



Ministry of Higher Education and
Scientific Research - Iraq
University of Tikrit
College of Science
Department of Biotechnology



MODULE DESCRIPTION FORM

نموذج وصف المادة الدراسية- مبادئ التقنيات الحيوية

Module Information			
معلومات المادة الدراسية			
Module Title	Principle of biotechnology مبادئ التقنيات الحيوية		Module Delivery
Module Type	Core		<input checked="" type="checkbox"/> Theory <input checked="" type="checkbox"/> Lecture <input checked="" type="checkbox"/> Lab <input type="checkbox"/> Tutorial <input type="checkbox"/> Practical <input type="checkbox"/> Seminar
Module Code	Biotech 113		
ECTS Credits	7		
SWL (hr/sem)	175		
Module Level	1	Semester of Delivery	
Administering Department	Biotechnology	College	
Module Leader		e-mail	
Module Leader's Acad. Title		Module Leader's Qualification	
Module Tutor		e-mail	
Peer Reviewer Name		e-mail	
Scientific Committee Approval Date		Version Number	

Relation with other Modules			
العلاقة مع المواد الدراسية الأخرى			
Prerequisite module	None	Semester	
Co-requisites module	None	Semester	

Module Aims, Learning Outcomes and Indicative Contents

أهداف المادة الدراسية ونتائج التعلم والمحتويات الإرشادية

<p>Module Objectives أهداف المادة الدراسية</p>	<p>Course Main Objective</p> <ol style="list-style-type: none"> 1. To describe Nucleic acids Replication, Recombination and its Repair Mechanisms. 2. To describe meristem culture and clonal propagation of plants on a commercial scale. 3. To get insight in applications or recombinant DNA technology in agriculture, production of therapeutic proteins. 4. To describe commercial production of fuels, microbial enzymes. 5. To explain the microbial degradation of pesticides, Bioremediation& Biofertilizers.
<p>Module Learning Outcomes مخرجات التعلم للمادة الدراسية</p>	<p>Knowledge:</p> <ol style="list-style-type: none"> 1. Understand and recognize the biochemical, molecular and cellular structure of organisms and biological systems. 2. Understand the concepts, regulations and applications of the existing and emerging methods of biotechnology. 3. Understand the fundamental concepts of molecular biology like DNA chemistry, DNA replication and recombinant DNA techniques. 4. Define basic concepts in microbial biotechnology and ecology for biodegradation and bioremediation of pollutants, fermentation kinetics, primary / secondary metabolite excretion and ingredients for food industry.
<p>Indicative Contents المحتويات الإرشادية</p>	<p>Indicative content includes the following.</p> <p>Biotechnology is the science of applied biological process. The application of biochemistry, biology, microbiology and chemical engineering to industrial process and products and on environment. (International Union of pure and Applied Chemistry. Biotechnology is "the controlled use of biological agents such as microorganisms or cellular components for beneficial use (U.S. National Science Federation).</p>

Learning and Teaching Strategies

استراتيجيات التعلم والتعليم

<p>Strategies</p>	<p>This course will examine the basic concepts of biotechnology and the instrumentation and techniques used in the manipulation of nucleic acids (DNA and RNA). Students will learn how biotechnology's tools and techniques are being used to help identify and fight disease, with a special emphasis on tools that help detect viral infections. This course will also examine the ethical and privacy issues associated with genetic testing.</p>
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Student Workload (SWL)			
الحمل الدراسي للطالب محسوب لـ ١٥ اسبوعا			
Structured SWL (h/sem) الحمل الدراسي المنتظم للطالب خلال الفصل	94	Structured SWL (h/w) الحمل الدراسي المنتظم للطالب أسبوعيا	5
Unstructured SWL (h/sem) الحمل الدراسي غير المنتظم للطالب خلال الفصل	81	Unstructured SWL (h/w) الحمل الدراسي غير المنتظم للطالب أسبوعيا	
Total SWL (h/sem) الحمل الدراسي الكلي للطالب خلال الفصل	175		

Module Evaluation					
تقييم المادة الدراسية					
		Time/Number	Weight (Marks)	Week Due	Relevant Learning Outcome
Formative assessment	Quizzes	2	10% (10)	5 and 10	LO #1, #2 and #10, #11
	Assignments	2	10% (10)	2 and 12	LO #3, #4 and #6, #7
	Projects / Lab.	1	10% (10)	Continuous	All
	Report	1	10% (10)	13	LO #5, #8 and #10
Summative assessment	Midterm Exam	2hr	10% (10)	7	LO #1 - #7
	Final Exam	3hr	50% (50)	16	All
Total assessment			100% (100 Marks)		

Delivery Plan (Weekly Syllabus)	
المنهاج الاسبوعي النظري	
	Material Covered
Week 1	Introduction to Biotechnology
Week 2	Foundations of Biotechnology
Week 3	Applications of Biotechnology
Week 4	DNA and RNA structures.

Week 5	Recombinant DNA technology
Week 6	Plant and animal cell culture
Week 7	Callus development and growth and stages
Week 8	Suspension cell culture methods, cell growth rate and metabolic activities
Week 9	Methods for culturing microorganisms
Week 10	Use of fermenters
Week 11	Use of Microorganism in Biotechnology
Week 12	Gene Cloning
Week 13	Genetic modification
Week 14	Monoclonal Antibodies
Week 15	Final exam

Delivery Plan (Weekly Lab. Syllabus)

المنهاج الاسبوعي للمختبر

Week	Material Covered
Week 1	General laboratory instructions
Week 2	Preparing chemical solutions
Week 3	Types of laboratory equipment
Week 4	Methods of using laboratory equipment
Week 5	PCR Technique
Week 6	Agarose gel electrophoresis
Week 7	Polyacrylamide gel electrophoresis
Week 8	Midterm Exam
Week 9	Protein extraction
Week 10	Estimation of protein concentration
Week 11	DNA extraction
Week 12	RNA extraction
Week 13	Determinate amount and purity on nucleic acid
Week 14	Data Analysis of nucleic acids and proteins
Week 15	Final examination

Learning and Teaching Resources

مصادر التعلم والتدريس

	Text	Available in the Library?
Required Texts	Lewis, C. (2007). <i>Biotechnology</i> . Global Media.	Yes
Recommended Texts	Ratledge, C., & Kristiansen, B. (Eds.). (2001). <i>Basic biotechnology</i> . Cambridge University Press.	
Websites		

Grading Scheme

مخطط الدرجات

Group	Grade	التقدير	Marks %	Definition
Success Group (50 - 100)	A - Excellent	امتياز	90 - 100	Outstanding Performance
	B - Very Good	جيد جدا	80 - 89	Above average with some errors
	C - Good	جيد	70 - 79	Sound work with notable errors
	D - Satisfactory	متوسط	60 - 69	Fair but with major shortcomings
	E - Sufficient	مقبول	50 - 59	Work meets minimum criteria
Fail Group (0 - 49)	FX – Fail	راسب (قيد المعالجة)	(45-49)	More work required but credit awarded
	F – Fail	راسب	(0-44)	Considerable amount of work required

Note: Marks Decimal places above or below 0.5 will be rounded to the higher or lower full mark (for example a mark of 54.5 will be rounded to 55, whereas a mark of 54.4 will be rounded to 54. The University has a policy NOT to condone "near-pass fails" so the only adjustment to marks awarded by the original marker(s) will be the automatic rounding outlined above.



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MODULE DESCRIPTOR

نموذج وصف المادة الدراسية- الفيزياء الحيوية

Module Information			
معلومات المادة الدراسية			
Module Title	Biophysics الفيزياء الحيوية		Module Delivery
Module Type	Supplement		Theory Lab Tutorial
Module Code	Biotech 114		
ECTS Credits	6		
SWL (hr/sem)	150		
Module Level	1	Semester (s) offered	1
Administering Department	Biotechnology	College	Science
Module Leader		e-mail	
Module Leader's Acad. Title		Module Leader's Qualification	
Module Tutor	None	e-mail	None
Peer Reviewer Name		e-mail	
Review Committee Approval		Version Number	1.0

Relation With Other Modules العلاقة مع المواد الدراسية الأخرى			
Prerequisite module	-	Semester	-
Co-requisites module	-	Semester	-
Module Aims, Learning Outcomes, Indicative Contents and Brief Description أهداف المادة الدراسية ونتائج التعلم والمحتويات الإرشادية مع وصف مختصر			
Module Aims أهداف المادة الدراسية	<p>In this module we will review in detail several important modern physical science concepts, models, laws, tools and techniques that can be applied to addressing real biological questions, with a thorough discussion of the underlying physics. Physical science methods historically have been key to providing enormous breakthroughs in our understanding of fundamental biology - stemming from the early development of optical microscopy in understanding the cellular nature of life, through to complex structural biology techniques to elucidate the shape of vital biomolecules including proteins and DNA.</p> <p>In the first half of this module we will introduce the key biological macromolecules, the forces that are involved in maintaining their structure and how structure is determined. We will next discuss key physical science developments that have involved methods to study single cells in their native context, single- molecule biophysical methods that permit dynamic and mechanistic information to be extracted with unprecedented precision, and ground-breaking developments in areas of super-resolution imaging and biosensing.</p> <p>In the second half of the module we will discuss tools and techniques that, broadly, permit the detection and characterization of biological material using non-visible electromagnetic radiation, and methods used to manipulate and quantify biological forces, with particular emphasis throughout placed on real applications. Examples of such tools discussed include electron microscopy, nuclear magnetic resonance spectroscopy and atomic force microscopy. We will also discuss optical and magnetic tweezers for single biological molecule manipulation, ion channel measurements in living cells and core physics concepts of fundamental biological processes which are interrogated using these modern instruments.</p> <p>Lectures will focus on both the core concepts of biophysics tools and techniques and on real research applications, including 'guest' lectures given by expert researchers in several different specific areas of biophysics, in addition to core lectures. Lecture material will be available to download on the VLE, and lectures will include worked-through problem solving and active discussion sessions and so physical attendance at the lectures is strongly encouraged.</p>		
Module Learning Outcomes مخرجات التعلم للمادة الدراسية	<p>Medical Biophysics is a multi-disciplinary field that encompasses the applications of physics, engineering, and mathematics to quantitative studies of biological and physiological processes. The long-range mission is to develop novel or improved diagnostics and therapeutics for a wide range of human illnesses, including cardiovascular disease and cancer. We believe that this goal is best achieved through interdisciplinary learning and collaborative research that crosses the traditional boundaries of</p>		

	<p>scientific and medical disciplines. The module will focus on a number of concepts, models, laws, tools and techniques of physical science that underpin biophysical methods. It will address a broad range of challenging biological questions. During this module students will:</p> <ul style="list-style-type: none"> • Comprehend the use of physical concepts and laws to produce models of biological systems, and quantitatively analyse these models. • Critically analyse the validity of assumptions made in these models and assess their impact on the validity of the results. • Understand the physical basis of experimental techniques used to study the biological systems introduced and explain the key results. • Assess the key features and biological significance of the systems introduced. • Demonstrate an understanding of the key physical principles behind several important biological processes underpinning living matter. • Apply modern biophysical tools and techniques to real applications.
<p>Indicative Contents المحتويات الإرشادية</p>	<p>The lecture course will discuss the scope of modern biophysics, and introduce students to the fundamentals of chemical bonding, and the structure and function of biological molecules including sugars, lipids, proteins, nucleic acids and molecular machines. Biophysical techniques including optical spectroscopy, dynamic light scattering, fluorescence spectroscopy and the basics of light microscopy will then be discussed in detail. Insights into single-molecule imaging and spectroscopy will then be provided before a series of lectures on super-resolution approaches. Next, students will encounter techniques which use non-optical waves in their mode of operation, including electron microscopy, X-ray spectroscopy and nuclear magnetic resonance spectroscopy. Experimental techniques which rely on forces, including atomic force microscopy and optical tweezers will then be discussed in detail. Complementary and emerging experimental techniques will also be presented, as well as detailed analysis of molecular dynamics simulations. The lecture course will also include revision of the course material and guest research lectures from specialists in the field. Examples of guest research lectures include, but are not limited to: Digital Holographic Microscopy, Biofilms, Biophotonics and Raman Spectroscopy.</p>
<p>Course Description</p>	<p>Interdisciplinary biophysical course is at the forefront of modern science, emerging as a prime area in industry and academia. Key to recent advances has been the development of pioneering experimental techniques and advanced theoretical/modelling approaches capable of assessing the nanoscale dynamics of nature's biomolecules. This modern armoury of the physicist constitutes a powerful toolbox which can be used to tackle a multitude of open questions related to our understanding of human life and disease. In this module we will cover an exciting array of experimental and theoretical tools from modern biophysics, addressing their purpose, instrumentation, underlying physics, limitations and applications. We will study analysis methods used in research labs around the world and showcase their application to current research activities.</p>

Learning and Teaching Strategies

استراتيجيات التعلم والتعليم

Strategies	Separate goals are defined for both research and teaching within the department over the next 3-5 years: A. The four key research strategies are to: 1. Increase Departmental cohesion and identity 2. Build research capacity through recruitment in key areas of strength 3. Increase collaborative funding and industrial partnerships.
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Student Workload (SWL)

الحمل الدراسي للطالب

Structured SWL (h/sem) الحمل الدراسي المنتظم للطالب خلال الفصل	79	Structured SWL (h/w) الحمل الدراسي المنتظم للطالب أسبوعيا	
Unstructured SWL (h/sem) الحمل الدراسي غير المنتظم للطالب خلال الفصل	71	Unstructured SWL (h/w) الحمل الدراسي غير المنتظم للطالب أسبوعيا	
Total SWL (h/sem) الحمل الدراسي الكلي للطالب خلال الفصل	150		

Module Evaluation

تقييم المادة الدراسية

		Time (hr)	Weight (Marks)	Week Due	Relevant Learning Outcome
Formative assessment	Quizzes	3	5% (5)		
	Assignments	2	5 % (5)		
	Lab	6	15% (15)		
	Tut.	2	5% (5)		
Summative assessment	Midterm Exam	2	20% (20)		
	Final Exam	3	50% (50)		
Total assessment			100% (100 Marks)		

Delivery Plan (Weekly Syllabus)

المنهاج الاسبوعي النظري

	Material Covered
Week 1	Physical Foundations of Biophysics / Molecular Biophysics
Week 2	Cellular Biophysics /Basic Biophysical Techniques
Week 3	Biostatistics & Computer Fundamentals
Week 4	Membrane Biophysics



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Scientific Research - Iraq
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College of Science
Department of Biotechnology**



Week 5	Physiological Biophysics
Week 6	Immunology
Week 7	Bioinformatics & Structural Biology
Week 8	Radiation Biophysics
Week 9	Medical Biophysics
Week 10	Optical Techniques
Week 11	Hydrodynamic Techniques
Week 12	Practical's based Molecular Biophysics
Week 13	Membrane Biophysics
Week 14	Molecular Biology
Week 15	Physiological Biophysics

Learning and Teaching Resources

مصادر التعلم والتدريس

	Text	Available in the Library?
Required Texts	Leake MC: Biophysics: tools and techniques (CRC Press, 1st Ed, 2016) Leake MC: Single-Molecule Cellular Biophysics (CUP, 1st Ed, 2013) Alberts A et al: Molecular Biology of the Cell (Garland Science, 6th Ed, 2014)	No
Recommended Texts	Molecular & Cellular Biology, D Roberties, Biophysical Aspects of Transmembrane signaling, Sandor D (2005), Springer Biophysics, Vasant Pattabhi, Gautam (2002), Narosa Biomembrane structure and Function, Chapman D. Introduction to Biological Membrane, Jain R K Biophysics, Hopp, Lohman, Mark and Ziegler Advances in Biophysics, Vol 18, 15 3.5 Molecular and Cellular Biophysics, Meyer B Jackson (2006), Cambridge Text Book of Physiology, Guyton & Hall, 11th Ed. 2006	No
Websites	http://www.phas.ubc.ca/~jrottler/phys305.html . Homework assignments will be posted on the webpage and will be distributed in class. Watch for updates.	

MODULE DESCRIPTION FORM

نموذج وصف المادة الدراسية- الديمقراطية وحقوق الانسان

Module Information			
معلومات المادة الدراسية			
Module Title	Democracy and human right الديمقراطية وحقوق الانسان		Module Delivery
Module Type	B		<input checked="" type="checkbox"/> Theory <input checked="" type="checkbox"/> Lecture <input type="checkbox"/> Lab <input checked="" type="checkbox"/> Tutorial <input type="checkbox"/> Practical <input checked="" type="checkbox"/> Seminar
Module Code	Biotech 115		
ECTS Credits	2		
SWL (hr/sem)	50		
Module Level	1	Semester of Delivery	1
Administering Department	Biotechnology	College	Science
Module Leader		e-mail	
Module Leader's Acad. Title		Module Leader's Qualification	
Module Tutor	None	e-mail	
Peer Reviewer Name		e-mail	
Scientific Committee Approval Date		Version Number	

Relation with other Modules			
العلاقة مع المواد الدراسية الأخرى			
Prerequisite module	لا يوجد	Semester	
Co-requisites module	لا يوجد	Semester	

Module Aims, Learning Outcomes and Indicative Contents

أهداف المادة الدراسية ونتائج التعلم والمحتويات الإرشادية

<p>Module Aims أهداف المادة الدراسية</p>	<p>1- يتعلم الطالب خلال السنة الدراسية أساسيات حقوق الإنسان والديمقراطية ما حقوقه كيف يدافع عنها بالطرق القانونية وماهي ضماناتها الداخلية والدولية</p> <p>2. استحصا المعرفة في مجال الديمقراطية وأنواع أنظمتها واثرها على حقوق الإنسان</p> <p>3. تنمية شخصية الطالب وتعزيز وعيهم في الأنظمة السياسية الديمقراطية وتفصيلها وكيفية تطبيقها على ارض الواقع واهمية ان يكون فعال في المجتمع من خلال احترامه لحقوق الآخرين ومعرفة ان الحقوق والحريات تنتهي عند بداية حقوقهم وحرياتهم ويؤدي واجباته بدلا من اكتساب الحقوق فقط</p> <p>4. تعزيز ثقافة السلام القائمة على العدل والمساواة</p>
<p>Module Learning Outcomes مخرجات التعلم للمادة الدراسية</p>	<p>1- تمكين الطالب من معرفة أساسيات الدفاع عن حقوقه وحقوق الآخرين بعد معرفتها ومعرفة أهميتها له وللمجتمع بصورة عامة وأيضا معرفه كل شخص حدود حقوقه وحريته.</p> <p>2- تمكين الطالب في المشاركة السياسية وذلك من خلال معرفته بأهمية مشاركته في الانتخابات وتأثير هذه المشاركة على سير الانتخابات وتشكيل السلطة فيما بعد.</p> <p>3- معرفة الطالب ضمانات حقوقه وحرياته وماهي مصادرها.</p> <p>4- معرفة الفرق بين الحقوق والحريات.</p> <p>5- تمكين الطالب من معرفة ماهي المفهوم العلمي للديمقراطية وماهي جذورها وانواعها واشكالها.</p> <p>6- يتعلم الطالب كيف يؤثر النظام الديمقراطي على حقوق الإنسان وماهي العلاقة بينها.</p> <p>7- ادراك الطالب ضرورة ان يكون مواطن فعال في المجتمع ايضاً معرفه شروط الناخب وشروط المرشح للانتخابات.</p> <p>8- معرفة أنظمة الانتخابات وايهما افضل.</p> <p>9- فهم الطالب للقانون الدولي لحقوق الإنسان وايضاً معرفة مختصرة عن المنظمات الدولية والية عملها كالأمم المتحدة ومنظمة الصليب الأحمر وغيرها</p>
<p>Indicative Contents المحتويات الإرشادية</p>	<p>الجزء الأول - تعريف حقوق الإنسان وحقوق الإنسان في الحضارات القديمة (تعريف الحق وتعريف الإنسان ومعرفة أهمية حقوق الإنسان بالنسبة للإنسان والمجتمع أيضا دراسة حقوق الإنسان في الحضارات كالحضارة المصرية والعراقية واليونانية والرومانية) (4 ساعات)</p> <p>الجزء الثاني معرف حقوق الإنسان في الأديان السماوية واهمها الإسلام (2 ساعة)</p> <p>مصادر حقوق الإنسان تتضمن (مصادر دولية كالإعلان العالمي لحقوق الإنسان والعهدان الدوليان والمصادر الإقليمية التي تشمل الاتفاقيات الإقليمية كالاتفاقية الأوروبية والأمريكية والدستور) (2 ساعة)</p> <p>ضمانات حقوق الإنسان (كالضمانات الدستورية والقانونية) (2 ساعة)</p> <p>الاتفاقيات الدولية والإقليمية لحقوق الإنسان (2 ساعة)</p> <p>الحريات العامة وانواعها والمقارنة فيما بينها (2 ساعة)</p> <p>مستقبل حقوق الإنسان والعولمة وحقوق الإنسان (2 ساعة)</p> <p>تعريف وتاريخ وأنواع الديمقراطية (دراسة تعريف ونشأة وتطور الديمقراطية مبادئها وانواعها كالديمقراطية</p>

	<p>المباشرة وغير المباشرة والنظام الرئاسي والبرلماني (٦ ساعات)</p> <p>تعريف الانتخاب وشروطه وأنواع النظم الانتخابية وتعريف المجلس النيابي (٦ ساعات)</p> <p>العلاقة بين الديمقراطية وحقوق الانسان (٢ ساعة)</p>
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Learning and Teaching Strategies	
استراتيجيات التعلم والتعليم	
Strategies	<p>1-زيادة وعي الطالب بأهمية معرفه حقوقه وواجباته اتجاه المجتمع وعلاقة حقوق الانسان بالنظام الديمقراطي 2- ثقافة عامة في مجموعة من المجالات ومنها المجال القانوني و السياسي والاجتماعي ورفع ثقة الطالب بنفسه من خلال ربط المادة النظرية بالواقع العملي</p>

Student Workload (SWL)			
الحمل الدراسي للطالب			
Structured SWL (h/sem)	32	Structured SWL (h/w)	
الحمل الدراسي المنتظم للطالب خلال الفصل		الحمل الدراسي المنتظم للطالب أسبوعيا	
Unstructured SWL (h/sem)	18	Unstructured SWL (h/w)	
الحمل الدراسي غير المنتظم للطالب خلال الفصل		الحمل الدراسي غير المنتظم للطالب أسبوعيا	
Total SWL (h/sem)	50		
الحمل الدراسي الكلي للطالب خلال الفصل			

Module Evaluation					
تقييم المادة الدراسية					
		Time/Number	Weight (Marks)	Week Due	Relevant Learning Outcome
Formative assessment	Quizzes	4	20% (20)	5, 10,12	LO #1-3 , LO# 9 - 11
	Assignments	6	15% (15)	2, 12	LO # 3, 4, LO#8 -10
	Projects / Lab.	7			
	Report	2	5% (5)	12	LO # 5, 9 and 11

Summative assessment	Midterm Exam	2 hr	10% (10)	7	LO # 1-8
	Final Exam	3	50% (50)	16	All
Total assessment			100% (100 Marks)		

Delivery Plan (Weekly Syllabus)

المنهاج الاسبوعي النظري

	Material Covered
Week 1	محاضرة تعريفية عن المادة واهميتها ..
Week 2	تعريف الحق والانسان وحقوق الانسان واهمية حقوق الانسان ,حقوق الانسان في الدين الإسلامي والحضارات القديمة .
Week 3	مصادر حقوق الانسان الدولية والإقليمية والمحلية .
Week 4	ضمانات حقوق الانسان الدستورية والقانونية وضمانات حقوق الانسان على الصعيد الدولي .
Week 5	ضمانات حقوق الانسان في الإسلام
Week 6	دور المنظمات الإقليمية في حماية حقوق الانسان .
Week 7	خصائص حقوق الانسان وتعريف الحريات العامة وانواعه والمقارنة بينها وبين الحقوق القانون الدولي لحقوق الانسان والقانون الدولي الإنساني ومنظمة الصليب الأحمر
Week 8	مستقبل حقوق الانسان وسبل تطويرها .
Week 9	العولمة وحقوق الانسان .
Week 10	تعريف الديمقراطية وتطورها التاريخي ومبادئها . الديمقراطية بين العالمية والخصوصية . اشكال الديمقراطية / الديمقراطية المباشرة
Week 11	الديمقراطية شبه المباشرة والديمقراطية التمثيلية / اركان النظام التمثيلي / اشكال النظام التمثيلي .
Week 12	المجلس النيابي وانواعه / الانتخاب وشروطه / هيئة الناخبين .
Week 13	تنظيم عملية الانتخاب / تحديد الدوائر الانتخابية / القوائم الانتخابية / المرشون/ الحملة الانتخابية / التصويت .
Week 14	نظم الانتخابات .
Week 15	علاقة الديمقراطية بحقوق الانسان وكيفية التأثير والتأثر فيما بينها .

