وزارة التعليم العالي والبحث العلمي
جـهاز الإشـراف والتقـويم العلـمي
دائرة ضمان الجودة والاعتماد الأكاديمي

استمارة وصف البرنامج الأكاديمي للكليات والمعاهد

الجامعة : ديالى

الكلية/المعهد : الطب

القسم العلمي : فرع الاحياء المجهرية

تاريخ ملء الملف : ١٥/ ٦ / ٢٠٢٢

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التوقيع :

اسم رئيس القسم : أ.د. لمى طه احمد

التاريخ : ١ / ٩ / ٢٠٢٣

التوقيع :

اسم المعاون العلمي : أ.د. جليل ابراهيم كاظم

التاريخ : ١ / ٩ / ٢٠٢٣

دقق الملف من قبل

شعبة ضمان الجودة والأداء الجامعي

اسم مدير شعبة ضمان الجودة والأداء الجامعي :

التاريخ :

التوقيع :

مصادقة السيد العميد

نموذج الوصف الأكاديمي لفرع الأحياء المجهرية

يوفر وصف البرنامج الأكاديمي هذا ايجازاً مقتضياً لأهم خصائص البرنامج ومخرجات التعلم المتوقعة من الطالب تحقيقها مبرهناً عما إذا كان قد حقق الاستفادة القصوى من الفرص المتاحة . ويصاحبه وصف لكل مقرر ضمن البرنامج .

١ – المؤسسة التعليمية
كلية الطب
٢- القسم العلمي / المركز
فرع الاحياء المجهرية
٣- اسم البرنامج الأكاديمي أو المهني
الطب البشري
٤- اسم الشهادة النهائية
بكالوريوس طب وجراحة عامة
٥- اشكال الحضور المتاحة
حضور الزامي فعلي
٦- النظام الدراسي (سنوي / مقررات / كورسات)
كورسات
٧- الفصل / السنة
كورس أول + كورس ثاني ٢٠٢٤
٨- عدد الساعات الدراسية
المرحلة الثالثة / ١٥٠ ساعة (٩٠ ساعة (نظري) ، ٦٠ ساعة (عملي)) الاحياء المجهرية ١٥٠ ساعة (٩٠ ساعة (نظري) ، ٦٠ ساعة (عملي)) الطفيليات ٦٠ ساعة (٣٠ ساعة (نظري) ، ٣٠ ساعة (عملي)) الفايروسات ٧٥ ساعة (٣٠ساعة (نظري) ، ٤٥ ساعة (عملي)) المناعة
٩- برنامج الاعتماد المعتمد
الدراسة النظرية والعملية والمناقشات في الكلية
١٠- المؤثرات الخارجية الأخرى
المستشفى التعليمي ، المكتبة ، الأنترنت ، المجتمع ، نقابة الأطباء
١١- تاريخ إعداد الوصف
١٥ / ٦ / ٢٠٢٢

١٢- اهداف البرنامج التعليمي

١. تخر يج اطباء وعلماء يمتلكون من الخلفيات العلمية و المهارات السريرية والبحثية.
٢. السعي لنيل درجة التخصص في مختلف الاختصاصات الطبية.
٣. المساهمة في اعداد قادة المستقبل في المجالات الصحية والتربوية.
٤. ادخال الوسائل التعليمية الحديثة والتقنيات المتقدمة في طرائق التدريس واعداد البرامج التعليمية للكلية وتوظيف تقنيات المعلومات والاتصالات في عملية نقل الانتاج والمعرفة والبحث العلمي وفي اعداد البرامج العلمية.
٥. تفعيل المشاركة والتنسيق والتكامل بين الكلية والمجتمع من خلال اقامة الندوات والمؤتمرات والحلقا ت الدراسية لمناقشة القضايا الصحية والعلمية للبلد.
٦. اقامة علاقات التبادل الثقافي والاتفاقيات الثنائية او الجماعية مع جامعات والمنظمات المهنية العربية

١٣- مخرجات البرنامج المطلوبة وطرائق التعليم والتعلم والتقييم

➢ الأهداف المعرفية

١. ان يتعرف الطالب على اجهزة الجسم البشري ووظيفة كل جزء منه.
٢. ان يتعرف الطالب على مكونات كل جزء من مكونات الجسم ودراسة وظائفه ابتداءان من أصغر مكون.
٣. ان يميز بين الحالة الطبيعية وغير الطبيعية من خلال دراسته لوظائف الجسم.
٤. ان يستنبط الحلول المناسبة لتصحيح الحالات غير الطبيعية.
٥. ان يتمكن من معرفة التأثيرات الخارجية ع لى صحة الفرد والمجتمع وتفادي مضارها واستخدام المفيدة منها

➢ الأهداف المهاراتية الخاصة بالبرنامج

١. التمكن من تطبيق نتائج الدراسة النظرية عمليا م ن خلال تعامله مع الحالات المرضية.
٢. التمكن من استخدام ا لاجهزة الحديثة في دراسة وظائف اع ضاء الجسم وتشخيص الحالات المرضية.
٣. التمكن من اجراء الدراسات والبحوث العلمية لحل مشكلات الفراد والمجتمع. .

• طرائق التعليم والتعلم

١. المحاضرات النظرية باستخدام وسائل الايضاح.
٢. التطبيق العملي للمفاهيم التي تمت دراستها في المختبرات المتخصصة والمستشفيات التعليمية.
٣. (السمنارات) يتم تكليف الطلبة بموضوع ضمن المنهاج للعرض والمناقشة .
٤. حل المشاكل العلمية والطبية من خلال مناقشة حيثياتها ضمن مجاميع صغيرة لتوصل الى الحل الصحيح.

• طرائق التقييم

١. الامتحانات النظرية والعملية اليومية.
٢. الامتحانات فصلية (نصف كورس اول ونصف كورس ثاني) (ونهائي الكورسات) (نظرية وعملية) .
٣. (السمنارات) تكليف كل طالب بموضوع العرض والمناقشة .

➢ الأهداف الوجدانية والتقييمية

١. الالتزام ب الأخلاقيات الطبية في ممارسة المهنة وبما يتفق مع قيم المجتمع.
٢. الالتزام بحضور الحلقات النقاشية بشكل فاعل.
٣. الالتزام باحترام حقوق زملائه في المشاركة في المناقشات العلمية لحل المشكلات .
٤. تقدير اهمية الدراسة المستمرة وتجديد المعلومات لمواكبة التطور العلمي.

• طرائق التعليم والتعلم

١. المحاضرات النظرية باستخدام وسائل الإيضاح
٢. التطبيق العلمي للمفاهيم التي تمت دراستها في المختبرات المتخصصة والمستشفيات التعليمي ة
٣. السمنارات والحلقات النقاشية
٤. حل المشاكل بعد مناقشتها ضمن مجاميع صغيرة لوضع حلول مناسبة

- **طرائق التقييم**

١. امتحانات يومية (نظرية وعملية)
٢. امتحانات نصف كورس (اول +ثاني) ونهائي كورسات
٣. السمنارات والحلقات النقاشية الاسبوعية

١٤- المهارات العامة والتأهيلية المنقولة (المهارات الأخرى المتعلقة بقابلية التوظيف والتطور الشخصي)

١. استخدام الوسائل الحديثة في البحث المعلمات الجديدة (المواقع العلمية والطبية)
٢. حضور الندوات العلمية المتخصصة للاطلاع على المستجدات في المجال الطبي
٣. المشاركة الفاعلة في الحصص العلمية في المختبرات والمستشفيات
٤. تطبيق المعلومات المتراكمة عمليا في المستشفيات التعليمية واجراء البحث العلمي

