and particles. Their numerous enzymes and toxic chemicals to carry out phagocytosis function. | Dr. Talib Hasan Ali |
| 5th week  | The Acquisition of Specific immunity | To understanding of Acquired specific immunities provided by B and T lymphocytes that protect us against infection and their role to survival. | Dr. Talib Hasan Ali |
| 6th week  | The origin of diversity and specificity  | To understanding of •Genetically programmed cells to react with foreignsubstances (antigens).•Glycoprotein receptors that dictate their specificityand reactivity.• B lymphocytes receptors, T lymphocytes receptors, and macrophages receptors such as MHC and HLA.• Differentiation of lymphocytes that create of genetically differentclones that each have a unique specificity for antigen.• The B cells and T cell maturity and migration to lymphoid tissues.• Antigens of foreign cells, viruses, and molecules that capable of triggering immune reactions by lymphocytes.• The B and T cells react with antigens through a complex series of mechanisms. | Dr. Talib Hasan Ali |
| 7th week  | The Classes of Immunoglobulins | To understanding of • B cells activated by antigen giving riseto plasma cells that secrete antibodies (humoral immunity) and longlivedmemory cells.• Antibodies binding sites and their roles in agglutination, opsonization, complement fixation, andneutralization.• The amount of antibodies during immediate and memory reactions. | Dr. Talib Hasan Ali |
| 8th week  | Immunization and vaccination | To understanding of • The categories of natural, artificial, active,and passive immunities.* Powerful medical tools to artificially induce protective immunities.

• Immunization by means of passive and active methods.• Vaccines types: dead or live cells and viruses, parts of cells or viruses, or by recombinant DNA techniques. | Dr. Talib Hasan Ali |
| 9th week | Serological and immune tests  | To understanding of • Reactions between antibodies and antigens that can be used in diagnosis of disease and identification of pathogens.• Serology testing of a patient’s blood serum that can indicate a current or past infection and the degree of immunity.• Tests that produce visible interactions of antibodies and antigens include agglutination, precipitation, and complement fixation. | Dr. Talib Hasan Ali |
| 10th week | Serological and immune tests | To understanding of • Assays can be used to separate antigens and antibodies and visualize them with radioactivity or fluorescence (such as immunelectrophoresis, Western blot, and direct and indirect immunoassays. | Dr. Talib Hasan Ali |
| 11th week | Disorders in Immunity  | To understanding of • The several types of dysfunctions (immunopathologies).•The dysfunctions that are due to abnormally heightened responses to antigens (allergies, hypersensitivities, and autoimmunities).•the dysfunctions that are due to the reduction or loss in protective immune reactions due to genetic or environmental causes such as (immunodeficiencies and cancer). | Dr. Talib Hasan Ali |
| 12th week  | Disorders in Immunity  | To understanding of • Some immune damage that caused by normal actions that directed at foreign tissues placed in the body for therapy, such as transfusions and transplants.• Hypersensitivities divisions into immediate, antibody-mediated, immune complex, and delayed allergies.• Allergens that cause a hypersensitive or allergic response. | Dr. Talib Hasan Ali |
| 13th week | Disorders in Immunity  | To understanding of • The immediate type of allergy that mediated by special types of B cells that produce IgE. * IgEinducing mast cells to release allergic chemicals such as histamine.
 | Dr. Talib Hasan Ali |
| 14th week | Disorders in Immunity  | To understanding of • Examples of immediate allergies are atopy, asthma, food allergies, and anaphylaxis.• Another type of hypersensitivity arises from the action of other antibodies (IgG and IgM) that can fix complement and lyse foreign cells. • Immune complex reactions that caused by circulating antibodies against foreign molecules and their accumulating in tissues and organs. | Dr. Talib Hasan Ali |
| 15th week | Disorders in Immunity  | To understanding of • Autoimmune diseases.The production of B and T cells that sensitized to react with the body’s natural molecules. Some examples of these diseases (rheumatoid arthritis, systemic lupus erythematosus, myasthenia gravis, and multiple sclerosis).• T cells in delayed-type hypersensitivities. | Dr. Talib Hasan Ali |
| 16th week | Immunodeficiency diseases | To understanding of •Immunodeficiencies pathologies in which B and T cells and other immune cells are missing or destroyed. • The primary outcome of immunodeficienciesas in recurrent infections and lack of immune competence. | Dr. Talib Hasan Ali |
| 17th-18th week | Cancer  | To understanding of Cancer as an abnormal overgrowth of cells due to a genetic defect and the lack of effective immune surveillance. |  |

**II- 8 hours practical sessions: 2 hours/day for 4 weeks including the following topics:**

1. Introduction to Immunology laboratory
2. Antibody-Antigen (Ab-Ag) reaction (hemagglutination)
3. (Ab-Ag) reaction (precipitation)
4. Electrophoretic Techniques (Immunoelectrophoresis)
5. Ab-Ag reaction (complement fixation)
6. Ab-Ag reaction (ELISA) and Immunoblot.
7. Ab-Ag reaction (Immunoflourescence test and Radio immune assay)
8. Cell isolation, Cell counting and functional assessment.