Week 16	امتحان نهائي
Delivery Plan (Weekly Lab. Syllabus): There is no Lab activities	
المنهاج الاسبوعي للمختبر:	
	Material Covered
Week 1	
Week 2	
Week 3	
Week 4	
Week 5	
Week 6	
Week 7	

Learning and Teaching Resources		
مصادر التعلم والتدريس		
	Text	Available in the Library?
Required Texts	حقوق الانسان والطفل والديمقراطية / تأليف ماهر صالح علاوي ورياض عزيز هادي وعلي عبد الرزاق محمد واخرون / العاتك / بيروت / ٢	Yes
Recommended Texts	عباس الدليمي / حقوق الانسان الفكر والممارسة فخري رشيد ،صلاح ياسين / المنظمات الدولية / العاتك لصناعة الكتاب / بغداد عصام العطية / القانون الدولي العام / المكتبة القانونية / بغداد 201 /	No
Websites		

Grading Scheme				
مخطط الدرجات				
Group	Grade	التقدير	Marks (%)	Definition



Ministry of Higher Education and
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University of Tikrit
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Department of Biotechnology



Success Group (50 - 100)	A - Excellent	امتياز	90 - 100	Outstanding Performance
	B - Very Good	جيد جدا	80 - 89	Above average with some errors
	C - Good	جيد	70 - 79	Sound work with notable errors
	D - Satisfactory	متوسط	60 - 69	Fair but with major shortcomings
	E - Sufficient	مقبول	50 - 59	Work meets minimum criteria
Fail Group (0 - 49)	FX – Fail	راسب (قيد المعالجة)	(45-49)	More work required but credit awarded
	F – Fail	راسب	(0-44)	Considerable amount of work required

Note: Marks Decimal places above or below 0.5 will be rounded to the higher or lower full mark (for example a mark of 54.5 will be rounded to 55, whereas a mark of 54.4 will be rounded to 54. The University has a policy NOT to condone "near-pass fails" so the only adjustment to marks awarded by the original marker(s) will be the automatic rounding outlined above.

MODULE DESCRIPTION FORM

نموذج وصف المادة الدراسية- اللغة العربية

Module Information			
معلومات المادة الدراسية			
Module Title	Arabic language اللغة العربية	Module Delivery	
Module Type	B	<input checked="" type="checkbox"/> Theory <input checked="" type="checkbox"/> Lecture <input type="checkbox"/> Lab <input checked="" type="checkbox"/> Tutorial <input type="checkbox"/> Practical <input checked="" type="checkbox"/> Seminar	
Module Code	Biotech 116		
ECTS Credits	2		
SWL (hr/sem)	50		
Module Level	1	Semester of Delivery	1
Administering Department	Biotechnology	College	Science
Module Leader		e-mail	
Module Leader's Acad. Title		Module Leader's Qualification	
Module Tutor	None	e-mail	
Peer Reviewer Name		e-mail	
Scientific Committee Approval Date		Version Number	

Relation with other Modules			
العلاقة مع المواد الدراسية الأخرى			
Prerequisite module	لا يوجد	Semester	
Co-requisites module	لا يوجد	Semester	

Module Aims, Learning Outcomes and Indicative Contents	
أهداف المادة الدراسية ونتائج التعلم والمحتويات الإرشادية	
Module Aims	1_ تقوية القدرة اللغوية لدى الطلاب .

أهداف المادة الدراسية	<p>2_ اكتساب الطالب المعرفة الكاملة لأسس اللغة العربية وإكسابهم مهارة التعبير الصحيح.</p> <p>3_ توضيح أهمية الشعر العربي في بيان القواعد النحوية للغة</p> <p>4_ تقوية ملكة الطلاب الأدبية لتذوق أساليب اللغة وإدراك مواطن الجمال فيها.</p> <p>5_ معرفة القواعد الأساسية القدرة على استخدامها وتطبيقها.</p>
<p>Module Learning Outcomes</p> <p>مخرجات التعلم للمادة الدراسية</p>	<p>1- تعريف الطالب بالمصطلحات ذات الصلة بمفهوم القواعد الإملائية والنحوية .</p> <p>2- تعريف الطالب على القواعد النحوية والقدرة على استخدامها.</p> <p>3- تعريف الطالب على أهمية الدقة في الملاحظة والتمييز بين الصواب والخطأ فيما يسمعون أو يقرأون مما يساعدهم على فهم معاني الجمل والأساليب.</p> <p>4- تعريف الطالب بقواعد الإملاء والقدرة على كتابة الهمزات بأنواعها المختلفة بدون أخطاء.</p> <p>5_ تعريف الطالب بعلامات الترقيم وكيفية استخدامها جيداً.</p>
Indicative Contents	
المحتويات الإرشادية	

Learning and Teaching Strategies	
استراتيجيات التعلم والتعليم	
Strategies	<p>وُضعت استراتيجيات التعلم والتعليم من أجل ان يحصل الطالب على معلومات كاملة تغطي المنهج الدراسي المعد للمادة ولكي تتحقق الغاية الأساسية للمنهج الذي ينصب نحو المام وإدراك الطالب بالمفاهيم الأساسية لمادة اللغة العربية , إذ يتميز هذا المساق بحقيقة أنه يحتاج إلى نهج خاص يعتمد بشكل أساسي على تنمية قدرات الطالب على فهم القواعد النحوية والإملائية وكيفية تطبيقها على النصوص القرآنية والنصوص الشعرية ، وعدم الوقوع في اللحن.</p>

Student Workload (SWL)			
الحمل الدراسي للطالب			
Structured SWL (h/sem)		Structured SWL (h/w)	
الحمل الدراسي المنتظم للطالب خلال الفصل	32	الحمل الدراسي المنتظم للطالب أسبوعياً	
Unstructured SWL (h/sem)		Unstructured SWL (h/w)	
الحمل الدراسي غير المنتظم للطالب خلال الفصل	18	الحمل الدراسي غير المنتظم للطالب أسبوعياً	
Total SWL (h/sem)			
الحمل الدراسي الكلي للطالب خلال الفصل	50		

Module Evaluation

تقييم المادة الدراسية

		Time/Number	Weight (Marks)	Week Due	Relevant Learning Outcome
Formative assessment	Quizzes	4	20% (20)	5, 10,12	LO #1-3 , LO# 9 - 11
	Assignments	6	15% (15)	2, 12	LO # 3, 4, LO#8 -10
	Projects / Lab.	7			
	Report	2	5% (5)	12	LO # 5, 9 and 11
Summative assessment	Midterm Exam	2 hr	10% (10)	7	LO # 1-8
	Final Exam	3	50% (50)	16	All
Total assessment			100% (100 Marks)		

Delivery Plan (Weekly Syllabus)

المنهاج الاسبوعي النظري

	Material Covered
Week 1	القراءة والتفسير واستخراج الصيغ النحوية
Week 2	قراءة الابيات وشرحها بصورة صحيحة وبيان معانيها
Week 3	تعريف همزة الوصل والقطع واماكن تواجدها في اللغة
Week 4	علامات الترقيم تعريفها وبيان انواعها واهميتها في كتابة البحوث مستقبلاً
Week 5	الاسم المنقوص والمقصور والممدود
Week 6	الفعل الصحيح والمعتل
Week 7	اسم الفاعل واسم المفعول
Week 8	امتحان نصف الفصل
Week 9	أنواع الجمل
Week 10	المبتدأ والخبر
Week 11	تذكير العدد وتأنيثه

Week 12	قصيدة ابو الطيب المتنبي
Week 13	قصيدة يا دجلة الخير قراءة الابيات وشرحها بصورة صحيحة وبيان معانيها
Week 14	معلقة عمرو بن كلثوم
Week 15	قصة ذي القرنين
Week 16	امتحان نهاية الفصل

Delivery Plan (Weekly Lab. Syllabus): **There is no Lab activities**

المنهاج الاسبوعي للمختبر:

	Material Covered
Week 1	
Week 2	
Week 3	
Week 4	
Week 5	
Week 6	
Week 7	

Learning and Teaching Resources

مصادر التعلم والتدريس

	Text	Available in the Library?
Required Texts	1 القرآن الكريم اللغة العربية العامة للأقسام غير الاختصاص / جمع واعداد ، د. صباح علي سليمان و د. حبيب احمد علي العزاوي جامعة تكريت كلية	No



Ministry of Higher Education and
Scientific Research - Iraq
University of Tikrit
College of Science
Department of Biotechnology



	التربية 2012	
Recommended Texts	شرح ابن عقيل ، و قطر الندى	No
Websites		

Grading Scheme

مخطط الدرجات

Group	Grade	التقدير	Marks (%)	Definition
Success Group (50 - 100)	A - Excellent	امتياز	90 - 100	Outstanding Performance
	B - Very Good	جيد جدا	80 - 89	Above average with some errors
	C - Good	جيد	70 - 79	Sound work with notable errors
	D - Satisfactory	متوسط	60 - 69	Fair but with major shortcomings
	E - Sufficient	مقبول	50 - 59	Work meets minimum criteria
Fail Group (0 - 49)	FX – Fail	راسب (قيد المعالجة)	(45-49)	More work required but credit awarded
	F – Fail	راسب	(0-44)	Considerable amount of work required

Note: Marks Decimal places above or below 0.5 will be rounded to the higher or lower full mark (for example a mark of 54.5 will be rounded to 55, whereas a mark of 54.4 will be rounded to 54. The University has a policy NOT to condone "near-pass fails" so the only adjustment to marks awarded by the original marker(s) will be the automatic rounding outlined above.

MODULE DESCRIPTION FORM

نموذج وصف المادة الدراسية- علم الاحياء العام (النبات)

Module Information معلومات المادة الدراسية			
Module Title	General biology (Plant)		Module Delivery
Module Type	C		<input checked="" type="checkbox"/> Theory <input checked="" type="checkbox"/> Lecture <input checked="" type="checkbox"/> Lab <input type="checkbox"/> Tutorial <input type="checkbox"/> Practical <input type="checkbox"/> Seminar
Module Code	Biotech 121		
ECTS Credits	7		
SWL (hr/sem)	175		
Module Level		Semester of Delivery	
Administering Department	Biotechnology	College	Science
Module Leader		e-mail	
Module Leader's Acad. Title		Module Leader's Qualification	
Module Tutor		e-mail	
Peer Reviewer Name		e-mail	
Scientific Committee Approval Date		Version Number	1.0

Relation with other Modules العلاقة مع المواد الدراسية الأخرى			
Prerequisite module	None	Semester	
Co-requisites module	None	Semester	

Module Aims, Learning Outcomes and Indicative Contents أهداف المادة الدراسية ونتائج التعلم والمحتويات الإرشادية	
Module Objectives أهداف المادة الدراسية	<ul style="list-style-type: none"> • To understand the scope and significance of the discipline. • To imbibe love and curiosity towards nature through the living plants. • To make students open-minded and curious, we try our best to enhance and

	<p>develop a scientific attitude.</p> <ul style="list-style-type: none"> • To make the students exposed to the diverse life forms. • To make them skilled in practical work, experiments, laboratory equipment and to interpret correctly on biological materials and data. • To encourage the students to do research in related disciplines. • To develop the ability of the students to transform the society through their education. • To acquaint the students about the methods used in the maintenance of different natural resources. • Critical Thinking: to include creative thinking, innovation, inquiry and analysis, evaluation • and synthesis of information. • Topics include the study of plant form, function and reproduction, and an overview of plant • diversity including bryophytes, ferns, and seed plants.
<p>Module Learning Outcomes</p> <p>مخرجات التعلم للمادة الدراسية</p>	<ol style="list-style-type: none"> 1. list the main steps of the scientific method and explain how science differs from other human endeavors 2. describe the functions of a plant cell and its organelles, and summarize the differences between plant and animal cells 3. identify and illustrate plant structure, growth and reproduction 4. summarize some of the evidence for evolution from fossils and living species, and give several examples of how plant structure relates to its function 5. outline the general principles of plant taxonomy and the Linnaean binomial system of nomenclature 6. explain the ecological and economic significance of wood, flowering plants, gymnosperms, ferns and mosses 7. describe the major terrestrial biomes of the world, including the climate, soil and characteristic plants and animals of each
<p>Indicative Contents</p> <p>المحتويات الإرشادية</p>	<p>No Indicative Contents available</p>

<p>Learning and Teaching Strategies</p> <p>استراتيجيات التعلم والتعليم</p>	
<p>Strategies</p>	<p>The subject is structured around several modes of delivery including a series of illustrated lectures with experts from the field coupled with workshop/tutorial discussions, and individual site visits with practical exercises. Assignment submissions may include verbal presentation and physical documents for the 2 assignments. Feedback will be verbal throughout the semester. It is the student's responsibility to make notes of any feedback given in these</p>

	<p>sessions. Supplemental written feedback will also be provided for each of the 2 assignments with the assessment.</p> <p>FEEDBACK:</p> <p>The class structure provides several opportunities for feedback:</p> <ol style="list-style-type: none"> 1. Throughout the semester verbal feedback will be provided by tutor(s) and peer-peer in the tutorial and workshop sessions for in-class presentations and work sessions. It is the student's responsibility to bring sufficient work for feedback (in line with the required timeline) and to make notes of any feedback given in these sessions. 2. All assignments are graded in <i>ReView</i>, where the tutor(s) will give formal feedback and indicative grades. This site also allows students to self-assess. 3. The online forum will allow students to engage with the work of their peers and the tutor(s) and can be seen as a further opportunity for informal feedback.
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Student Workload (SWL) الحمل الدراسي للطالب محسوب لـ ١٥ اسبوعا			
Structured SWL (h/sem) الحمل الدراسي المنتظم للطالب خلال الفصل	94	Structured SWL (h/w) الحمل الدراسي المنتظم للطالب أسبوعيا	
Unstructured SWL (h/sem) الحمل الدراسي غير المنتظم للطالب خلال الفصل	81	Unstructured SWL (h/w) الحمل الدراسي غير المنتظم للطالب أسبوعيا	
Total SWL (h/sem) الحمل الدراسي الكلي للطالب خلال الفصل	175		

Module Evaluation تقييم المادة الدراسية					
		Time/Number	Weight (Marks)	Week Due	Relevant Learning Outcome
Formative assessment	Quizzes	2	10% (10)	5 and 10	LO #1, #2 and #10, #11
	Assignments	2	10% (10)	2 and 12	LO #3, #4 and #6, #7
	Projects / Lab.	1	10% (10)	Continuous	All

	Report	1	10% (10)	13	LO #5, #8 and #10
Summative assessment	Midterm Exam	2hr	10% (10)	7	LO #1 - #7
	Final Exam	3hr	50% (50)	16	All
Total assessment			100% (100 Marks)		

Delivery Plan (Weekly Syllabus)

المنهاج الاسبوعي النظري

	Material Covered
Week 1	The plant cell structure
Week 2	Prokaryotic and eukaryotic cell
Week 3	Cell wall, mitochondria, chloroplast
Week 4	Plant structure, growth, development
Week 5	Root and modified root
Week 6	Stem and modified stem
Week 7	Leaves and modified leaves
Week 8	Tissue systems
Week 9	Xylem, phloem
Week 10	Parenchyma, collenchyma, sclerenchyma
Week 11	Cell cycle and division
Week 12	Plant nutrition
Week 13	Transport in vascular plant
Week 14	photosynthesis
Week 15	Plant environment and interactions among plants.
Week 16	Preparatory week before the final Exam

Delivery Plan (Weekly Laboratory Syllabus)

المنهاج الأسبوعي للمختبر (العملي)

	Material Covered
Week 1	The Optical Microscope, Its Components, and How to Use It.
Week 2	Introduction in Botany –Terms and concepts.
Week 3	Protoplasmic components
Week 4	Non-Protoplasmic components
Week 5	Plant body development
Week 6	Plant Organs: Root, Stem, and Leaf.
Week 7	Plant Tissues and its Types.
Week 8	Parenchyma, Collenchyma, Sclerenchyma.
Week 9	Primary growth in plant
Week 10	Secondary growth in plant
Week 11	Photosynthesis
Week 12	Respiration
Week 13	Plant cell cycle
Week 14	Division in plant cell (mitosis and amitosis)
Week 15	Division in plant cell (meiosis)

Learning and Teaching Resources

مصادر التعلم والتدريس

	Text	Available in the Library?
Required Texts	<p>Textbook: Introductory Botany: Plants, People and the Environment, by Linda R. Berg, PhD; latest edition (Laboratory)</p> <p>Introductory Plant Biology, latest edition; Kingsley R. Stern</p> <p>Textbook: Practical Botany: Plants, TAXONOMY, ECONOMIC BOTANY, EMBRYOLOGY, ANATOMY, ECOLOGY, PHYSIOLOGY, BIOSTATISTICS, CYTOLOGY AND GENETICS, by DR. ASHOK M. BENDRE and DR. ASHOK KUMAR, RASTOGI</p> <p>PUBLICATIONS SHIVAJI ROAD. MEERUT-250 002: INDIA.</p> <p>• An illustrated checklist of the flora of the University of Canterbury Cass Mountain Research Area:</p>	Yes
Websites	<p>https://www.canterbury.ac.nz/life/facilities/field/cass/flora/</p> <p>• BIOL305 iNaturalist observations: https://inaturalist.nz/projects/uc-biology-305-practical-field-botany</p>	



Ministry of Higher Education and
Scientific Research - Iraq
University of Tikrit
College of Science
Department of Biotechnology



Grading Scheme

مخطط الدرجات

Group	Grade	التقدير	Marks %	Definition
Success Group (50 - 100)	A - Excellent	امتياز	90 - 100	Outstanding Performance
	B - Very Good	جيد جدا	80 - 89	Above average with some errors
	C - Good	جيد	70 - 79	Sound work with notable errors
	D - Satisfactory	متوسط	60 - 69	Fair but with major shortcomings
	E - Sufficient	مقبول	50 - 59	Work meets minimum criteria
Fail Group (0 - 49)	FX - Fail	راسب (قيد المعالجة)	(45-49)	More work required but credit awarded
	F - Fail	راسب	(0-44)	Considerable amount of work required

Note: Marks Decimal places above or below 0.5 will be rounded to the higher or lower full mark (for example a mark of 54.5 will be rounded to 55, whereas a mark of 54.4 will be rounded to 54. The University has a policy NOT to condone "near-pass fails" so the only adjustment to marks awarded by the original marker(s) will be the automatic rounding outlined above.

MODULE DESCRIPTION FORM

نموذج وصف المادة الدراسية- كيمياء عضوية

Module Information

معلومات المادة الدراسية

Module Title	Organic chemistry		Module Delivery	
Module Type	S		<input checked="" type="checkbox"/> Theory <input checked="" type="checkbox"/> Lecture <input checked="" type="checkbox"/> Lab <input type="checkbox"/> Tutorial <input type="checkbox"/> Practical <input type="checkbox"/> Seminar	
Module Code	Biotech 122			
ECTS Credits	6			
SWL (hr/sem)	150			
Module Level	1	Semester of Delivery		
Administering Department	Biotechnology	College	Science	
Module Leader		e-mail		
Module Leader's Acad. Title		Module Leader's Qualification		
Module Tutor		e-mail		
Peer Reviewer Name		e-mail		
Scientific Committee Approval Date		Version Number		

Relation with other Modules			
العلاقة مع المواد الدراسية الأخرى			
Prerequisite module	None	Semester	
Co-requisites module	None	Semester	

Module Aims, Learning Outcomes and Indicative Contents	
أهداف المادة الدراسية ونتائج التعلم والمحتويات الإرشادية	
Module Objectives أهداف المادة الدراسية	Preparing specialists who are familiar with the basics of chemistry, theoretically and practically, who are able to meet the needs of the labor market, in addition to teaching chemistry to students of other departments in the Faculty of Science and some other faculties at the university. Conducting scientific research and trying to keep pace with the scientific development of chemistry. Cooperating with state institutions and the private sector by providing advice and scientific advice and conducting chemical analyzes.
Module Learning	Enable students to gain knowledge and understanding of the intellectual

Outcomes مخرجات التعلم للمادة الدراسية	framework of chemistry, enable students to acquire knowledge and understanding of international chemical standards, enable students to acquire knowledge and understanding of the laws of chemistry, enable students to acquire knowledge and understanding of chemical analysis standards, enabling students to obtain knowledge and understanding of the law of the wrong use of chemicals . skills goals special to the programme scientific skills , reminding and analyzing skills and uses , development skills .
Indicative Contents المحتويات الإرشادية	Preparation of alkanes and their properties , Reactions of Alkanes , Nomenclature of alkenes and properties , Alkynes , Dienes, structure and synthesis and stabilization
Learning and Teaching Strategies استراتيجيات التعلم والتعليم	
Strategies	Type something like: The main strategy that will be adopted in delivering this module is to encourage students' participation in the exercises, while at the same time refining and expanding their critical thinking skills. This will be achieved through classes, interactive tutorials and by considering types of simple experiments involving some sampling activities that are interesting to the students.

Student Workload (SWL) الحمل الدراسي للطالب محسوب ل ١٥ اسبوعا			
Structured SWL (h/sem) الحمل الدراسي المنتظم للطالب خلال الفصل	94	Structured SWL (h/w) الحمل الدراسي المنتظم للطالب أسبوعيا	4
Unstructured SWL (h/sem) الحمل الدراسي غير المنتظم للطالب خلال الفصل	56	Unstructured SWL (h/w) الحمل الدراسي غير المنتظم للطالب أسبوعيا	
Total SWL (h/sem) الحمل الدراسي الكلي للطالب خلال الفصل	150		

Module Evaluation تقييم المادة الدراسية

		Time/Number	Weight (Marks)	Week Due	Relevant Learning Outcome
Formative assessment	Quizzes	2	10% (10)	5 and 10	LO #1, #2 and #10, #11
	Assignments	2	10% (10)	2 and 12	LO #3, #4 and #6, #7
	Projects / Lab.	1	10% (10)	Continuous	All
	Report	1	10% (10)	13	LO #5, #8 and #10
Summative assessment	Midterm Exam	2hr	10% (10)	7	LO #1 - #7
	Final Exam	3hr	50% (50)	16	All
Total assessment			100% (100 Marks)		

Delivery Plan (Weekly Syllabus)

المنهاج الاسبوعي النظري

	Material Covered
Week 1	Introduction to organic chemistry
Week 2	Hydrocarbons
Week 3	Saturated hydrocarbons, primarily methane and properties
Week 4	Preparation of alkanes and their properties
Week 5	Reactions of Alkanes
Week 6	Unsaturated hydrocarbons
Week 7	Nomenclature of alkenes and properties
Week 8	Midterm Exam
Week 9	Preparation method of alkenes
Week 10	Reaction of alkenes
Week 11	Alkynes, naming, properties and properties
Week 12	Reactions of alkenes
Week 13	Dienes, structure and synthesis and stabilization
Week 14	Reactions of Dienes
Week 15	Final Exam

Delivery Plan (Weekly Lab. Syllabus)

المنهاج الاسبوعي للمختبر

Week	Material Covered
Week 1	Laboratory safety information,
Week 2	Introduction to organic chemistry
Week 3	Experimental of measure the melting point of solid chemicals,
Week 4	Experimental of boiling point of liquid chemicals
Week 5	Sublimation, Conducting a recrystallization
Week 6	experiment to purify solid chemicals
Week 7	Perform an extraction experiment,
Week 8	Do a distillation experiment
Week 9	Experimental of simple distillation, Experimental of fractional distillation ,
Week 10	Experimental of thin layer chromatography
Week 11	Reactions of Dienes
Week 12	Reactions of Dienes
Week 13	Sodium smelting experiment and detection of some elements in organic compounds
Week 14	Sodium smelting experiment and detection of some elements in organic compounds
Week 15	Exam

Learning and Teaching Resources

مصادر التعلم والتدريس

	Text	Available in the Library?
Required Texts	Organic Chemistry, 2th edition, Oxford University, 2009. أساسيات الكيمياء العضوية، تاليف د. جاسم محمد جندل، قسم علوم الغذية، تكرت، العراق، 200 -كلية الزراعة، جامعة 2	Yes
Recommended Texts	Organic Chemistry, Clayden J., Creeves N., Warren S and Wother P., Oxford, 2001	No
Websites		

Grading Scheme

مخطط الدرجات



Ministry of Higher Education and
Scientific Research - Iraq
University of Tikrit
College of Science
Department of Biotechnology



Group	Grade	التقدير	Marks %	Definition
Success Group (50 - 100)	A - Excellent	امتياز	90 - 100	Outstanding Performance
	B - Very Good	جيد جدا	80 - 89	Above average with some errors
	C - Good	جيد	70 - 79	Sound work with notable errors
	D - Satisfactory	متوسط	60 - 69	Fair but with major shortcomings
	E - Sufficient	مقبول	50 - 59	Work meets minimum criteria
Fail Group (0 - 49)	FX – Fail	راسب (قيد المعالجة)	(45-49)	More work required but credit awarded
	F – Fail	راسب	(0-44)	Considerable amount of work required

Note: Marks Decimal places above or below 0.5 will be rounded to the higher or lower full mark (for example a mark of 54.5 will be rounded to 55, whereas a mark of 54.4 will be rounded to 54. The University has a policy NOT to condone "near-pass fails" so the only adjustment to marks awarded by the original marker(s) will be the automatic rounding outlined above.

