MODULE DESCRIPTION FORM

نموذج وصف المادة الدراسية

Module Information معلومات المادة الدراسية					
Module Title	**Analytical Chemistry**			**Module Delivery**	
Module Type	**C**			☒ **Theory** ☒ **Lecture** ☒ **Lab** ☒ **Tutorial** ☐ **Practical** ☒ **Seminar**	
Module Code	**CoS-112**				
ECTS Credits	**7**				
SWL (hr/sem)	**60**				
Module Level	1		**Semester of Delivery**	1	
Administering Department	Bio		**College**	Sci	
Module Leader	Wahran M. Suaad		**e-mail**		
Module Leader's Acad. Title	lecturer		**Module Leader's Qualification**	Ph.D.	
Module Tutor	Name (if available)		**e-mail**		
Peer Reviewer Name	Name		**e-mail**	E-mail	
Scientific Committee Approval Date	01/09/2024		**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	1. **The chemical separation methods course is determined according to the study plan prepared in the Applied Chemistry Department.** 2. **2. The course aims to introduce students to the general concepts of chemical separation methods used in chemical measurements** 3. **3. It also aims to study in detail the types of separation methods that depend on physical or chemical properties, as well as extraction processes, purification of drinking water, fractional distillation of crude oil products, and purification of medical and chemical extracts used in daily life. It helps the student to know the composition of these materials, including medicines and extracts, separating components from their raw materials, how reactions occur, and the measurement mechanism.**
Module Learning Outcomes مخرجات التعلم للمادة الدراسية	**1- That the student know the general concepts of compounds in the analytical chemistry curriculum.** **2- The student should be familiar with the basics and rules for naming different compounds, structural compositions, and different physical properties. .** **3- The student should know the basic principles of measurement methods and separation processes, choose the most appropriate property for separation processes for each compound, obtain the best results and pure extracts, and get acquainted with each method.** **4- The student should understand the importance of these methods and methods and their applications.**
Indicative Contents المحتويات الإرشادية	**a- Methods of teaching and learning** **1- Giving lectures.** **2- Using the method of recitation, discussion and solving questions.** **3- Giving assignments to students to strengthen them and prepare them for the final and final exams.** **b- Evaluation methods** **1- Daily and monthly exams** **2- Duties** **3- In-class exercises**

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 لـ ١٥ اسبوعا			
Structured SWL (h/sem) الحمل الدراسي المنتظم للطالب خلال الفصل	60	**Structured SWL (h/w)** الحمل الدراسي المنتظم للطالب أسبوعيا	4
Unstructured SWL (h/sem) الحمل الدراسي غير المنتظم للطالب خلال الفصل	112	**Unstructured SWL (h/w)** الحمل الدراسي غير المنتظم للطالب أسبوعيا	7.4
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**	6	10% (5)	Same week	LO #1, #2 and #10, #11
	Assignments	4	10% (5)	Each following week	LO #3, #4 and #6, #7
	Projects / Lab.	1	10% (10)	Continuous	All
	Report	4	10% (5)	13	LO #5, #8 and #10
Summative assessment	**Midterm Exam**	1hr	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 separation methods**
Week 2	**Distillation and type of distillations**
Week 3	**Extraction, its types and types of extracts**
Week 4	**Methods for treating contamination and purification of extracts**
Week 5	**Distribution Coefficient in extraction methods**

Week 6	Extraction devices, their types, specifications of each device
Week 7	Organic solvents used in extraction and conditions to be met
Week 8	First month exam
Week 9	Ion exchanges , types, components, manufacturing methods, and specifications
Week 10	General rules for selectivity in ion exchangers
Week 11	Introduction to Chromatography
Week 12	Types of chromatography, types of classification
Week 13	Types of Liquid-solid chromatography
Week 14	Types of Gas-solid chromatography
Week 15	HPLC chromatography
Week 16	Preparatory week before the final Exam