بنية البرنامج

المرحلة الدراسية	رمز المادة	اسم المادة	الساعات المعتمدة	
			نظري	عملي
الثالثة	MBM303	الاحياء المجهرية	٣ ساعة أسبوعياً الكورس (١٥ اسبوع) عدد الساعات الكلي لكل كورس (٤٥ ساعة)	٢ ساعة أسبوعياً الكورس (١٥ اسبوع) عدد الساعات الكلي لكل كورس (٣٠ ساعة)
الثالثة	MPR 301	الطفيليات	٢ ساعة أسبوعياً الكورس (١٥ اسبوع) عدد الساعات الكلى لكل كورس (٣٠ ساعة)	٢ ساعة أسبوعياً الكورس (١٥ اسبوع) عدد الساعات الكلى لكل كورس (٣٠ ساعة)
الثالثة	BMV 305	الفايروسات	١ ساعة أسبوعياً الكورس (١٥ اسبوع) عدد الساعات الكلي لكل كورس (١٥ ساعة)	٢ ساعة أسبوعياً الكورس (١٥ اسبوع) عدد الساعات الكلي لكل كورس (٣٠ ساعة)
الثالثة	BMI 307	المناعة	١ ساعة أسبوعياً الكورس (١٥ اسبوع) عدد الساعات الكلى للكورس الاول (١٥ ساعة)	٢ ساعة أسبوعياً الكورس (١٥ اسبوع) عدد الساعات الكلى للكورس الاول (٣٠ ساعة)
			١ ساعة أسبوعياً الكورس (١٥ اسبوع) عدد الساعات الكلي لكورس الثاني (١٥ ساعة)	

مخطط مهارات المنهج																					
السنة / المستوى	رمز المقرر	اسم المقرر	الأهداف المعرفية					الأهداف المهاراتية الخاصة بالبرنامج					الأهداف الوجدانية والقيمية					المهارات العامة والتأهيلية المنقولة(المهارات الأخرى المتعلقة بقابلية التوظيف والتطور الشخصي)				
			أ١	أ٢	أ٣	أ٤	ب ١	ب ٢	ب ٣	ب ٤	ج١	ج٢	ج٣	ج٤	د١	د٢	د٣	د٤
الثالثة	303	الاحياء المجهرية	√	√	√	√	√	√	√	√	√	√	√	√	√	√	√	√
الثالثة	301	الطفيليات	√	√	√	√	√	√	√	√	√	√	√	√	√	√	√	√
الثالثة	305	الفايروسات	√	√	√	√	√	√	√	√	√	√	√	√	√	√	√	√
الثالثة	307	المناعة	√	√	√	√	√	√	√	√	√	√	√	√	√	√	√	√

١٥ – – بنية المقرر الاحياء المجهرية النظري / المستوى الدراسي الثالث / الكورس الأول بكتريا

الأسبوع	الساعات	اهداف التعليم المطلوبة	اسم الوحدة / الموضوع	طريقة التعليم	طريقة التقييم
1	3	1-Introduction to medical Microbiology, Bacterial 2-classification and nomenclature, Bacterial, nutrition and growth, Bacterial virulence	Introduction to medical Microbiology	Lecture	Exam
2	3	1-It aims to understanding the structure & functions of microbial genome, 2-its gene products & their role in infection & disease, 3-The unit of heredity is gene, Replication of bacterial DNA, Mechanisms of genetic variation, Genetic engineering	Bacterial genetics and metabolism	Lecture	Exam
3	3	1-Antimicrobial chemotherapy 2-Mechanisms of action of antimicrobial drugs Inhibition of cell wall synthesis 3-Inhibition of protein synthesis (transcription & translation) 4-Inhibition of nucleic acid synthesis.	Antibiotics and chemotherapeutic agents	Lecture	Exam
4	3	*Staphylococcus aureus* *Staphylococcus epidermidis (albus)* *Staphylococcus saprophyticus*, Morphology, 1-Culture, Pathogenesis, Pathogenicity factors of *S. aureus* , 2-Toxins and enzymes of *S. aureus*, S. aurus virulence factors, B-lactamase production &Biofilm formation. 3-Clinical infections caused by *S. aureus*, Laboratory diagnosis	Gram-positive cocci: Staphylococci	Lecture	Exam
5	3	1-Streptococci, Culture characteristics, Classification of streptococci, 2-Toxins and enzymes of streptococci, *Streptococcus pyogenes*, Diseases attributable to B-hemolytic streptococci (*st. pyogenes*), 3-Diseases attributable to local infection with B-hemolytic streptococci, 4-Laboratory diagnosis,	Gram-positive cocci: Streptococci	Lecture	Exam

Exam	Lecture	Gram negative cocci, Neisseria species	1-Gram Negative cocci, Morphology, Culture, *Neisseria gonorrhea*, several types of surface structures, 2-Pathogenesis. 3-Laboratory diagnosis, *Neisseria meningitides*, Laboratory diagnosis.	3	6
Exam	Lecture	Gram positive non-spore forming bacilli: Corynebacterium diphtheria	1-Distinguish between *Corynebacterium* and *Listeria* 2-Describe the two genera microscopically and culturally. 3-List types of clinical infections these organisms produce 4-Predict G +vet causative agents causing clinical cases. 5-Discuss the principles of identifying tests.	3	7
Exam	Lecture	Gram positive aerobic spore forming bacilli: Bacillus anthracis, B. subtilis, B. cereus	1-Distinguish between G +ve rods genera. 2-Describe each species of Gram-positive rods microscopically and culturally. 3-Differentiate between *Bacillus anthracis* and other saprophytic species. 4-Differentiate between *Clostridium* spp. 5-List types of clinical infections these organisms produce 6-Predict G +ve causative agents causing clinical cases. 7-Discuss the principles of identifying test	3	8
Exam	Lecture	Gram positive anaerobic spore forming bacilli: Clostridia species	1- Morphology & identification, Pathogenesis, Prevention, Clinical findings and Laboratory diagnosis: for *Cl. Botulinum*, *Cl.tetani*, *Cl.perfringens*,and *Cl. Difficile*.	3	9
Exam	Lecture	Gram negative enteric bacilli: E. coli, Klebsiella species, Enterobacter, Citrobacter	1-Describe microscopic morphology and cultural biochemical characteristics of each member in this family. 2-List infections caused by each of these members. 3-Differentiate each member of this family from each other. 4-Discuss principles of biochemical tests of each member in this family. 5-Predict enteric causative agents causing clinical cases	3	10
Exam	Lecture	Gram negative enteric bacilli: Proteus species and others	1-Describe microscopic morphology and cultural biochemical characteristics of each member in this family. 2-List infections caused by each of these members. 3-Differentiate each member of this family from each other. 4-Discuss principles of biochemical tests of each member in this family. 5-Predict enteric causative agents causing clinical cases	3	11
Exam	Lecture	Gram negative enteric bacilli: Salmonella species	1-Describe microscopic morphology and cultural biochemical characteristics of each member in this family. 2-List infections caused by each of these members. 3-Differentiate each member of this family from each other. 4-Discuss principles of biochemical tests of each member in this family. 5-Predict enteric causative agents causing clinical cases	3	12
Exam	Lecture	Gram positive non-spore forming bacilli: Corynebacterium diphtheria	1-Describe microscopic morphology and cultural biochemical characteristics of each member in this family. 2-List infections caused by each of these members. 3-Differentiate each member of this family from each other. 4-Discuss principles of biochemical tests of each member in this family. 5-Predict enterics causative agents causing clinical cases	3	13

Exam	Lecture	Syphilis	1-Spirochetes, *T. pallidum,* Syphilis 2-Pathogenesis, pathology & clinical findings, Acquired syphilis 3-Congenital syphilis 4-Lab. Diagnosis, Serological tests for syphilis: Non-treponema Ag test (VDRL), Treponema Ab test: Fluorescent treponemal Ab test (FTA-Abs), Treponema pallidum particl agglutination test 5-Epidemiology	3	14
Exam	Lecture	Final first semester exam	Exam	3	15

١٦- بنية المقرر الاحياء المجهرية العملي / المستوى الدراسي الثالث / الكورس الأول يكتريا