MODULE DESCRIPTION FORM

نموذج وصف المادة الدراسية- الاحصاء الحياتي

Module Information		
معلومات المادة الدراسية		
Module Title	Biostatistics الاحصاء الحياتي	Module Delivery

Module Type	Support		<input checked="" type="checkbox"/> Theory <input type="checkbox"/> Lecture <input type="checkbox"/> Lab <input type="checkbox"/> Tutorial <input type="checkbox"/> Practical <input type="checkbox"/> Seminar	
Module Code	Biotech 123			
ECTS Credits	5			
SWL (hr/sem)	125			
Module Level	1	Semester of Delivery		1
Administering Department	Biotechnology	College	Science	
Module Leader			e-mail	
Module Leader's Acad. Title			Module Leader's Qualification	
Module Tutor			e-mail	
Peer Reviewer Name			e-mail	
Scientific Committee Approval Date			Version Number	1.0

Relation with other Modules			
العلاقة مع المواد الدراسية الأخرى			
Prerequisite module	None	Semester	
Co-requisites module	None	Semester	

Module Aims, Learning Outcomes and Indicative Contents أهداف المادة الدراسية ونتائج التعلم والمحتويات الإرشادية	
Module Objectives أهداف المادة الدراسية	The course aims to provide the student with knowledge and understanding of biostatistics, and to understand how to find the mean, median and mode, and to know how to find frequency tables and standard deviations and in what field statistics are introduced to a range of statistical tools relevant to scientists. Specific topics include an overview of statistical distributions, significance testing, uncertainty determination, linear regression and experimental design. Particular emphasis is placed on the application of statistics to quality control and practical experience in the application of widely used statistical features. Teaching methods will be a combination of lectures, self-study and any combination of discussion, case study and problem-solving exercises.
Module Learning Outcomes مخرجات التعلم للمادة الدراسية	<ol style="list-style-type: none"> 1-Describe the basic statistical terms relevant to the field of analytical sciences. Identify the types of statistics 2- Identify how statistics is applied and in which field it is used 3- Know the application of statistics in our daily lives and how to draw functions 4- Display data graphically and summarize them numerically using appropriate tables, graphs, and measures of center, spread, and position. 5- Conduct interventions on population parameters using sample statistics using confidence interval estimates and statistical hypothesis tests. 6- Describe the application of statistics to sampling, quality control, validation of analytical method, and experimental design. 7- Use an appropriate method to analyze relationships between variables in a data set
Indicative Contents المحتويات الإرشادية	<ol style="list-style-type: none"> 1-Describe basic statistical terms relevant to the field of analytical science <p>Introduction to statistical terms Population and samples Statistical description of data Display data graphically and summarize them numerically using tables, graphs, and measures of center, spread, and position</p> <ol style="list-style-type: none"> 2-Appropriate Graphical representation of data including frequency tables and graphs 3-Explain and apply the concepts of basic statistical distributions . Normal distribution . Correlation . T-distribution and T-test . Z-distribution and Z-test . Introduction to hypothesis testing . Probability theory . Moments . Finding measures of central tendency.

Learning and Teaching Strategies استراتيجيات التعلم والتعليم	
Strategies	The teaching methods used will be a combination of online lectures, self-study, online practical workshops and any combination of discussion, case study and problem-solving exercises. The practical component will be delivered separately to students in their different study groups (Biomedical Sciences/Medical Biotechnology, Forensic Sciences, Pharmaceutical Sciences) so that the examples used in the practical application of statistics can be tailored to suit their field of study.

Student Workload (SWL) الحمل الدراسي للطالب محسوب لـ ١٥ اسبوعا			
Structured SWL (h/sem) الحمل الدراسي المنتظم للطالب خلال الفصل	79	Structured SWL (h/w) الحمل الدراسي المنتظم للطالب أسبوعيا	
Unstructured SWL (h/sem) الحمل الدراسي غير المنتظم للطالب خلال الفصل	46	Unstructured SWL (h/w) الحمل الدراسي غير المنتظم للطالب أسبوعيا	
Total SWL (h/sem) الحمل الدراسي الكلي للطالب خلال الفصل	125		

Module Evaluation تقييم المادة الدراسية					
		Time/Number	Weight (Marks)	Week Due	Relevant Learning Outcome
Formative assessment	Quizzes	4	20% (5)	3 , 5,8,11	LO #1...#3, #4...#5, #7, #9... #11
	Assignments	2	10% (5)	5 and 12	LO #3, #4 and #6, #7
	Projects / Lab.				
	Report	1	10% (10)	13	LO #5, #8 and #10
Summative assessment	Midterm Exam	1hr	10% (10)	7	LO #1 - #7
	Final Exam	2hr	50% (50)	15	All
Total assessment			100% (100 Marks)		

Delivery Plan (Weekly Syllabus) المنهاج الاسبوعي النظري	
	Material Covered
Week 1	Introduction to Biostatistical and some Basic concepts
Week 2	Methods of presentation of data
Week 3	Measures of Central Tendency, Arithmetic Mean, mode, Median.
Week 4	Measures of Variability, The Range, Variance and Standard Deviation
Week 5	Sample of random sampling.
Week 6	Probability theory.
Week 7	Cumulative distribution.
Week 8	The Normal Distribution

Week 9	The one exam	
Week 10	Moment, skewness and kurtosis.	
Week 11	Introduction to Hypothesis Testing	
Week 12	Z-test for the mean	
Week 13	T - test for the mean	
Week 14	Regression	
Week 15	the final Exam	

Delivery Plan (Weekly Lab. Syllabus): **There is no Lab activities**

المنهاج الاسبوعي للمختبر

Material Covered	
Week 1	
Week 2	

Learning and Teaching Resources

مصادر التعلم والتدريس

	Text	Available in the Library?
Required Texts	Modern Mathematical Statistics with Applications, Jay L. Devore, Kenneth N. Berk, Springer, 2012.	No
Recommended Texts	Mathematical Statistics with Applications", 7 th edition, by Wackerly, Mendenhall & Scheaffer	No
Websites	https://en.wikipedia.org/wiki/Biostatistics	

Grading Scheme

مخطط الدرجات

Group	Grade	التقدير	Marks %	Definition
Success Group (50 - 100)	A – Excellent	امتياز	90 - 100	Outstanding Performance
	B - Very Good	جيد جدا	80 - 89	Above average with some errors
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Note: Marks Decimal places above or below 0.5 will be rounded to the higher or lower full mark (for example a mark of 54.5 will be rounded to 55, whereas a mark of 54.4 will be rounded to 54. The University has a policy NOT to condone "near-pass fails" so the only adjustment to marks awarded by the original marker(s) will be the automatic rounding outlined above.



Ministry of Higher Education and
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Department of Biotechnology



MODULE DESCRIPTOR

نموذج وصف المادة الدراسية- السلامة والامن البيولوجي

Module Information			
معلومات المادة الدراسية			
Module Title	Biosafety and biological control السلامة والامن البيولوجي		Module Delivery
Module Type	Core		Theory Lab Tutorial
Module Code	Biotech 124		
ECTS Credits	6		
SWL (hr/sem)	175		
Module Level	1	Semester (s) offered	
Administering Department	Biotech	College	Science
Module Leader		e-mail	
Module Leader's Acad. Title		Module Leader's Qualification	
Module Tutor	None	e-mail	None
Peer Reviewer Name		e-mail	
Review Committee Approval		Version Number	1.0

Relation With Other Modules العلاقة مع المواد الدراسية الأخرى			
Prerequisite module	-	Semester	-
Co-requisites module	-	Semester	-
Module Aims, Learning Outcomes, Indicative Contents and Brief Description أهداف المادة الدراسية ونتائج التعلم والمحتويات الإرشادية مع وصف مختصر			
Module Aims أهداف المادة الدراسية	Equip students with fundamental knowledge of biosafety and biosecurity principles and their practical application in agricultural, forestry, and food- related settings. Enable students to develop the skills necessary to identify, assess, and manage biological hazards, ensuring the protection of human health, the environment, and food products.		
Module Learning Outcomes مخرجات التعلم للمادة الدراسية	<ol style="list-style-type: none"> 1- Interactive lecture 2- Brainstorming 3- Dialogue and discussion 4- Field Training 5- Practical exercises 6- Field project 7- Interactive 8- Lectures Brainstorming 9- Self-education <p>The student should be able to:</p> <ul style="list-style-type: none"> - Identify common biological hazards in agriculture, forestry, and food sectors, and assess their level of risk. - Apply biosafety and biosecurity principles and practices in accordance with recognized international standards and levels. - Design and implement prevention and control programs for biological hazards in laboratories and agricultural/food production facilities. - Adhere to ethical and legal considerations when handling biological materials, ensuring public health and environmental protection. 		
Indicative Contents المحتويات الإرشادية	Indicative content includes the following. <u>Theoretical</u> The course covers the concepts of biosafety and biosecurity, risk assessment, regulations, and safe laboratory techniques, with practical training on using personal protective equipment, sterilization, and waste disposal. It also enhances understanding of emergency response and designing biosecurity protocols in agricultural and food sectors, aiming to ensure worker safety and protect products and the environment.		
Course Description	The course covers the concepts of biosafety and security, risk assessment, legislation, and safe laboratory techniques, with practical training in the use of personal protective equipment, sterilization, and waste disposal. It also enhances understanding of emergency response and the design of biosecurity protocols in the agricultural and food sectors. It aims to ensure the safety of workers and the protection of products and the environment.		
Learning and Teaching Strategies استراتيجيات التعلم والتعليم			
Strategies	Separate goals are defined for both research and teaching within the department over the next 3-5 years: A. The four key research strategies are to: 1. Increase Departmental cohesion and identity 2. Build research capacity through recruitment in key areas of strength 3. Increase collaborative funding and industrial partnerships.		

Student Workload (SWL) الحمل الدراسي للطالب			
Structured SWL (h/sem) الحمل الدراسي المنتظم للطالب خلال الفصل	94	Structured SWL (h/w) الحمل الدراسي المنتظم للطالب أسبوعياً	
Unstructured SWL (h/sem) الحمل الدراسي غير المنتظم للطالب خلال الفصل	81	Unstructured SWL (h/w) الحمل الدراسي غير المنتظم للطالب أسبوعياً	
Total SWL (h/sem) الحمل الدراسي الكلي للطالب خلال الفصل	175		

Module Evaluation تقييم المادة الدراسية					
		Time (hr)	Weight (Marks)	Week Due	Relevant Learning Outcome
Formative assessment	Quizzes	3	5% (5)		
	Assignments	2	5 % (5)		
	Lab	6	15% (15)		
	Tut.	2	5% (5)		
Summative assessment	Midterm Exam	2	20% (20)		
	Final Exam	3	50% (50)		
Total assessment			100% (100 Marks)		

Delivery Plan (Weekly Syllabus) المنهاج الأسبوعي النظري	
	Material Covered
Week 1	Introduction to Biosafety and Biosecurity
Week 2	Types of Biological Hazards in the Agricultural and Food Sectors
Week 3	Risk Assessment and Management
Week 4	Biosafety Levels and International Standards
Week 5	Personal Protective Equipment (PPE) and Safe Work Practices
Week 6	Sterilization, Disinfection, and Biological Waste Disposal
Week 7	Mid-term Exam
Week 8	Safe Storage, Handling, and Transport of Biological Materials
Week 9	Good Laboratory Practices (GLP) and Quality Standards
Week 10	Biosecurity in Agriculture and Protection of Plant and Animal Resources

Week 11	Emergencies and Rapid Response to Biological Incidents
Week 12	Local and International Regulations on Biosafety and Biosecurity
Week 13	Ethical Considerations and Dual-Use of Biological Technologies
Week 14	Case Studies and Practical Applications in Biosafety and Biosecurity
Week 15	Workshops and Simulations for Biosafety Protocol Design

Delivery Plan (Weekly Laboratory Syllabus)

المنهاج الأسبوعي للمختبر (العملي)

Week	Material Covered
Week 1	Introduction to Biosafety and Biosecurity
Week 2	Types of Biological Hazards in the Agricultural and Food Sectors
Week 3	Risk Assessment and Management
Week 4	Biosafety Levels and International Standards
Week 5	Personal Protective Equipment (PPE) and Safe Work Practices
Week 6	Sterilization, Disinfection, and Biological Waste Disposal
Week 7	Safe Storage, Handling, and Transport of Biological Materials
Week 8	Good Laboratory Practices (GLP) and Quality Standards
Week 9	Biosecurity in Agriculture and Protection of Plant and Animal Resources
Week 10	Emergencies and Rapid Response to Biological Incidents
Week 11	Local and International Regulations on Biosafety and Biosecurity
Week 12	Ethical Considerations and Dual-Use of Biological Technologies
Week 13	Case Studies and Practical Applications in Biosafety and Biosecurity
Week 14	Workshops and Simulations for Biosafety Protocol Design
Week 15	Comprehensive Review and Final Assessment

Learning and Teaching Resources

مصادر التعلم والتدريس

	Text	Available in the Library?
Required Texts	منهاج السلامة والامن الحيوي / اعداد اللجنة الجامعية المركزية للسلامة والامن الكيماوي والاشعاعي والنووي ومنع الانتشار CBRN	Yes
Recommended Texts	اللجنة الجامعية المركزية للسلامة والامن الكيماوي والبايولوجي والاشعاعي والنووي ومنع الانتشار CBRN	No
Websites		



Ministry of Higher Education and
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College of Science
Department of Biotechnology



MODULE DESCRIPTION FORM

نموذج وصف المادة الدراسية- علم الحاسوب

Module Information			
معلومات المادة الدراسية			
Module Title	Computer I		Module Delivery
Module Type	Basic learning activities		<input checked="" type="checkbox"/> Theory <input type="checkbox"/> Lecture <input type="checkbox"/> Lab <input type="checkbox"/> Tutorial <input type="checkbox"/> Practical <input type="checkbox"/> Seminar
Module Code	Bio 125		
ECTS Credits	3		
SWL (hr/sem)	75		
Module Level	1	Semester of Delivery	
Administering Department	All	College	All
Module Leader		e-mail	
Module Leader's Acad. Title		Module Leader's Qualification	
Module Tutor		e-mail	
Peer Reviewer Name		e-mail	
Scientific Committee Approval Date		Version Number	1.0

Relation with other Modules			
العلاقة مع المواد الدراسية الأخرى			
Prerequisite module	None	Semester	
Co-requisites module	None	Semester	

Module Aims, Learning Outcomes and Indicative Contents

أهداف المادة الدراسية ونتائج التعلم والمحتويات الإرشادية

<p>Module Objectives أهداف المادة الدراسية</p>	<ol style="list-style-type: none"> 1. Training students on the basics of using the computer and providing them with the necessary skills to deal with the computer with high efficiency. 2. Assisting the student in distinguishing and developing his scientific and artistic abilities. 3. Enriching the student's skills to be able to deal with the computer with high efficiency. 4. Providing students with a way to use other modern technologies related to the educational process.
<p>Module Learning Outcomes مخرجات التعلم للمادة الدراسية</p>	<ol style="list-style-type: none"> 1. Students will be able to describe the basic concepts functions and primary components of a computer. 2. Students will demonstrate the ability to set up a personal computer. 3. Students will be able to describe the function of an operating system and differentiate between various types. 4. Students will understand and utilize basic GUI elements such as windows, icons, and menus. 5. Students will apply Microsoft Office (Word, Excel, PowerPoint) features. 6. Students will understand how the internet works and effectively use web browsers to search for information. 7. Students will compose and manage emails professionally, including understanding attachments, signatures, and managing contacts. 8. Students will identify and resolve common computer issues related to <ol style="list-style-type: none"> 1. hardware, and software.
<p>Indicative Contents المحتويات الإرشادية</p>	<p>Indicative content includes the following.</p> <ol style="list-style-type: none"> 1. Course Introduction to Computer, Computer Components, and Personal Computer. 2. Working with Operating Systems and Graphical User Interface (GUI). 3. Microsoft Office Word, Excel, and PowerPoint. 4. Working with the Internet and Web browser <p>Working with E-mail and Computer troubleshooting Common Operating Systems; The User Interface, Using Mouse Techniques; Use of Common Icons, Status Bar, Using Menu and Menu-selection, Concept of Folders and Directories, Opening and closing of different Windows; Creating Shortcuts.</p> <p>Word Processing: Word Processing Basics; Opening and Closing of documents; Text creation and Manipulation; Formatting of text; Table handling; Spell check, language setting, and thesaurus; Printing of word document.</p> <p>Spreadsheet: Basics of Spreadsheet; Manipulation of cells; Formulas and Functions; Editing of Spreadsheet, printing of Spreadsheet.</p> <p>Presentation Software: Basics of presentation software; Creating Presentation; Preparation and Presentation of Slides; Slide Show; Taking printouts of presentation/handouts.</p> <p>Introduction to Internet and Web Browsers: Computer networks Basic; LAN, WAN; Concept of Internet and its Applications; Connecting to Internet; World Wide Web; Web Browsing software's, Search Engines; Understanding URL; Domain name; IP Address.</p> <p>Communications and Emails: Basics of electronic mail; Getting an email account; Sending and receiving emails; Accessing sent emails; Using emails for document collaboration.</p> <p>Computer Troubleshooting: Identifying and solving common hardware and software problems; Basic troubleshooting techniques and tools for diagnosing and resolving issues.</p>

Learning and Teaching Strategies

استراتيجيات التعلم والتعليم

Strategies

- In this course, students are guided by:
- Using different examples.
- Using different styles of discussion that aim to connect the theoretical and practical sides.
- Asking questions and giving exercises that require analysis and conclusions related to lectures.
- Encourage students to participate in discussions and do practical work.
- Encourage students to work in groups.

Student Workload (SWL)

الحمل الدراسي للطالب محسوب لـ ١٥ اسبوعا

Structured SWL (h/sem) الحمل الدراسي المنتظم للطالب خلال الفصل	62	Structured SWL (h/w) الحمل الدراسي المنتظم للطالب أسبوعيا	
Unstructured SWL (h/sem) الحمل الدراسي غير المنتظم للطالب خلال الفصل	13	Unstructured SWL (h/w) الحمل الدراسي غير المنتظم للطالب أسبوعيا	
Total SWL (h/sem) الحمل الدراسي الكلي للطالب خلال الفصل		75	

Module Evaluation

تقييم المادة الدراسية

		Time/Number	Weight (Marks)	Week Due	Relevant Learning Outcome
Formative assessment	Quizzes	4	20% (5)	3 , 5,8,11	LO #1...#3, #4...#5, #7, #9... #11
	Assignments	2	10% (5)	5 and 12	LO #3, #4 and #6, #7
	Projects / Lab.				
	Report	1	10% (10)	13	LO #5, #8 and #10
Summative assessment	Midterm Exam	1hr	10% (10)	7	LO #1 - #7
	Final Exam	2hr	50% (50)	15	All
Total assessment			100% (100 Marks)		

Delivery Plan (Weekly Syllabus)

المنهاج الاسبوعي النظري

Weeks	Material Covered
Week 1	Introduction to Computer
Week 2	Computer Components
Week 3	Personal Computer
Week 4	Operating Systems
Week 5	Graphical User Interface (GUI)
Week 6	Microsoft Office- Word Introduction
Week 7	Microsoft Office- Word Practice
Week 8	Microsoft Office- Excel Introduction
Week 9	Microsoft Office- Excel Practice
Week 10	Microsoft Office- Power-Point Introduction
Week 11	Microsoft Office- Power-Point Practice
Week 12	Introduction to Internet
Week 13	Web Browser
Week 14	Communications and E-mail
Week 15	Computer Troubleshooting

Delivery Plan (Weekly Lab. Syllabus): There is no Lab activities	
المنهاج الاسبوعي للمختبر	
	Material Covered
Week 1	Introduction to the lab and get started with use of computer

Week 2	Computer Components: Computer Portions, Hardware Parts, I/O Units, Memory Types, Basic CPU Components, Computer Ports,
Week 3	Personal Computer (Features and Types).
Week 4	Basic use of Windows operating system
Week 5	Graphical User Interface (GUI): The User Interface, Using Mouse Techniques; Use of Common Icons, Status Bar, Using Menu and Menu-selection.
Week 6	Microsoft Office Word: Getting Started with Word
Week 7	Microsoft Office Word: Editing a Document and Formatting Text and Paragraphs, Adding Tables and Inserting Graphic Objects, Controlling Page Appearance and Proofing a Document.
Week 8	Microsoft Office Excel: Getting Started with Excel
Week 9	Microsoft Office Excel: Sorting, Selecting and Subtotaling data, Microsoft Office Excel: Formulas and Functions, Worksheet Formatting and Presentation
Week 10	Microsoft Office PowerPoint: Getting Started with PowerPoint
Week 11	Microsoft Office PowerPoint: Developing a PowerPoint Presentation, Adding Graphical Elements to Your Presentation and Modifying Objects in Your Presentation, Adding Graphical Elements, tables and charts to Your Presentation and Modifying Objects in Your Presentation, Prepare to deliver your presentation
Week 12	Introduction to Internet: Computer networks Basic; LAN, WAN; Concept of the Internet and its Applications; Connecting to the Internet;
Week 13	Learn Web Browsers: World Wide Web; Web Browsing software, Search Engines; Understanding URL; Domain name; IP Address.
Week 14	Communications and Emails: Basics of electronic mail; Getting an email account; Sending and receiving emails; Accessing sent emails; Using emails for document collaboration.
Week 15	Computer Troubleshooting: Identifying and solving common hardware and software problems; Basic troubleshooting techniques and tools for diagnosing and resolving issues.

Learning and Teaching Resources		
مصادر التعلم والتدريس		
	Text	Available in the Library?
Required Texts	Joan Lambert and Steve Lambert, Windows 10 step by step, 1st Edition 2015. Joan Lambert and Curtis Frye, Microsoft Office 2016 step by step, 1st Edition 2015.	Yes
Recommended Texts	Michael Miller, ABSOLUTE BEGINNER'S GUIDE TO COMPUTER BASICS, 5th EDITION, QUE Indianapolis, Indiana 46240, 2010. Paul McFedries, TEACH YOURSELF VISUALLY MICROSOFT WINDOWS 10, ANNIVERSARY	
Websites		

Grading Scheme				
مخطط الدرجات				
Group	Grade	التقدير	Marks %	Definition
Success Group (50 - 100)	A – Excellent	امتياز	90 - 100	Outstanding Performance
	B - Very Good	جيد جدا	80 - 89	Above average with some errors
	C – Good	جيد	70 - 79	Sound work with notable errors
	D - Satisfactory	متوسط	60 - 69	Fair but with major shortcomings

Fail Group (0 – 49)	E – Sufficient	مقبول	50 - 59	Work meets minimum criteria
	FX – Fail	راسب (فقد المعالجة)	(45-49)	More work required but credit awarded
	F – Fail	راسب	(0-44)	Considerable amount of work required

<p>Note: Marks Decimal places above or below 0.5 will be rounded to the higher or lower full mark (for example a mark of 54.5 will be rounded to 55, whereas a mark of 54.4 will be rounded to 54. The University has a policy NOT to condone "near-pass fails" so the only adjustment to marks awarded by the original marker(s) will be the automatic rounding outlined above.</p>				



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MODULE DESCRIPTION FORM

نموذج وصف المادة الدراسية- اللغة الانكليزية

Module Information			
معلومات المادة الدراسية			
Module Title	English Language		Module Delivery
Module Type	Basic learning activities		<input checked="" type="checkbox"/> Theory <input type="checkbox"/> Lecture <input type="checkbox"/> Lab <input type="checkbox"/> Tutorial <input type="checkbox"/> Practical <input type="checkbox"/> Seminar
Module Code	Biotech 126		
ECTS Credits	2		
SWL (hr/sem)	50		
Module Level	1	Semester of Delivery	
Administering Department	All	College	All
Module Leader		e-mail	
Module Leader's Acad. Title		Module Leader's Qualification	
Module Tutor		e-mail	
Peer Reviewer Name		e-mail	
Scientific Committee Approval Date		Version Number	1.0

Relation with other Modules			
العلاقة مع المواد الدراسية الأخرى			
Prerequisite module	None	Semester	
Co-requisites module	None	Semester	

Module Aims, Learning Outcomes and Indicative Contents أهداف المادة الدراسية ونتائج التعلم والمحتويات الإرشادية	
Module Objectives أهداف المادة الدراسية	The module aims at enabling students to learn and understand the written and spoken form of English. It also aims at teaching functional English to learners and improving their reading, writing and listening skills.
Module Learning Outcomes مخرجات التعلم للمادة الدراسية	<ol style="list-style-type: none"> 2. Read and understand simple texts in English. 3. Answer simple comprehension questions and match sentences about texts. 4. Reconstruct texts by reordering sentences. 5. Understand the main idea of a text. 6. Identify specific information in a text. <p style="text-align: center;">Writing and paraphrasing paragraphs.</p>
Indicative Contents المحتويات الإرشادية	<p>Indicative content includes the following.</p> <ol style="list-style-type: none"> i) Grammar has a core place in language teaching and learning. ii) A wide variety of practice tasks in all the four skills are essential to language learning. iii) Everyday expressions, particularly of spoken English, also need a place in the syllabus. These can be functional, social, situational or idiomatic.