Delivery Plan (Weekly Lab. Syllabus) المنهاج الاسبوعي للمختبر	
	Material Covered
Week 1	Lab 1: Introduction to separation methods
Week 2	Lab 2: Extraction by funnel separation
Week 3	Lab 3: Extraction with a scicholite and clavanger device
Week 4	Lab 4: paper chromatography
Week 5	Lab 5: separation ions by Ion exchanges
Week 6	Lab 6: study The effect of pH in chromatography
Week 7	Lab 7: separation ions using chromatography

Learning and Teaching Resources مصادر التعلم والتدريس		
	Text	Available in the Library?
Required Texts	1- General principles of chemical and weight analysis dr. Safaa Razouqi Al-mraab. The second part 2- Separation Methods in Chemical Analysis, Albertine Habboush, University of Baghdad. 3- Practical applications in automated chemical analyzes and separation methods - Ismail Khalil Al-Hiti	Yes
Recommended Texts	separation and purification of organic compounds	No

	Approach To Modern Separation Techniques. by C-Zhou, E Almatrafi, X Tang, B Shao, W Xia… (Ph.D) (Author), 2022	
Websites	https://www.sciencedirect.com/journal/separation-and-purification-technology/vol/292/suppl/C https://www.amazon.com/Separation-Purification-Methods-Edmond-Perry/dp/082476319X	

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.

5 / 6 / 2023

MODULE DESCRIPTION FORM of BIOCHEMISTRY

نموذج وصف المادة الدراسية

Module Information معلومات المادة الدراسية					
Module Title	Biochemistry I			Module Delivery	
Module Type	Core			☒ Theory ☒ Lecture ☒ Lab ☐ Tutorial ☐ Practical ☐ Seminar	
Module Code	Bio-215				
ECTS Credits	5				
SWL (hr/sem)	60				
Module Level	3		Semester of Delivery	1	
Administering Department	Bio. Dept.		College	Science	
Module Leader	Hameed Hussein Ali		e-mail	Sc.dr.hameedh.ali@uoanbar.edu.iq	
Module Leader's Acad. Title	Professor		Module Leader's Qualification	Ph.D.	
Module Tutor	Name (if available)		e-mail	E-mail	
Peer Reviewer Name	Name		e-mail	E-mail	
Scientific Committee Approval Date	12/09/2024		Version Number	1.0	

Relation with other Modules العلاقة مع المواد الدراسية الأخرى			
Prerequisite module	Bio-102 General Chemistry	Semester	
Co-requisites module	Analytical chemistry , Organic chemistry	Semester	
Co-requisites module	Inorganic chemistry	Semester	

Module Aims, Learning Outcomes and Indicative Contents أهداف المادة الدراسية ونتائج التعلم والمحتويات الإرشادية	
Module Objectives **أهداف المادة الدراسية**	The module objectives of Basic Biochemistry 1 may vary depending on the specific course or educational institution. However, here are some common objectives that are typically covered in a Basic Biochemistry 1 module: 1. Introduction to Biochemistry: Understand the scope, importance, and basic principles of biochemistry as a scientific discipline. 2. Structure and Function of Biomolecules: Explore the structure, properties, and functions of biomolecules, including proteins, carbohydrates, lipids, and nucleic acids. 3.carbohydrate 4. Protein Structure and Function: Learn about the primary, secondary, tertiary, and quaternary structure of proteins and the relationship between structure and function. Understand protein folding, enzymes, and enzyme kinetics. 5. lipids. 6. Enzymes. 7. Hormones. 8. Vitamins and Minerals. These objectives provide a broad overview of the topics typically covered in a Basic Biochemistry 1 module, but the specific content and emphasis may vary from course to course.
Module Learning Outcomes مخرجات التعلم للمادة الدراسية	The outcomes of this modules are to have ability to understand the following subject: 1. Carbohydrate Metabolism: Study the metabolism of carbohydrates, including glycolysis, gluconeogenesis, glycogen metabolism, and the regulation of blood sugar levels. 2. Protein Structure and Function: Learn about the primary, secondary, tertiary, and quaternary structure of proteins and the relationship between structure and function. Understand protein folding, enzymes, and enzyme kinetics. 3. Lipid Metabolism: Explore the metabolism of lipids, including fatty acid oxidation, lipogenesis, cholesterol metabolism, and the role of lipids in cellular membranes. 4. Nucleic Acids and DNA Replication: Understand the structure and function of nucleic acids, including DNA and RNA. Learn about DNA replication, transcription, and translation.