**Text books approved :**

1) Medical Microbiology **by Jawetz, Melnick** 26th ed**., 2013.**

**Assessment:** Homeworks, quizzes, examination, poster discussion.

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| **2nd Part of Microbiology** |  **Medical Virology** |
| **Theory** | **18 Hours** |
| **Practical** | **10 hours** |

**Objectives of Medical Immunology** : The objective of this course is to learn about the general characteristics, structure, replication and properties of RNA and DNA viruses in addition to a view of the differences among viruses and other pathogens as well as the physical and chemical factors affected viruses. Also, it includes an overview of the most important viral diseases affected human with focus on their diagnosis, treatment and prevention. The primary aim of this course is to make easy for student to understand what are viruses and how they can distinguish the viral infection in a way that increase their knowledge.

**Program of Medical Virology for the 3rd year medical students in College of Medicine at University of Thi-Qar include:**

**I- 18 hours lectures: 1 hour for 18 weeks including the following topics:**

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| Week No. | Lecture Title | Objectives | Lecturer |
| 1st week  | Virology introduction-properties and classification | To understanding of the followings 1-General properties of viruses. 2-Define structure of viruses. 3- classification of RNA and DNA viruses. 4-Evolutionary Origin of Viruses and Universal System of Virus Taxonomy. | Dr. Mohammed Jasim Mohammed  |
| 2nd week  | Chemical composition of viruses | To understanding of the define compartment of virus which includes Viral protein, viral nucleic acid, viral lipid envelopes, viral glycoproteins, cultivation and assay of viruses, detection of virus-infected cells, Quantitation of viruses,physical and biologic methods. | Dr. Mohammed Jasim Mohammed  |
| 3rd week  | Reaction of viruses to physical and chemical agents | To understanding of different physical and chemical factors affected viruses such as 1-Heat & Cold, 2- Stabilization of Viruses by Salts3-pH, 4-Radiation, 5-Photodynamic inactivation, 6-Ether Susceptibility, 7-Detergents, Formaldehyde, Antibiotics & Other Antibacterial Agents,  | Dr. Mohammed Jasim Mohammed  |
| 4th week  | Replication of Viruses: Virus Growth Cycle  | To understanding of • An Overview of Replication of RNA and DNA viruses, General Steps in Viral Replication  | Dr. Mohammed Jasim Mohammed |
| 5th week  | Expression of Viral Genomes and Synthesis of Viral Components | To understanding of 1- Morphogenesis and Release, 2- Genetics of Animal Viruses, Viral Vectors. | Dr. Mohammed Jasim Mohammed |
| 6th week  | Pathogenesis of Viral Diseases  | To understanding of 1- Pathogenesis of Viral Diseases: 2- Steps in Viral Pathogenesis, 3- Viral Persistence: Chronic & Latent Virus Infections. | Dr. Mohammed Jasim Mohammed |
| 7th week  | Viral infections (1) | To understanding of 1- Overview of Acute Viral Respiratory Infections, 2- Overview of Viral Infections of the GIT. | Dr. Mohammed Jasim Mohammed |
| 8th week  | Viral infections (2) | To understanding of1- Overview of Viral Skin Infections, 2- Overview of Viral Infections of the CNS, 3- Overview of Congenital Viral Infections, 4- Effect of Host Age | Dr. Mohammed Jasim Mohammed  |
| 9th week | Rubella and other viral congenital infections | To understanding of 1- Transmission & Epidemiology, 2- Pathogenesis & Immunity, 3- Clinical Findings, 4- Congenital rubella syndrome (CRS), Lab Diagnosis, Treatment, Prevention, Diagnosis of Congenital viral infections | Dr. Mohammed Jasim Mohammed  |
| 10th week | RNA non-enveloped Picornaviruses, Enteroviruses | To understanding of 1- Properties of Picornaviruses, Picornavirus Replication, 2- ENTEROVIRUSES, Poliovirus, 3- Pathogenesis, Pathology, Clinical Findings, Laboratory Diagnosis, | Dr. Mohammed Jasim Mohammed  |
| 11th week | CoxsackievirusesRhinoviruses | To understanding of 1- Coxsackieviruses and their Clinical Findings,Transmission & Epidemiology,2- RHINOVIRUSES and their Transmission & Epidemiology3- Group B Specific Diseases: ECHOVIRUSES | Dr. Mohammed Jasim Mohammed  |
| 12th week  | Rotaviruses and some examples of different viruses | To understanding of 1- Pathogenesis, clinical findings, lab diagnosis, epidemiology, treatment and control, 2- Caliciviruses, 3- Astroviruses, 4- Viruses cause GIT infections, 5- Overview on Viruses that cause Common cold, 6- Overview on Viruses that cause lower respiratory tract infections, 7- Overview on Viruses that cause Genital tract and sexually transmitted Infections. | Dr. Mohammed Jasim Mohammed  |
| 13th week | Rabies virus and other CNS Viral infections   | To understanding of 1- Rabies virus and Properties of the Rabies Virus, 2- Rabies Virus Replication, 3- Rabies 4- Pathogenesis & Pathology, Clinical Findings, Laboratory Diagnosis, Prevention, Treatment & Control, Other Viral CNS infections,  | Dr. Mohammed Jasim Mohammed  |
| 14th week | Hepatitis A-E Viruses: An Overview (1) | To understanding of 1- Types of Hepatitis and General Characteristics of Hepatitis Viruses, 2- Hepatitis A Virus, 3-Transmission & Epidemiology, Pathogenesis & Immunity, 4- Clinical findings, Treatment & Prevention, Lab Diagnosis, | Dr. Mohammed Jasim Mohammed  |
| 15th week | Hepatitis A-E Viruses: An Overview (2) | To understanding of 1- Hepatitis B Virus, 2- Transmission & Epidemiology, Replication, Pathogenesis & Immunity, clinical findings, lab diagnosis, treatment, prevention, 3-hepatitis c virus (HCV), Hepatitis C Life Cycle, Transmission & Epidemiology, Pathogenesis & Immunity, Clinical Findings, lab diagnosis, treatment,  | Dr. Mohammed Jasim Mohammed  |
| 16th week | Hepatitis A-E Viruses: An Overview (3) | To understanding of 1-Hepatitis D Virus, 2- Transmission and Epidemiology, Hepatitis D – 3- Clinical Features, lab diagnosis, treatment and prevention, Hepatitis E Virus. | Dr. Mohammed Jasim Mohammed  |
| 17th week  | Herpesviruses  | To understanding of 1-Introduction, important properties of herpesviruses, Structure & Composition, 2- Classification, Herpesvirus Replication, 3-Overview of Herpesvirus Diseases, 4-Properties of the Viruses, Pathogenesis & Pathology, 5-Oropharyngeal Disease, 6-Keratoconjunctivitis, 7-Neonatal Herpes. | Dr. Mohammed Jasim Mohammed  |
| 18th week | Chemotherapy of viruses, antiviral agents, vaccines | 1- To understand all mechanisms followed by different Types of antiviral chemotherapies, 2- To know about the different kinds of vaccines used for prevention of viral infections | Dr. Mohammed Jasim Mohammed  |
| Measles and mumps viruses | Introduction, important properties of measles and mumps viruses, pathogenesis, clinical findings, lab diagnosis, treatment, prevention, types of vaccines. | Dr. Mohammed Jasim Mohammed  |