Learning and Teaching Strategies استراتيجيات التعلم والتعليم	
Strategies	<p>Headway's trusted methodology combines solid grammar and practice, vocabulary development, and integrated skills with communicative role-plays and personalization.</p> <p>Authentic material from a variety of sources enables students to see new language in context, and a range of comprehension tasks, language and vocabulary exercises, and extension activities practice the four skills. 'Everyday English' and 'Spoken grammar' sections practice real-world speaking skills, and a writing section for each unit at the back of the book provides models for students to analyze and imitate.</p>

Student Workload (SWL) الحمل الدراسي للطلاب محسوب لـ ١٥ اسبوعا			
Structured SWL (h/sem) الحمل الدراسي المنتظم للطلاب خلال الفصل	32	Structured SWL (h/w) الحمل الدراسي المنتظم للطلاب أسبوعيا	
Unstructured SWL (h/sem) الحمل الدراسي غير المنتظم للطلاب خلال الفصل	18	Unstructured SWL (h/w) الحمل الدراسي غير المنتظم للطلاب أسبوعيا	
Total SWL (h/sem) الحمل الدراسي الكلي للطلاب خلال الفصل	50		

Module Evaluation

تقييم المادة الدراسية

		Time/Number	Weight (Marks)	Week Due	Relevant Learning Outcome
Formative assessment	Quizzes	4	20% (5)	3 , 5,8,11	LO #1...#3, #4...#5, #7, #9... #11
	Assignments	2	10% (5)	5 and 12	LO #3, #4 and #6, #7
	Projects / Lab.				
	Report	1	10% (10)	13	LO #5, #8 and #10
Summative assessment	Midterm Exam	1hr	10% (10)	7	LO #1 - #7
	Final Exam	2hr	50% (50)	15	All
Total assessment			100% (100 Marks)		

Delivery Plan (Weekly Syllabus)

المنهاج الاسبوعي النظري

	Material Covered
Week 1	Course Introduction (Course material and objectives, learning outcomes, lessons and assessment discussed with the learners).
Week 2	Unit 1. Hello Vocabulary: People, introduce each other – ways of greetings, Numbers 1-10 and plurals. Reading: Introduction dialogues, Everyday English dialogues. Listening: People meet each other and introduce someone else. How are you? What's this in English? Speaking: Introductions, Good morning! Practicing introduction dialogues- Information gap. Writing: Complete the conversations. Grammar: Verb to be with subject, Possessive adjectives, This is
Week 3	Unit 2. Your World Vocabulary: A set of cities and countries: Brazil, Spain.... , Adjectives: awful, really good, fantastic, Nouns: center, hospital, building, park. Numbers 10-20 Reading: Two people are on holiday in New York. Listening: listening to a conversation about Claude and Holly. Speaking: Talking about where people are from. Writing: Complete the conversations, countries , cities, adjectives, nouns, and numbers. Grammar: Subject verb agreement, possessive pronouns, questions (what, where ... ?).
Week 4	Unit 3. All About You Vocabulary: Jobs (police officer, nurse..), Personal information (surname, first name, address....). Reading: ' Hello! We're on A Mountain' about different students from different countries. Listening: Interview on a mountain. Speaking: Practice the interview. Writing: Social expressions (I am sorry, that's ok) Grammar: Subject pronoun (negatives and questions) , Possessive adjectives.
Week 5	Unit 4. Family and friends Vocabulary: Family members (mother, son,....) , Describing friend (very clever , funny,...) , Alphabet. Reading: 'The Walk' An Interview with students on a walk.

	<p>Listening: Listen and identify the people 'Fatima Al Zamil' , 'Paddy McNab and his family'</p> <p>Speaking: Talking about family and friends.</p> <p>Writing: Write about a good friend , his/ her family , job, favourite shop, and sport , extra....</p> <p>Grammar: Possessive adjectives. Possessive 's. Has/ have Adjective + noun Irregular Plurals.</p>
Week 6	Assessment Test 1. Feedback and Remedial Work
Week 7	<p>Unit 5. The way I live?</p> <p>Vocabulary: The lexical set of sports/food/drinks. Verbs (live, work), Languages and nationalities.</p> <p>Reading: ' Colin Brodie from Dundee'</p> <p>Listening: Listen to the context of likes and dislikes. At a party: Flavia and Terry are at a party in London, At dinner : two people meet and talk.</p> <p>Speaking: Role play: Practice the conversation in different situations.</p> <p>Writing: Write sentences, questions, make notes.</p> <p>Grammar: Present Simple :(I/you/we/they),Indefinite article(a/an),Adjective + noun(a German car).</p>
Week 8	<p>Unit 6. Everyday</p> <p>Vocabulary: The time, Words that go together: watch TV, get up early, Days of week.</p> <p>Reading: 'Lois Maddox ' Talking about daily routines.</p> <p>Listening: Lifestyle questionnaire, Listening a phone conversation between Lois and Elliot.</p> <p>Speaking: Asking and answering questions about daily routines.</p> <p>Writing: Write the correct preposition, Complete the questions.</p> <p>Grammar: Present Simple: He/she Question and negatives, Adverbs of frequency Prepositions of time.</p>
Week 9	<p>Unit 7. My Favourites</p> <p>Vocabulary: Adjectives: lovely, terrible, comfortable, friendly..., Opposite adjectives: new/old, big/small Places: chemist, post office</p> <p>Reading: ' The Famous International Footballer' , An email of San Francisco,</p> <p>Listening: Listening the requests with Can I.....? A holiday postcard. Describing lifestyles, preferences and places</p> <p>Speaking: Role play: conversations in town.</p> <p>Writing: Writing an email to a friend.</p> <p>Grammar: Question words, Subject pronouns, Object pronouns, Possessive pronouns.</p>
Week 10	<p>Unit 8. Where I live</p> <p>Vocabulary: Rooms and furniture: living room, bedroom, In and out of town: beach, mountain, sailing,...</p> <p>Reading: 'Vancouver- a great city'.</p> <p>Listening: My home town, Steve talks about living in Vancouver, Listen to the directions.</p> <p>Speaking: Talking and asking about rooms and furniture, Giving directions to places.</p> <p>Writing: Write about a town you know.</p> <p>Grammar: There is /are , Prepositions: in, on, under, next to</p>
Week 11	Assessment Test 2. Feedback and Remedial Work
Week 12	<p>Unit 9. Times Past</p> <p>Vocabulary: Saying years, People and jobs, Irregular verbs Have, do, go: have lunch, do homework, go shopping</p> <p>Reading: 'Two Saudi boys find an antiquity vasa'</p> <p>Listening: 'Magalia Dromard' : Magalia talks about her family.</p> <p>Speaking: Telling a story form pictures.</p> <p>Writing: complete the sentences, write the words in correct form.</p> <p>Grammar: Was/were born , Past simple: irregular verbs (It's a Jackson Pollock).</p>
Week 13	<p>Unit 10. We had a great time!</p> <p>Vocabulary: Time expressions: on Monday, last night..., Sports and leisure: tennis, skiing, windsurfing... Play or go: play tennis, go skiing , Seasons: winter, summer... .</p> <p>Listening: 'Jack and Millie Parker's holiday' , A couple talk about their holidays.</p> <p>Speaking: A questionnaire, Asking about holiday , My last holiday. Making conversations</p>

	Writing: Write about your favorite holiday. Grammar: Past simple: regular and irregular, Questions/Negatives, Ago Dialogues with simple past.
Week 14	Unit 11. I can do that! Vocabulary: Verbs: (draw, run, drive), Verb+noun: (Listen to the radio, chat to friends), Adjective+noun (fast city, busy city, dangerous sport), Opposite adjectives: dangerous/ safe, old/modern. Reading: ‘The Internet ‘ Listening: ‘ Five people talk about what they do on the internet’ Grammar: Can / can’t, Adverbs, Adjective + noun, Requests and offers.
Week 15	Unit 12. Please and thank you Vocabulary: Shopping: (bread, milk, fruit) , Food: (cereal, salad, pasta, fish), In a restaurant: (menu, starter, desert, soup, salmon) Reading: People different parts of the world. Listening: ‘Conversation with Adam’ , ‘After my exam’. Speaking: Describe what they eat? Discussion-what is a good diet? Grammar: I’d like, Some and Any , Like and would like.

Delivery Plan (Weekly Lab. Syllabus): **There is no Lab activities**

المنهاج الاسبوعي للمختبر

	Material Covered
Week 1	
Week 2	

Learning and Teaching Resources

مصادر التعلم والتدريس

	Text	Available in the Library?
Required Texts	New Headway Pre-Intermediate by: John and Liz Soars. Oxford University Press	Yes
Recommended Texts	None	
Websites	https://www.scribd.com/document/510746145/New-Headway-Plus-Beginner-Student-s-book	

Grading Scheme

مخطط الدرجات

Group	Grade	التقدير	Marks %	Definition
Success Group (50 - 100)	A – Excellent	امتياز	90 - 100	Outstanding Performance
	B - Very Good	جيد جدا	80 - 89	Above average with some errors
	C – Good	جيد	70 - 79	Sound work with notable errors
	D - Satisfactory	متوسط	60 - 69	Fair but with major shortcomings
	E – Sufficient	مقبول	50 - 59	Work meets minimum criteria
Fail Group (0 – 49)	FX – Fail	راسب (قيد المعالجة)	(45-49)	More work required but credit awarded
	F – Fail	راسب	(0-44)	Considerable amount of work required

Note: Marks Decimal places above or below 0.5 will be rounded to the higher or lower full mark (for example a mark of 54.5 will be rounded to 55, whereas a mark of 54.4 will be rounded to 54. The University has a policy NOT to condone "near-pass fails" so the only adjustment to marks awarded by the original marker(s) will be the automatic rounding outlined above.



Ministry of Higher Education and
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Department of Biotechnology



MODULE DESCRIPTION FORM

نموذج وصف المادة الدراسية-كيمياء حيائية

Module Information			
معلومات المادة الدراسية			
Module Title	Biochemistry كيمياء حيائية		Module Delivery
Module Type	Core		<input checked="" type="checkbox"/> Theory <input checked="" type="checkbox"/> Lecture <input checked="" type="checkbox"/> Lab <input type="checkbox"/> Tutorial <input type="checkbox"/> Practical <input type="checkbox"/> Seminar
Module Code	Biotech 211		
ECTS Credits	4		
SWL (hr/sem)	100		
Module Level	2	Semester of Delivery	
Administering Department	Biotechnology	College	Science
Module Leader		e-mail	
Module Leader's Acad. Title		Module Leader's Qualification	
Module Tutor		e-mail	
Peer Reviewer Name		e-mail	
Scientific Committee Approval Date		Version Number	2

Relation with other Modules			
العلاقة مع المواد الدراسية الأخرى			
Prerequisite module	None	Semester	
Co-requisites module	None	Semester	

Module Aims, Learning Outcomes and Indicative Contents أهداف المادة الدراسية ونتائج التعلم والمحتويات الإرشادية	
Module Objectives أهداف المادة الدراسية	<p>Enabling the student to understand and comprehend biochemistry.</p> <ul style="list-style-type: none"> - Enabling the student to become familiar with the most important sources of carbohydrates, proteins, and fats. - Enabling the student to know the chemical composition of carbohydrates, proteins, and lipids. - Enabling the student to discover different types of biological components in the organism's body.
Module Learning Outcomes مخرجات التعلم للمادة الدراسية	<ol style="list-style-type: none"> 1. Appraise and articulate biochemical processes based on the fundamentals of organic chemistry, inorganic chemistry, analytical chemistry, physical chemistry, and biology as part of their integral and quality education. 2. Construct and employ effective and safe laboratory skills utilizing modern scientific instrumentation and techniques. 3. Analyze, compare, and formulate an interpretation of biochemical data and problems as applied to living organisms and environment. 4. Assemble and assess biological data and compose a scientific analysis report or presentation.
Indicative Contents المحتويات الإرشادية	<p>Indicative content includes the following:</p> <p><u>Part A – Biochemistry and Life</u> Scope of biochemistry- The foundations of biochemistry, Cellular and chemical foundations of Life, Cells types, characteristics of living things, Water as a biological solvent, pH, buffers, Biological Buffers.</p> <p><u>Part B – Carbohydrates and Life</u> Families of Carbohydrates- monosaccharides- Types of monoses, Chemical and physical properties, Biological functions, Sugar derivatives. Disaccharides- the concept of reducing and non-reducing sugars, Properties, and functions of maltose, lactose, and sucrose. Polysaccharides- Types of polysaccharides (storage polysaccharides, Structural Polysaccharides, Homopolysaccharides, and heteropolysaccharides), Properties, and functions of polysaccharides.</p> <p><u>Part C – Amino acids</u> Monomers of proteins- The building blocks of proteins, the General formula of amino acids, Classification and biochemical structure of standard amino acids, Properties and functions of amino acids, and Reactions of amino acids. Revision problem classes.</p> <p><u>Follows Part C – Peptides and proteins</u> Peptide bond: Definition and structure of peptide bond, biologically important of peptides and their functions, Chemical and physical properties of peptides, Numbering and naming the peptides. Oligopeptides: Structure, functions, and their characteristics.</p>

Learning and Teaching Strategies استراتيجيات التعلم والتعليم	
Strategies	<p>Many techniques and explanation methods will be used in this module to increase students' ability to learn in the biochemistry course by encouraging students' participation in exercises, seminars, laboratory experiments, and workshops, in addition to using non-traditional learning methods such as the use of educational videos and electronic simulation equipment to improve scientific and critical thinking skills are expanded. This will be achieved through the use of the foregoing during the theoretical and practical educational classes, using simple and interesting methods that include types of simple experiments for students.</p>

Student Workload (SWL)			
الحمل الدراسي للطالب محسوب لـ ١٥ اسبوعا			
Structured SWL (h/sem) الحمل الدراسي المنتظم للطالب خلال الفصل	51	Structured SWL (h/w) الحمل الدراسي المنتظم للطالب أسبوعيا	
Unstructured SWL (h/sem) الحمل الدراسي غير المنتظم للطالب خلال الفصل	49	Unstructured SWL (h/w) الحمل الدراسي غير المنتظم للطالب أسبوعيا	
Total SWL (h/sem) الحمل الدراسي الكلي للطالب خلال الفصل	100		

Module Evaluation					
تقييم المادة الدراسية					
		Time/Number	Weight (Marks)	Week Due	Relevant Learning Outcome
Formative assessment	Quizzes	2	10% (10)	5 and 10	LO #1, #2 and #10, #11
	Assignments	2	10% (10)	2 and 12	LO #3, #4 and #6, #7
	Projects / Lab.	1	10% (10)	Continuous	All
	Report	1	10% (10)	13	LO #5, #8 and #10
Summative assessment	Midterm Exam	2hr	10% (10)	7	LO #1 - #7
	Final Exam	3hr	50% (50)	16	All
Total assessment			100% (100 Marks)		

Delivery Plan (Weekly Syllabus)	
المنهاج الاسبوعي النظري	
	Material Covered
Week 1	Introduction to the biochemistry
Week 2	Introduction to the carbohydrates
Week 3	The types, structure, and functions of monosaccharides
Week 4	The Oligosaccharides and polysaccharides
Week 5	The amino acids I
Week 6	The amino acids II
Week 7	Mid-term Exam
Week 8	The peptides and proteins I
Week 9	The peptides and proteins II
Week 10	The nucleic acids I
Week 11	The nucleic acids I
Week 12	The lipids I
Week 13	The lipids II
Week 14	The enzymes I
Week 15	The enzymes II

Delivery Plan (Weekly Lab. Syllabus)

المنهاج الاسبوعي للمختبر

Week	Material Covered
Week 1	Lab 1: Introduction in Laboratory Safety & Good Practices
Week 2	Lab 2: Colorimetric Analysis Techniques & Uses of Spectrophotometer in the Biomolecule Analysis
Week 3	Lab 3: Preparation and Use Buffer Solution (Molar and Normal solutions)
Week 4	Lab 4: Qualitative and Quantitative Analysis in the Biomolecule Analysis
Week 5	Lab 5: Introduction in the Qualitative Analysis of Carbohydrates
Week 6	Lab 6: Detection of Glucose by Molisch's Reagent
Week 7	Mid-term Exam
Week 8	Lab 8: : Introduction in the Quantitative Analysis of Carbohydrates
Week 9	Lab 9: : Estimation of Starch by Atherone Reagent
Week 10	Lab 10: Quantitative Analysis of Lipid
Week 11	Lab 11: Solubility and Emulsion Tests of Oils
Week 12	Lab 12: Qualitative and Quantitative Analysis of Total Proteins & Amino Acids
Week 13	Lab 13: Qualitative and Quantitative Analysis of Albumin , Proline & Leucine by Ninhydrin Reagent
Week 14	Lab 14: Quantitative Analysis of Nucleic Acid in Plasma by Spectrophotometer
Week 15	A preparatory week before the final exam

Learning and Teaching Resources

مصادر التعلم والتدريس

	Text	Available in the Library?
Required Texts	Leininger: Principles of Biochemistry (2013) 6th ed., Nelson, D.L. and Cox, M.M., W.H. Freeman and Company (New York).	Yes
Recommended Texts	Biomaterials: Bhat, Sujata, V., Narosa Publishing House, 2010.	No
Websites		

Grading Scheme

مخطط الدرجات

Group	Grade	التقدير	Marks %	Definition
Success Group (50 - 100)	A - Excellent	امتياز	90 - 100	Outstanding Performance
	B - Very Good	جيد جدا	80 - 89	Above average with some errors
	C - Good	جيد	70 - 79	Sound work with notable errors
	D - Satisfactory	متوسط	60 - 69	Fair but with major shortcomings
	E - Sufficient	مقبول	50 - 59	Work meets minimum criteria
Fail Group (0 - 49)	FX – Fail	راسب (قيد المعالجة)	(45-49)	More work required but credit awarded
	F – Fail	راسب	(0-44)	Considerable amount of work required

Note: Marks Decimal places above or below 0.5 will be rounded to the higher or lower full mark (for example a mark of 54.5 will be rounded to 55, whereas a mark of 54.4 will be rounded to 54. The University has a policy NOT to condone "near-pass fails" so the only adjustment to marks awarded by the original marker(s) will be the automatic rounding outlined above.



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MODULE DESCRIPTION FORM

نموذج وصف المادة الدراسية- الطحالب وتطبيقاتها الحيوية

Module Information			
معلومات المادة الدراسية			
Module Title	Algae and biotechnological application الطحالب وتطبيقاتها الحيوية		Module Delivery
Module Type	Core		<input checked="" type="checkbox"/> Theory <input checked="" type="checkbox"/> Lecture <input checked="" type="checkbox"/> Lab <input type="checkbox"/> Tutorial <input type="checkbox"/> Practical <input type="checkbox"/> Seminar
Module Code	Biotech 212		
ECTS Credits	5		
SWL (hr/sem)	125		
Module Level	2	Semester of Delivery	
Administering Department	Biotechnology	College	Science
Module Leader		e-mail	
Module Leader's Acad. Title		Module Leader's Qualification	
Module Tutor		e-mail	
Peer Reviewer Name		e-mail	
Scientific Committee Approval Date		Version Number	1.0

Relation with other Modules			
العلاقة مع المواد الدراسية الأخرى			
Prerequisite module	None	Semester	

Co-requisites module	None	Semester	
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Module Aims, Learning Outcomes and Indicative Contents

أهداف المادة الدراسية ونتائج التعلم والمحتويات الإرشادية

Module Objectives أهداف المادة الدراسية	Important of Algae which involves most of the biotechnological utilizations ranging from nutrition, pharmaceuticals, biofuel production, and agriculture processes to environmental protection Identify the environments of these algae. Know the algae diversity. Occurrence, characteristics, structures, reproduction and life cycles. Know the economic importance of algae and their biotechnology application
Module Learning Outcomes مخرجات التعلم للمادة الدراسية	<ol style="list-style-type: none"> 1. The student devises solutions and explanations for the phenomena that occur due to algae with some modernity and creativity. 2. The student's knowledge of the concept of practical algae and adaptation to solve problems. 3. The student should design a scheme for studying vocabulary in a new way 4. Enable students to analyze reality from a biological perspective
Indicative Contents المحتويات الإرشادية	No Indicative Contents available

Learning and Teaching Strategies

استراتيجيات التعلم والتعليم

Strategies	The subject is structured around several modes of delivery including a series of illustrated lectures with experts from the field coupled with workshop/tutorial discussions, and individual site visits with practical exercises. Assignment submissions may include verbal presentation and physical documents for the 2 assignments. Feedback will be a verbal throughout the semester. It is the student's responsibility to make notes of any feedback given in these sessions. Supplemental written feedback will also be provided for each of the 2 assignments with the assessment.
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Student Workload (SWL)

الحمل الدراسي للطالب محسوب لـ ١٥ اسبوعا

Structured SWL (h/sem) الحمل الدراسي المنتظم للطلاب خلال الفصل	79	Structured SWL (h/w) الحمل الدراسي المنتظم للطلاب أسبوعيا	
Unstructured SWL (h/sem) الحمل الدراسي غير المنتظم للطلاب خلال الفصل	46	Unstructured SWL (h/w) الحمل الدراسي غير المنتظم للطلاب أسبوعيا	
Total SWL (h/sem) الحمل الدراسي الكلي للطلاب خلال الفصل	125		

Module Evaluation					
تقييم المادة الدراسية					
		Time/Number	Weight (Marks)	Week Due	Relevant Learning Outcome
Formative assessment	Quizzes	2	10% (10)	5 and 10	LO #1, #2 and #10, #11
	Assignments	2	10% (10)	2 and 12	LO #3, #4 and #6, #7
	Projects / Lab.	1	10% (10)	Continuous	All
	Report	1	10% (10)	13	LO #5, #8 and #10
Summative assessment	Midterm Exam	2hr	10% (10)	7	LO #1 - #7
	Final Exam	3hr	50% (50)	16	All
Total assessment			100% (100 Marks)		

Delivery Plan (Weekly Syllabus)	
المنهاج الاسبوعي النظري	
Week	Material Covered
Week 1	Introduction to algae: Algal diversity, Morphology, Structure, reproduction and life cycles, and environment
Week 2	Economically and ecology importance of algae.
Week 3	Algal collection and Identification
Week 4	Introduction to algae biotechnology
Week 5	Uses of the following algae genera: <i>Spirulina</i> , <i>Dunaliella</i> , <i>Haematococcus</i> , <i>Chlorella</i> , <i>Scenedesmus</i> , <i>Botryococcus</i> , <i>Porphyridium</i> , <i>Hypnea</i> , <i>Gracilaria</i> , <i>Gelidium</i> , <i>Gelidiella</i> , <i>Kappaphycus</i> , <i>Grateloupia</i> ,

	<i>Sargassum, Turbinaria, Cystoseira, Laminaria, Macrocystis, Porphyra, Caulerpa and Ulva.</i> For technological application
Week 6	Commercialization of algae product
Week 7	Algal production systems; Strain selection; Algal growth curve; Culture media; indoor cultivation methods and scaling up
Week 8	Measurement of algal growth.
Week 9	Harvesting algae
Week 10	Chemical composition of algae
Week 11	Algal immobilization and its applications; Blue-green algal bio-fertilizer
Week 12	Liquid seaweed fertilizer: Method of preparation and application
Week 13	Biodiesel from algae: algae producing biodiesel
Week 14	Role of algae in nanobiotechnology.
Week 15	Algal control: Methods of control of algae

Delivery Plan (Weekly Laboratory Syllabus)

المنهاج الأسبوعي للمختبر (العملي)

	Material Covered
Week 1	How to collect algae samples from different environments.
Week 2	Explain the basics of Identification algae, classification and diversity.
Week 3	Describe the algal isolation.
Week 4	Microalgal cultivation methods and biomass production.
Week 5	Identify the macro algal distribution and biomass collections
Week 6	Algal growth curve: measurement
Week 7	Harvesting algae
Week 8	Apply the algal systems in biotechnological product development.
Week 9	Mid exam
Week 10	Chemical analysis: Protein test,
Week 11	Carbohydrate test
Week 12	Oil and Biodiesel algae
Week 13	Pigment product from algae: Chlorophylls analysis
Week 14	Carotenoids analysis
Week 15	Analysis of Active compounds of algae by HPLC

Learning and Teaching Resources

مصادر التعلم والتدريس

	Text	Available in the Library?
Required Texts	<p>Mishra, L., Pandey, D., Khan, R., Singh, A., Gupta, N., & Kumar, R. (2024). Biotechnological approaches of algae. <i>Sustainable Production Innovations: Bioremediation and Other Biotechnologies</i>, 307-334.</p> <p>Wang, X., Ma, S., & Kong, F. (2024). Microalgae biotechnology: Methods and applications. <i>Bioengineering</i>, 11(10), 965.</p> <p>-Lee ,R.E (2018) .Phycology .5th ed. Colarado university press</p> <p>Andersen, R. A. (Ed.). (2005). <i>Algal culturing techniques</i>. Elsevier.</p>	Yes

Websites		

Grading Scheme مخطط الدرجات				
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Group	Grade	التقدير	Marks %	Definition
Success Group (50 - 100)	A - Excellent	امتياز	90 - 100	Outstanding Performance
	B - Very Good	جيد جدا	80 - 89	Above average with some errors
	C - Good	جيد	70 - 79	Sound work with notable errors
	D - Satisfactory	متوسط	60 - 69	Fair but with major shortcomings
	E - Sufficient	مقبول	50 - 59	Work meets minimum criteria
Fail Group (0 - 49)	FX – Fail	راسب (قيد المعالجة)	(45-49)	More work required but credit awarded
	F – Fail	راسب	(0-44)	Considerable amount of work required

Note: Marks Decimal places above or below 0.5 will be rounded to the higher or lower full mark (for example a mark of 54.5 will be rounded to 55, whereas a mark of 54.4 will be rounded to 54. The University has a policy NOT to condone "near-pass fails" so the only adjustment to marks awarded by the original marker(s) will be the automatic rounding outlined above.