	5. Bioenergetics and Metabolism: Gain an understanding of the principles of bioenergetics and the metabolism of major biomolecules. Learn about ATP production, oxidative phosphorylation, and the regulation of metabolism. 5. Integration of Metabolic Pathways: Study the integration and coordination of different metabolic pathways in the cell. Understand how cells regulate metabolic processes to maintain homeostasis. 6. Techniques in Biochemistry: Familiarize yourself with common laboratory techniques used in biochemistry, such as chromatography, electrophoresis, spectrophotometry, and molecular biology techniques. 7. Biochemical Techniques and Applications: Learn about the applications of biochemistry in various fields, including medicine, biotechnology, pharmacology, and environmental science.
Indicative Contents مضمون المحتويات	Indicative content includes the following. The indicative contents of Basic Biochemistry may vary depending on the specific course or educational institution. However, here are some common topics and areas of study that are typically covered in a Basic Biochemistry course: 1. Introduction to Biochemistry: - Definition and scope of biochemistry - Historical overview of biochemistry - Importance and applications of biochemistry 2. Biomolecules: - Structure, properties, and functions of proteins - Structure, properties, and functions of carbohydrates - Structure, properties, and functions of lipids - Structure, properties, and functions of nucleic acids 3. Protein Structure and Function: - Primary, secondary, tertiary, and quaternary structure of proteins - Protein folding and stability - Enzymes and enzyme kinetics - Regulation of enzyme activity 4. Carbohydrate classifications and reactions: 5.Enzymes 6.Hormones: 7.Vitamins and Minerals

Learning and Teaching Strategies استراتيجيات التعلم والتعليم	
Strategies	Learning and teaching strategies in Basic Biochemistry aim to engage students in active learning, facilitate understanding of complex concepts, and develop critical thinking skills. Here are some common learning and teaching strategies employed in Basic Biochemistry courses: 1. Lectures: Lectures are often used to deliver foundational knowledge and concepts in biochemistry. They provide an overview of the topics, explain key principles, and highlight important details. Lectures may be supplemented with visual aids, such as slides or multimedia presentations, to enhance understanding. 2. Laboratory Work: Laboratory sessions allow students to apply theoretical knowledge to practical situations. They provide hands-on experience with biochemical techniques, data collection, analysis, and interpretation. Lab work may involve experiments related to biomolecule analysis, enzyme kinetics, or metabolic pathways. 3. Problem-solving Exercises: Problem-solving exercises and case studies help students apply their knowledge to real-life scenarios. They encourage critical thinking and problem-solving skills by presenting biochemical problems or experimental data for analysis and interpretation. Students may work individually or in groups to find solutions and explain their reasoning. 4. Interactive Discussions: Interactive discussions, such as small group discussions or classroom debates, promote active learning and peer-to-peer interaction. They allow students to ask questions, clarify doubts, and engage in meaningful discussions about biochemical concepts, experiments, or applications. 5. Concept Mapping: Concept mapping is a visual learning tool that helps students organize and connect different biochemical concepts. It involves creating diagrams or mind maps that illustrate the relationships between different biomolecules, metabolic pathways, or cellular processes. Concept maps can aid in understanding the "big picture" and identifying the interconnections within biochemistry. 6. Multimedia Resources: Incorporating multimedia resources, such as videos, animations, and interactive simulations, can enhance students' engagement and understanding of complex biochemical processes. These resources can visually illustrate molecular structures, enzyme kinetics, or cellular processes, making them more accessible and memorable. 7. Collaborative Learning: Collaborative learning activities, such as group projects or problem-solving tasks, encourage students to work together to solve biochemical problems or complete assignments. This fosters teamwork, communication, and the