طريقة التقييم	طريقة التعليم	اسم الوحدة / الموضوع	اهداف التعليم المطلوبة	الساعات	الأسبوع
Exam	**Practice laboratory**	Lab Equipment, Biosafety	1- Recognize equipment used in bacteriology lab with 2- their functions 3- Understand the principle of biosafety. 4- Understand biosafety levels in lab.	2	1
Exam	**Practice laboratory**	Control of Microorganisms	1- Understand general disinfection principles. 2- Distinguish between methods of sterilization. 3- and disinfection	2	2
Exam	**Practice laboratory**	Types of Culture media, culturing, and pure culture techniques	1. Define culture media. 2. list the common ingredients in the culture media. 3. Explain the purpose of each type of culture media. 4. the principle of biosafety Distinguish between methods of pure culture	2	3
Exam	**Practice laboratory**	Laboratory diagnosis Smear preparation, Simple and Gram stains	1. Identify laboratory diagnosis steps. 2. Understand staining techniques. 3. Illustrate the purpose of each stain Interpret laboratory tests results	2	4
Exam	**Practice laboratory**	Cultural morphology And Antibiotic susceptibility test	1. Identify the colonial morphology of bacterial growth. 2. Understand the principle of antibiotic susceptibility test. 3. Differentiate between types of antibiotic susceptibility test. 4. Understand the principle of each antibiotic susceptibility.	2	5
Exam	**Practice laboratory**	Gram- positive cocci: *Staphylococci*	1. Describe staphylococci under microscope. 2. Distinguish between staphylococci and streptococci. 3. List diseases caused by each spp. of staphylococci. 4. Predict staphylococcal causative agents causing clinical cases	2	6
Exam	**Practice laboratory**	Gram- positive cocci: Streptococci	1- Describe streptococci under microscope. 2- Classify streptococcus spp. according to hemolysis pattern> 3- Classify streptococcus spp. according to Lancefield grouping. 4- List infections caused by each of streptococcal spp. 5- Differentiate each streptococcus spp. From each other. 6- Discuss principles of differentiation tests of each streptococcal spp.	2	7
Exam	**Practice laboratory**	Gram-negative cocci *(Neisseriae*	1- Differentiate between Neissereiae spp. 2- Describe the two species microscopically and culturally. 3- List types of clinical infections these organisms producePredict g-ve diplococci agents causing clinical cases. 4- Diagnose the Neisseria spp. In clinical sample. 5- List recommended treatment regimens for gonorrhea 6-Describe the measures for prevention of each organism.	2	8

Exam	**Practice laboratory**	Gram- positive rods Non-spore formers *Corynebacterium , Listeria, Actinomyces & Nocardia*	1- Distinguish between Corynebacterium and Listeria 2- Describe the two genera microscopically and culturally. 3- List types of clinical infections these organisms produce Predict G +vet causative agents causing clinical cases. 4- Discuss the principles of identifying tests. 5-Know the prevention ways of each organism	2	9
Exam	**Practice laboratory**	Gram- positive rods Spore formers *Bacillus & Clostridium*	1-Distinguish between G +ve rods genera. 2- Describe each species of Gram-positive rods microscopically and culturally. 3-Differentiate between Bacillus anthracis and other saprophytic species. 4-Differentiate between Clostridium spp. 5-List types of clinical infections these organisms produce Predict G +ve causative agents causing clinical cases. 6-Discuss the principles of identifying tests. 7-Know prevention ways of some organisms	2	10
Exam	**Practice laboratory**	Gram-negative Rods Enterobacteriaceae and *Pseudomonas*	1-Describe microscopic morphology and cultural biochemical characteristics of each member in this family. 2-List infections caused by each of these members. 3-Differentiate each member of this family from each other. 4-Discuss principles of biochemical tests of each member in this family. 5-Predict enterics causative agents causing clinical cases	2	11
Exam	**Practice laboratory**	*Salmonella* and *Shigella*	1-Describe microscopic morphology and cultural biochemical characteristics of each member in this family. 2-List infections caused by each of these members. 3-Differentiate each member of this family from each other. 4-Discuss principles of biochemical tests of each member in this family. 5-Predict enterics causative agents causing clinical cases	2	12
Exam	**Practice laboratory**	*Vibrio, Compylobacter* and *Helicobacter*	1-Describe microscopic morphology and cultural biochemical characteristics of each member in this family. 2-List infections caused by each of these members. 3-Differentiate each member of this family from each other. 4-Discuss principles of biochemical tests of each member in this family. 5-Predict enterics causative agents causing clinical cases	2	13
Exam	**Practice laboratory**	Mycobacterium	1-Describe microscopic morphology and cultural biochemical characteristics of each member in this family. 2-List infections caused by each of these members. 3-Differentiate each member of this family from each other. 4-Discuss principles of biochemical tests of each member in this family. 5-Predict enterics causative agents causing clinical cases	2	14
Exam	**Practice laboratory**	Exam	Exam	2	15

١٧– بنية المقرر الاحياء المجهرية النظري / المستوى الدراسي الثالث / الكورس الثاني (بكتريا)

طريقة التقييم	طريقة التعليم	اسم الوحدة / الموضوع	اهداف التعليم المطلوبة	الساعات	الأسبوع
Exam	**Lecture**	Gram negative bacilli: Vibrio cholera	1- General characteristics, *Vibrio typing*, 2- Pathogenesis, Clinical findings 3- Lab. Diagnosis, Treatment	1	1
Exam	**Lecture**	Gram negative bacilli Compylobacter, H. pylori	1- Compylobacter, *C.Jejuni & C. coli* H. pylori 2- General characteristics, 3- Pathogenesis, Clinical findings, Lab. 4- Diagnosis	1	2
Exam	**Lecture**	Gram negative bacilli: H. influenza species	1- Most important species: *- H. influenzae,- H. ducreyi* 2- Important properties, Laboratory Diagnosis: Specimens: throat and conjunctival swabs, sputum, sinus drainage, CSF, blood …etc.	1	3

			3- Microscopy 4- Culture 4- Capsular swelling 5- Latex agglutination test 6- Treatment and prevention		
Exam	**Lecture**	Gram negative bacilli: Bordetella species	1-*Bordetella pertussis:* The causative agent of very contagious disease called whooping cough (pertussis). 2-Important properties 3-Laboratory diagnosis 4-Treatment and prevention	1	4
Exam	**Lecture**	Gram negative bacilli: Brucella species	1--Morphology & identification: 2-They are G negative short coccobacilli, aerobic, non-motile. 3-Culture 4-Pathogenesis 5-Clinical findings 6-Laboratory diagnosis Agglutination test 7-Rapid slide agglutination test 8-Tube agglutination test 9-- Epidemiology and prevention	1	5
Exam	**Lecture**	Pseudomonas, Listeria	1- Morphology &identification of Pseudomonas, Listeria 2- Growth characteristics 3- Pathogenesis & epidemiology 4- Clinical Findings 5- Soft tissue infection 6- Laboratory diagnosis.	1	6
Exam	**Lecture**	Gram negative bacilli: Yersinia species	1- Growth characteristics of Yersinia species 2- Pathogenesis & epidemiology 3- Clinical Findings 4- Laboratory diagnosis	1	7
Exam	**Lecture**	Mycobacterium tuberculosis, pulmonary TB	1. Growth characteristics of Mycobacterium tuberculosis, pulmonary TB 2. Pathogenesis & epidemiology 3. Clinical Findings 4. Laboratory diagnosis	1	8
Exam	**Lecture**	Other mycobacterium species and Spirochetes, Mycoplasma	1. Growth characteristics of Mycobacterium tuberculosis, pulmonary TB 2. Pathogenesis & epidemiology 3. Clinical Findings 4. Laboratory diagnosis	1	9
Exam	**Lecture**	Actinomyces, Rickettsia	1. Growth characteristics of Actinomyces, Rickettsia 2. Pathogenesis & epidemiology 3. Clinical Findings 4. Laboratory diagnosis	1	10
Exam	**Lecture**	Chlamydia	1. Growth characteristics of Chlamydia 2. Pathogenesis & epidemiology 3. Clinical Findings 4. Laboratory diagnosis	1	11
Exam	**Lecture**	Introduction of Medical mycology	1. To describe the definition of mycology science and the types of cells (yeast and molds) 2. the important of the cells with the explain of the most common pathological species .	1	12
Exam	**Lecture**	Candidiasis and yeast important medical species, antifungal treatments	1. *The explanation the types and species of most common pathogenic* 2. *types of yeast infect human*	1	13
Exam	**Lecture**	*Dermatophytes ,Aspergilosis and black death, mycotoxines and Black fungus and mycotoxins and their pathological effects*	1. The description of most common types of pathogenic species of molds and the symptoms 2. Treatment 3. diagnosis and the most modern techniques of diagnosis.	1	14