**II- 10 hours practical sessions: 2 hours/day for 5 weeks including the following topics:**

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| The week | The title | Lecture objective |
| 1st week  | Introduction | To understanding of the followings What is the virus ??, Methods of Diagnosing Viral Infections, Surface protein of the virus. |
| 2nd week  | Virus IsolationUsing three living systems | To understanding of the Isolation of the virus using three living systems, Lab Animals, Chick emberyo, tissue culture. |
| 3rd week  | Types of tissue cultures | To understanding of Primary tissue culture, advantages, disadvantages, Semi-continuous cell cultures, Continuous (Cell line), advantages, disadvantages, examples of isolated viruses  |
| 4th week  | Demonstration on Tissue Culture used for virus isolation | To understanding of Preparation of primary tissue culture, procedure, Counting of cells. |
| 5th week | Inoculation of clinical sample in living system | A-Inoculation of clinical sample in tissue culture, how to harvest Rabbit kidney for tissue culture, procedure, Inoculation of clinical sample in tissue culture, Recognition of virus growth. |
| **Assessment:** Homeworks, quizzes, examination, poster discussion.

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| **3rd Part of Microbiology** |  **Medical Bacteriology** |  |
| **Theory** | **54 Hours** |  |
| **Practical** | **42 hours** |  |

**Objectives**: The objective of this course is to learn the basic and systematic microbiology especially medical bacteriology.The primary aim of this course is understanding characteristic structures and pathogenicity of medical bacteriology as well as methods of diagnosis and understanding new procedures of prevention, and treatments of diseases.**Program of Medical bacteriology for the 3rd year medical students in College of Medicine at University of Thi-Qar include:**I- 54 hours lectures: 2 hour for 27 weeks including the following topics:

