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| 1. المؤسسة التعليمية | كلية الطب/جامعة القادسية  College of Medicine /AL-Qadisiyah University |
| 1. القسم العلمي / المركز | الاحياء المجهرية Medical Microbiology |
| 1. اسم / رمز المقرر | MPM365 |
| 1. الفصل / السنة | الفصل الأول والفصل الثاني 2020-2021 |
| 1. عدد الساعات الدراسية (الكلي) | 5 ساعة اسبوعيا |
| **أهداف المقررA Aim of the Course UR S E**  **AIM OF**  **1.**To educate students about the basic features of general bacteriology, virology and  mycology and to provide students with an understanding of the immune system, itsprotective functions and its role in the patho-physiology of infectious and non- infectiousdiseases | |
| **2.**To familiarize students with the common infections and diseases of medical importance, their microbial causes, as well as laboratory diagnosis, treatment, prevention and control of such diseases. | |
| **3.**To enable the students to practice the principles of sterilization and infection control. | |

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| 1. مخرجات المقرر وطرائق التعليم والتعلم والتقييم**(Intended Learning Outcome)** |
| **أ- الأهداف المعرفية** **Knowledge and Understanding**  1-Illustrate general bacterial morphology, physiology and genetics.  2-Understand the host parasite relationship and microbial pathogenesis.  3-Explain the physiology of the immune system, itsbeneficial role, as well as its detrimental role inhypersensitivity, autoimmunity and transplant rejection.  4 -Describe the morphology, culture, antigenic structureand virulence factors of microorganisms of medicalimportance.  **5**-Recognize the most important infectious clinicalconditions and outline the diagnosis, treatment,  prevention and control of the most likely organismscausing such diseases.  **6-**Describe the most important methods ofdecontamination and principles of infection control  Understand the impact of molecular technology inmicrobiology and immunology. |
| **ب - الأهداف المهاراتية الخاصة بالمقرر .Practical Skills**  1.Identify medically important bacteria based on microscopic examination of stained preparations.  **2**.Perform a Gram stain and a Ziehl-Neelsen stain andidentify, according to morphology and characteristics,stained preparations.  **3.**Identify culture media and biochemical tests commonlyused for bacterial identification and distinguish positiveand negative results.  4.Perform hand wash and control of steam sterilization.  **5.** |
| **Teaching and Learning MethodesT**  **طرائق التعليم والتعلم EACHING & LEARNING METHODS** |
| 1. Lecture  2. Practical class  3. Small group discussion with case study and problem solving  4. Quiz |
| **Students Assessment طرائق التقييم**  **STUDENASSESSMENT STUDENT ASSESSMENT** |
| **Written Examination:** Assessment of knowledge and understanding and intellectual skills.  **Practical Examination:** A. Assessment of practical skills.  B. Intellectual skills  a. Station  b. Objective Structured Test (OST)  c. Photos  d. Report |
| **ج- الأهداف الوجدانية والقيميةGeneral Intellectual Skills**  1- Interpret results of microbiological, serological and molecular tests.  **2-** Formulate a systematic approach for laboratory diagnosis of common infectious clinical conditions and select the most appropriate and cost-effective tool leading to the identification of the causative organism.  **3-** Evaluate according to evidence the causal relationship of microbes and diseases  4- Categorize a microorganism as a bacterium, virus or fungus according to standard taxonomy  5- Report and appraise a concise scientific activity according to standard scientific thinking and integrity  6- Appreciate the danger of handling and use of infectious agents on community and environment as a part of their ethical heritage |
| طرائق التعليم والتعلم **Teaching and Learning Methods** |
| 1. Lecture  2. Practical class  3. Small group discussion with case study and problem solving  4. Quiz |
| طرائق التقييم **Students Assessment** |
| **Written Examination:** Assessment of knowledge and understanding and intellectual skills.  **Practical Examination:** A. Assessment of practical skills.  B. Intellectual skills  a. Station  b. Objective Structured Test (OST)  c. Photos  d. Report |
| د - المهارات العامة والتأهيلية المنقولة ( المهارات الأخرى المتعلقة بقابلية التوظيف والتطور الشخصي ).  د1-تاهيل الطالب كمخرجات لتغذية المؤسسات الصحية باطباء اكفاء  د2-تاهيل الطالب لاكتساب مهارات تؤهلة لان يكون طبيب ناجح  د3- تطوير مهارات وقدرات الطلبة المتفوقين لاكمال دراستهم العليامستقبلا |