Exam	**Lecture**	Exam	Exam	1	15

١٨- بنية المقرر الفايروسات النظري / المستوى الدراسي الثالث / الكورس الاول

طريقة التقييم	طريقة التعليم	اسم الوحدة / الموضوع	اهداف التعليم المطلوبة	الساعات	الأسبوع
Exam	**Lecture**	Introduction about medical virology	✓ Define viruses and virology. ✓ Know the characteristic of viruses. ✓ List the criteria for viral classification. ✓ Mention type of viruses	1	1
Exam	**Lecture**	Replication of viruses	✓ Classify types of replications of viruses. ✓ Describe stepwise. ✓ Recognize the mechanism of transcription and translation. ✓ List types of viral release from infected cell	1	2
Exam	**Lecture**	Pathogenesis of viruses	✓ Define pathogenesis. ✓ List steps of pathogenesis ✓ Recognize the differences between local and systemic infection. ✓ Explain viral pathogenesis at the cellular level	1	3
Exam	**Lecture**	Antiviral Chemotherapy	✓ Classify types of antiviral therapy according to each family ✓ Recognize the mechanism of action of each antiviral therapy. ✓ Distinguish interferons has induced mechanisms	1	4
Exam	**Lecture**	Viral vaccine	✓ List types of vaccine. ✓ Distinguish advantages and disadvantages of each type. ✓ Identify the mechanism of action	1	5
Exam	**Lecture**	First exam	✓ First Exam	1	6
Exam	**Lecture**	Herpes simplex virus type 1 and 2	✓ Important properties of HSV-1,-2 ✓ Mode of transmission ✓ steps of replication cycle ✓ Clinical manifestation ✓ Method of diagnosis, prevention and treatment	1	7
Exam	**Lecture**	Human Cytomegalovirus and Varicella-zoster virus	✓ List general characteristic of viruses. ✓ Identify the mechanism of entry and replication. ✓ Analyze result of diagnosis. ✓ Enumerate the mechanisms of treatment and prevention	1	8
Exam	**Lecture**	Epstein-barr Virus and Human herpes virus type-8	✓ List general characteristic of viruses. ✓ Identify the mechanism of entry and replication. ✓ Analyze result of diagnosis. ✓ Enumerate the mechanisms of treatment and prevention	1	9
Exam	**Lecture**	Viral Hepatitis (Part 1)	✓ List general characteristic of viruses. ✓ Identify the mechanism of entry and replication. ✓ Analyze result of diagnosis. ✓ Enumerate the mechanisms of treatment and prevention	1	10
Exam	**Lecture**	Viral Hepatitis (Part 2)	✓ List general characteristic of viruses. ✓ Identify the mechanism of entry and replication. ✓ Analyze result of diagnosis. ✓ Enumerate the mechanisms of treatment and prevention	1	11
Exam	**Lecture**	Second exam	✓ Second Exam	1	12
Exam	**Lecture**	Poxviruses	✓ List general characteristic of viruses. ✓ Identify the mechanism of entry and replication. ✓ Analyze result of diagnosis. ✓ 5. Enumerate the mechanisms of treatment and prevention	1	13

Exam	**Lecture**	Human Papilloma Viruses	✓ List general characteristic of viruses. ✓ Identify the mechanism of entry and replication. ✓ Analyze result of diagnosis. ✓ Enumerate the mechanisms of treatment and prevention	1	14
Exam	**Lecture**	Adenovirus and Human polyoma viruses (B19)	✓ List general characteristic of viruses. ✓ Identify the mechanism of entry and replication. ✓ Analyze result of diagnosis. ✓ Enumerate the mechanisms of treatment and prevention	1	15

١٩– بنية المقرر الفايروسات النظري / المستوى الدراسي الثالث / الكورس الثاني

طريقة التقييم	طريقة التعليم	اسم الوحدة / الموضوع	اهداف التعليم المطلوبة	الساعات	الأسبوع
Exam	**Lecture**	Orthomyxoviruses	✓ Define viruses and virology. ✓ Know the characteristic of viruses. ✓ List the criteria for viral classification. ✓ Mention type of viruses	1	1
Exam	**Lecture**	Paramyxoviruses (Part 1)	✓ Classify types of replications of viruses. ✓ Describe stepwise. ✓ Recognize the mechanism of transcription and translation. ✓ List types of viral release from infected cell	1	2
Exam	**Lecture**	Paramyxoviruses (Part 2)	✓ Define pathogenesis. ✓ List steps of pathogenesis ✓ Recognize the differences between local and systemic infection. ✓ Explain viral pathogenesis at the cellular level	1	3
Exam	**Lecture**	Togaviridae and Coronavirus	✓ Classify types of antiviral therapy according to each family ✓ Recognize the mechanism of action of each antiviral therapy. ✓ Distinguish interferons has induced mechanisms	1	4
Exam	**Lecture**	Rhabdoviruses	✓ List types of vaccine. ✓ Distinguish advantages and disadvantages of each type. ✓ Identify the mechanism of action	1	5
Exam	**Lecture**	First exam	✓ First Exam	1	6
Exam	**Lecture**	Picornaviruses	✓ Important properties of HSV-1,-2 ✓ Mode of transmission ✓ steps of replication cycle ✓ Clinical manifestation ✓ Method of diagnosis, prevention and treatment	1	7
Exam	**Lecture**	Coxsackie viruses	✓ List general characteristic of viruses. ✓ Identify the mechanism of entry and replication. ✓ Analyze result of diagnosis. ✓ Enumerate the mechanisms of treatment and prevention	1	8
Exam	**Lecture**	Enteroviruses	✓ List general characteristic of viruses. ✓ Identify the mechanism of entry and replication. ✓ Analyze result of diagnosis. ✓ Enumerate the mechanisms of treatment and prevention	1	9
Exam	**Lecture**	Human immunodeficiency virus (Part 1)	✓ List general characteristic of viruses. ✓ Identify the mechanism of entry and replication. ✓ Analyze result of diagnosis. ✓ Enumerate the mechanisms of treatment and prevention	1	10
Exam	**Lecture**	Human immunodeficiency virus (Part 2)	✓ List general characteristic of viruses. ✓ Identify the mechanism of entry and replication. ✓ Analyze result of diagnosis. ✓ Enumerate the mechanisms of treatment and prevention	1	11
Exam	**Lecture**	Second exam	✓ Second Exam	1	12

Exam	**Lecture**	Arboviruses (Part 1)	✓ List general characteristic of viruses. ✓ Identify the mechanism of entry and replication. ✓ Analyze result of diagnosis. ✓ 5. Enumerate the mechanisms of treatment and prevention	1	13
Exam	**Lecture**	Arboviruses (Part 2)	✓ List general characteristic of viruses. ✓ Identify the mechanism of entry and replication. ✓ Analyze result of diagnosis. ✓ Enumerate the mechanisms of treatment and prevention	1	14
Exam	**Lecture**	Prion	✓ List general characteristic of viruses. ✓ Identify the mechanism of entry and replication. ✓ Analyze result of diagnosis. ✓ Enumerate the mechanisms of treatment and prevention	1	15