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| Week No. | Lecture Title | Objectives | Lecturer |  |
| 1st week  | Introduction of medical microbiology and bacterial structures | To understanding of 1-Science of medical microbiology. 2-Structures of bacterial cell envelope.3-Nuclear materials, plasmid and transposons4- Study the external appendages and endospores.  | Haider Khamis Shnan |
| 2nd week |  Bacterial genetics and gene transfer, | To understanding of… Infectious processScience of geneticsDNA and RNA typesMutationsMethods of gene transfer. | Dr. Zainab Dakhil Dgeim |
| 3rd week | Host-pathogen relations | To understanding ofAttachment of microbial agent with host cell.Invasion processAntiphagostic factorsIntracellular pathogenicity. |  |
| 4th week  | Sterilization and disinfection | To understanding of Methods of sterilization and disinfectionPhysical processChemical process | Dr. Saad Abdul-Aziz Atia |  |
| 5th week  |  Antimicrobial therapy | To understanding of Types of antibioticsMode of its actionMethods of resistanceOrigin of drug resistanceSide effects of antibiotic  | 1- Haider Khamis Shnan |
| 6th week  | Staphylococci species | To understanding of • The Staphylococci characteristics.• Morphology and Identification.•Antigenic Structure.• Pathogenesis.• Pathology.• Clinical Findings.• Diagnostic Laboratory Tests• Treatment.• Epidemiology, Prevention, & Control. | Dr. Zainab Dakhil Dgeim |
| 7th week  | Streptococci species | To understanding of • The Streptococci characteristics.• Morphology and Identification.• Antigenic Structure.• Pathogenesis.• Pathology.• Clinical Findings.• Diagnostic Laboratory Tests• Treatment.• Epidemiology, Prevention, & Control. | Dr. Saad Abdul-Aziz Atia |
| 8th week  | Neisseria species | To understanding of • The Neisseriacharacteristics.• Morphology and Identification.• Antigenic Structure.• Pathogenesis.• Pathology.• Clinical Findings.• Diagnostic Laboratory Tests• Treatment.• Epidemiology, Prevention, & Control. | 1- Haider Khamis Shnan |  |
| 9th week | Campylobacter species | To understanding of • The Campylobacter characteristics.• Morphology and Identification.• Antigenic Structure.• Pathogenesis.• Pathology.• Clinical Findings.• Diagnostic Laboratory Tests• Treatment.• Epidemiology, Prevention, & Control. | Dr. Zainab Dakhil Dgeim |
| 10th week | Helicobacter pylori | To understanding of • The H. pyloricharacteristics.• Morphology and Identification.• Antigenic Structure.• Pathogenesis.• Pathology.• Clinical Findings.• Diagnostic Laboratory Tests• Treatment.• Epidemiology, Prevention, & Control. | Dr. Saad Abdul-Aziz Atia |
| 11th week | Legionella species | To understanding of • The Legionella characteristics.• Morphology and Identification.• Antigenic Structure.• Pathogenesis.• Pathology.• Clinical Findings.• Diagnostic Laboratory Tests• Treatment.• Epidemiology, Prevention, & Control. | 1- Haider Khamis Shnan |
| 12th week  | Listeria species | To understanding of • The Listeria characteristics.• Morphology and Identification.• Antigenic Structure.• Pathogenesis.• Pathology.• Clinical Findings.• Diagnostic Laboratory Tests• Treatment.• Epidemiology, Prevention, & Control. | Dr. Zainab Dakhil Dgeim |
| 13th week | The Vibrios | To understanding of • The Vibrios characteristics.• Morphology and Identification.• Antigenic Structure.• Pathogenesis.• Pathology.• Clinical Findings.• Diagnostic Laboratory Tests• Treatment.• Epidemiology, Prevention, & Control. | Dr. Saad Abdul-Aziz Atia |
| 14th week | Corynebacterium | To understanding of • The Corynebacteriumcharacteristics.• Morphology and Identification.• Antigenic Structure.• Pathogenesis.• Pathology.• Clinical Findings.• Diagnostic Laboratory Tests• Treatment.• Epidemiology, Prevention, & Control. |  Haider Khamis Shnan |
| 15th week | Rickettsia and Related Genera | To understanding of • The Rickettsiacharacteristics.• Morphology and Identification.• Antigenic Structure.• Pathogenesis.• Pathology.• Clinical Findings.• Diagnostic Laboratory Tests• Treatment.• Epidemiology, Prevention, & Control. | Dr. Zainab Dakhil Dgeim |
| 16th week | Brucella | To understanding of • The Brucellae characteristics.• Morphology and Identification.• Antigenic Structure.• Pathogenesis.• Pathology.• Clinical Findings.• Diagnostic Laboratory Tests• Treatment.• Epidemiology, Prevention, & Control. | Dr. Saad Abdul-Aziz Atia |
| 17th , 18th week  |  Enteric Gram Negative Rods(E. coli, klebsiella, proteus, pseudomonas, provencia group)Salmonella, Shigella | To understanding of • The Enteric Gram Negative Rods characteristics.• Morphology and Identification.• Antigenic Structure.• Pathogenesis.• Pathology.• Clinical Findings.• Diagnostic Laboratory Tests• Treatment.• Epidemiology, Prevention, & Control. |  |  |
| 19th week  | Acinetobacter species | To understanding of • The Acinetobactercharacteristics.• Morphology and Identification.• Antigenic Structure.• Pathogenesis.• Pathology.• Clinical Findings.• Diagnostic Laboratory Tests• Treatment.• Epidemiology, Prevention, & Control. | 1- Haider Khamis Shnan |
| 20th week  | Complex aerobic Actinomycetes | To understanding of • The Actinomycetes characteristics.• Morphology and Identification.• Antigenic Structure.• Pathogenesis.• Pathology.• Clinical Findings.• Diagnostic Laboratory Tests• Treatment.• Epidemiology, Prevention, & Control. | Dr. Zainab Dakhil Dgeim |  |
| 21st week  | Mycobacteria | To understanding of • The Mycobacteria characteristics.• Morphology and Identification.• Antigenic Structure.• Pathogenesis.• Pathology.• Clinical Findings.• Diagnostic Laboratory Tests• Treatment.• Epidemiology, Prevention, & Control. | Dr. Saad Abdul-Aziz Atia |
| 22nd week | Bacillus genus | To understanding of • The Bacilluscharacteristics.• Morphology and Identification.• Antigenic Structure.• Pathogenesis.• Pathology.• Clinical Findings.• Diagnostic Laboratory Tests• Treatment.• Epidemiology, Prevention, & Control. | 1- Haider Khamis Shnan |
| 23rd week | Clostridium genus | To understanding of • The Clostridium characteristics.• Morphology and Identification.• Antigenic Structure.• Pathogenesis.• Pathology.• Clinical Findings.• Diagnostic Laboratory Tests• Treatment.• Epidemiology, Prevention, & Control. | Dr. Zainab Dakhil Dgeim |  |
| 24th week | Borella, Leptospira | To understanding of • The Borella, Leptospira characteristics.• Morphology and Identification.• Antigenic Structure.• Pathogenesis.• Pathology.• Clinical Findings.• Diagnostic Laboratory Tests• Treatment.• Epidemiology, Prevention, & Control. | Dr. Saad Abdul-Aziz Atia |  |
| 25th week | Spirochaetes : T . pallidum,  | To understanding of • The Spirochaetes : T . pallidum, Borella, Leptospira characteristics.• Morphology and Identification.• Antigenic Structure.• Pathogenesis.• Pathology.• Clinical Findings.• Diagnostic Laboratory Tests• Treatment.• Epidemiology, Prevention, & Control. | 1- Haider Khamis Shnan |  |
| 26th week | Pasterurella : Hemophilic , Bordetella | To understanding of • The Pasterurella : Hemophilic , Bordetella characteristics.• Morphology and Identification.• Antigenic Structure.• Pathogenesis.• Pathology.• Clinical Findings.• Diagnostic Laboratory Tests• Treatment.• Epidemiology, Prevention, & Control. | Dr. Zainab Dakhil Dgeim |  |
| 27th week | Chlamydia , normal microbial flora of human body | To understanding of • The Chlamydia , normal microbial flora of human body characteristics.• Morphology and Identification.• Antigenic Structure.• Pathogenesis.• Pathology.• Clinical Findings.• Diagnostic Laboratory Tests• Treatment.• Epidemiology, Prevention, & Control. | Dr. Saad Abdul-Aziz Atia |  |
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II- 42 hours practical sessions: 2 hours/day for 21 weeks including the following topics:1-Tools and biosafety2-Sterilization3-Antibiotic susceptibility test4-Methods of bacterial counting and measuring bacterial growth5-Bacterial staining6-Culturing media7-Growth characteristics8-General urine examination9-Biochemical tests10-Staphylococci11-Streptococci12-Neisseriae13-Aerobic spore-forming bacilli14-Anaerobic spore-forming bacilli15-Enterobacteriaceae16-Non-Lactose Fermentors17-Pseudomonas aeruginosa18-Vibrio19-Listeria20-Legeonella21-Helicobacter and Corynebacterium and Mycobacterium.**Assessment:** Homeworks, quizzes, examination, poster discussion.