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MODULE DESCRIPTION FORM

نموذج وصف المادة الدراسية- احياء مجهرية 1

Module Information			
معلومات المادة الدراسية			
Module Title	Microbiology 1		Module Delivery
Module Type	Core		<input checked="" type="checkbox"/> Theory <input checked="" type="checkbox"/> Lecture <input checked="" type="checkbox"/> Lab <input type="checkbox"/> Tutorial <input type="checkbox"/> Practical <input type="checkbox"/> Seminar
Module Code	Biotech 213		
ECTS Credits	5		
SWL (hr/sem)	125		
Module Level	2	Semester of Delivery	
Administering Department	Biotechnology	College	Science
Module Leader		e-mail	
Module Leader's Acad. Title		Module Leader's Qualification	
Module Tutor		e-mail	
Peer Reviewer Name		e-mail	
Scientific Committee Approval Date		Version Number	

Relation with other Modules			
العلاقة مع المواد الدراسية الأخرى			
Prerequisite module	None		Semester

Co-requisites module	None	Semester	
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Module Aims, Learning Outcomes and Indicative Contents	
أهداف المادة الدراسية ونتائج التعلم والمحتويات الإرشادية	
Module Objectives أهداف المادة الدراسية	<ul style="list-style-type: none"> • Explain how microbes affect our daily lives. • Apply pure culture technique. • Observe and measure microbial growth. • Develop core competencies in microbiology: structure and function, information flow, energy transfer and evolution. • Manipulate bacteria genetically to address biological questions.
Module Learning Outcomes مخرجات التعلم للمادة الدراسية	Upon successful completion, students will have the knowledge and skills to: <ol style="list-style-type: none"> 1. Describe diversity of microorganisms, bacterial cell structure and function, microbial growth and metabolism, and the ways to control their growth by physical and chemical means 2. Explain the basic genetic systems of bacteria, bacteriophage and plasmids 3. Explain the role of microorganisms in food production and preservation, and their ability to cause food-borne infections 4. Demonstrate practical skills in fundamental microbiological techniques 5. Systematically apply the scientific method of investigation and hypothesis testing including the development of theoretical and practical skills in the design and execution of experiments as well as the development of oral and writing skills necessary for the effective communication of experimental results
Indicative Contents المحتويات الإرشادية	No Indicative Contents available

Learning and Teaching Strategies	
استراتيجيات التعلم والتعليم	
Strategies	<p>Microorganisms play a significant role in medicine, agriculture, the environment, and many facets of our daily lives. This course focuses on the general principles of microbiology, providing students with an understanding of the fundamental concepts of the biology of microorganisms. The course includes the following topics: bacterial cell structure and function; genetic systems of bacteria, bacteriophages and plasmids; microbial growth and metabolism; energy and nutrient harvesting; microorganisms and the environment; control of microorganisms; introduction to viruses; food and industrial microbiology.</p> <p>Practical skills are an essential part of microbiology. The laboratory classes in this course aim: (1) to teach and develop basic microbiological techniques and experimental skills; (2) to illustrate some of the concepts presented in the lectures.</p>

Student Workload (SWL)

الحمل الدراسي للطالب محسوب لـ ١٥ اسبوعا

Structured SWL (h/sem) الحمل الدراسي المنتظم للطالب خلال الفصل	79	Structured SWL (h/w) الحمل الدراسي المنتظم للطالب أسبوعيا	
Unstructured SWL (h/sem) الحمل الدراسي غير المنتظم للطالب خلال الفصل	46	Unstructured SWL (h/w) الحمل الدراسي غير المنتظم للطالب أسبوعيا	
Total SWL (h/sem) الحمل الدراسي الكلي للطالب خلال الفصل	125		

Module Evaluation

تقييم المادة الدراسية

		Time/Number	Weight (Marks)	Week Due	Relevant Learning Outcome
Formative assessment	Quizzes	2	10% (10)	5 and 10	LO #1, #2 and #10, #11
	Assignments	2	10% (10)	2 and 12	LO #3, #4 and #6, #7
	Projects / Lab.	1	10% (10)	Continuous	All
	Report	1	10% (10)	13	LO #5, #8 and #10
Summative assessment	Midterm Exam	2hr	10% (10)	7	LO #1 - #7
	Final Exam	3hr	50% (50)	16	All
Total assessment			100% (100 Marks)		

Delivery Plan (Weekly Syllabus)

المنهاج الاسبوعي النظري

	Material Covered
Week 1	Introduction to microbiology and the stages of its development
Week 2	Evolution of Prokaryotic Organisms
Week 3	General characteristics of Prokaryotic and Eukaryotic organisms
Week 4	The importance of taxonomy
Week 5	Overview of Archaea
Week 6	Structure of Bacterial Cell
Week 7	Cell Wall of Gram-Negative bacteria
Week 8	Mechanism of Gram Staining
Week 9	Microorganism growth curves
Week 10	Controlling Bacteria by Damaging Cell Wall
Week 11	Cell Membrane or plasma membrane
Week 12	The movement of substances across membrane
Week 13	Primary Active Transport
Week 14	Cell Envelope Layers Outside the Cell Wall
Week 15	The final Exam

Delivery Plan (Weekly Laboratory Syllabus)

المنهاج الأسبوعي للمختبر (العملي)

	Material Covered
Week 1	the Optical Microscope, Its Components, and How to Use It.
Week 2	Introduction in microbiology –Terms and concepts.
Week 3	Methods of sterilization and disinfection in the microbiology laboratory
Week 4	Types of culture media
Week 5	Morphological of bacterial colonies

Week 6	Bacterial staining
Week 7	Gram stain
Week 8	Acid fast stain
Week 9	Bacterial Capsule stain
Week 10	Bacterial flagella stain /hanging drop
Week 11	Motility tests
Week 12	Bacterial cells count
Week 13	Dilution method
Week 14	Fungi and yeast
Week 15	Serological tests

Learning and Teaching Resources

مصادر التعلم والتدريس

	Text	Available in the Library?
Required Texts	1- Microbiology - PRESCOTT, HARLEY, AND KLEIN'S MICROBIOLOGY, SEVENTH EDITION 2- Microbiology Principles and Explorations / Jacquelyn G. Black.	Yes
Websites	1- https://www.ucl.ac.uk/research/domains/microbiology/ 2- https://www.reed.edu/biology/courses/bio358/logistics.html .	

Grading Scheme

مخطط الدرجات

Group	Grade	التقدير	Marks %	Definition
Success Group (50 - 100)	A - Excellent	امتياز	90 - 100	Outstanding Performance
	B - Very Good	جيد جدا	80 - 89	Above average with some errors
	C - Good	جيد	70 - 79	Sound work with notable errors
	D - Satisfactory	متوسط	60 - 69	Fair but with major shortcomings



**Ministry of Higher Education and
Scientific Research - Iraq
University of Tikrit
College of Science
Department of Biotechnology**



	E - Sufficient	مقبول	50 - 59	Work meets minimum criteria
Fail Group (0 – 49)	FX – Fail	راسب (قيد المعالجة)	(45-49)	More work required but credit awarded
	F – Fail	راسب	(0-44)	Considerable amount of work required

Note: Marks Decimal places above or below 0.5 will be rounded to the higher or lower full mark (for example a mark of 54.5 will be rounded to 55, whereas a mark of 54.4 will be rounded to 54. The University has a policy NOT to condone "near-pass fails" so the only adjustment to marks awarded by the original marker(s) will be the automatic rounding outlined above.

MODULE DESCRIPTION FORM

نموذج وصف المادة الدراسية-فسلجة حيوانية

Module Information			
معلومات المادة الدراسية			
Module Title	Animal physiology فسلجة حيوانية		Module Delivery
Module Type	Core		<input checked="" type="checkbox"/> Theory <input checked="" type="checkbox"/> Lecture <input checked="" type="checkbox"/> Lab <input type="checkbox"/> Tutorial <input type="checkbox"/> Practical <input type="checkbox"/> Seminar
Module Code	Biotech 214		
ECTS Credits	6		
SWL (hr/sem)	150		
Module Level	2	Semester of Delivery	
Administering Department	Biotechnology	College	Science
Module Leader		e-mail	
Module Leader's Acad. Title		Module Leader's Qualification	
Module Tutor		e-mail	
Peer Reviewer Name		e-mail	
Scientific Committee Approval Date		Version Number	2

Relation with other Modules			
العلاقة مع المواد الدراسية الأخرى			
Prerequisite module	None	Semester	
Co-requisites module	None	Semester	

Module Aims, Learning Outcomes and Indicative Contents	
أهداف المادة الدراسية ونتائج التعلم والمحتويات الإرشادية	

Module Objectives أهداف المادة الدراسية	Description: Animal physiology is a basic and important science that has a close relationship to human health, studying the functions of the body's organs and all related topics, so giving students the basics of this science and explaining its ideas from all aspects, including applied aspects with examples
Module Learning Outcomes مخرجات التعلم للمادة الدراسية	Teaching students the basics of Physiology in all its topics with examples and all related to this science of applications, especially those related to the health aspect, and in order to achieve a solid scientific background for students in Physiology
Indicative Contents المحتويات الإرشادية	Students ' understanding of the basics of philology, their understanding of its ideas, their awareness and mastery of its applied aspects and examples, and their ability to benefit from this in the future with their direct practical reality after graduation

Learning and Teaching Strategies

استراتيجيات التعلم والتعليم

Strategies	Type something like: The main strategy that will be adopted in delivering this module is to encourage students' participation in the exercises, while at the same time refining and expanding their critical thinking skills. This will be achieved through classes, interactive tutorials, and by considering types of simple experiments involving some interesting sampling activities to the students.
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Student Workload (SWL)

الحمل الدراسي للطالب محسوب لـ ١٥ اسبوعا

Structured SWL (h/sem) الحمل الدراسي المنتظم للطالب خلال الفصل	94	Structured SWL (h/w) الحمل الدراسي المنتظم للطالب أسبوعيا	
Unstructured SWL (h/sem) الحمل الدراسي غير المنتظم للطالب خلال الفصل	56	Unstructured SWL (h/w) الحمل الدراسي غير المنتظم للطالب أسبوعيا	
Total SWL (h/sem) الحمل الدراسي الكلي للطالب خلال الفصل	150		

Module Evaluation					
تقييم المادة الدراسية					
		Time/Number	Weight (Marks)	Week Due	Relevant Learning Outcome
Formative assessment	Quizzes	2	10% (10)	5 and 10	LO #1, #2 and #10, #11
	Assignments	2	10% (10)	2 and 12	LO #3, #4 and #6, #7
	Projects / Lab.	1	10% (10)	Continuous	All
	Report	1	10% (10)	13	LO #5, #8 and #10
Summative assessment	Midterm Exam	2hr	10% (10)	7	LO #1 - #7
	Final Exam	3hr	50% (50)	16	All
Total assessment			100% (100 Marks)		

Delivery Plan (Weekly Syllabus)	
المنهاج الاسبوعي النظري	
	Material Covered
Week 1	Introduction, brief history, definitions of philology
Week 2	Cell phagocytosis and organelle functions
Week 3	Physiology of the nervous system
Week 4	Musculoskeletal system
Week 5	Respiratory tract
Week 6	Gastrointestinal tract
Week 7	Quarterly exam
Week 8	The spin device series
Week 9	Complement the spin device series
Week 10	Urinary system incontinence
Week 11	The vulgarity of the reproductive system

Week 12	Structural device scalability
Week 13	Dermatological device serology
Week 14	The faculty of the Sens
Week 15	final exam

Delivery Plan (Weekly Lab. Syllabus)

المنهاج الاسبوعي للمختبر

Week	Material Covered
Week 1	Lab 1: Anatomical study of the cell and its components
Week 2	Lab 2: Anatomical study of cellular tissues and their types
Week 3	Lab 3: Taking samples from cellular tissues and studying the mechanism of transport of materials across the cell membrane
Week 4	Lab 4 : Anatomical study of the digestive system and its parts in animals
Week 5	Lab 5: Study of types of hormones and enzymes of the digestive system
Week 6	Lab 6: Study of small intestine movements and their types
Week 7	Lab 7: Anatomical study of the large intestine and types of bowel movements
Week 8	Anatomical study of the circulatory system in animals
Week 9	Study of blood components and blood groups
Week 10	Study the parts and functions of each part of the lymphatic system.
Week 11	Study of the nerve cell and its components
Week 12	Structure of the central nervous system and its parts
Week 13	Structure of the peripheral nervous system and its parts
Week 14	Structure of the respiratory system and its parts
Week 15	Structure of the urinary system and its parts

Learning and Teaching Resources

مصادر التعلم والتدريس

	Text	Available in the Library?
Required Texts	physiology (author: A.Dr. Sabah Nasser Al-aloji, 2014)	Yes



Ministry of Higher Education and
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University of Tikrit
College of Science
Department of Biotechnology



Recommended Texts	External sources :Human Physiology (2013), Essentials of Animal Physiology (2007)	yes
Websites		

Grading Scheme				
مخطط الدرجات				
Group	Grade	التقدير	Marks %	Definition
Success Group (50 - 100)	A - Excellent	امتياز	90 - 100	Outstanding Performance
	B - Very Good	جيد جدا	80 - 89	Above average with some errors
	C - Good	جيد	70 - 79	Sound work with notable errors
	D - Satisfactory	متوسط	60 - 69	Fair but with major shortcomings
	E - Sufficient	مقبول	50 - 59	Work meets minimum criteria
Fail Group (0 - 49)	FX – Fail	راسب (قيد المعالجة)	(45-49)	More work required but credit awarded
	F – Fail	راسب	(0-44)	Considerable amount of work required

Note: Marks Decimal places above or below 0.5 will be rounded to the higher or lower full mark (for example a mark of 54.5 will be rounded to 55, whereas a mark of 54.4 will be rounded to 54. The University has a policy NOT to condone "near-pass fails" so the only adjustment to marks awarded by the original marker(s) will be the automatic rounding outlined above.

MODULE DESCRIPTION FORM

نموذج وصف المادة الدراسية- بايولوجية الخلية

Module Information			
معلومات المادة الدراسية			
Module Title	Cell Biology بايولوجية الخلية	Module Delivery	
Module Type	Core	<input checked="" type="checkbox"/> Theory <input checked="" type="checkbox"/> Lecture <input checked="" type="checkbox"/> Lab <input type="checkbox"/> Tutorial <input type="checkbox"/> Practical <input type="checkbox"/> Seminar	
Module Code	Biotech 215		
ECTS Credits	6		
SWL (hr/sem)	150		
Module Level	2		
Administering Department	Biotechnology	College	Science
Module Leader		e-mail	
Module Leader's Acad. Title		Module Leader's Qualification	
Module Tutor		e-mail	
Peer Reviewer Name		e-mail	
Scientific Committee Approval Date		Version Number	2

Relation with other Modules			
العلاقة مع المواد الدراسية الأخرى			
Prerequisite module	None	Semester	
Co-requisites module	None	Semester	

Module Aims, Learning Outcomes and Indicative Contents	
أهداف المادة الدراسية ونتائج التعلم والمحتويات الإرشادية	

<p>Module Objectives</p> <p>أهداف المادة الدراسية</p>	<ol style="list-style-type: none"> 1. This course includes studying the basic components of prokaryotic cells and eukaryotic cells (animal and plant), especially: macromolecules (proteins, carbohydrates and nucleic acids), the structure of membranes and organelles, in addition to how energy is generated and used inside cells, understanding the cellular components that perform mitosis (the cell cycle)). The course contains examples of changes that occur in cell functions in response to environmental and physical changes that lead to mutations (programmed cell death, cell necrosis, and cancer). 2. Conveying an idea of the general cell in general, the mechanisms by which the cell operates, methods of division specialized in the field of reproduction, growth, regeneration, and the background of the affected cells. 3. Preparing qualified and specialized cadres in the field of life sciences, specifically in the cell field in Iraq. 4. To classify the needs to develop the practical reality in the cell. 5. To get used to practicing the rules he learned in his speech, actions, and interpretation of phenomena 6. To retrieve the information, he studied accurately and verify it practically. 7. That the student devise solutions and explanations to prepare different concentrations for conducting experiments 8. The student's knowledge of the concept of cell biology and how to detect its organelles.
<p>Module Learning Outcomes</p> <p>مخرجات التعلم للمادة الدراسية</p>	<ol style="list-style-type: none"> 1. Learn about cell organelles and their various functions. 2. It explains cellular processes such as cellular respiration and protein transit. 3. Link between the structure of organelles and the two. 4. Explain the structure and function of the cell membrane and identify the major receptors. 5. Plant and animal cells have structural features. 6. assembly of the cell. 7. Distinguish between apoptotic cells, cellular necrosis and carcinomas. 8. Distinguish different cellular structures using light microscopes and in-process images.
<p>Indicative Contents</p> <p>المحتويات الإرشادية</p>	<ol style="list-style-type: none"> 1- Know the components of plant and animal cells and the difference between them. 2- Division of plant aggregates from an evolutionary point of view. 3- Tissues and their division in the human body

<p style="text-align: center;">Learning and Teaching Strategies</p> <p style="text-align: center;">استراتيجيات التعلم والتعليم</p>	
<p>Strategies</p>	<ol style="list-style-type: none"> 1- The ability to express ideas clearly and confidently in speech. 2- Teamwork Work with confidence within the TEAMWORK group 3-Analyzing, analyzing and providing information in a systematic and scientific manner for its establishment, council and project for the islands problem 4- Motivation over passion for initiative, identifying opportunities and developing ideas and solutions

Student Workload (SWL)			
الحمل الدراسي للطالب محسوب لـ ١٥ اسبوعا			
Structured SWL (h/sem) الحمل الدراسي المنتظم للطالب خلال الفصل	94	Structured SWL (h/w) الحمل الدراسي المنتظم للطالب أسبوعيا	
Unstructured SWL (h/sem) الحمل الدراسي غير المنتظم للطالب خلال الفصل	56	Unstructured SWL (h/w) الحمل الدراسي غير المنتظم للطالب أسبوعيا	
Total SWL (h/sem) الحمل الدراسي الكلي للطالب خلال الفصل	150		

Module Evaluation					
تقييم المادة الدراسية					
		Time/Number	Weight (Marks)	Week Due	Relevant Learning Outcome
Formative assessment	Quizzes	2	10% (10)	5 and 10	LO #1, #2 and #10, #11
	Assignments	2	10% (10)	2 and 12	LO #3, #4 and #6, #7
	Projects / Lab.	1	10% (10)	Continuous	All
	Report	1	10% (10)	13	LO #5, #8 and #10
Summative assessment	Midterm Exam	2hr	10% (10)	7	LO #1 - #7
	Final Exam	3hr	50% (50)	16	All
Total assessment			100% (100 Marks)		

Delivery Plan (Weekly Syllabus)	
المنهاج الاسبوعي النظري	
	Material Covered
Week 1	Scope of botany, the importance of green plants, branches of botany.
Week 2	what is the life, how to distinguished between living and non-living things, how to group the organism in the ecosystem.
Week 3	biological level of organization, the three domains of life, relation between domains and kingdoms.

Week 4	organism classification, how to write the scientific name, the cell, types of cells, Kingdom of bacteria (prokaryotic cell).
Week 5	Eukaryotic cells (plant and animal cell), living and non living compounds of the cell.
Week 6	Major Plant Categories and Associated Groups: Algae, Fungi, Lichens
Week 7	Ferns, horsetails and club mosses Mosses and liverworts Conifers (gymnosperms)
Week 8	Flowering plants (angiosperms)
Week 9	Classification of living organism
Week 10	Types of tissues in multicellular organism
Week 11	Integument system in variable chordate and invertebrate
Week 12	Respiratory system
Week 13	Diversity in digestive structure in vertebrate
Week 14	Circulatory system
Week 15	Regulating the internal environment

Delivery Plan (Weekly Lab. Syllabus)

المنهاج الاسبوعي للمختبر

Week	Material Covered
Week 1	compound light microscope
Week 2	Expression of solutions and concentrations
Week 3	Processes of separating the components of cell organelles
Week 4	Detection of plant cell wall components
Week 5	the plasma membrane
Week 6	Bacteria (microscopic examination of a sample of milk)
Week 7	Cell shapes
Week 8	Crystals and their types
Week 9	Plastids and their types
Week 10	detection of mitochondria
Week 11	Killing, fixation and dyeing
Week 12	Bar body detection
Week 13	Nucleus
Week 14	Plating and mashing method for the study of cell division

Week 15	monthly exam
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Learning and Teaching Resources مصادر التعلم والتدريس		
	Text	Available in the Library?
Required Texts	1- Biology with physiology (Life on the Earth) by Tersa Audesirk, Gerald Audesirk and Bruce E. Byers, 2008 2- Zoology, by MillerHarley, 5th edition 3- Plant Anatomy by Katherine Esau, 1964 4- A class –Book of Botany by A.C. Dutta, seventeenth edition , 2005 5- Basic Histology, text and atlas by Luis Carlos Junquiera and Josef Carneiro, 11th edition	
Recommended Texts	1- Botany MPB basic facts series (MANOJ Pocket books), 2005 2- Text Books Botany Angiospermes, by P.B. Pandey, reprint, 2009 3- Junquiera’s Basic Histology text and atlas, By Anthony L. Mescher, 12 th edition	
Websites	ashipunov.info/shipunov/school/biol www.life.illinois.edu/downie/Master.pdf	

Grading Scheme مخطط الدرجات				
Group	Grade	التقدير	Marks %	Definition
Success Group (50 - 100)	A - Excellent	امتياز	90 - 100	Outstanding Performance
	B - Very Good	جيد جدا	80 - 89	Above average with some errors
	C - Good	جيد	70 - 79	Sound work with notable errors
	D - Satisfactory	متوسط	60 - 69	Fair but with major shortcomings
	E - Sufficient	مقبول	50 - 59	Work meets minimum criteria
Fail Group (0 – 49)	FX – Fail	راسب (قيد المعالجة)	(45-49)	More work required but credit awarded
	F – Fail	راسب	(0-44)	Considerable amount of work required



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Note: Marks Decimal places above or below 0.5 will be rounded to the higher or lower full mark (for example a mark of 54.5 will be rounded to 55, whereas a mark of 54.4 will be rounded to 54. The University has a policy NOT to condone "near-pass fails" so the only adjustment to marks awarded by the original marker(s) will be the automatic rounding outlined above.

MODULE DESCRIPTION FORM

نموذج وصف المادة الدراسية- اللغة العربية

Module Information			
معلومات المادة الدراسية			
Module Title	Arabic language اللغة العربية		Module Delivery
Module Type	B		<input checked="" type="checkbox"/> Theory
Module Code	Biotech 216		<input checked="" type="checkbox"/> Lecture
ECTS Credits	2		<input type="checkbox"/> Lab
SWL (hr/sem)	50		<input checked="" type="checkbox"/> Tutorial
			<input type="checkbox"/> Practical
			<input checked="" type="checkbox"/> Seminar
Module Level	2	Semester of Delivery	1
Administering Department	Biotechnology	College	Science
Module Leader		e-mail	
Module Leader's Acad. Title		Module Leader's Qualification	
Module Tutor	None	e-mail	
Peer Reviewer Name		e-mail	
Scientific Committee Approval Date		Version Number	

Relation with other Modules			
العلاقة مع المواد الدراسية الأخرى			
Prerequisite module	لا يوجد	Semester	
Co-requisites module	لا يوجد	Semester	

Module Aims, Learning Outcomes and Indicative Contents	
أهداف المادة الدراسية ونتائج التعلم والمحتويات الإرشادية	
Module Aims أهداف المادة الدراسية	1- تقوية القدرة اللغوية لدى الطالب وإكسابه مهارة التعبير الصحيح 2- تنمية قدرات الطالب ومهاراته الخطية والاملائية ليتمكن من كتابة البحوث العلمية والتقارير بصورة صحيحة وكذلك يتمكن من استعمال عالمات الترقيم ووضعها في المكان المناسب في الجملة 3- تدريب الطالب على استخدام القواعد النحوية أثناء القراءة والكتابة والتعبير 4- تعويد الطالب على فهم المادة المقروءة والتعبير عنها بلغته الخاصة وذلك مما يشجع الطالب على التفكير والابتكار

Module Learning Outcomes مخرجات التعلم للمادة الدراسية	يتوقع من الطالب بعد إنتهائه من دراسة مادة اللغة العربية تحقيق المخرجات الآتية 1- معرفة القواعد النحوية 2- معرفة كيفية توظيف ادوات اللغة العربية في كتابة اي بحث علمي 3- تعزيز المحتوى العربي على الشبكة العنكبوتية 4- التعلم الإلكتروني واستخدام الحاسوب في التعليم
Indicative Contents المحتويات الإرشادية	أهمية اللغة العربية : وهذا الموضوع يتحدث عن أهمية اللغة العربية بصورة عامة مع ربط علاقة اللغة العربية بالعلوم (4 ساعات) اقسام الكلام : وهذا موضوع يقسم الى ثلاثة محاور وهي الـ اسم والفعل والحرف (8 ساعات) علامات الاعراب : يتحدث عن عالمات اعراب الاسم والفعل ويقسم الى محورين علامات الاعراب الاصلية و الفرعية (8 ساعات) المبتدأ والخبر :يتناول مفهوم المبتدأ والخبر و اعرابه (6ساعات) كان واخواتها : هذا الموضوع يتعبّر تكملة لموضوع الافعال (6ساعات) إن واخواتها : وهي من النواسخ , وهي احرف مشبهة بالفعل (8 ساعات) العدد : وهذا الموضوع مهم جدا لانه يعلم الطالب كيفية كتابة العدد من ناحية التذكير والتأنيث (2 ساعات)

Learning and Teaching Strategies استراتيجيات التعلم والتعليم	
Strategies	الطريقة المستخدمة لتعليم الطالب مادة اللغة العربية هي القاء المحاضرة والشرح باستخدام السبورة وفي بعض الاحيان نستخدم الداتا شو باستخدام شرائح عرض برنامج البوربوينت (اذا كانت المادة تتطلب لذلك) وكذلك تضمين المحاضرة اسئلة توجه للطالب لمعرفة مدى فهمهم للمادة , واعطاءهم الواجب البيتي وفي منتصف الفصل يطلب من كل طالب تقرير حول مادة او مفردة معينة , مع الاكثار من الاختبارات اليومية لتساعدهم في حفظ المادة ورفع مستواهم العلمي ايضا.