٢٠- بنية المقرر الفايروسات العملي / المستوى الدراسي الثالث / الكورس الثاني

طريقة التقييم	طريقة التعليم	اسم الوحدة / الموضوع	اهداف التعليم المطلوبة	الساعات	الأسبوع
Exam	**Lecture**	Laboratory diagnosis of viral infection	✓ Identify sample collection, transport sample, sample processing and inoculation in system of living cell and viral identification. ✓ List factors that effects on viral infectivity	1	1
Exam	**Lecture**	Direct method - Rapid viral diagnosis (Electron microscope, Immune electron microscope and Ordinary microscope)	✓ Describe the principle of test. ✓ list steps of work and requirement ✓ Explain the advantages and disadvantages of each test	1	2
Exam	**Lecture**	Traditional immunological (NT, CFT, HI, LA, PHA, CIEOP, SRH)	✓ Describe the principle of test. ✓ list steps of work and requirement ✓ Explain the advantages and disadvantages of each test. Interpretation of results	1	3
Exam	**Lecture**	Newer techniques (Radioimmunoassay , Enzyme linked immunosorbent assay, Immunofluorescence test)	✓ Describe the principle of test. ✓ list steps of work and requirement ✓ Explain the advantages and disadvantages of each test. ✓ Interpretation of results	1	4
Exam	**Lecture**	Immunological tests (Western blot, Immunohistochemistry)	✓ Describe the principle of test. ✓ list steps of work and requirement ✓ Explain the advantages and disadvantages of each test. ✓ Interpretation of results	1	5
Exam	**Lecture**	**First exam**		1	6
Exam	**Lecture**	Polymerase chain reaction	✓ Describe the principle of test. ✓ list steps of work and requirement ✓ Explain the advantages and disadvantages of each test. ✓ Interpretation of results	1	7
Exam	**Lecture**	Gel electrophoresis	✓ Describe the principle of test. ✓ list steps of work and requirement ✓ Explain the advantages and disadvantages of each test. ✓ Interpretation of results	1	8
Exam	**Lecture**	Reverse transcriptase	✓ Describe the principle of test. ✓ list steps of work and requirement ✓ Explain the advantages and disadvantages of each test. ✓ Interpretation of results	1	9

Exam	**Lecture**	Real time-PCR and In situ hybridizations	✓ Describe the principle of test. ✓ list steps of work and requirement ✓ Explain the advantages and disadvantages of each test. ✓ Interpretation of results	1	10
Exam	**Lecture**	Inoculation (cell culture, animal inoculation and embryonated egg).	✓ Describe the principle of test ✓ list steps of work and requirement ✓ Explain the advantages and disadvantages of each test ✓ Interpretation of results	1	11
Exam	**Lecture**	**Second exam**		1	12
Exam	**Lecture**	Introduction of practical / diagnostic mycology	✓ To describe the definition of mycology science and the types of cells (yeast and molds) ,the important of the cells with the explain of the most common pathological species .	1	13
Exam	**Lecture**	Identification of yeast infections by microscopic and cultural methods	✓ *The explanation the types and species of most common* ✓ *pathogenic types of yeast infect human with methodology of culture ,staining and molecular diagnosis.(pcr)*	1	14
Exam	**Lecture**	*Identification of multicellular fungal infections, introduction* of advanced diagnosis methods ,	✓ *The description of diagnosis of most common types of pathogenic species of molds and the most modern* ✓ *techniques of diagnosis with using of recent color media*	1	15

٢١– بنية المقرر الاحياء الطفيليات النظري / المستوى الدراسي الثالث / الكورس الأول (الاوالي)

طريقة التقييم	طريقة التعليم	اسم الوحدة / الموضوع	اهداف التعليم المطلوبة	الساعات	الأسبوع
Exam	Lecture	Introduction , Basic principle &concept: Host-parasite relationships	✓ Understanding the parasites biology ✓ Disease and pathogenesis ✓ Epidemiology ,Vector control ✓ Diagnosis and treatment ✓ Control and prevention	2	1
Exam	Lecture	Classification of parasites	✓ Understanding diversity ✓ Taxonomic organization ✓ Diagnostic and identification tools ✓ Treatment and control strategies ✓ Epidemiological studies	2	2
Exam	Lecture	Entamoeba histolytica (Trophozoite&cyst stage) morphology, lifecycle, diagnosis, pathogenesis,clinical signs,treatment	✓ Parasite and disease understanding ✓ Epidemiological studies, transmission, ✓ Public health impact ✓ Diagnosis tools ✓ Treatment and drugs development ✓ Prevention and control	2	3
Exam	Lecture	E. coli, E. nana and Iodamoeba butschlii) morphology, lifecycle, diagnosis, pathogenesis,clinical signs, treatment, Non – pathogenic commensals, free-living ameba as athogen	✓ Parasite and disease understanding ✓ Epidemiological studies, transmission, ✓ Public health impact ✓ Diagnosis tools ✓ Treatment and drugs development ✓ Prevention and control	2	4
Exam	Lecture	Giardia lamblia, Chilomastix mesnili, Trichomonas vaginalis morphology, lifecycle,Diagnosis,pathogenesis	✓ Parasite and disease understanding ✓ Epidemiological studies, transmission, ✓ Public health impact ✓ Diagnosis tools	2	5

			✓ Treatment and drugs development ✓ Prevention and control		
Exam	Lecture	Leshmania types and Trypanosoma cruzi morphology, lifecycle, diagnosis, pathogenesis,clinical signs,treatment	✓ Parasite and disease understanding ✓ Epidemiological studies, transmission, ✓ Public health impact ✓ Diagnosis tools ✓ Treatment and drugs development ✓ Prevention and control	2	6
Exam	Lecture	Ciliate: Balantidium coli, morphology, lifecycle, diagnosis, pathogenesis,clinical signs, treatment	✓ Parasite and disease understanding ✓ Epidemiological studies, transmission, ✓ Public health impact ✓ Diagnosis tools ✓ Treatment and drugs development ✓ Prevention and control	2	7
Exam	Lecture	vivax, P. ovale plasmodium P.falciparium , P.malariae morphology, lifecycle, diagnosis, pathogenesis,clinical signs, treatment	✓ Parasite and disease understanding ✓ Epidemiological studies, transmission, ✓ Public health impact ✓ Diagnosis tools ✓ Treatment and drugs development ✓ Prevention and control	2	8
Exam	Lecture	P.falciparium , P.malariae morphology, lifecycle, diagnosis, pathogenesis,clinical signs, treatment	✓ Parasite and disease understanding ✓ Epidemiological studies, transmission, ✓ Public health impact ✓ Diagnosis tools ✓ Treatment and drugs development ✓ Prevention and control	2	9
Exam	Lecture	*Toxoplasma gondii,* morphology, lifecycle, diagnosis, pathogenesis,clinical signs, treatment	✓ Parasite and disease understanding ✓ Epidemiological studies, transmission, ✓ Public health impact ✓ Diagnosis tools ✓ Treatment and drugs development ✓ Prevention and control	2	10
Exam	Lecture	*Cryptosporidium,* morphology, lifecycle, diagnosis, pathogenesis,clinical signs,treatment	✓ Parasite and disease understanding ✓ Epidemiological studies, transmission, ✓ Diagnosis tools ✓ Treatment and drugs development ✓ Prevention and control	2	11
Exam	Lecture	*Isospora,* morphology, lifecycle, diagnosis, pathogenesis,clinical signs,treatment	✓ Parasite and disease understanding ✓ Epidemiological studies, transmission, ✓ Public health impact ✓ Diagnosis tools ✓ Treatment and drugs development ✓ Prevention and control	2	12
Exam	Lecture	*sarcocystis* morphology, lifecycle, diagnosis, pathogenesis, clinical signs, treatment	✓ Parasite and disease understanding ✓ Epidemiological studies, transmission, ✓ Public health impact ✓ Diagnosis tools ✓ Treatment and drugs development ✓ Prevention and control	2	13
Exam	Lecture	Immunity against protozoan infection	✓ Disease Prevention ✓ Vaccine development ✓ Immune evasion Mechanism ✓ Epidemiology Strategies	2	14
Exam	Lecture	Exam	Exam	2	15