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| **General Subject** | **Medical Parasitology** |  |
| **Theory** | **60 hours/year** |  |
| **Practical** | **60 hours/year** |  |
| **Units** | **6 Units annually** |  |
| **Teaching and learning methods:** |  |
| 1. Power point Lectures |  |
| 2. Posters |  |
| 3. Videos |  |
| 4. Laboratory work. |  |
| 5. Small groups seminars |  |
| **Educational Goals:**(Goals are broad and often difficult to measure in an objective sense. They tend to focus on big picture issues.) |  |
| 1- To learn about the general characteristics, properties and life cycles of different kinds of parasites which infected human. |  |
| 2- Going through an overview of the most important anti-parasitic drugs used for treatment and the main ways in control and prevention of these diseases. |  |
| 3- to make easy for student to understand what are the parasites and how they can characterize and detect the parasitic infection in a way that increase their knowledge in treatment. |  |

**Program of Medical parasitology for the 3rd year medical students in College of Medicine at University of Thi-Qar include:****I**- 60 hours lectures: 2 hour for 30 weeks including the following topics:

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| Week No. | Lecture Title | Objectives | Lecturer |
| 1st week | Introduction of parasitology | To understanding of define parasite , parasitology , type of parasite , host and type host, parasite transmission , type of parasite sample detection. | Dr. Amal Khdair Khalaf |
| 2nd week | Introduction to Protozoology | To understanding of the Introduction on Morphology, life cycle, Pathogenesis, Symptoms of human protozoa. Introduction diagnosis, treatment, epidemiology, Control of human Protozoa. | Dr. Amal Khdair Khalaf |
| 3rd week | Entamoeba histolytica | To understanding and explain the Morphology, life cycle, pathogenesis, symptoms, treatment, control of intestinal amoebiasis. | Dr. Amal Khdair Khalaf  |
| 4th week | Entamoeba coli | To understanding and explain the Morphology, life cycle | Dr. Khalid Jamel |
| 5th week | Other ameba | To understanding and explain the Morphology, life cycle, pathogenesis, symptoms, treatment, control of intestinal amoebiasis. | Dr. Amal Khdair Khalaf |
| 6th week | Giardia lamblia | To understanding and explain the Morphology, life cycle, pathogenesis, symptoms, treatment, control of giardiasis. | Dr. Amal Khdair Khalaf |
| 7th week | Trichomonas spp. | To understanding and explain the Morphology, life cycle, pathogenesis, symptoms, treatment, control of trichomoniasis. | Dr. Amal Khdair Khalaf |
| 8th week | Leishmania tropica | To understanding and explain the Morphology, life cycle, pathogenesis, symptoms, treatment, control of leishmaniasis tropica. | Dr. Amal Khdair Khalaf |
| 9th week | Leishmania donovani | To understanding and explain the Morphology, life cycle, pathogenesis, symptoms, treatment, control of leishmaniasis donovani. | Dr. Amal Khdair Khalaf |
| 10th week | Trypanosoma brucei | To understanding and explain the Morphology, life cycle, pathogenesis, symptoms, treatment, control of African sleeping sickness. | Dr. Amal Khdair Khalaf |
| 11th week | Trypanosoma cruzi | To understanding and explain the Morphology, life cycle, pathogenesis, symptoms, treatment, control of Chagas disease. | Dr. Amal Khdair Khalaf |
| 12th week | Balantidium coli | To understanding and explain the Morphology, life cycle, pathogenesis, symptoms, treatment, control of balantidiasis. | Dr. Khalid Jamel |
| 13th week | Toxoplasma gondi | Morphology, life cycle, pathogenesis, symptoms, treatment, control of toxoplasmosis. | Dr. Amal Khdair Khalaf |
| 14th week | Plasmodium spp. | To understanding and explain the Morphology, life cycle, pathogenesis, symptoms, treatment, control of Malaria. | Dr. Amal Khdair Khalaf |
| 15th week | Cryptosporidium parvum | To understanding and explain the Morphology, life cycle, pathogenesis, symptoms, treatment, control of cryptosporidiosis. | Dr. Amal Khdair Khalaf |
| 16th week | Microsporidia | To understanding and explain the Morphology, life cycle, pathogenesis, symptoms, treatment, control. | Dr. Amal Khdair Khalaf |
| 17th week | Introduction to Helminthes | To understanding and explain the Introduction on Morphology, life cycle, Pathogenesis, Symptoms of human parasites. | Dr. Amal Khdair Khalaf |
| 18th week | Fasciola spp. | To understanding and explain the Morphology, life cycle, pathogenesis, symptoms, treatment, control of fascioliasis. | Dr. Amal Khdair Khalaf |
| 19th week | Clonorchis sinensis | Morphology, life cycle, pathogenesis, symptoms, treatment, control. | Dr. Amal Khdair Khalaf |
| 20th week | Paragonimus westermani | To understanding and explain the Morphology, life cycle, pathogenesis, symptoms, treatment, control of paragonimiasis. | Dr. Amal Khdair Khalaf |
| 21st week | Fasciolopsis buski | To understanding and explain the Morphology, life cycle, pathogenesis, symptoms, treatment, control | Dr. Amal Khdair Khalaf |
