جامعة: المنصـــورة
كـلـيـة: العلـــــــوم
قـسـم:علم الحيـوان

توصيف مقرر دراسى

١- بيانات المقرر		
الرمز الكودى: Es402	أسم المقرر: Immunity & Molecular biology	المستوى: الرابع
التخصص: علوم البيئة	عدد الوحدات الدراسية: 3 نظرى 2 تمارين 0 عملى 2	

٢- هدف المقرر:	For students undertaking this course, the aims are to: 1- Introduce the principles of immunity and molecular biology. 2- Outline the basic information of immunity, antibodies, antigens and the role of immune system. 3- Understand the basic concepts of molecular biology.
٣- المستهدف من التدريس المقرر:	
أ- المعلومات والمفاهيم:	a- Knowledge and Understanding : On completing this course, students will be able to: a.1- Define immune nature of different animals. a.2- List and differentiate examples for antibodies and antigens. a.3- Acquire anunderstanding of the pattern of DNA and RNA. a.4- Conclude the relation between the nucleic acids and flow ofinformation.
ب-المهارات الذهنية	b- Intellectual Skills: On completing this course, students will be able to: b.1- Distinguish between primary and secondary immune response. b.2- Analyze the data obtained from the different constituents of immune system. b.3- Compare the structure of DNA and RNA. b.4- Evaluate the role of immune system and molecular biology in our life.
ج- المهارات المهنية الخاصة بالمقرر:	c-Professional and Practical Skills: On completing this course, students will be able to: c.1-. Apply collection of data about immunity and molecular biology c.2- Compare between different studied species. c.3-. Collect, record and analyze data using appropriate techniques in the field and laboratory c.4-. Apply field and laboratory investigations of animals in an ethical and responsible manner
د- المهارات العامة :	d-General and Transferable Skills: On completing this course, students will be able to: d.1- Work effectively both in a team, and independently. d.2- Communicate effectively with the surrounding ecosystem. d.3- Manage time, collaborate and communicate with others positively.
٤- محتوى المقرر:	The cellular basis of immunity- the development of T and B cells- ultra structural and immunological characteristics of T and B cells- clonal

selection theory- the nature of the antigen- lymphocyte recirculation- immunological memory- immunological tolerance- the functional properties of antibodies- the strength of the antibody- antigen interaction- complement system- the fine structure of antibodies- the generation of antibody diversity- T cell responses- MHC molecules- cytotoxic T cells- helper T cells- the signaling complex in the plasma membrane of T and B cells- interleukins- selection of T cell repertoire- the role of MHC complex in transplantation reactions and MHC polymorphism- the Ig superfamily.
Floe of genetic information- the structure of DNA and RNA- gene organization- gene structure in prokaryotes- gene structure in eukaryotes- gene expression- isolation of DNA and RNA- handling and quantification of nucleic acids- radiolabelling of nucleic acids- nucleic acid hybridization- gel electrophoresis- DNA sequencing- nucleases- restriction enzymes- nucleases apart from restriction enzymes- polymerases- enzymes that modify the ends of DNA molecules- DNA ligase- host cell types- vectors- plasmids- phages- alternative methods for DNA delivery.

٥- اساليب التعليم والتعلم:

4 - Teaching and Learning Methods
4.1 - Interactive presentations (lectures with discussion).
4.2 - Practical study.

٦- أساليب التعليم والتعلم للطلاب ذوى القدرات المحدودة:

As normal students. Only students with skeletal disabilities are allowed to join the program

٧- تقويم الطلاب :

أ- الأساليب المستخدمة :

5 - Student Assessment Methods

5-1.	Final exam	to assess	a1,a2,a3,a4-b1,b2,b3,b4
5-2.	Oral exam	to assess	a1,a2,a3,a4-b1,b2,b3,b4
5-3.	Practical exam	to assess	c1,c2,c3,c4-
5-4.	Research article	to assess	a1,a2,a3,a4-d1,d2,d3

ب- التوقيت :

Assessment Schedule

Assessment 1	Week	14
Assessment 2	Week	14
Assessment 3	Week	13
Assessment 4	Week	6

ج- توزيع الدرجات :

Weighting of Assessments

Final-Term Examination	60
Oral Examination	10
Practical Examination	20
Semester work	0
Other types of assessment	10
Total	100

٨- قائمة الكتب الدراسية والمراجع :	
أ- مذكرات:	Course notes
ب- كتب ملزمة	
ج- كتب مقترحة :	
د- دوريات علمية أو نشرات..	Different web sites of the field of study.

مصفوفة المعارف والمهارات المستهدفة من المقرر الدراسى

المحتويات للمقرر	أسبوع الدراسة	المعارف الرئيسية	مهارات ذهنية	مهارات مهنية	مهارات عامة
The cellular basis of immunity.	1	a1, a2	b2	c1, c2	d1
The development of T and B cells	2	a1, a2, a3	b1,b2	c2, c3	d1
Clonal selection theory.	3	a1, a2	b1, b3	c1, c3	d2
The nature of the antigen.	4	a1, a3	b1, b3	c2, c3	d1
Immunological memory-immunological tolerance.	5	a1, a2, a3	b1, b3	c1,c2	d2
Antibodies.	6	a1, a2, a3	b1, b3	c1, c3	d1
Floe of genetic information	7	a1, a2, a3	b1, b3	c2, c3	d2
The structure of DNA and RNA.	8	a1, a2	b1, b2, b4	c2, c3	d3
Gene organization.	9	a1, a2,a4	b1, b3	c2, c3	d3
Gene expression.	10	a1, a2	b1, b4	c4	d2
Handling and quantification of nucleic acids.	11	a1, a2, a3	b2, b4	c2, c3	d2
Gel electrophoresis.	12	a1, a2, a3	b1, b4	c1 , c4	d2
Practical according to the course content.	2-11			c1,c2,c3, c4	

أستاذ المادة: أ.د./ تهانى عامر **رئيس مجلس القسم العلمى: أ.د. هناء على حسن**