Student Workload (SWL) الحمل الدراسي للطالب			
Structured SWL (h/sem) الحمل الدراسي المنتظم للطالب خلال الفصل	33	Structured SWL (h/w) الحمل الدراسي المنتظم للطالب أسبوعيا	
Unstructured SWL (h/sem) الحمل الدراسي غير المنتظم للطالب خلال الفصل	17	Unstructured SWL (h/w) الحمل الدراسي غير المنتظم للطالب أسبوعيا	
Total SWL (h/sem) الحمل الدراسي الكلي للطالب خلال الفصل	50		

Module Evaluation

تقييم المادة الدراسية

		Time/Number	Weight (Marks)	Week Due	Relevant Learning Outcome
Formative assessment	Quizzes	4	20% (20)	5, 10,12	LO #1-3 , LO# 9 - 11
	Assignments	6	15% (15)	2, 12	LO # 3, 4, LO#8 -10
	Projects / Lab.	7			
	Report	2	5% (5)	12	LO # 5, 9 and 11
Summative assessment	Midterm Exam	2 hr	10% (10)	7	LO # 1-8
	Final Exam	3	50% (50)	16	All
Total assessment			100% (100 Marks)		

Delivery Plan (Weekly Syllabus)

المنهاج الاسبوعي النظري

	Material Covered
Week 1	أهمية اللغة العربية
Week 2	علاقة اللغة العربية بالعلوم
Week 3	أقسام الكلام: الاسم
Week 4	الفعل
Week 5	الحرف
Week 6	علامات الاعراب الاصلية والفرعية
Week 7	امتحان فصلي
Week 8	علامات الاعراب الفرعية
Week 9	الاسماء
Week 10	المبتدأ والخبر
Week 11	النواسخ
Week 12	كان واخوانها

Week 13	النواسخ
Week 14	ان واخواتها
Week 15	العدد
Week 16	امتحان نهاية الفصل

Delivery Plan (Weekly Lab. Syllabus): There is no Lab activities		
المنهاج الاسبوعي للمختبر:		
	Material Covered	
Week 1		
Week 2		
Learning and Teaching Resources		
مصادر التعلم والتدريس		
	Text	Available in the Library?
Required Texts	كتاب النحو الوافي للمؤلف عباس حسن	Yes
Recommended Texts	كتاب النحو الشافي للمؤلف محمود حسني وشرح ابن عقيل عن الفية ابن مالك	No
Websites		

Grading Scheme				
مخطط الدرجات				
Group	Grade	التقدير	Marks (%)	Definition
Success Group (50 - 100)	A - Excellent	امتياز	90 - 100	Outstanding Performance
	B - Very Good	جيد جدا	80 - 89	Above average with some errors
	C - Good	جيد	70 - 79	Sound work with notable errors
	D - Satisfactory	متوسط	60 - 69	Fair but with major shortcomings
	E - Sufficient	مقبول	50 - 59	Work meets minimum criteria
Fail Group (0 - 49)	FX – Fail	راسب (قيد المعالجة)	(45-49)	More work required but credit awarded
	F – Fail	راسب	(0-44)	Considerable amount of work required



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Note: Marks Decimal places above or below 0.5 will be rounded to the higher or lower full mark (for example a mark of 54.5 will be rounded to 55, whereas a mark of 54.4 will be rounded to 54. The University has a policy NOT to condone "near-pass fails" so the only adjustment to marks awarded by the original marker(s) will be the automatic rounding outlined above.

MODULE DESCRIPTION FORM

نموذج وصف المادة الدراسية- جرائم حزب البعث

Module Information معلومات المادة الدراسية			
Module Title	Ba'ath party crime جرائم حزب البعث		Module Delivery
Module Type	B		<input checked="" type="checkbox"/> Theory <input checked="" type="checkbox"/> Lecture <input type="checkbox"/> Lab <input checked="" type="checkbox"/> Tutorial <input type="checkbox"/> Practical <input checked="" type="checkbox"/> Seminar
Module Code	Biotech 217		
ECTS Credits	2		
SWL (hr/sem)	50		
Module Level	2	Semester of Delivery	1
Administering Department	All	College	Science
Module Leader		e-mail	
Module Leader's Acad. Title		Module Leader's Qualification	
Module Tutor	None	e-mail	
Peer Reviewer Name		e-mail	
Scientific Committee Approval Date		Version Number	

Relation with other Modules العلاقة مع المواد الدراسية الأخرى			
Prerequisite module	لا يوجد	Semester	
Co-requisites module	لا يوجد	Semester	

Module Aims, Learning Outcomes and Indicative Contents أهداف المادة الدراسية ونتائج التعلم والمحتويات الإرشادية	
Module Aims أهداف المادة الدراسية	<p>التعرف على ماهية الجريمة لغة واصطلاحاً وماهية أقسام الجرائم</p> <p>2. التعرف على جرائم نظام البعث وفق قانون المحكمة الجنائية العراقية العليا عام 2005م</p>

	<p>3. تنمية وعي الطلب بجرائم نظام البعث وفق توثيق قانون المحكمة الجنائية العراقية العليا لسنة 2005م</p> <p>4. دراسة الجرائم التي ارتكبتها نظام البعث على مدى سنوات طويلة واثارها النفسية والاجتماعية5. التعرف على صور انتهاكات حقوق الانسان وجرائم السلطة والتعرف على الجرائم البيئية لنظام البعث في العراق</p> <p>6. تعزيز الوعي بحقيقة ما جرى من مآسي المقابر الجماعية المرتكبة من النظام البعثي في العراق</p>
<p>Module Learning Outcomes</p> <p>مخرجات التعلم للمادة الدراسية</p>	<p>1. تمكين الطالب من معرفة المفاهيم النظرية للجرائم وأركان الجرائم .</p> <p>2. تمكين الطالب من معرفة أقسام الجرائم .</p> <p>3. تمكين الطالب من معرفة قانون المحكمة الجنائية العراقية العليا لسنة 2005.</p> <p>4. فهم تشكيل المحكمة الجنائية العراقية العليا لسنة 2005 والتعرف على تشكيل المحكمة إجراءات التقاضي امام المحكمة.</p> <p>5. يتعلم الطالب أنواع الجرائم الدولية على وفق النظام الاساسي للمحكمة الجنائية الدولية.</p> <p>6. معرفة الطالب بالاثار النفسية والاجتماعية لجرائم نظام البعث.</p> <p>7. يتمكن الطالب من فهم موقف النظام البعثي من الدين من خلال فهم عقيدة النظام السياسي سبباً لفهم موقف النظام من الدين . 8. يتمكن الطالب من التعرف على صور انتهاكات القوانين العراقية وانتهاكات حقوق الانسان وجرائم السلطة.</p> <p>9. تمكين الطالب من التعرف على بعض قرارات الانتهاكات السياسية والعسكرية لنظام البعث.</p> <p>10- يتعرف الطالب على أماكن السجون والاحتجاز لنظام البعث.</p> <p>11- معرفة الطالب بالجرائم البيئية وبأثار الجرائم البيئية لنظام البعث، ويتعرف جرائم المقابر الجماعية</p>
<p>Indicative Contents</p> <p>المحتويات الإرشادية</p>	<p>الجزء الاول : جرائم نظام البعث وفق قانون المحكمة الجنائية العراقية العليا لعام 2005م، والجرائم النفسية والاجتماعية واثارها وابرز انتهاكات النظام البعثي في العراق:</p> <p>التعريف بالجريمة لغة وأصطلاحاً، اركان واقسام الجريمة(2 ساعة). جرائم نظام البعث وفق قانون المحكمة الجنائية العراقية العليا عام 2005م : أنواع الجرائم الدولية، القرارات الصادرة من المحكمة الجنائية العليا (2 ساعة).</p> <p>وابرز القضايا التي نظرت فيها المحكمة(2 ساعة). الجرائم النفسية والاجتماعية واثارها وابرز انتهاكات النظام البعثي في العراق: الجرائم النفسية، البات الجرائم النفسية(2 ساعة). اثار الجرائم النفسية ، الجرائم الاجتماعية(2 ساعة) . عسكرة المجتمع، موقف النظام البعثي من الدين(2 ساعة) . انتهاكات القوانين العراقية، صور انتهاكات حقوق الانسان(2 ساعة) . جرائم السلطة، بعض قرارات الانتهاكات السياسية والعسكرية لنظام البعث، أماكن السجون والاحتجاز لنظام البعث(2 ساعة</p> <p>الجزء الثاني : الجرائم البيئية لنظام البعث في العراق، جرائم المقابر الجماعية: الجرائم البيئية لنظام البعث في العراق: التلوث الحربي والاشعاعي – أستعمال الاسلحة المحرمة دولياً ومخاطر الالغام(2 ساعة). التلوث بالمواد المشعة، أثار استخدام الاسلحة المحرمة دولياً(2 ساعة). تدمير المدن والقرى (سياسة الارض المحروقة): قصف المدن، قصف العتبات المقدسة والمساجد والحسينيات، معركة نهر جاسم ، حرق آبار النفط(2 ساعة). تجفيف الاهوار و اثارها البيئية والاجتماعية والاقتصادية(2 ساعة) ، تجريف بساتين النخيل والاشجار والمزروعات(2 ساعة). جرائم المقابر الجماعية وموقف الامم</p>

المتحدة منها2) ساعة (. احداث المقابر الجماعية المرتكبة من النظام البعثي في العراق، التصنيف الزمني لمقابر ابادة الجماعية في العراق للمدة 1963- 2003) 2ساعة)

Learning and Teaching Strategies

استراتيجيات التعلم والتعليم

Strategies	1-زيادة وعي الطالب بالجرائم التي ارتكبتها نظام البعث في العراق وحقيقة ما جرى من مآسي وويلات بحق الشعب العراقي.
	2-اكتساب الطالب ثقافة عامة بماهية الجرائم واركانها واقسامها وموقف المشرع العراقي منها.
	3-زيادة وعي الطالب بموقف القانون الدولي والمحاكم الجنائية الدولية من الجرائم والانتهاكات التي ترتكبها الانظمة السلطوية

Student Workload (SWL)

الحمل الدراسي للطالب

Structured SWL (h/sem) الحمل الدراسي المنتظم للطالب خلال الفصل	33	Structured SWL (h/w) الحمل الدراسي المنتظم للطالب أسبوعيا	
Unstructured SWL (h/sem) الحمل الدراسي غير المنتظم للطالب خلال الفصل	17	Unstructured SWL (h/w) الحمل الدراسي غير المنتظم للطالب أسبوعيا	
Total SWL (h/sem) الحمل الدراسي الكلي للطالب خلال الفصل	50		

Module Evaluation

تقييم المادة الدراسية

	Time/Number	Weight (Marks)	Week Due	Relevant Learning Outcome
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Formative assessment	Quizzes	4	20% (20)	5, 10,12	LO #1-3 , LO# 9 - 11
	Assignments	6	15% (15)	2, 12	LO # 3, 4, LO#8 -10
	Projects / Lab.	7			
	Report	2	5% (5)	12	LO # 5, 9 and 11
Summative assessment	Midterm Exam	2 hr	10% (10)	7	LO # 1-8
	Final Exam	3	50% (50)	16	All
Total assessment			100% (100 Marks)		

Delivery Plan (Weekly Syllabus)

المنهاج الاسبوعي النظري

	Material Covered
Week 1	محاضرة تعريفية عن المادة واهميتها .
Week 2	التعريف بالجريمة لغة واصطلاحاً، أقسام الجريمة، جرائم نظام البعث وفق قانون المحكمة الجنائية العراقية العليا عام 2005م ، أنواع الجرائم الدولية.
Week 3	القرارات الصادرة من المحكمة الجنائية العليا، وأبرز القضايا التي نظرت فيها المحكمة .
Week 4	الجرائم النفسية، البات الجرائم النفسية .
Week 5	اثار الجرائم النفسية، الجرائم الاجتماعية
Week 6	عسكرة المجتمع، موقف النظام البعثي من الدين .
Week 7	انتهاكات القوانين العراقية، صور انتهاكات حقوق الانسان، جرائم السلطة .
Week 8	بعض قرارات الانتهاكات السياسية والعسكرية لنظام البعث، أماكن السجون والاحتجاز لنظام البعث .
Week 9	الجرائم البيئية لنظام البعث في العراق: التلوث الحربي والاشعاعي - استعمال الاسلحة المحرمة دولياً ومخاطر اللغام.
Week 10	التلوث بالمواد المشعة، آثار استخدام الاسلحة المحرمة دولياً
Week 11	تدمير المدن والقرى (سياسة الارض المحروقة) .
Week 12	تجفيف الأهوار أثارها البيئية والاجتماعية والاقتصادية .
Week 13	تجريف بساتين النخيل والاشجار والمزروعات .
Week 14	جرائم المقابر الجماعية، أحداث المقابر الجماعية المرتكبة من النظام البعثي في العراق .

Week 15	التصنيف الزمي لمقابرالابادة الجماعية في العراق للمدة 2003- .1963
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Delivery Plan (Weekly Lab. Syllabus): There is no Lab activities	
المنهاج الاسبوعي للمختبر:	
	Material Covered
Week 1	
Week 2	

Learning and Teaching Resources		
مصادر التعلم والتدريس		
	Text	Available in the Library?
Required Texts	المنهج المقر الدراسي للجامعات الحكومية و الأهلية كافة كتاب وزارة التعليم والبحث العلمي ذي العدد (ت م 7588 /3في)	Yes
Recommended Texts		No
Websites		

Grading Scheme				
مخطط الدرجات				
Group	Grade	التقدير	Marks (%)	Definition
Success Group (50 - 100)	A - Excellent	امتياز	90 - 100	Outstanding Performance
	B - Very Good	جيد جدا	80 - 89	Above average with some errors
	C - Good	جيد	70 - 79	Sound work with notable errors
	D - Satisfactory	متوسط	60 - 69	Fair but with major shortcomings
	E - Sufficient	مقبول	50 - 59	Work meets minimum criteria
Fail Group (0 – 49)	FX – Fail	راسب (قيد المعالجة)	(45-49)	More work required but credit awarded
	F – Fail	راسب	(0-44)	Considerable amount of work required



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Note: Marks Decimal places above or below 0.5 will be rounded to the higher or lower full mark (for example a mark of 54.5 will be rounded to 55, whereas a mark of 54.4 will be rounded to 54. The University has a policy NOT to condone "near-pass fails" so the only adjustment to marks awarded by the original marker(s) will be the automatic rounding outlined above.

MODULE DESCRIPTION FORM

نموذج وصف المادة الدراسية- انسجة

Module Information

معلومات المادة الدراسية			
Module Title	Histology انسجة		Module Delivery
Module Type	Core		<input checked="" type="checkbox"/> Theory <input checked="" type="checkbox"/> Lecture <input checked="" type="checkbox"/> Lab <input type="checkbox"/> Tutorial <input type="checkbox"/> Practical <input type="checkbox"/> Seminar
Module Code	Biotech 221		
ECTS Credits	4		
SWL (hr/sem)	100		
Module Level	2	Semester of Delivery	
Administering Department	Biotechnology	College	Science
Module Leader		e-mail	
Module Leader's Acad. Title		Module Leader's Qualification	
Module Tutor		e-mail	
Peer Reviewer Name		e-mail	
Scientific Committee Approval Date	19/6/2023	Version Number	

Relation with other Modules			
العلاقة مع المواد الدراسية الأخرى			
Prerequisite module	None	Semester	
Co-requisites module	None	Semester	

Module Aims, Learning Outcomes and Indicative Contents	
أهداف المادة الدراسية ونتائج التعلم والمحتويات الإرشادية	
Module Objectives أهداف المادة الدراسية	<p>The objectives of an immunology module can vary depending on the level of education or the specific course in which it is taught. However, here are some common objectives that are often included in immunology modules:</p> <ol style="list-style-type: none"> 1. Understand the immune system: Gain a comprehensive understanding of the components, organization, and functions of the immune system, including both innate and adaptive immune responses.

	<ol style="list-style-type: none"> 2. Recognize immunological components: Identify and describe the various cells, tissues, organs, and molecules involved in the immune system, such as leukocytes, lymphoid organs, antibodies, cytokines, and major histocompatibility complex (MHC) molecules. 3. Comprehend immune responses: Explore the mechanisms of immune responses, including antigen recognition, antigen processing and presentation, lymphocyte activation and differentiation, antibody production, and cell-mediated immunity. 4. Learn about immunological disorders: Study common immunological disorders, such as autoimmune diseases, allergies, immunodeficiencies, and hypersensitivities, their underlying mechanisms, and their impact on health. 5. Investigate host-pathogen interactions: Examine the interactions between the immune system and pathogens, including bacteria, viruses, fungi, and parasites, and understand the mechanisms by which the immune system detects and eliminates these pathogens. 6. Explore vaccination and immunotherapy: Understand the principles of vaccination, including types of vaccines, vaccine development, and the concept of herd immunity. Also, learn about emerging immunotherapeutic approaches, such as monoclonal antibodies and immune checkpoint inhibitors. 7. Analyze immunological techniques: Familiarize yourself with laboratory techniques commonly used in immunology research, such as flow cytometry, ELISA (enzyme-linked immunosorbent assay), immunohistochemistry, and molecular techniques like PCR (polymerase chain reaction) and gene expression analysis. 8. Develop critical thinking and problem-solving skills: Apply immunological principles to analyze and solve complex immunological problems, evaluate scientific literature, and think critically about immunological concepts and experimental design. 9. Ethical considerations: Discuss ethical issues related to immunology research and medical interventions, including the use of animals in research, the development and distribution of vaccines, and the potential implications of genetic engineering in immunotherapy. 10. Interdisciplinary connections: Recognize the interdisciplinary nature of immunology and its connections to other fields, such as microbiology, genetics, biochemistry, pharmacology, and clinical medicine.
<p>Module Learning Outcomes</p> <p>مخرجات التعلم للمادة الدراسية</p>	<p>Here are some potential learning outcomes for an immunology module:</p> <ol style="list-style-type: none"> 1. Knowledge of the immune system: Demonstrate a solid understanding of the components, organization, and functions of the immune system, including innate and adaptive immunity. 2. Familiarity with immunological components: Identify and describe the different cells, tissues, organs, and molecules involved in the immune system, and explain their roles in immune responses. 3. Understanding of immune responses: Explain the mechanisms of immune responses, including antigen recognition, antigen processing and presentation, lymphocyte activation and differentiation, antibody production, and cell-mediated immunity. 4. Awareness of immunological disorders: Recognize and describe common immunological disorders, their underlying mechanisms, and their impact on human health. 5. Analysis of host-pathogen interactions: Analyze and explain the interactions between the immune system and pathogens, including the mechanisms of pathogen detection, immune evasion strategies, and the immune response to infections. 6. Knowledge of vaccination and immunotherapy: Understand the principles of vaccination, including the different types of vaccines, vaccine development strategies, and the concept of herd immunity. Additionally, demonstrate knowledge of emerging immunotherapeutic approaches. 7. Proficiency in immunological techniques: Apply laboratory techniques commonly used in immunology research, such as flow cytometry, ELISA, immunohistochemistry, and molecular techniques like PCR and gene expression analysis. 8. Critical thinking and problem-solving skills: Apply immunological principles to analyze and solve complex immunological problems, critically evaluate scientific literature, and design experiments to address immunological questions. 9. Ethical considerations: Identify and discuss ethical issues related to immunology research and medical interventions, including the use of animals in research, vaccine development and distribution, and genetic engineering in immunotherapy. 10. Integration of interdisciplinary knowledge: Recognize and understand the interdisciplinary nature of immunology, and integrate knowledge from other fields, such as microbiology, genetics, biochemistry, pharmacology, and clinical medicine, to further enhance understanding of immunological concepts.

	<p>These learning outcomes demonstrate the knowledge, skills, and understanding students should acquire upon completing an immunology module. They can be used to assess students' progress and provide a framework for evaluating their achievements in the field of immunology.</p>
<p>Indicative Contents المحتويات الإرشادية</p>	<p>Indicative content includes the following.</p> <p>Here are some indicative contents that can be covered in an immunology lecture:</p> <ol style="list-style-type: none"> 1. Introduction to Immunology: Historical perspectives and milestones in immunology. <p>Overview of the immune system and its importance in maintaining health.</p> <ol style="list-style-type: none"> 2. Innate Immunity: Components of innate immunity: physical barriers, phagocytes, natural killer cells, and complement system. <p>Pattern recognition receptors and their role in recognizing pathogens.</p> <p>Inflammatory responses and their role in eliminating pathogens.</p> <ol style="list-style-type: none"> 3. Adaptive Immunity: Introduction to adaptive immunity and its key features. <ol style="list-style-type: none"> 4. Antigen recognition: major histocompatibility complex (MHC), T cell receptors, and B cell receptors. T cell-mediated immunity: T cell development, activation, and effector functions. B cell-mediated immunity: B cell development, antibody production, and antibody functions. <p>Antigen Processing and Presentation:</p> <p>Antigen processing pathways: endogenous and exogenous pathways.</p> <p>MHC molecules: structure, types, and antigen presentation.</p> <p>Co-stimulation and the activation of T cells.</p> <ol style="list-style-type: none"> 5. Lymphocyte Activation and Differentiation: Signal transduction pathways in lymphocytes. <p>Activation of T cells by antigen-presenting cells.</p> <p>T helper cell subsets: Th1, Th2, Th17, Treg, and their functions.</p> <p>B cell activation, antibody class switching, and memory B cell formation.</p> <ol style="list-style-type: none"> 6. Immunological Disorders: Autoimmunity: mechanisms, examples, and impact on the body. Hypersensitivity reactions: types I, II, III, and IV hypersensitivity. <ol style="list-style-type: none"> 7. Immunodeficiencies: primary and secondary immunodeficiencies. Allergies and allergic reactions. <p>Immune Responses to Pathogens:</p> <p>Immune response to bacteria, viruses, fungi, and parasites.</p> <p>Mechanisms of pathogen detection and elimination.</p> <p>Cell-mediated immunity and cytotoxic responses.</p> <ol style="list-style-type: none"> 8. Vaccines and Immunization: Principles of vaccination and herd immunity. <p>Types of vaccines: live attenuated, inactivated, subunit, and conjugate vaccines.</p>

	<p>Vaccine development and challenges in vaccine design.</p> <p>9. Immunotherapy: Monoclonal antibodies and their therapeutic applications.</p> <p>Immune checkpoint inhibitors in cancer therapy.</p> <p>Adoptive cell therapy and CAR-T cell therapy.</p> <p>10. Emerging Trends in Immunology: Advances in immunological research.</p> <p>Immunogenetics and personalized immunotherapy.</p> <p>Immunomodulatory therapies and their potential applications.</p>
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Learning and Teaching Strategies استراتيجيات التعلم والتعليم	
Strategies	<p>Type something like: The main strategy that will be adopted in delivering this module is to encourage students' participation in the exercises, while at the same time refining and expanding their critical thinking skills. This will be achieved through classes, interactive tutorials, and by considering types of simple experiments involving some interesting sampling activities to the students.</p>

Student Workload (SWL) الحمل الدراسي للطالب محسوب لـ ١٥ اسبوعا			
Structured SWL (h/sem) الحمل الدراسي المنتظم للطالب خلال الفصل	49	Structured SWL (h/w) الحمل الدراسي المنتظم للطالب أسبوعيا	4
Unstructured SWL (h/sem) الحمل الدراسي غير المنتظم للطالب خلال الفصل	51	Unstructured SWL (h/w) الحمل الدراسي غير المنتظم للطالب أسبوعيا	
Total SWL (h/sem) الحمل الدراسي الكلي للطالب خلال الفصل	100		

Module Evaluation					
تقييم المادة الدراسية					
		Time/Number	Weight (Marks)	Week Due	Relevant Learning Outcome
Formative assessment	Quizzes	2	10% (10)	5 and 10	LO #1, #2 and #10, #11
	Assignments	2	10% (10)	2 and 12	LO #3, #4 and #6, #7
	Projects / Lab.	1	10% (10)	Continuous	All
	Report	1	10% (10)	13	LO #5, #8 and #10
Summative assessment	Midterm Exam	2hr	10% (10)	7	LO #1 - #7
	Final Exam	3hr	50% (50)	16	All
Total assessment			100% (100 Marks)		

Delivery Plan (Weekly Syllabus)	
المنهاج الاسبوعي النظري	
Week	Material Covered
Week 1	Immunology: definition, history, type of immunity.
Week 2	Innate resistance mechanisms: Barriers
Week 3	Innate resistance mechanisms: Chemical Mediators, Organs, and tissues of the immune system
Week 4	Inflammation
Week 5	Adaptive Immunity
Week 6	The Major Histocompatibility Complex
Week 7	T Cells
Week 8	B-cell
Week 9	Antibodies
Week 10	Antibody Response
Week 11	Vaccine
Week 12	Immune system disorders, Hypersensitivity

Week 13	Autoimmunity and Autoimmune Diseases
Week 14	Transplantation (Tissue) Rejection
Week 15	final exam

Delivery Plan (Weekly Lab. Syllabus)

المنهاج الاسبوعي للمختبر

Week	Material Covered
Week 1	Lab 1: Basic Immunology
Week 2	Lab 2: Immunological Techniques
Week 3	Lab 3: Serological Assays
Week 4	Lab 4 Cellular Immunology
Week 5	Lab 5: Immunogenetics
Week 6	Lab 6: Immunological Assays for Disease Diagnosis
Week 7	Lab 7: Experimental Design and Data Analysis

Learning and Teaching Resources

مصادر التعلم والتدريس

	Text	Available in the Library?
Required Texts	علم النسيج (ج1وج 2) تاليف كواكب عبدالقادر المختار وعبدالحكيم الراوي	Yes
Recommended Texts		
Websites		

Grading Scheme

مخطط الدرجات

Group	Grade	التقدير	Marks %	Definition
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Ministry of Higher Education and
Scientific Research - Iraq
University of Tikrit
College of Science
Department of Biotechnology



Success Group (50 - 100)	A - Excellent	امتياز	90 - 100	Outstanding Performance
	B - Very Good	جيد جدا	80 - 89	Above average with some errors
	C - Good	جيد	70 - 79	Sound work with notable errors
	D - Satisfactory	متوسط	60 - 69	Fair but with major shortcomings
	E - Sufficient	مقبول	50 - 59	Work meets minimum criteria
Fail Group (0 - 49)	FX - Fail	راسب (قيد المعالجة)	(45-49)	More work required but credit awarded
	F - Fail	راسب	(0-44)	Considerable amount of work required

Note: Marks Decimal places above or below 0.5 will be rounded to the higher or lower full mark (for example a mark of 54.5 will be rounded to 55, whereas a mark of 54.4 will be rounded to 54. The University has a policy NOT to condone "near-pass fails" so the only adjustment to marks awarded by the original marker(s) will be the automatic rounding outlined above.