| 22nd week | Schistosoma spp. | To understanding and explain the Morphology, life cycle, pathogenesis, symptoms, treatment, control schistosomiasis. | Dr. Amal Khdair Khalaf |
| 23rd week | Hymenolepis spp. | To understanding and explain the Morphology, life cycle, pathogenesis, symptoms, treatment, control of dwarf tapeworm infection. | Dr. Amal Khdair Khalaf |
| 24th week | Taenia spp. | To understanding and explain the Morphology, life cycle, pathogenesis, symptoms, treatment, control of taeniasis. | Dr. Khalid Jamel |
| 25th week | Echinococcus granulosus | To understanding and explain the Morphology, life cycle, pathogenesis, symptoms, treatment, control | Dr. Khalid Jamel |
| 26th week | Strongyloides stercoralis | To understanding and explain the Morphology, life cycle, pathogenesis, symptoms, treatment, control of strongyloidiasis. | Dr. Amal Khdair Khalaf |
| 27th week | Hookworms | To understanding and explain the Morphology, life cycle, pathogenesis, symptoms, treatment, control of hookworm infection. | Dr. Amal Khdair Khalaf |
| 28th week | Ascaris lumbricoides | To understanding and explain the Morphology, life cycle, pathogenesis, symptoms, treatment, control of ascariasis. | Dr. Amal Khdair Khalaf |
| 29th week | Enterobius vermicularis | To understanding and explain the Morphology, life cycle, pathogenesis, symptoms, treatment, control of enterobiasis. | Dr. Amal Khdair Khalaf |
| 30th week |  Trichinella spiralis Trichuris trichura | To understanding and explain the Morphology, life cycle, pathogenesis, symptoms, treatment,control trichuriasis., control. | Dr. Amal Khdair Khalaf |

II- 60 hours lectures: 2 hour for 30 weeks including the following topics:1- Type of sample and General stool examination .2- Slide show the parasite in different stages with description for each one (Protozoalogy : Class : sarcodina , Entamoeba histolytica (amoebic dysentery)3- Slide show the parasite in different stages with description for each one Class : sarcodina, other amoebae.4- Slide show the parasite in different stages with description for each one Class; flagellata : Giardia lamblia and trichomonas species .5- Slide show the parasite different stages with description for each one Class; flagellate, leishmania sp.6- Slide show the parasite different stages with description for each one Class; flagellate, Trypanosoma sp.7- Slide show the parasite different stages with description for each one Class; ciliata; Balantidium coli With examination for previous lectures .8- Slide show the parasite different stages with description for each one Classs; sporozoa ; intestinal coccidian.9- Slide show the parasite different stages with description for each one Classs; sporozoa; toxoplasma sp.10- Slide show the parasite different stages with description for each one Classs; sporozoa; plasmodium sp(malaria).11- Slide show the parasite different stages with description for each one class: trematodaSchistosoma sp.12- Slide show the parasite different stages with description for each one class: trematoda ;Fasciola sp (liver root).13- Slide show the parasite different stages with description for each one class: trematoda ;Fasciolopsis and clonorchis sp.14- Slide show the parasite different stages with description for each one class: trematoda ;Heterophyes heterophyes , metagonimus sp.15- Slide show the parasite different stages with description for each one class: trematoda ;Lung fluke ; paragonimus sp.16- Slide show the parasite different stages with description for each one class, cestoda, echinococcus sp (hydatid cyst).17- Slide show the parasite different stages with description for each one class, cestoda ; taenia sp.18- Slide show the parasite different stages with description for each one class; cestoda , H.nana 19- Slide show the parasite different stages with description for each one class, nematode ,Intestinal species, Ascaris lumricoides.20- Slide show the parasite different stages with description for each one class, nematode ,Intestinal species; Enterubius and Trichuris sp.21- Slide show the parasite different stages with description for each one class, nematode ,Intestinal species, hook worm22- Slide show the parasite different stages with description for each one class, nematode ,Tissue species; wuchereria sp and onchocerca volvolus .23- Slide show the parasite different stages with description for each one and dipylidium sp , D. latum.24- Slide show the parasite different stages with description for each one metagonimus sp.25- Slide show the parasite different stages with description for each one hook worm26- Slide show the parasite different stages with description for each one Trichuris sp.27- Slide show the parasite different stages with description for each one and onchocerca volvolus .28- Slide show the parasite different stages with description for each one metagonimus sp.29- Slide show the parasite different stages with description for each one Entomology , insect or ectoparasite, scabei and lice30- Slide show the parasite different stages with description for each one Entomology , insect or ectoparasite, scabei and lice**Assessment:** Homeworks, quizzes, examination, poster discussion. |