٢٢- بنية المقرر الطفيليات العملي / المستوى الدراسي الثالث / الكورس الأول (الاوالي)

الأسبوع	الساعات	اهداف التعليم المطلوبة	اسم الوحدة / الموضوع	طريقة التعليم	طريقة التقييم
1	2	To recognize the types of samples for parasites To list the methods of lab. Diagnosis of parasites To describe all the types of lab. Diagnosis of parasites	Introduction of practical / diagnostic parasite	**Practice laboratory**	Exam
2	2	To recognize the types of samples for parasites To list the methods of lab. Diagnosis of parasites To describe all the types of lab. Diagnosis of parasites	Identification of parasitic infections by direct and indirect method	**Practice laboratory**	Exam
3	2	To define the classification of this parasite To know types of parasite stages To recognize the morphology of this stage of parasite by (explain and show slides) To describe the life cycle of parasite To identify methods of parasite transmission to human To list different methods of laboratory diagnosis for this parasite	*Entamoeba histolytica* (Trophozoite&cyst stage) slides Morphology, lifecycle , lab. diagnosis	**Practice laboratory**	Exam
4	2	To define the classification of this parasite To know types of parasite stages To recognize the morphology of this stage of parasite by (explain and show slides) To describe the life cycle of parasite To identify methods of parasite transmission to human To list different methods of laboratory diagnosis for this parasite	E. coli, Endolimax nana & Iodamoeba butschlii) slides Morphology, lifecycle , lab. diagnosis	**Practice laboratory**	Exam
5	2	To define the classification of this parasite To know types of parasite stages To recognize the morphology of this stage of parasite by (explain and show slides) To describe the life cycle of parasite To identify methods of parasite transmission to human To list different methods of laboratory diagnosis for this parasite	*Giardia lamblia,Chilomastix mesnili,* (Morphology, lifecycle , lab.diagnosis	**Practice laboratory**	Exam
6	2	To define the classification of this parasite To know types of parasite stages To recognize the morphology of this stage of parasite by (explain and show slides) To describe the life cycle of parasite To identify methods of parasite transmission to human To list different methods of laboratory diagnosis for this parasite	*Trichomonas vaginalis* (Morphology, lifecycle , lab.diagnosis	**Practice laboratory**	Exam
7	2	To define the classification of this parasite To know types of parasite stages To recognize the morphology of this stage of parasite by (explain and show slides) To describe the life cycle of parasite To identify methods of parasite transmission to human To list different methods of laboratory diagnosis for this parasite	Leishmania donovani, Leishmania tropica , L. brasiliensis (Morphology, lifecycle , lab. diagnosis)	**Practice laboratory**	Exam
8	2	To define the classification of this parasite To know types of parasite stages To recognize the morphology of this stage of parasite by (explain and show slides) To describe the life cycle of parasite To identify methods of parasite transmission to human To list different methods of laboratory diagnosis for this parasite	*Trypanosoma spp.* (Morphology, lifecycle , lab. diagnosis)	**Practice laboratory**	Exam
9	2	To define the classification of this parasite To know types of parasite stages To recognize the morphology of this stage of parasite by (explain and show slides) To describe the life cycle of parasite To identify methods of parasite transmission to human To list different methods of laboratory diagnosis for this parasite	Ciliate:*Balantidum coli* slides (Morphology, lifecycle, lab.Diagnosis)	**Practice laboratory**	Exam
10	2	To define the classification of this parasite To know types of parasite stages To recognize the morphology of this stage of parasite by (explain and show slides) To describe the life cycle of parasite To identify methods of parasite transmission to human To list different methods of laboratory diagnosis for this parasite	*Plasmodium vivax,P. ovale, P. falciparum & P. malariae* (Morphology, lifecycle , lab.Diagnosis)	**Practice laboratory**	Exam

Exam	**Practice laboratory**	*P. falciparum & P. malariae* (Morphology, lifecycle , lab.Diagnosis)	To define the classification of this parasite To know types of parasite stages To recognize the morphology of this stage of parasite by (explain and show slides) To describe the life cycle of parasite To identify methods of parasite transmission to human To list different methods of laboratory diagnosis for this parasite	2	11
Exam	**Practice laboratory**	*Toxoplasma gondii* Morphology, lifecycle , lab. Diagnosis)	To define the classification of this parasite To know types of parasite stages To recognize the morphology of this stage of parasite by (explain and show slides) To describe the life cycle of parasite To identify methods of parasite transmission to human To list different methods of laboratory diagnosis for this parasite	2	12
Exam	**Practice laboratory**	*Cryptosporidium (* Morphology, lifecycle , lab. Diagnosis)	To define the classification of this parasite To know types of parasite stages To recognize the morphology of this stage of parasite by (explain and show slides) To describe the life cycle of parasite To identify methods of parasite transmission to human To list different methods of laboratory diagnosis for this parasite	2	13
Exam	**Practice laboratory**	Review of slides	To recognize all the types of parasites slides	2	14
Exam	EXAM	Exam	To recognize all the types of parasites slides	2	15

٢٣- بنية المقرر الطفيليات النظري / المستوى الدراسي الثالث / الكورس الثاني (الديدان)

طريقة التقييم	طريقة التعليم	اسم الوحدة / الموضوع	اهداف التعليم المطلوبة	الساعات	الأسبوع
Exam	Lecture	Cestoda: Diphyllobothrium latum , Morphology, lifecycle , lab. Diagnosis	✓ Understanding the parasites biology ✓ Disease and pathogenesis ✓ Epidemiology ,Vector control ✓ Diagnosis and treatment ✓ Control and prevention	2	1
Exam	Lecture	Cestoda: Taenia saginata and T. solium Morphology, lifecycle , lab. Diagnosis	✓ Understanding diversity ✓ Taxonomic organization ✓ Diagnostic and identification tools ✓ Treatment and control strategies ✓ Epidemiological studies	2	2
Exam	Lecture	*-Echinococcus granulosus and Echinococcus multilocularis* (Morphology, lifecycle , lab. Diagnosis)	✓ Parasite and disease understanding ✓ Epidemiological studies, transmission, ✓ Public health impact ✓ Diagnosis tools ✓ Treatment and drugs development ✓ Prevention and control	2	3
Exam	Lecture	*Hymenolepis nana , H. diminuta* &*Dipylidium caninum* (Morphology, lifecycle , lab. Diagnosis)	✓ Parasite and disease understanding ✓ Epidemiological studies, transmission, ✓ Public health impact ✓ Diagnosis tools ✓ Treatment and drugs development ✓ Prevention and control	2	4
Exam	Lecture	*Fasciola hepatica, Clonorchis sinensis* (Morphology,lifecycle , lab.Diagnosis)	✓ Parasite and disease understanding ✓ Epidemiological studies, transmission, ✓ Public health impact ✓ Diagnosis tools ✓ Treatment and drugs development ✓ Prevention and control	2	5
Exam	Lecture	*Fasciolopsis buski & Heterophyes heterophyes. Paragonimus westermani*	✓ Parasite and disease understanding ✓ Epidemiological studies, transmission, ✓ Public health impact	2	6