MODULE DESCRIPTION FORM

نموذج وصف المادة الدراسية- تقنيات حياتية بيئية

Module Information

معلومات المادة الدراسية			
Module Title	Environmental biotechnology تقنيات حياتية بيئية		Module Delivery
Module Type	Core		<input checked="" type="checkbox"/> Theory <input checked="" type="checkbox"/> Lecture <input checked="" type="checkbox"/> Lab <input type="checkbox"/> Tutorial <input type="checkbox"/> Practical <input type="checkbox"/> Seminar
Module Code	Biotech 222		
ECTS Credits	5		
SWL (hr/sem)	125		
Module Level	2	Semester of Delivery	
Administering Department	Biotechnology	College	Science
Module Leader		e-mail	
Module Leader's Acad. Title		Module Leader's Qualification	
Module Tutor		e-mail	
Peer Reviewer Name		e-mail	
Scientific Committee Approval Date		Version Number	

Relation with other Modules			
العلاقة مع المواد الدراسية الأخرى			
Prerequisite module	None	Semester	
Co-requisites module	None	Semester	

Module Aims, Learning Outcomes and Indicative Contents	
أهداف المادة الدراسية ونتائج التعلم والمحتويات الإرشادية	
Module Objectives أهداف المادة الدراسية	1. Introduce the student to the basics of environmental biotechnology. 2. Introduce the student to the applications of environmental biotechnology in the Iraqi environment. 3. Enabling the student to diagnose and describe solutions to complex environmental problems in Iraq.

	4. Enabling the student to manage and dispose of toxic waste using modern biotechnology.
Module Learning Outcomes مخرجات التعلم للمادة الدراسية	Level One: Developing Knowledge : Developing the student's ability to recall what they have learned about living cells. Level Two: Improving Comprehension (Developing the ability to interpret, predict, and infer). Level Three: Developing Application Skills Level four: Providing the student with the ability to analyze). Level Five: Developing the student's ability to integrate ideas and information (Synthesis) (which is the opposite of analysis). Level Six: Evaluation (Developing the student's ability to judge the value of the material learned).
Indicative Contents المحتويات الإرشادية	Improving the student's ability to observe Learning how to imitate Learning how to conduct environmental experiments

Learning and Teaching Strategies استراتيجيات التعلم والتعليم	
Strategies	The subject is structured around several modes of delivery including a series of illustrated lectures with experts from the field coupled with workshop/tutorial discussions, and individual site visits with practical exercises. Assignment submissions may include verbal presentation and physical documents for the 2 assignments. Feedback will be verbal throughout the semester. It is the student's responsibility to make notes of any feedback given in these sessions. Supplemental written feedback will also be provided for each of the 2 assignments with the assessment.

Student Workload (SWL) الحمل الدراسي للطالب محسوب لـ ١٥ اسبوعا			
Structured SWL (h/sem) الحمل الدراسي المنتظم للطالب خلال الفصل	79	Structured SWL (h/w) الحمل الدراسي المنتظم للطالب أسبوعيا	
Unstructured SWL (h/sem) الحمل الدراسي غير المنتظم للطالب خلال الفصل	46	Unstructured SWL (h/w) الحمل الدراسي غير المنتظم للطالب أسبوعيا	
Total SWL (h/sem) الحمل الدراسي الكلي للطالب خلال الفصل	125		

Module Evaluation					
تقييم المادة الدراسية					
		Time/Number	Weight (Marks)	Week Due	Relevant Learning Outcome
Formative assessment	Quizzes	2	10% (10)	5 and 10	LO #1, #2 and #10, #11
	Assignments	2	10% (10)	2 and 12	LO #3, #4 and #6, #7
	Projects / Lab.	1	10% (10)	Continuous	All
	Report	1	10% (10)	13	LO #5, #8 and #10
Summative assessment	Midterm Exam	2hr	10% (10)	7	LO #1 - #7
	Final Exam	3hr	50% (50)	16	All
Total assessment			100% (100 Marks)		

Delivery Plan (Weekly Syllabus)	
المنهاج الاسبوعي النظري	
	Material Covered
Week 1	Fundamental Aspects of Environmental Microbiology
Week 2	Microbial Metabolism, Growth and Biokinetics
Week 3	Microbial Genetics Recombinant DNA Technology
Week 4	Insertion and Expression of Foreign Genes, Recombinant DNA Techniques in Biotechnology.
Week 5	Microbiology Reactions, types of reactors
Week 6	Biofilm Processes Trickling Filters and Biological Towers, Rotating Biological Contactors, Granular Media Filters, Fluidized-bed Reactors, Hybrid Biofilm Processes
Week 7	Bioremediation for Soil Environment
Week 8	Midterm exam
Week 9	Industrial solvents and Microorganisms

Week 10	Bioremediation for Air Environment
Week 11	Bioremediation for Water Environment
Week 12	Landfill Leachate Biotreatment Technologies,
Week 13	Biotreatment of Metals
Week 14	Emerging Environmental Biotechnologies, Phytoremediation,
Week 15	Final Exam

Delivery Plan (Weekly Laboratory Syllabus)

المنهاج الأسبوعي للمختبر (العملي)

	Material Covered
Week 1	<u>Water Quality Analysis</u> : determining pH, alkalinity of waste water, dissolved oxygen content,
Week 2	Estimation of BOD and COD in polluted water samples. Estimation of COD in polluted water samples.
Week 3	Estimation of electrical conductivity and Total Dissolved Solids (TDS) in waste water samples
Week 4	chloride content, sulfate content, and nitrogen content in the water samples
Week 5	Determination of quality of water sample (Coliform test)
Week 6	Isolation of microorganisms from pollutes soil/Industrial effluents
Week 7	Production of hydrogen or biogas
Week 8	Identification and characterization of Bioremediation microorganisms.
Week 9	Production of microbial biofertilizers.
Week 10	<u>Soil Quality Analysis</u> : determination of moisture content, pH,
Week 11	particle size, organic matter and organic carbon content, ,
Week 12	chloride content, sulfate content
Week 13	nitrogen content,
Week 14	potassium content
Week 15	phosphorus content in the soil samples

Learning and Teaching Resources		
مصادر التعلم والتدريس		
	Text	Available in the Library?
Required Texts	Kumar, P., & Kumar, V. (2018). Textbook of Environmental Biotechnology. Woodhead Singh, R. L. (Ed.). (2017). Principles and applications of environmental biotechnology for a sustainable future. Springer Singapore. Publishing India.	Yes
Websites		

Grading Scheme				
مخطط الدرجات				
Group	Grade	التقدير	Marks %	Definition
Success Group (50 - 100)	A - Excellent	امتياز	90 - 100	Outstanding Performance
	B - Very Good	جيد جدا	80 - 89	Above average with some errors
	C - Good	جيد	70 - 79	Sound work with notable errors
	D - Satisfactory	متوسط	60 - 69	Fair but with major shortcomings
	E - Sufficient	مقبول	50 - 59	Work meets minimum criteria
Fail Group (0 - 49)	FX – Fail	راسب (قيد المعالجة)	(45-49)	More work required but credit awarded
	F – Fail	راسب	(0-44)	Considerable amount of work required
<p>Note: Marks Decimal places above or below 0.5 will be rounded to the higher or lower full mark (for example a mark of 54.5 will be rounded to 55, whereas a mark of 54.4 will be rounded to 54. The University has a policy NOT to condone "near-pass fails" so the only adjustment to marks awarded by the original marker(s) will be the automatic rounding outlined above.</p>				



Ministry of Higher Education and
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University of Tikrit
College of Science
Department of Biotechnology



MODULE DESCRIPTION FORM

نموذج وصف المادة الدراسية- احياء مجهرية 2

Module Information معلومات المادة الدراسية		
Module Title	Microbiology 2	Module Delivery

Module Type	Core		<input checked="" type="checkbox"/> Theory <input checked="" type="checkbox"/> Lecture <input checked="" type="checkbox"/> Lab <input type="checkbox"/> Tutorial <input type="checkbox"/> Practical <input type="checkbox"/> Seminar	
Module Code	Biotech 223			
ECTS Credits	5			
SWL (hr/sem)	125			
Module Level	2	Semester of Delivery		2
Administering Department	Biotechnology	College	Science	
Module Leader		e-mail		
Module Leader's Acad. Title		Module Leader's Qualification		
Module Tutor		e-mail		
Peer Reviewer Name		e-mail		
Scientific Committee Approval Date		Version Number		

Relation with other Modules			
العلاقة مع المواد الدراسية الأخرى			
Prerequisite module	None	Semester	
Co-requisites module	None	Semester	

Module Aims, Learning Outcomes and Indicative Contents	
أهداف المادة الدراسية ونتائج التعلم والمحتويات الإرشادية	
Module Objectives أهداف المادة الدراسية	<ul style="list-style-type: none"> • Explain how microbes affect our daily lives. • Apply pure culture technique. • Observe and measure microbial growth. • Develop core competencies in microbiology: structure and function, information flow, energy transfer and evolution. • Manipulate bacteria genetically to address biological questions.
Module Learning Outcomes مخرجات التعلم للمادة الدراسية	<p>Upon successful completion, students will have the knowledge and skills to:</p> <ol style="list-style-type: none"> 6. Describe diversity of microorganisms, bacterial cell structure and function, microbial growth and metabolism, and the ways to control their growth by physical and chemical means 7. Explain the basic genetic systems of bacteria, bacteriophage and plasmids 8. Explain the role of microorganisms in food production and preservation, and their ability to cause food-borne infections

	<p>9. Demonstrate practical skills in fundamental microbiological techniques</p> <p>10. Systematically apply the scientific method of investigation and hypothesis testing including the development of theoretical and practical skills in the design and execution of experiments as well as the development of oral and writing skills necessary for the effective communication of experimental results</p>
<p>Indicative Contents</p> <p>المحتويات الإرشادية</p>	No Indicative Contents available

<p>Learning and Teaching Strategies</p> <p>استراتيجيات التعلم والتعليم</p>	
<p>Strategies</p>	<p>Microorganisms play a significant role in medicine, agriculture, the environment, and many facets of our daily lives. This course focuses on the general principles of microbiology, providing students with an understanding of the fundamental concepts of the biology of microorganisms. The course includes the following topics: bacterial cell structure and function; genetic systems of bacteria, bacteriophages and plasmids; microbial growth and metabolism; energy and nutrient harvesting; microorganisms and the environment; control of microorganisms; introduction to viruses; food and industrial microbiology.</p> <p>Practical skills are an essential part of microbiology. The laboratory classes in this course aim: (1) to teach and develop basic microbiological techniques and experimental skills; (2) to illustrate some of the concepts presented in the lectures.</p>

<p>Student Workload (SWL)</p> <p>الحمل الدراسي للطالب محسوب لـ ١٥ اسبوعا</p>			
<p>Structured SWL (h/sem)</p> <p>الحمل الدراسي المنتظم للطالب خلال الفصل</p>	79	<p>Structured SWL (h/w)</p> <p>الحمل الدراسي المنتظم للطالب أسبوعيا</p>	
<p>Unstructured SWL (h/sem)</p> <p>الحمل الدراسي غير المنتظم للطالب خلال الفصل</p>	46	<p>Unstructured SWL (h/w)</p> <p>الحمل الدراسي غير المنتظم للطالب أسبوعيا</p>	
<p>Total SWL (h/sem)</p>	125		

Module Evaluation

تقييم المادة الدراسية

		Time/Number	Weight (Marks)	Week Due	Relevant Learning Outcome
Formative assessment	Quizzes	2	10% (10)	5 and 10	LO #1, #2 and #10, #11
	Assignments	2	10% (10)	2 and 12	LO #3, #4 and #6, #7
	Projects / Lab.	1	10% (10)	Continuous	All
	Report	1	10% (10)	13	LO #5, #8 and #10
Summative assessment	Midterm Exam	2hr	10% (10)	7	LO #1 - #7
	Final Exam	3hr	50% (50)	16	All
Total assessment			100% (100 Marks)		

Delivery Plan (Weekly Syllabus)

المنهاج الاسبوعي النظري

	Material Covered
Week 1	Introduction to microbiology and the stages of its development
Week 2	Morphological characteristics for microbiology
Week 3	External structural of bacteria
Week 4	Internal structural of bacteria
Week 5	Microbiology development
Week 6	Exam
Week 7	Food environments
Week 8	Microorganism growth curves
Week 9	Types of farms a counting method Bacteria

Week 10	General characteristics of fungi
Week 11	Yeasts
Week 12	Fungi
Week 13	Viruses
Week 14	Microbiology relationship with food
Week 15	The final Exam

Delivery Plan (Weekly Laboratory Syllabus)

المنهاج الأسبوعي للمختبر (العملي)

	Material Covered
Week 1	Microscope and its uses
Week 2	Gram stain
Week 3	Acid-fast bacteria
Week 4	Painting blackboards
Week 5	Laboratory equipment Microbiology
Week 6	Examination of bacterial Movement By hanging drop
Week 7	Count bacteria by Hemocytometer slide
Week 8	Scientific visit
Week 9	Test and estimate Number of bacteria in milk
Week 10	Count bacteria by Molded dishes
Week 11	Count bacteria by Molded dishes
Week 12	Sterilization
Week 13	Water tests
Week 14	Cultivation media
Week 15	review

Learning and Teaching Resources		
مصادر التعلم والتدريس		
	Text	Available in the Library?
Required Texts	3- Microbiology - PRESCOTT, HARLEY, AND KLEIN'S MICROBIOLOGY, SEVENTH EDITION 4- Microbiology Principles and Explorations / Jacquelyn G. Black.	Yes
Websites	3- https://www.ucl.ac.uk/research/domains/microbiology/ 4- https://www.reed.edu/biology/courses/bio358/logistics.html .	

Grading Scheme				
مخطط الدرجات				
Group	Grade	التقدير	Marks %	Definition
Success Group (50 - 100)	A - Excellent	امتياز	90 - 100	Outstanding Performance
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	F – Fail	راسب	(0-44)	Considerable amount of work required
<p>Note: Marks Decimal places above or below 0.5 will be rounded to the higher or lower full mark (for example a mark of 54.5 will be rounded to 55, whereas a mark of 54.4 will be rounded to 54. The University has a policy NOT to condone "near-pass fails" so the only adjustment to marks awarded by the original marker(s) will be the automatic rounding outlined above.</p>				



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MODULE DESCRIPTION FORM

نموذج وصف المادة الدراسية- فسلفة نبات

Module Information معلومات المادة الدراسية		
Module Title	Plant Physiology فسلفة نبات	Module Delivery <input checked="" type="checkbox"/> Theory <input checked="" type="checkbox"/> Lecture <input checked="" type="checkbox"/> Lab <input type="checkbox"/> Tutorial <input type="checkbox"/> Practical <input type="checkbox"/> Seminar
Module Type	Core	
Module Code	Biotech 224	
ECTS Credits	6	
SWL (hr/sem)	150	

Module Level	2	Semester of Delivery	2
Administering Department	Biotechnology	College	Science
Module Leader		e-mail	
Module Leader's Acad. Title		Module Leader's Qualification	
Module Tutor		e-mail	
Peer Reviewer Name		e-mail	
Scientific Committee Approval Date		Version Number	

Relation with other Modules			
العلاقة مع المواد الدراسية الأخرى			
Prerequisite module	None	Semester	
Co-requisites module	None	Semester	

Module Aims, Learning Outcomes and Indicative Contents	
أهداف المادة الدراسية ونتائج التعلم والمحتويات الإرشادية	
Module Objectives أهداف المادة الدراسية	<ul style="list-style-type: none"> • Understanding the Importance of Water for Plants and Studying Water Relations. • Understanding Water Potential, Its Components, and Theories of Water Movement, Absorption, and Translocation. • Studying Photosynthesis and Understanding Light Reactions and Dark Reactions in C3, C4, and CAM Plants. • Studying Respiration in Plants and Understanding Types of Respiration, Respiratory Quotient, and Mechanism of Respiration. • Understanding Plant Hormones, including Auxins, Gibberellins, Cytokinins, Abscisic Acid, and Ethylene, and the Importance of These Hormones. • To develop the ability of the students to transform the society through their education. • To acquaint the students about the methods used in the maintenance of different natural resources.

	<ul style="list-style-type: none"> • Critical Thinking: to include creative thinking, innovation, inquiry and analysis, evaluation • and synthesis of information. • Topics include the study of plant form, function and reproduction, and an overview of plant
Module Learning Outcomes مخرجات التعلم للمادة الدراسية	<ol style="list-style-type: none"> 5. Knowledge Development - Developing the student's ability to recall what they have learned about the scientific facts related to plant physiology. 6. Understanding Vital Processes in Plants. 7. Understanding the Process of Transport in Plants from the Root to the Leaf. 8. Understanding How Plants Survive Throughout the Year and their Resistance to Heat and Cold. 9. Understanding Types of Plant Hormones, Their Effects on Growth, and Their Applications in Fruit Ripening, Seed Germination, and Plant Propagation. 10. Understanding the Processes of Photosynthesis and Respiration, Gas Exchange in Nature, and the Factors Influencing These Processes. 11. Improving Comprehension Level - Developing the ability to interpret, predict, and infer in order to enhance understanding.
Indicative Contents المحتويات الإرشادية	No Indicative Contents available

Learning and Teaching Strategies استراتيجيات التعلم والتعليم	
Strategies	<p>The subject is structured around several modes of delivery including a series of illustrated lectures with experts from the field coupled with workshop/tutorial discussions, and individual site visits with practical exercises. Assignment submissions may include verbal presentation and physical documents for the 2 assignments. Feedback will be verbal throughout the semester. It is the student's responsibility to make notes of any feedback given in these sessions. Supplemental written feedback will also be provided for each of the 2 assignments with the assessment.</p> <p>FEEDBACK:</p> <p>The class structure provides several opportunities for feedback:</p> <ol style="list-style-type: none"> 1. Throughout the semester verbal feedback will be provided by tutor(s) and peer-peer in the tutorial and workshop sessions for in-class presentations and work sessions. It is the student's responsibility to bring sufficient work for feedback (in line with the required timeline) and to make notes of any feedback given in these sessions.

	<p>2. All assignments are graded in <i>ReView</i>, where the tutor(s) will give formal feedback and indicative grades. This site also allows students to self-assess.</p> <p>3. The online forum will allow students to engage with the work of their peers and the tutor(s) and can be seen as a further opportunity for informal feedback.</p>
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Student Workload (SWL) الحمل الدراسي للطالب محسوب لـ ١٥ اسبوعا			
Structured SWL (h/sem) الحمل الدراسي المنتظم للطالب خلال الفصل	94	Structured SWL (h/w) الحمل الدراسي المنتظم للطالب أسبوعيا	
Unstructured SWL (h/sem) الحمل الدراسي غير المنتظم للطالب خلال الفصل	56	Unstructured SWL (h/w) الحمل الدراسي غير المنتظم للطالب أسبوعيا	
Total SWL (h/sem) الحمل الدراسي الكلي للطالب خلال الفصل	150		

Module Evaluation تقييم المادة الدراسية

		Time/Number	Weight (Marks)	Week Due	Relevant Learning Outcome
Formative assessment	Quizzes	2	10% (10)	5 and 10	LO #1, #2 and #10, #11
	Assignments	2	10% (10)	2 and 12	LO #3, #4 and #6, #7
	Projects / Lab.	1	10% (10)	Continuous	All
	Report	1	10% (10)	13	LO #5, #8 and #10
Summative assessment	Midterm Exam	2hr	10% (10)	7	LO #1 - #7
	Final Exam	3hr	50% (50)	16	All
Total assessment			100% (100 Marks)		

Delivery Plan (Weekly Syllabus)

المنهاج الاسبوعي النظري

	Material Covered
Week 1	Concepts in Plant Physiology.
Week 2	Nature of Solutions, Types of Solutions, and their Concentrations.
Week 3	Colloidal Systems and the Physical Nature of Colloidal Solutions.
Week 4	Plant cell
Week 5	Water Relations in Plants.
Week 6	Osmotic Pressure, Absorption, Transpiration, and the Importance of Water in Supporting Plants.
Week 7	Carbohydrate Metabolism (Biochemical Reactions).
Week 8	Enzymes and Factors Affecting Enzyme Activity, along with the Mechanism and Mode of Action of Enzymes.
Week 9	Respiration, Measuring and Expressing the Rate of Respiration, Compounds Derived from Respiration Process, and their Utilization in Building and Metabolism.
Week 10	Photosynthesis in Plants.
Week 11	Light Absorption in Plants and Describing the Pathways Involved.

Week 12	Mineral Nutrition of Plants.
Week 13	Plant Growth Hormones.
Week 14	Phototropism
Week 15	Growth and Photoperiodism.
Week 16	Preparatory week before the final Exam

Delivery Plan (Weekly Laboratory Syllabus)

المنهاج الأسبوعي للمختبر (العملي)

	Material Covered
Week 1	The Effect of Solution Concentration (Osmotic Potential) on Absorption Rate.
Week 2	Estimating Water Potential of Plant Tissue using the Weight Method.
Week 3	Estimating Water Potential of Plant Tissue using the Schardakov Method.
Week 4	Measuring the Rate of Colloidal Substance Absorption at Room Temperature (Time Effect).
Week 5	The Effect of Solution Concentration (Osmotic Potential) on Absorption Rate.
Week 6	Growth (Experiment 1) - Determining the Elongation Zone.
Week 7	(Experiment 2) Illustrating the Phenomenon of Etiolation in Darkness.
Week 8	(Experiment 3) Demonstrating Negative Geotropism (Positive Phototropism) of the Stem.
Week 9	(Experiment 4) Demonstrating Positive Geotropism (Negative Phototropism) of the Root.
Week 10	(Experiment 5) Demonstrating Positive Phototropism of Leaf Sheaths in a Grass Plant.
Week 11	Chemical Detection of Some Stored Nutrients in Plants.
Week 12	Detection of Carbohydrate Substances: (a) Differentiating between Reducing and Non-Reducing Sugars. (b) Hydrolysis Analysis of Sucrose.
Week 13	Detection of Lipid Substances: -1 Transparent Spot Test. -2 Sudan Staining Test.

Week 14	Plant Growth Hormones.
Week 15	Mineral Nutrition of Plants.

Learning and Teaching Resources		
مصادر التعلم والتدريس		
	Text	Available in the Library?
Required Texts	<p>-علم فسيولوجيا النبات عبد القادر ، فيصل ، فهيمة عبد اللطيف ، أحمد شوقي ، عباس أبو طيبخ ، غسان الخطيب 1982 . . الجمهورية العراقية . وزارة التعليم العالي والبحث العلمي . دار الكتب للطباعة والنشر.</p> <p>- علم فسلجة النبات د. عبد العظيم كاظم م</p> <p>- Plant physiology, 2009. Hopkins, W.G. and .Hiiner, N.P. Wiley</p> <p>- Taiz ,L. and E. Zeiger.2002. Plant Physiology, 3rd ed.Sinauer Associates</p>	Yes
Websites	<p>Journal of Plant Physiology</p> <p>Plant Physiology</p> <p>Indian Journal of Plant Physiology</p>	

Grading Scheme				
مخطط الدرجات				
Group	Grade	التقدير	Marks %	Definition
Success Group (50 - 100)	A - Excellent	امتياز	90 - 100	Outstanding Performance
	B - Very Good	جيد جدا	80 - 89	Above average with some errors
	C - Good	جيد	70 - 79	Sound work with notable errors
	D - Satisfactory	متوسط	60 - 69	Fair but with major shortcomings
	E - Sufficient	مقبول	50 - 59	Work meets minimum criteria
Fail Group (0 – 49)	FX – Fail	راسب (قيد المعالجة)	(45-49)	More work required but credit awarded
	F – Fail	راسب	(0-44)	Considerable amount of work required

Note: Marks Decimal places above or below 0.5 will be rounded to the higher or lower full mark (for example a mark of 54.5 will be rounded to 55, whereas a mark of 54.4 will be rounded to 54. The University has a policy NOT to condone "near-pass fails" so the only adjustment to marks awarded by the original marker(s) will be the automatic rounding outlined above.

