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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 andmycology 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)**
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| **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 controlUnderstand 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. Lecture2. Practical class3. Small group discussion with case study and problem solving4. 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 diseases4- Categorize a microorganism as a bacterium, virus or fungus according to standard taxonomy5- Report and appraise a concise scientific activity according to standard scientific thinking and integrity6- 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. Lecture2. Practical class3. Small group discussion with case study and problem solving4. 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** |

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| **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** |
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| **Dermatophytes** |  |
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| **Miscellaneous fungi :** **Aspergillosis ,Mucor ,Rhizopus** |  **1** |  |
| **systemic mycosis; Histoplasmosis** |  **1** |  |

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| **Facilities used for teaching this course includeالتحتية البنية**: -12 Lecture hallsData 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.orgo http://www.phage.org/black09.htmhttp://www.microbe.org/microbes/virus\_or\_bacterium.asphttp://www.bact.wisc.edu/Bact330/330Lecturetopicso http://whyfiles.org/012mad\_cow/7.htmlo http://www.microbelibrary.org/o http://www.hepnet.com/hepb.htmhttp://www.tulane.edu/~dmsander/Big\_Virology/BVHomePage.htmlo http://www.mic.ki.se/Diseases/c2.htmlohttp://www.med.sc.edu:85/book/welcome.htmohttp://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 andscientific 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. |