		(Morphology, lifecycle, lab.Diagnosis	✓ Diagnosis tools ✓ Treatment and drugs development ✓ Prevention and control		
Exam	Lecture	Schistosoma spp. (Morphology, lifecycle , lab. Diagnosis)	✓ Parasite and disease understanding ✓ Epidemiological studies, transmission, ✓ Public health impact ✓ Diagnosis tools ✓ Treatment and drugs development ✓ Prevention and control	2	7
Exam	Lecture	*Ascaris lumbricoides & Enterobius vermiculars* ,Morphology, lifecycle , lab. Diagnosis	✓ Parasite and disease understanding ✓ Epidemiological studies, transmission, ✓ Public health impact ✓ Diagnosis tools ✓ Treatment and drugs development ✓ Prevention and control	2	8
Exam	Lecture	*Trichinella spiralis &Trichuris trichiura* (Morphology, lifecycle , lab. Diagnosis	✓ Parasite and disease understanding ✓ Epidemiological studies, transmission, ✓ Public health impact ✓ Diagnosis tools ✓ Treatment and drugs development ✓ Prevention and control	2	9
Exam	Lecture	*Strongyloides stercoralis*(Morphology, lifecycle , lab. Diagnosis	✓ Parasite and disease understanding ✓ Epidemiological studies, transmission, ✓ Public health impact ✓ Diagnosis tools ✓ Treatment and drugs development ✓ Prevention and control	2	10
Exam	Lecture	*Ancylostoma duodenale &Necator americanus* ,Morphology, lifecycle , lab. Diagnosis	✓ Parasite and disease understanding ✓ Epidemiological studies, transmission, ✓ Diagnosis tools ✓ Treatment and drugs development ✓ Prevention and control	2	11
Exam	Lecture	*Wuchereria bancrofti,loa loa &Onchocerca volvulus* (Morphology, lifecycle , lab. Diagnosis	✓ Parasite and disease understanding ✓ Epidemiological studies, transmission, ✓ Public health impact ✓ Diagnosis tools ✓ Treatment and drugs development ✓ Prevention and control	2	12
Exam	Lecture	Anopheles : mouth parts, larva, egg, male and female,Gules mouth parts, larva, egg,male and female, *Phlebotomus papatasii & Sarcoptes scabiei* Hard tick, soft tick adult, larva ,Cyclops	✓ Parasite and disease understanding ✓ Epidemiological studies, transmission, ✓ Public health impact ✓ Diagnosis tools ✓ Treatment and drugs development ✓ Prevention and control	2	13
Exam	Lecture	*Phlebotomus papatasii male,female& Sarcoptes scabiei male,female*, Hard tick, soft tick adult, larva ,	✓ Parasite and disease understanding ✓ Epidemiological studies, transmission, ✓ Public health impact ✓ Diagnosis tools ✓ Treatment and drugs development ✓ Prevention and control	2	14
Exam	Lecture	Exam	Exam	2	15

٢٤– بنية المقرر الطفيليات العملي / المستوى الدراسي الثالث / الكورس الثاني (الديدان)

طريقة التقييم	طريقة التعليم	اسم الوحدة / الموضوع	اهداف التعليم المطلوبة	الساعات	الأسبوع
Exam	**Practice laboratory**	Cestoda: Diphyllobothrium latum , Morphology, lifecycle , lab. Diagnosis	To recognize the types of samples for parasites To list the methods of lab. Diagnosis of parasites To describe all the types of lab. Diagnosis of parasites	2	1
Exam	**Practice laboratory**	Cestoda: Taenia saginata and T. solium	To recognize the types of samples for parasites To list the methods of lab. Diagnosis of parasites To describe all the types of lab. Diagnosis of parasites	2	2

		Morphology, lifecycle , lab. Diagnosis			
Exam	**Practice laboratory**	*-Echinococcus granulosus and Echinococcus multilocularis* (Morphology, lifecycle , lab. Diagnosis)	To define the classification of this parasite To know types of parasite stages To recognize the morphology of this stage of parasite by (explain and show slides) To describe the life cycle of parasite To identify methods of parasite transmission to human To list different methods of laboratory diagnosis for this parasite	2	3
Exam	**Practice laboratory**	*Hymenolepis nana , H. diminuta* &*Dipylidium caninum* (Morphology, lifecycle , lab. Diagnosis)	To define the classification of this parasite To know types of parasite stages To recognize the morphology of this stage of parasite by (explain and show slides) To describe the life cycle of parasite To identify methods of parasite transmission to human To list different methods of laboratory diagnosis for this parasite	2	4
Exam	**Practice laboratory**	*Fasciola hepatica, Clonorchis sinensis* (Morphology,lifecycle , lab.Diagnosis)	To define the classification of this parasite To know types of parasite stages To recognize the morphology of this stage of parasite by (explain and show slides) To describe the life cycle of parasite To identify methods of parasite transmission to human To list different methods of laboratory diagnosis for this parasite	2	5
Exam	**Practice laboratory**	*Fasciolopsis buski & Heterophyes heterophyes. P. westermani* (Morphology, lifecycle, lab.Diagnosis	To define the classification of this parasite To know types of parasite stages To recognize the morphology of this stage of parasite by (explain and show slides) To describe the life cycle of parasite To identify methods of parasite transmission to human To list different methods of laboratory diagnosis for this parasite	2	6
Exam	**Practice laboratory**	Schistosoma spp. (Morphology, lifecycle , lab. Diagnosis)	To define the classification of this parasite To know types of parasite stages To recognize the morphology of this stage of parasite by (explain and show slides) To describe the life cycle of parasite To identify methods of parasite transmission to human To list different methods of laboratory diagnosis for this parasite	2	7
Exam	**Practice laboratory**	*Ascaris lumbricoides & Enterobius vermiculars* ,Morphology, lifecycle , lab. Diagnosis	To define the classification of this parasite To know types of parasite stages To recognize the morphology of this stage of parasite by (explain and show slides) To describe the life cycle of parasite To identify methods of parasite transmission to human To list different methods of laboratory diagnosis for this parasite	2	8
Exam	**Practice laboratory**	*Trichinella spiralis &Trichuris trichiura* and *Strongyloides stercoralis*(Morphology, lifecycle , lab. Diagnosis	To define the classification of this parasite To know types of parasite stages To recognize the morphology of this stage of parasite by (explain and show slides) To describe the life cycle of parasite To identify methods of parasite transmission to human To list different methods of laboratory diagnosis for this parasite	2	9
Exam	**Practice laboratory**	*Ancylostoma duodenale &Necator americanus* ,Morphology, lifecycle , lab. Diagnosis	To define the classification of this parasite To know types of parasite stages To recognize the morphology of this stage of parasite by (explain and show slides) To describe the life cycle of parasite To identify methods of parasite transmission to human To list different methods of laboratory diagnosis for this parasite	2	10
Exam	**Practice laboratory**	*Wuchereria bancrofti,loa loa &Onchocerca volvulus* (Morphology, lifecycle , lab. Diagnosis	To define the classification of this parasite To know types of parasite stages To recognize the morphology of this stage of parasite by (explain and show slides) To describe the life cycle of parasite To identify methods of parasite transmission to human To list different methods of laboratory diagnosis for this parasite	2	11
Exam	**Practice laboratory**	Anopheles : mouth parts, larva, egg, male and female Gules mouth parts, larva, egg,male and female	To define the classification of this parasite To know types of parasite stages To recognize the morphology of this stage of parasite by (explain and show slides) To describe the life cycle of parasite	2	12

			To identify methods of parasite transmission to human To list different methods of laboratory diagnosis for this parasite		
Exam	**Practice laboratory**	*Phlebotomus papatasii male,female& Sarcoptes scabiei male,female*, Hard tick, soft tick adult, larva , Cyclops	To define the classification of this parasite To know types of parasite stages To recognize the morphology of this stage of parasite by (explain and show slides) To describe the life cycle of parasite To identify methods of parasite transmission to human To list different methods of laboratory diagnosis for this parasite	2	13
Exam	**Practice laboratory**	Review of slides	To recognize all the types of parasites slides	2	14
Exam	EXAM	Exam	To recognize all the types of parasites slides	2	15