MODULE DESCRIPTION FORM

نموذج وصف المادة الدراسية- احياء مجهرية صناعية

Module Information		
معلومات المادة الدراسية		
Module Title	Industrial microbiology احياء مجهرية صناعية	Module Delivery
Module Type	Core	<input checked="" type="checkbox"/> Theory <input checked="" type="checkbox"/> Lecture <input checked="" type="checkbox"/> Lab <input type="checkbox"/> Tutorial
Module Code	Biotech 225	
ECTS Credits	5	

SWL (hr/sem)	125		<input type="checkbox"/> Practical <input type="checkbox"/> Seminar	
Module Level	2	Semester of Delivery		1
Administering Department	Biotechnology	College	Science	
Module Leader		e-mail		
Module Leader's Acad. Title		Module Leader's Qualification		
Module Tutor		e-mail		
Peer Reviewer Name		e-mail		
Scientific Committee Approval Date		Version Number		

Relation with other Modules			
العلاقة مع المواد الدراسية الأخرى			
Prerequisite module	None	Semester	
Co-requisites module	None	Semester	

Module Aims, Learning Outcomes and Indicative Contents	
أهداف المادة الدراسية ونتائج التعلم والمحتويات الإرشادية	
Module Objectives أهداف المادة الدراسية	<ul style="list-style-type: none"> ❖ Describe the microorganism involved in industrial microbiology. ❖ • Mention the methods of sourcing for microorganism of industrial importance. ❖ • Describe how microorganisms of industrial importance are preserved ❖ • Describe the modern classification trends in microbiology. ❖ • Explain the different methods of strain improvement ❖ • Describe how a laboratory fermenter can be scaled up to a commercial one. ❖ • Explain what antifoams are and the work of antifoam in fermenters ❖ • Understand the importance of scale up and the steps involved in scale up process

Module Learning Outcomes مخرجات التعلم للمادة الدراسية	The principal aim of this course is to give the students knowledge on the main microbial groups involved in industrial processes, i.e. the microorganisms responsible for fermentations of industrial relevance. Hence, students will be given all the information necessary to manage, optimize and control microbial metabolic activities through biotechnological processes aimed at biotransformation of substrates, raw food materials and agro-food wastes and by-products into microbial metabolites and fermented foods thus preventing food diseases.
Indicative Contents المحتويات الإرشادية	No Indicative Contents

Learning and Teaching Strategies استراتيجيات التعلم والتعليم	
Strategies	The assessment strategy is designed to provide students with the opportunity to demonstrate that they can describe, explain and understand the type of food toxicants that can cause disease and the type of foods they can be found in. The assessment strategy is also designed to provide students with the opportunity to show that they understand the principles, roles and applications of different food processes used to produce safe and palatable food. Furthermore, calculation tutorials allow students to show that they have the skills to characterize the adequacy of a variety of processes (such as heat processes).

Student Workload (SWL) الحمل الدراسي للطالب محسوب لـ ١٥ اسبوعا			
Structured SWL (h/sem) الحمل الدراسي المنتظم للطالب خلال الفصل	79	Structured SWL (h/w) الحمل الدراسي المنتظم للطالب أسبوعيا	
Unstructured SWL (h/sem) الحمل الدراسي غير المنتظم للطالب خلال الفصل	46	Unstructured SWL (h/w) الحمل الدراسي غير المنتظم للطالب أسبوعيا	
Total SWL (h/sem) الحمل الدراسي الكلي للطالب خلال الفصل	125		

Module Evaluation تقييم المادة الدراسية				
	Time/Number	Weight (Marks)	Week Due	Relevant Learning Outcome

Formative assessment	Quizzes	2	10% (10)	5 and 10	LO #1, #2 and #10, #11
	Assignments	2	10% (10)	2 and 12	LO #3, #4 and #6, #7
	Projects / Lab.	1	10% (10)	Continuous	All
	Report	1	10% (10)	13	LO #5, #8 and #10
Summative assessment	Midterm Exam	2hr	10% (10)	7	LO #1 - #7
	Final Exam	3hr	50% (50)	16	All
Total assessment			100% (100 Marks)		

Delivery Plan (Weekly Syllabus)

المنهاج الاسبوعي النظري

	Material Covered
Week 1	Introduction of Industrial microbiology and its technologies
Week 2	International Food Legislations & Standards
Week 3	Food Quality Control
Week 4	Food chemistry, engineering and microbiology
Week 5	Food Preparation and Toxic Products: D-amino acids/lysinoalanine/toxic amino acids, lectins , Phytoestrogens, goitrogens and cyanogenic glycosides
Week 6	Food additives - lipid oxidation and antioxidants Contaminants -microbes, Pesticide residues
Week 7	Technology for the manufacture, preservation, packaging and marketing of a wide variety of food products of plant and animal origin.
Week 8	Mid exam
Week 9	Food Preparation and Toxic Products
Week 10	Role of heat processing in food production and preservation
Week 11	Novel methods, low cost and low energy: High pressure, pulsed electric field and their use in processing Psychrometry and dehydration.
Week 12	Role of refrigeration in food preservation
Week 13	Advances in food packaging with a particular attention to sustainability issues and novel packaging strategies

Week 14	Nanotechnology Applications for Industrial microbiology and Quality Monitoring
Week 15	Risk assessment in Food Safety
Week 16	Final exam

Delivery Plan (Weekly Laboratory Syllabus)

المنهاج الأسبوعي للمختبر (العملي)

	Material Covered
Week 1	Food Preparation and Toxic Products <ul style="list-style-type: none"> • D-amino acids/lysinoalanine/toxic amino acids, lectins • Phytoestrogens, goitrogens and cyanogenic glycosides • Food additives - lipid oxidation and antioxidants • Contaminants - Pesticide residues
Week 2	Principles of separation techniques for food production and preservation <ul style="list-style-type: none"> • Filtration, ultrafiltration and reverse osmosis • Centrifugation
Week 3	Introduction, heating methods, dielectric and microwave heating, principles of heat transfer – conduction, convection and radiation <ul style="list-style-type: none"> • Pasteurization, sterilization and canning
Week 4	Novel methods <ul style="list-style-type: none"> • Spray drying and freeze-drying • Calculation tutorial • Evaporation • Food Extrusion
Week 5	Food preservation in refrigeration <ul style="list-style-type: none"> • Freezing/frozen storage • Process of freezing/chilled storage/impact on microorganisms
Week 6	Packaging materials, biodegradable and smart packaging Safety of food packaging materials
Week 7	Nanotechnology Applications for Industrial microbiology and Quality Monitoring

Learning and Teaching Resources

مصادر التعلم والتدريس

	Text	Available in the Library?
Required Texts	Lima, G. P., & Vianello, F. (Eds.). (2013). Food quality, safety and technology. Springer. Arun Sharma, P.s. Vijayakumar, Er. Pramod K Prabhakar, Ritesh Kumar. Nanotechnology Applications for Industrial microbiology and Quality . Monitoring. (2023). Elsevier Inc.	



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University of Tikrit
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Websites				
Grading Scheme				
مخطط الدرجات				
Group	Grade	التقدير	Marks %	Definition
Success Group (50 - 100)	A - Excellent	امتياز	90 - 100	Outstanding Performance
	B - Very Good	جيد جدا	80 - 89	Above average with some errors
	C - Good	جيد	70 - 79	Sound work with notable errors
	D - Satisfactory	متوسط	60 - 69	Fair but with major shortcomings
	E - Sufficient	مقبول	50 - 59	Work meets minimum criteria
Fail Group (0 - 49)	FX – Fail	راسب (قيد المعالجة)	(45-49)	More work required but credit awarded
	F – Fail	راسب	(0-44)	Considerable amount of work required
Note: Marks Decimal places above or below 0.5 will be rounded to the higher or lower full mark (for example a mark of 54.5 will be rounded to 55, whereas a mark of 54.4 will be rounded to 54. The University has a policy NOT to condone "near-pass fails" so the only adjustment to marks awarded by the original marker(s) will be the automatic rounding outlined above.				

MODULE DESCRIPTION FORM

نموذج وصف المادة الدراسية- اللغة الانكليزية

Module Information

معلومات المادة الدراسية

Module Title	English Language		Module Delivery	
Module Type	Basic learning activities		<input checked="" type="checkbox"/> Theory <input type="checkbox"/> Lecture <input type="checkbox"/> Lab <input type="checkbox"/> Tutorial <input type="checkbox"/> Practical <input type="checkbox"/> Seminar	
Module Code	Biotech 226			
ECTS Credits	2			
SWL (hr/sem)	50			
Module Level	2	Semester of Delivery	2	
Administering Department	All	College	All	
Module Leader			e-mail	
Module Leader's Acad. Title			Module Leader's Qualification	
Module Tutor			e-mail	
Peer Reviewer Name			e-mail	
Scientific Committee Approval Date			Version Number	1.0

Relation with other Modules			
العلاقة مع المواد الدراسية الأخرى			
Prerequisite module		None	Semester
Co-requisites module		None	Semester

Module Aims, Learning Outcomes and Indicative Contents	
أهداف المادة الدراسية ونتائج التعلم والمحتويات الإرشادية	
Module Objectives أهداف المادة الدراسية	The module aims at enabling students to learn and understand the written and spoken form of English. It also aims at teaching functional English to learners and improving their reading, writing and listening skills.
Module Learning Outcomes مخرجات التعلم للمادة الدراسية	<ol style="list-style-type: none"> 1. Read and understand simple texts in English. 2. Answer simple comprehension questions and match sentences about texts. 3. Reconstruct texts by reordering sentences. 4. Understand the main idea of a text. 5. Identify specific information in a text. Writing and paraphrasing paragraphs.
Indicative Contents المحتويات الإرشادية	Indicative content includes the following. <ol style="list-style-type: none"> i) Grammar has a core place in language teaching and learning. ii) A wide variety of practice tasks in all the four skills are essential to language learning. iii) Everyday expressions, particularly of spoken English, also need a place in the syllabus. These can be functional, social, situational or idiomatic.

Learning and Teaching Strategies	
استراتيجيات التعلم والتعليم	
Strategies	Headway's trusted methodology combines solid grammar and practice, vocabulary development, and integrated skills with communicative role-plays and personalization. Authentic material from a variety of sources enables students to see new language in context, and a range of comprehension tasks, language and vocabulary exercises, and extension activities practice the four skills. 'Everyday English' and 'Spoken grammar' sections practice real-world speaking skills, and a writing section for each unit at the back of the book provides models for students to analyze and imitate.

Student Workload (SWL)			
الحمل الدراسي للطلاب محسوب لـ ١٥ اسبوعا			
Structured SWL (h/sem) الحمل الدراسي المنتظم للطلاب خلال الفصل	33	Structured SWL (h/w) الحمل الدراسي المنتظم للطلاب أسبوعيا	
Unstructured SWL (h/sem) الحمل الدراسي غير المنتظم للطلاب خلال الفصل	17	Unstructured SWL (h/w) الحمل الدراسي غير المنتظم للطلاب أسبوعيا	
Total SWL (h/sem) الحمل الدراسي الكلي للطلاب خلال الفصل	50		

Module Evaluation					
تقييم المادة الدراسية					
		Time/Number	Weight (Marks)	Week Due	Relevant Learning Outcome
Formative assessment	Quizzes	4	20% (5)	3, 5,8,11	LO #1...#3, #4...#5, #7, #9... #11
	Assignments	2	10% (5)	5 and 12	LO #3, #4 and #6, #7
	Projects / Lab.				
	Report	1	10% (10)	13	LO #5, #8 and #10
Summative assessment	Midterm Exam	1hr	10% (10)	7	LO #1 - #7
	Final Exam	2hr	50% (50)	15	All
Total assessment			100% (100 Marks)		
Delivery Plan (Weekly Syllabus)					
المنهاج الاسبوعي النظري					
	Material Covered				
Week 1	Course Introduction (Course material and objectives, learning outcomes, lessons and assessment discussed with the learners).				
Week 2	Unit 1. Getting to know you Reading: People, the great communicators' - the many ways we communicate Listening: Neighbours - Steve and Mrs Snell talk about each other as neighbours Speaking: Information gap - Joy Darling Writing: Informal letters - A letter to a pen friend Grammar: Tenses: present, past and future				
Week 3	Unit 2. The way we live Reading: 'Living in the USA' - three people talk about their experiences Listening: You drive me mad (but I love you)! - what annoys you about the people in your life? Speaking: Information gap - people's Lifestyles. Exchanging information about immigrants to the USA Writing: Linking words, but, however. Describing a person Grammar: Present tense, present continuous				
Week 4	Unit 3. It all went wrong Reading: 'The burglars' friend'. Newspaper stories. A short story - 'The perfect crime Listening: A radio drama - 'The perfect crime Speaking: Information gap - Zoe's party. Telling stories Writing: Linking words: while, during, and for. Writing a story Grammar: Past tenses: Past Simple and past continuous				
Week 5	Unit 4. Let's go shopping! Reading: 'The best shopping street in the world' Listening: 'My uncle's a shopkeeper', Buying things Speaking: Town survey - the good things and bad things about living in your town, Discussion - attitudes to shopping p Writing: Filling in forms Grammar: Quantity, Articles				
Week 6	Assessment Test 1. Feedback and Remedial Work				

Week 7	<p>Unit 5. What do you want to do? Reading: Hollywood kids - growing up in Los Angeles ain't easy Listening: A song - You've got a friend Speaking: What are your plans and ambitions? Being a teenager Writing: Writing a postcard Grammar: Verb patterns 1, future intentions</p>
Week 8	<p>Unit 6. Tell me! What's it like? Reading: A tale of two millionaires' - one was mean and one was generous Listening: Living in another country — an interview with a girl who went to live in Sweden Speaking: Information gap – comparing cities Writing: Relative clauses 1 who/that/which/where. Describing a place Grammar: Comparative and superlative adjectives big, bigger, biggest, good, better, best</p>
Week 9	<p>Unit 7. Famous couples Reading: Celebrity interview from Hi! Magazine with the pop star and the footballer who are in love Listening: An interview with the band Style Speaking: Mingle - Find someone who ... Role play - interviewing a band Writing: Relative clauses 2 who/ which/ that as the object. Writing a biography Grammar: Present Perfect and Past Simple</p>
Week 10	<p>Unit 8. Do's and don'ts Reading: Problems and suggestions Listening: Holidays in January - three people's advice on what to do in their country in January Speaking: Jobs - a game. Discussion - house rules, Asking questions about place Writing: Writing letters- Formal letters Grammar: have (got) to, should, must</p>
Week 11	Assessment Test 2. Feedback and Remedial Work
Week 12	<p>Unit 9. Going places Reading: The world's first megalopolis - a city of 40 million people Listening: Life in 2050 - an interview with Michio Kaku, Professor of Theoretical Physics Speaking: What will you do? Discussion - what will life be like in the 21st century? Writing: Linking words 2, Advantages and disadvantages Grammar: Time and conditional clauses</p>
Week 13	<p>Unit 10. Scared to death Reading: 'Don't look down' - walking on a dangerous footpath, 'Into the wild' Listening: When I was young p80 It was just a joke - a boy called Jamie kidnapped his friend Speaking: 'When I was young' - talking about your childhood Writing: Writing letters Formal and informal letters 1 Grammar: Verb patterns 2 manage to do, used to do, go walking, Infinitives, Purpose</p>
Week 14	<p>Unit 11. Things that changed the world Reading: Three plants that changed the world - tobacco, sugar and cotton Listening: The world's most common habit: chewing gum Speaking: Exchanging information about three plants Writing: Writing a review of a book or film Grammar: Passive</p>
Week 15	<p>Unit 12. Dreams and reality Reading: The vicar who's a ghostbuster Listening: An interview with a woman who heard voices Speaking: Giving advice - If I were you, I'd..... Writing: Writing letters Expressions in different kinds of letters Grammar: Second conditional</p>

Delivery Plan (Weekly Lab. Syllabus): There is no Lab activities	
المنهاج الاسبوعي للمختبر	
	Material Covered
Week 1	
Week 2	

Learning and Teaching Resources		
مصادر التعلم والتدريس		
	Text	Available in the Library?
Required Texts	New Headway Pre-Intermediate by:John and Liz Soars. Oxford University Press	Yes
Recommended Texts	None	
Websites	https://www.scribd.com/document/510746145/New-Headway-Plus-Beginner-Student-s-book	

Grading Scheme				
مخطط الدرجات				
Group	Grade	التقدير	Marks %	Definition
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MODULE DESCRIPTION FORM

نموذج وصف المادة الدراسية- علم الحاسوب

Module Information			
معلومات المادة الدراسية			
Module Title	Computer II		Module Delivery
Module Type	Basic learning activities		<input checked="" type="checkbox"/> Theory
Module Code	Bio 227		<input type="checkbox"/> Lecture
ECTS Credits	3		<input type="checkbox"/> Lab
SWL (hr/sem)	75		<input type="checkbox"/> Tutorial
Module Level	2	Semester of Delivery	2
Administering Department	All	College	All
Module Leader		e-mail	
Module Leader's Acad. Title		Module Leader's Qualification	
Module Tutor		e-mail	
Peer Reviewer Name		e-mail	
Scientific Committee Approval Date		Version Number	2

Relation with other Modules			
العلاقة مع المواد الدراسية الأخرى			
Prerequisite module	None	Semester	
Co-requisites module	None	Semester	

Module Aims, Learning Outcomes and Indicative Contents

أهداف المادة الدراسية ونتائج التعلم والمحتويات الإرشادية

<p style="text-align: center;">Module Objectives</p> <p style="text-align: center;">أهداف المادة الدراسية</p>	<ol style="list-style-type: none"> 1. Training students on the basics of using the computer and providing them with the necessary skills to deal with the computer with high efficiency. 2. Assisting the student in distinguishing and developing his scientific and artistic abilities. 3. Enriching the student's skills to be able to deal with the computer with high efficiency. 4. Providing students with a way to use other modern technologies related to the educational process.
<p style="text-align: center;">Module Learning Outcomes</p> <p style="text-align: center;">مخرجات التعلم للمادة الدراسية</p>	<ol style="list-style-type: none"> 1. Students will be able to describe the basic concepts functions and primary components of a computer. 2. Students will demonstrate the ability to set up a personal computer. 3. Students will be able to describe the function of an operating system and differentiate between various types. 4. Students will understand and utilize basic GUI elements such as windows, icons, and menus. 5. Students will apply Microsoft Office (Word, Excel, PowerPoint) features. 6. Students will understand how the internet works and effectively use web browsers to search for information. 7. Students will compose and manage emails professionally, including understanding attachments, signatures, and managing contacts. 8. Students will identify and resolve common computer issues related to hardware, and software.
<p style="text-align: center;">Indicative Contents</p> <p style="text-align: center;">المحتويات الإرشادية</p>	<p style="text-align: right;">Indicative content includes the following.</p> <ol style="list-style-type: none"> 1. Course Introduction to Computer, Computer Components, and Personal Computer. 2. Working with Operating Systems and Graphical User Interface (GUI). 3. Microsoft Office Word, Excel, and PowerPoint. 4. Working with the Internet and Web browser <p style="text-align: right;">Working with E-mail and Computer troubleshooting</p> <p>Common Operating Systems; The User Interface, Using Mouse Techniques; Use of Common Icons, Status Bar, Using Menu and Menu-selection, Concept of Folders and Directories, Opening and closing of different Windows; Creating Shortcuts.</p> <p>Word Processing: Word Processing Basics; Opening and Closing of documents; Text creation and Manipulation; Formatting of text; Table handling; Spell check, language setting, and thesaurus; Printing of word document.</p> <p>Spreadsheet: Basics of Spreadsheet; Manipulation of cells; Formulas and Functions; Editing of Spreadsheet, printing of Spreadsheet.</p> <p>Presentation Software: Basics of presentation software; Creating Presentation; Preparation and Presentation of Slides; Slide Show; Taking printouts of presentation/handouts.</p> <p>Introduction to Internet and Web Browsers: Computer networks Basic; LAN, WAN; Concept of Internet and its Applications; Connecting to Internet; World Wide Web; Web Browsing software's, Search Engines; Understanding URL; Domain name; IP Address.</p> <p>Communications and Emails: Basics of electronic mail; Getting an email account; Sending and receiving emails; Accessing sent emails; Using emails for document collaboration.</p> <p>Computer Troubleshooting: Identifying and solving common hardware and software problems; Basic troubleshooting techniques and tools for diagnosing and resolving issues.</p>

Learning and Teaching Strategies

استراتيجيات التعلم والتعليم

Strategies

- In this course, students are guided by:
- Using different examples.
- Using different styles of discussion that aim to connect the theoretical and practical sides.
- Asking questions and giving exercises that require analysis and conclusions related to lectures.
- Encourage students to participate in discussions and do practical work.
Encourage students to work in groups.

Student Workload (SWL)

الحمل الدراسي للطالب محسوب لـ ١٥ اسبوعا

Structured SWL (h/sem)	62	Structured SWL (h/w)	
الحمل الدراسي المنتظم للطالب خلال الفصل		الحمل الدراسي المنتظم للطالب أسبوعيا	
Unstructured SWL (h/sem)	13	Unstructured SWL (h/w)	
الحمل الدراسي غير المنتظم للطالب خلال الفصل		الحمل الدراسي غير المنتظم للطالب أسبوعيا	
Total SWL (h/sem)	75		
الحمل الدراسي الكلي للطالب خلال الفصل			

Module Evaluation

تقييم المادة الدراسية

		Time/Number	Weight (Marks)	Week Due	Relevant Learning Outcome
Formative assessment	Quizzes	4	20% (5)	3 , 5,8,11	LO #1...#3, #4...#5, #7, #9... #11
	Assignments	2	10% (5)	5 and 12	LO #3, #4 and #6, #7
	Projects / Lab.				
	Report	1	10% (10)	13	LO #5, #8 and #10
Summative assessment	Midterm Exam	1hr	10% (10)	7	LO #1 - #7
	Final Exam	2hr	50% (50)	15	All
Total assessment			100% (100 Marks)		

Delivery Plan (Weekly Syllabus)

المنهاج الاسبوعي النظري

Weeks	Material Covered
Week 1	Knowing and understanding an introductory lecture and an overview of computer history
Week 2	Knowing and understanding computer generations
Week 3	Knowing and understanding computer types, sizes, and uses

Week 4	Knowing and understanding the main parts of a computer and its hardware
Week 5	Quiz
Week 6	Knowing and understanding cache memory, input units, and output units
Week 7	Knowing and understanding data representation in a computer + systems software + operating systems
Week 8	Knowing and understanding application software + computer usage rules
Week 9	Knowing and understanding computer viruses
Week 10	Monthly Exam
Week 11	Knowledge and understanding of the Windows 10 operating system introduction (start-up steps + desktop components + icons)
Week 12	Knowledge and understanding (continuation of the previous lecture + taskbar + Start menu)
Week 13	Daily Exam 2 / Practical
Week 14	Knowledge and understanding of managing files, folders, and disks
Week 15	Knowledge and understanding of Paint + the topic of interrupting program execution

Delivery Plan (Weekly Lab. Syllabus): **There is no Lab activities**

المنهاج الاسبوعي للمختبر

	Material Covered
Week 1	Knowledge and understanding of Introduction to Microsoft Applications
Week 2	Knowledge and understanding of Microsoft Word (how to save documents and write text)
Week 3	Knowledge and understanding of Microsoft Word (Home Ribbon + Insert)
Week 4	Daily Exam (1) / Practical
Week 5	Knowledge and understanding of Introduction to Computer Networks + Network Classifications, Benefits, and Risks
Week 6	Knowledge and understanding of the Internet (its concept, history, features, and requirements)
Week 7	Knowledge and understanding of the explanation of the topic (Internet Service Providers, Websites, and Internet Browsers)
Week 8	Daily Exam (2)
Week 9	Introduction to Microsoft Excel: Knowledge and Understanding of Spreadsheet Program Basics (How to Create Tables and Worksheets in Excel)
Week 10	Electronic (How to create tables and worksheets in Excel)
Week 11	Knowledge and understanding of the instructions for inserting, deleting, renaming, and hiding all (cells, columns, rows, and worksheets) in Excel
Week 12	Knowledge and understanding of the instructions for hiding rows, columns, and cells + learning the instructions for filtering and sorting in Excel
Week 13	Monthly Exam
Week 14	Knowledge and understanding of mathematical formulas and arithmetic operators
Week 15	Knowledge and understanding of how to prepare charts in an Excel spreadsheet.

Learning and Teaching Resources

مصادر التعلم والتدريس

	Text	Available in the Library?
Required Texts	(Computer Basics) book / Author: Dr. Qais Al-Hadi Babiker Al-Hadi, Assistant Professor, University of Gezira - Department of Computer Science (Sudan)	Yes

Recommended Texts	
Websites	

Grading Scheme				
مخطط الدرجات				
Group	Grade	التقدير	Marks %	Definition
Success Group (50 - 100)	A – Excellent	امتياز	90 - 100	Outstanding Performance
	B - Very Good	جيد جدا	80 - 89	Above average with some errors
	C – Good	جيد	70 - 79	Sound work with notable errors
	D - Satisfactory	متوسط	60 - 69	Fair but with major shortcomings
	E – Sufficient	مقبول	50 - 59	Work meets minimum criteria
Fail Group (0 - 49)	FX – Fail	راسب (قيد المعالجة)	(45-49)	More work required but credit awarded
	F – Fail	راسب	(0-44)	Considerable amount of work required
<p>Note: Marks Decimal places above or below 0.5 will be rounded to the higher or lower full mark (for example a mark of 54.5 will be rounded to 55, whereas a mark of 54.4 will be rounded to 54. The University has a policy NOT to condone "near-pass fails" so the only adjustment to marks awarded by the original marker(s) will be the automatic rounding outlined above.</p>				