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| **General Subject** | **Medical Biology** |  |
| **Theory** | **60 hours/year** |  |
| **Practical** | **60 hours/year** |
| **Units** | **6 Units annually** |
| **Teaching and learning methods:** |
| 1. Power point Lectures |
| 2. Posters |
| 3. Videos |
| 4. Laboratory work. |
| 5. Small groups seminars |
| **Educational Goals:**(Goals are broad and often difficult to measure in an objective sense. They tend to focus on big picture issues.) |
| 1- To learn about the introduction to the science of medical biology. |
| 2- Going through an overview to understanding the basis of genetics and medical inheritance. |
| 3- to make easy for student to understand what knoweleges related to study of the basic body tissues. |

**Program of Medical Biology for the 3rd year medical students in College of Medicine at University of Thi-Qar include:** (three parts: cell biology+ histology and Genetics)

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| 1st Part of Medical Biology | Cell Biology |
| **Theory lectures** | **34 hours/year** |
| **Practical lectures** | **34 hours/year** |

**I**- Theory lectures: 34 hours: 2 hour for 17 weeks including the following topics:

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| The week No. | The title | Lecture objective | Lecturer |  |
| 1st week  | Introduction of Biology | To understanding of Sciences of Biology.Types of the organisms.Kingdoms of life. | Dr. Zainab Dakhil Dgeim |  |
| 3rd week  | Tools of cell biology | To understanding of MicroscopeTypes of microscope. | Dr. Haider Khamis Shnan |  |
| 4th week  | Composition of The cell | To understanding of The cytoplasm.Endoplasmic reticulum.  | Dr. Zainab Dakhil Dgeim |
| 5th week  | Composition of The cell | To understanding of Golgi apparatus.Ribosomes, Lysosomes ,Peroxisomes. | Dr. Haider Khamis Shnan |
| 6th week  | Composition of The cell. | To understanding of the Mitochondria,Vacuoles.Centrosome.Cilia and flagella.Non- living inclusion bodies. | Dr. Zainab Dakhil Dgeim |
| 7th week  | Cell structure  | To understanding of The Nucleus.Nuclear envelope.Nucleoplasm.Nucleolus. | Dr. Haider Khamis Shnan |
| 8th week  | Cell structure | To understanding of CytoskeletonIntermediate filaments. Microtubules. Microfilaments. | Dr. Zainab Dakhil Dgeim |
| 9th week | Plasma membrane | To understanding of•Structure and function | Dr. Haider Khamis Shnan |
| 10th week | Plasma membrane | •Membrane lipids.•Membrane protein diversity. | Dr. Zainab Dakhil Dgeim |
| 11th week | How molecules cross the plasma membrane | To understanding of •Passive ways.•diffusion.•Osmosis.•Facilitated transport. | Dr. Haider Khamis Shnan |
| 12th week | How molecules cross the plasma membrane | To understanding of •Active transport.•Extracellular matrix.•Types of junctions. | Dr. Zainab Dakhil Dgeim |
| 13th week | Cell division | To understanding of •Chromosome Composition. | Dr. Zainab Dakhil Dgeim |
| 14th week | Cell cycle | • To understanding of Cell cycle. • Mitosis.• Mitosis phases. | Dr. Zainab Dakhil Dgeim |
| 15th week | Meiosis  | To understanding of •Meiosis.• Mitosis phases | Dr. Zainab Dakhil Dgeim |
| 16th week | Gametogenesis | •To understanding of all Antigenic Structure.•Gametogenesis. •spermatogenesis. •Oogenesis. | Dr. Zainab Dakhil Dgeim |
| 17th week | Energy | To understaning of the knowledge and mechanisms related to production of energy and utilization of it through cell activities. | Dr. Zainab Dakhil Dgeim |
| II- Practical lectures 34 hours: 2 hour for 17 weeks including the following topics: 1- Laboratory Safety.2- Tools for cell biology: Microscope.3- The cell..anatomy of the cell.4- Cell components.5- Cell organelles.6- Active transport7- Passive transport8- Prokaryote and Euokaryote cells9- Classes of Protozoa.10- Preparation of Smear.11- Types of staining techniques.12- Osmosis13- Tonicity and procedure.14- Cell division.15- Mitosis: slides for stages of Mitotic figures in animal cell.16- Meiosis: Slides for stages of meiotic figures in animal cell.17- Difference between Mitosis and Meiosis.