٢٥– بنية المقرر المناعة النظري / المستوى الدراسي الثالث / الكورس الاول

طريقة التقييم	طريقة التعليم	اسم الوحدة / الموضوع	اهداف التعليم المطلوبة	الساعات	الأسبوع
Exam	Lecture	innate (nonspecific) immune response	1. To recognize the significance of the immune system 2. To distinguish between the innate (nonspecific) and adaptive (specific) immune systems 3. To understand the mechanisms of combating infection/disease (killing pathogens) 4. To know the humoral and cellular components of the innate immune response 5. To recognize the mechanisms of action of the components of the innate immune response	1	1
Exam	Lecture	antigens	1. To compare the immunogen, antigen, and hapten 2. To describe the factors influencing immunogenicity 3. To define the chemical nature of immunogens 4. To compare the structures of T-independent and T-dependent antigens 5. To introduce the concept of hap ten-carrier conjugates and to describe their structure 6. To characterize antigenic determinants 7. To define superantigen	1	2
Exam	Lecture	complement	1. Understand different pathways of complement activation. 2. Know the enzymatic and non-enzymatic mechanisms of C activation. 3. Know the biological properties of C activation products. 4. Know the significance of the C system in host resistance, inflammation, and damage to self. 5. Understand the mechanisms of regulating C activation and it products	1	3
Exam	Lecture	immunoglobulins: structure & function i & ii	1. To discuss the general properties of all immunoglobulins 2. To describe the basic structure of immunoglobulins 3. To relate immunoglobulin structure with function 4. To define immunoglobulin hypervariable and framework regions 5. To define immunoglobulin classes and subclasses, types and subtypes 6. To describe the structures and properties of immunoglobulin classes	1	4
Exam	Lecture	immunoglobulins: structure & function I & II	1. To discuss the general properties of all immunoglobulins 2. To describe the basic structure of immunoglobulins 3. To relate immunoglobulin structure with function 4. To define immunoglobulin hypervariable and framework regions 5. To define immunoglobulin classes and subclasses, types and subtypes 6. To describe the structures and properties of immunoglobulin classes	1	5
Exam	Lecture	immunoglobulins: isotypes, allotypes and idiotypes	1. To explain the structural basis for immunoglobulin isotypes, allotypes and idiotypes 2. To describe some of the uses of isotypes, allotypes and idiotype	1	6
Exam	Lecture	immunoglobulins: genetics	1. To describe the organization and expression of the immunoglobulin gene families. 2. To explain the origins of antibody diversity	1	7
Exam	Lecture	immunoglobulins: Ag-Ab reactions and selected tes	1. 2. 3. 4. To describe the nature of Ag-Ab reactions To compare and contrast antibody affinity and avidity To delineate the basis for antibody specificity and cross reactivity To discuss the principles of commonly used tests for antigen/antibody reaction	1	8
Exam	Lecture	antibody formation(part1)	1.To describe general characteristic of specific immune response2.to comber and contrast primary and secondary	1	9

			antibody responce3.to describe the molecular event involved in class switching and membrane immunoglubin expression		
Exam	Lecture	Immunization(part2)	1. Know the distinction between passive and active immunization and their examples 2. Distinguish between artificial and natural means of immunization 3. Know the applications and problems of artificial passive immunization 4. Know the applications and problems of artificial active immunization 5. Know the modern approaches to immunization	1	10
Exam	Lecture	: immune cells and Ag recognition	1. To review the role of immune cells in protection from different types of pathogens 2. To discuss the types of cells involved in immune responses 3. To describe the nature of specificity in adaptive immune responses 4. To understand the role of lymphocyte recirculation in immune response	1	11
Exam	Lecture	MHC and T cell receptors	1. To give an overview of the role of MHC in immune response 2. To describe the structure and function of the MHC 3. To describe the structure and function of the TCR 4. To discuss the genetic basis for generation of diversity in TCR 5. To describe the nature of the immunological synapse and the requirements for T cell activation	1	12

٢٦- بنية المقرر المناعة العملي / المستوى الدراسي الثالث / الكورس الاول

طريقة التقييم	طريقه التعليم	اسم الوحدة الموضوع	اهداف التعليم المطلوبة	الساعات	الاسبوع
Exam	**Practice laboratory**	Sample collection, preservation and storage & Principles of immunological tests	1.to Know and identify the methods for samplig collection and handling and storage	2	1
Exam	**Practice laboratory**	Laboratory diagnosis immunological tests	1.Understand different methods for diagnosis 2 .to Know the Principle of immunological methods diagnosis 3.know the Significant of serological tests	2	2
Exam	**Practice laboratory**	Laboratory diagnosis immunological tests	1.Understand different methods for diagnosis 2 .to Know the Principle of immunological methods diagnosis 3.know the Significant of serological tests	2	3
Exam	**Practice laboratory**	Imunofluorescence	1.Understand different methods for diagnosis 2 .to Know the Principle of immunological methods diagnosis 3.know the Significant of serological tests	2	4
Exam	**Practice laboratory**	Radioimmunoassay	1.Understand different methods for diagnosis 2 .to Know the Principle of immunological methods diagnosis 3.know the Significant of serological tests	2	5
Exam	**Practice laboratory**	Enzyme-linkedimmunofluorescent assay	1.Understand different methods for diagnosis 2 .to Know the Principle of immunological methods diagnosis 3.know the Significant of serological tests	2	6
Exam	**Practice laboratory**	Mini VIDAS	1.Understand different methods for diagnosis 2.to Know the Principle of immunological methods diagnosis 3.know the Significant of serological tests	2	7
Exam	**Practice laboratory**	Immunochromatographyassay	1.Understand different methods for diagnosis 2 .to Know the Principle of immunological methods diagnosis 3.know the Significant of serological tests	2	8

٢٧- بنية المقرر المناعة النظري / المستوى الدراسي الثالث / الكورس الثاني

الاسبوع	الساعات	اهداف التعليم المطلوبة	اسم الوحدة الموضوع	طريقه التعليم	طريقة التقييم
1 - 2	1	1. To compare and contrast Ag recognized by the TCR and BCR 2. To describe the pathways involved in processing endogenous and exogenous antigens 3. To discuss self MHC restriction in APCs 4. To compare and contrast presentation of conventional and superantigens 5. To discuss the role of positive and negative selection in the thymus in generation of self MHC restricted T cells	Ag processing and presentation	Lecture	Exam
3 - 4	1	1. To discuss the central role of Th cells in immune responses 2. To describe the cell-cell interactions which occur in 1) Ab responses to T-dependent Ag, 2) generation of CTL, and 3) activation of macrophage and NK cells 3. To discuss responses to T-independent Ag 4. To discuss the mechanisms of killing by CTL and macrophages	Cell-cell interactions in immune responses	Lecture	Exam
5 - 6	1	1. To discuss regulation of immune responses including regulation by antibody, Tregs, and cytokines 2. To discuss some genetic factors influencing immunoregula	Immunoregulation	Lecture	Exam
7 - 8	1	1. Understand the concept and significance of tolerance 2. Know the factors that determine induction of tolerance 3. Understand the mechanism of tolerance induction 4. Understand the concepts of autoimmunity and disease 5. Know the features of major autoimmune diseases 6. Know the theories on etiology of autoimmune disease	Tolerance and Autoimmunity	Lecture	Exam
9 – 10	1	1. Understand the classification of hypersensitivity reactions 2. Know the diseases associated with hypersensitivity reactions 3. Understand the mechanisms of damage in hypersensitivity reactions 4. Know the methods for diagnosing conditions due to hypersensitivity 5. Know the modes of treating disease due to hypersensitivity and their rationale	Hypersensitivity reactions	Lecture	Exam
11 – 12	1	1. Understand Primary and Secondary immunodeficiencies 2. Characterization, diagnosis, and treatment of various immunodeficiencies 3. Studies on HIV and Development of AIDS 4. Analysis of Strategies for Prevention and Treatment of AIDS	Immunodeficiency	Lecture	Exam
13 – 14	1		COVID 19 VACCINE	Lecture	Exam

٢٨- البنية التحتية لفرع الاحياء المجهرية	
١- الكتب المقررة المطلوبة	Jaweds for Medical students
٢- المصادر الخارجية	Medical Microbiology
٣- الكتب والمراجع التي يوصى بها (المجلات العلمية والتقارير.....)	Various reliable international sources and periodicals
٤- المراجع الإلكترونية ، موقع الأنترنت	NCBi , Lancet

٢٩ – خطة تطوير فرع الاحياء المجهرية
تطوير المقررات الدراسية سنوياً بما يلائم التطور العالمي في مجال الاحياء المجهرية وتقنيات التشخيص .