***Course Contents:11- بنية المقرر***

***First Semester(Microbiology I):***

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| **Subject** | | **Theory** | | | | | **Hours** | **Practical** | **Hours** |
| **Total** | |  | | | | | **45** |  | **30** |
| **General Microbiology**  **1St Week** | | **The science of Microbiology Introduction.** | | | | | **1** | **Laboratory safety** | **2** |
| **Host parasite relationship.** | | | | | **1** | **Laboratory methods for identification of Bacteria and sample collection** | **2** |
| **Specific and nonspecific immune response** | | | | | **1** | **SGT**  **Collection and handling of samples.** | **2** |
| **2nd& 3rd**  **Week** | | **General properties and classification of bacteria** | | | | | **2** | **Sterilization and Disinfection** | **2** |
| **General properties and classification of viruses** | | | | | **2** | **Bacterial staining**  **Methods** | **2** |
| **Bacterial cell wall** | | | | | **2** | **Bact. culture and**   * **Sensitivity** | **1** |
| **4th& 5thWeek**  **6th Week** | | **Bacterial Physiology and Metabolism** | | | | | **2** | **Bacterial biochemical tests.** | **2** |
| **Cells of immune response** | | | | | **2** | **S G T**  **(Traditional and**  **Newer bacterial culture methods)** | **2**  **2** |
| **Replication of viruses** | | | | | **2** |
| **Bacterial genetics** | | | | | **2** | **Antigen– antibody**  **Reaction +separation of immune cells** |
| **Structure and classes of immunoglobulin** | | | | | **1** |
| **7th& 8th Week** | | **Viral pathogenesis** | | | | | **2** | **Methods for Viral**  **Diagnosis** | **2** |
| **Bacterial pathogenesis** | | | | | **4** |
| **9th&10 th**  **Week** | | **Humoral immunity - Antibody Mediated immunity and Cell Mediated immunity** | | | | | **2** | **SGT**  **Bacterial Biofilm** | **2** |
| **Antimicrobial Agents, antibiotics and resistance.** | | | | | **4** |
| **11th Week** | | **Normal flora.** | | | | | **1** | **DNA Extraction PCR** | **2** |
| **Complement System.** | | | | | **2** | **Antibiotics resistance.** | **2** |
| **12th Week** | | **General properties of Fungi.** | | | | | **3** |
| **13th Week** | | **Viral vaccines.** | | | | | **1** |
| **Immunity to infections** | | | | | **2** | **Methods for Fungal diagnosis** | **2** |
| **14th Week** | | **Methods useful for diagnosis of**  **Infections: microbiology, imaging, serology.** | | | | | **3** |
| **15th Week** | | **Mid Term Examination** | | | | | **1.5** |  |  |
| **Practical Examination** | | | | |  |  | **2** |
| **Subject** | **Theory** | | | | | | **Hours** | **Practical** | **Hours** |
| **Total** |  | | | | | | **45** |  | **30** |
| **Bacteriology**  **Immunology** | **Pyogenic cocci**  Staphylococcal  Streptococcal  Neisseria | | | |  | | **4** | **Pyogenic cocci** | **4** |
| Corynae bacterium | | | |  | | **2** |  | **2** |
| **Enteric bact. Part I**  **(E.coli,Klb.,prot.,pseudo.)** | | | |  | | **2** | Enteric bact. Part I  **Practical** | **2** |
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| **Enterobacteriace Part II**  **Salmonella , shigella, brucella, Cholera** | | | |  | | **2** | **Enterobacteriace Part II**  **Practical** | **2** |
| **Mycobacterium** | | | |  | | **2** | **Cholera**   * **workshop** | **2** |
| **Genus bacillus** | | | |  | | **2** |  |  |
| **Chlamydia, Mycoplasma**  **Spirocheats**  **hypersensitivity actions**  **I**  **hypersensitivity reactions II**  **hypersensitivity reactions III**  **hypersensitivity reactions IV** | | | | |  | | --- | | **Allergy** | | | **3**  **2** | **Hospital acquired infections(Nosocomial Infections)**  **Workshop** | **2** |
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| **Immune tolerance &**  **autoimmunity** | | |  | | | **2** | **SGT** | **2** |
| **Immune deficiency states: congenital and acquired** | | | | | | **1** |  |  |
| **Cytokins** | | | | | | **1** |  |  |
| **HLA** | | | | | | **1** |
| **Tumor immunity** | | | **Tumor marker** | | | **2** |
| **Virology**  ***Mycology*** | **Influenza viruses** | | | **Antiviral drugs** | | | **2** |
| **paramyxoviruses** | |  | | | | **1** | **SGT**  **URTI/LRTI** | **2** |
| **Enteric viruses &Rhinovirus group** | | | | | | **1** |  |  |
| **Herpes viruses** | |  | | | | **2** | **SGT**  **Viral gastroenteritis** | **2** |
| **Hepatitis viruses A &E** | |  | | | | **1** |
| **Hepatitis viruses B,C &D** | | | | | | **1** |
| **Retro virus ; (AIDS)** | | | | |  | **1** | **SGT**  **HIV infection** | **2** |
| **Rabies & other neurotropic viruses** | | | | |  | **1** |
| **HPV ,Pox &Parvo virus** | | | | | | **1** |
| **Mid Term Examination** | | | | | | **2** |  |  |
| **Practical Examination** | | | | | |  |  | **4** |
| **Actinomyces Nocardia** | | **Antifungal drugs** | | | | **2** |  |  |
| **Candidiasis & Cryptococcosis** | | | | | | 1 | **Laboratory diagnosis of Candida** | **2** |
| |  |  | | --- | --- | | **Dermatophytes** |  | |  | | |  | | | | | | | | 1 |  |  |
| **Miscellaneous fungi :**  **Aspergillosis ,Mucor ,Rhizopus** | | | | | | **1** |  |
| **systemic mycosis; Histoplasmosis** | | | | | | **1** |  |