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| 2nd Part of Medical Biology | Histology |  |
| **Theory lectures** | **13 hours/year** |  |
| **Practical lectures** | **34 hours/year** |  |

I- Theory lectures: 13 hours: 1 hour for 13 weeks including the following topics:

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| Lecturer | Lecture objectives | The title of lecture | The week No. |
| Dr. Talib Hasan Ali | To understanding of Histology and all parts included | Introduction of histology  | 1st week  |
| Dr. Talib Hasan Ali | To understanding of all the types of cells included in histology  | The types of cells | 2nd week |
| Dr. Talib Hasan Ali | To understanding of classification and properties of epithelial cells | epithelial tissue | 3rd week |
| Dr. Talib Hasan Ali | To understanding of classification and properties of Stratified epithelium | Stratified epithelium  | 4th week  |
| Dr. Talib Hasan Ali | To understanding of classification and properties of Glandular epithelial tissue, the classification | Glandular epithelial tissue, the classification | 5th week |
| Dr. Talib Hasan Ali | To understanding of classification and properties of Type of Connective tissue According to the number of the cells | Type of Connective tissue According to the number of the cells | 6th week  |
| Dr. Talib Hasan Ali | To understanding of classification and properties of type of the duct, the way in which the secretory products, type of secretion | According to the mode of secretion, type of the duct, the way in which the secretory products, type of secretion | 7th week |
| Dr. Talib Hasan Ali | To understanding of classification and properties of Connective tissue functions, the cell types , the fibers types, the matrix | Connective tissue functions, the cell types , the fibers types, the matrix  | 8th week |
| Dr. Talib Hasan Ali | To understanding of classification and properties of Areolar tissue, Mucous tissue, Mesenchyme tissue, Reticular tissue | Types of C.T. :adipose tissue ,its types . Areolar tissue, Mucous tissue, Mesenchyme tissue, Reticular tissue  | 9th week |
| Dr. Talib Hasan Ali | To understanding of classification and properties of Skeletal tissue , Cartilage tissue ,hyaline cartridge, elastic cartilage,, fibrocartilage  | Skeletal tissue , Cartilage tissue ,hyaline cartridge, elastic cartilage,, fibrocartilage  | 10th week |
| Dr. Talib Hasan Ali | To understanding of classification and properties of Bone tissue : the structure , bone cells: osteocytes and osteoclasts | Bone tissue : the structure , bone cells: osteocytes and osteoclasts | 11th week |
| Dr. Talib Hasan Ali | To understanding of classification and properties of Muscular tissue: muscle types : skeletal , smooth and cardiac | Muscular tissue: muscle types : skeletal , smooth and cardiac  | 12th week |
| Dr. Talib Hasan Ali | To understanding of classification and properties of Nervous tissue: neurons. Nerve cell parts , types of neurons , neuron function roles. | Nervous tissue: neurons. Nerve cell parts , types of neurons , neuron function roles  | 13th week |

II- Practical lectures 26 hours: 2 hour for 17 weeks including the following topics: 1- Introduction of histology2- The types of cells.3- epithelial tissues.4- Stratified epithelium.5- Glandular epithelial tissue.6- Type of Connective tissue.7- type of the duct, type of secretion8- Connective tissues.9- Adipose tissue.10- Skeletal tissues.11- Bone tissues.12- Muscular tissues.13- Nervous tissues.. |
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| 3rd Part of Medical Biology | Genetics |  |  |
| **Theory lectures** | **13 hours/year** |  |  |
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I- Theory lectures: 13 hours: 1 hour for 13 weeks including the following topics:  |  |
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| The week No. | The title of lecture | Lecture objectives | Lecturer |
| 1st week  | Introduction and history of genetics development  | To understanding all information of history of genetic development |  |
| 2nd week | Mendels 1st law of genetics, segregation and 2nd law of independent assortment with few definition concerning genotype, phenotype, alleles and homologous chromosomes, recessive genes and dominant genes. | To understandingofdefinition concerning genotype, phenotype, alleles and homologous chromosomes, |  |
| 3rd week | Modes of inheritance recessive model. B- Dominant inheritance: its characters, example of disease with their mode and different probabilities and results of their mode of inheritance  | To understanding of its characters, example of disease with their mode and different probabilities and results of their mode of inheritance |  |
| 4th week  | Genetics of sex determination and sex chromosome, sex linked gene  | To understanding of example of diseases of their mode and characters of their type of inheritance and probabilities of inheritance, sex limited gene and characters |  |
| 5th week | Linkage in genetics and Mendels 2nd law independent assortment. | To understanding of linkage usage in chromosomal mapping and location of genes on certain chromosomes and as a cause for deviation of certain diseases from the expected result according to |  |
| 6th week  | Crossing over and the exchange of genetic material between homologous in meiosis and  | its importance as a natural methods in creating variation for the effect of selection |  |
| 7th week | Interaction between environment and genetic constitution of an  | individual exemplified by multifactorial inheritance |  |
| 8th week | Structure of chromosomes with details of the DNA structure and bases . The double helix and other unit of heredity  | To understand the gene its structure and the concept of one gene to one polypeptide chain |  |
| 9th week | Transcription and translation of the genetic code by the specificity of the base sequence  | To understand the Transcription and translation of the genetic code by the specificity of the base sequence  |  |
| 10th week | Heamoglobinopathies and types of mutation causing them characteristics of resulting haemoglobin and syndromes (frame shift mutation, substitution, mutation, deletion mutation)   | To understand the heamoglobinopathies and types of mutation |  |
| 11th week | Unequal crossing over,  | To understandall information related to Unequal crossing over,  |  |
| 12th week | Thalassemia syndrome , molecular biology of the two types of thalassemia (α and β) and its different syndrome . | To understandall information related toThalassemia syndrome |  |
| 13th week | Blood grouping ABO system , the secretor system and explantation of Bombay phenomena ., RH system and their genetic as an example of multiple alleles ( locus). Determination of a character, blood groups association with disease. | To understand all information related toBlood grouping ABO systemDetermination of a character, blood groups association with disease. |  |

**Assessment:** Homeworks, quizzes, examination, poster discussion.