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| **Facilities used for teaching this course includeالتحتية البنية**: -12  Lecture halls  Data shows & computer assistance, Laboratories (with sinks) | |
| 1ـ الكتب المقررة المطلوبة | **Basic Materials**:  - Department books available for students, at the faculty bookshop |
| 2ـ المراجع الرئيسية (المصادر) | Jawetz, Melnick&Adelberg’s Medical Microbiology, Brooks, Butel and Morse. Cal Books/McGraw-Hill Publishers. |
| اـ الكتب والمراجع التي يوصى بها ( المجلات العلمية , التقارير ,.... ) | **Suggested materials**  1 . Basic and Clinical Immunology, Stites, Stobo, Fudenberg and Wells. Lange MedicalPublishing. 2. Clinincal Immunology, Brostoff, Scadding, Male and Roitt. Gower Medical Publishing. 3. Immunology, Roitt, Brostoff and Male. Gower Medical Publishing. |
| ب ـ المراجع الالكترونية, مواقع الانترنيت .... | **Biology Web Site References:**  o asmnews@asmusa.org  o http://www.phage.org/black09.htm  http://www.microbe.org/microbes/virus\_or\_bacterium.asp  http://www.bact.wisc.edu/Bact330/330Lecturetopics  o http://whyfiles.org/012mad\_cow/7.html  o http://www.microbelibrary.org/  o http://www.hepnet.com/hepb.htm  http://www.tulane.edu/~dmsander/Big\_Virology/BVHomePage.html  o http://www.mic.ki.se/Diseases/c2.html  ohttp://www.med.sc.edu:85/book/welcome.htm  ohttp://www.biology.arizona.edu/immunology/microbiology\_immunology.html |

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| **13- خطة تطوير المقرر الدراسي** |
| 1.Focus on host- parasite relationship, causal relationship, critical thinking and  scientific integrity.  2. Applied microbiology and safe handling: ethical issues and responsibilities.  3. Reporting and communicating: 2 ways channel.  4. Categorizing according to taxonomy and self learning. |