	exchange of ideas, allowing students to learn from each other's perspectives and experiences. 8. Assessments: Assessments, such as quizzes, exams, and assignments, evaluate students' understanding and knowledge retention. They provide feedback on individual progress and help identify areas that require further review or clarification. Assessments may include multiple-choice questions, problem-solving tasks, or short essay questions. 9. Online Resources: Utilizing online resources, such as virtual labs, interactive tutorials, or online discussion forums, can provide additional learning opportunities outside of the classroom. These resources offer flexibility and accessibility, allowing students to review content at their own pace and seek additional support when needed. 10. Real-world Applications: Relating biochemistry concepts to real-world applications, such as medical advancements, biotechnology, or environmental issues, can enhance students' motivation and understanding. Exploring the practical relevance of biochemistry concepts helps students appreciate the significance of their learning and its impact in various fields. These strategies aim to create an active and engaging learning environment that promotes understanding, critical thinking, and application of biochemistry principles. The specific strategies employed may vary based on the teaching style, course format, and resources available to the instructor.

Student Workload (SWL) الحمل الدراسي للطالب محسوب لـ ١٥ اسبوعا			
Structured SWL (h/sem) الحمل الدراسي المنتظم للطالب خلال الفصل	60	**Structured SWL (h/w)** الحمل الدراسي المنتظم للطالب أسبوعيا	4
Unstructured SWL (h/sem) الحمل الدراسي غير المنتظم للطالب خلال الفصل	62	**Unstructured SWL (h/w)** الحمل الدراسي غير المنتظم للطالب أسبوعيا	4.1
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	6	10% (5)	5 and 10	LO #1, #2 and #10, #11
	Assignments	4	10% (5)	2 and 12	LO #3, #4 and #6, #7
	Projects / Lab.	1	10% (10)	Continuous	All
	Report	4	10% (5)	13	LO #5, #8 and #10
Summative assessment	Midterm Exam	1hr	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 biochemistry and living cells
Week 2	Introduction and principle of carbohydrates
Week 3	Classification of carbohydrates(monosaccharides, oligosacch., polysacch.)
Week 4	Diagnosis and reactions of carbohydrates
Week 5	Introduction and principle of Amino acids, peptides and proteins
Week 6	General properties, Classification and Diagnosis of amino acids
Week 7	General properties, Classification, Diagnosis and Determination of proteins.
Week 8	**Mid-term Exam**
Week 9	Introduction and principle of lipids
Week 10	General properties, Classification and Diagnosis of Lipids, Determination of lipids
Week 11	Discovery of enzymes, nomenclature, classification and characteristic of enzymes
Week 12	Mode of enzyme action, specificity of enzymes, Factors influencing enzyme activity, enzyme inhibition and chemotherapy.
Week 13	Introduction and principle of vitamin and coenzymes, Classification of vitamin
Week 14	Structure of nucleic acids, Classification of nucleic acid and DNA and RNA, Genetic code
Week 15	Diagnosis and determination of nucleic acids, Mutation and Genetic diseases, Central dogma
Week 16	**Preparatory week before the final Exam**

Delivery Plan (Weekly Lab. Syllabus)

المنهاج الاسبوعي للمختبر

	Material Covered

Week 1	Buffer and solutions preparations
Week 2	Molish test
Week 3	Fehling test
Week 4	Benedict test
Week 5	Ozasone formation
Week 6	Iodine test and Unknown test
Week 7	Ninhydrin test and Xanthoproteic test
Week 8	Sakaguchi test
Week 9	Milon test
Week 10	Protein test
Week 11	Solubility test of lipids
Week 12	Saponification test
Week 13	Acrolein test
Week 14	Enzymes test
Week 15	Vitamin C test

Learning and Teaching Resources
مصادر التعلم والتدريس

	Text	Available in the Library?
Required Texts	Biochemistry books: Biochemistry by L. Stryer Harper, Text Book of Medical Biochemistry Lippincott, Lehninger principle of biochemistry Color atlas of biochemistry Fundamental of biochemistry	**Available Online**
Recommended Texts	Color atlas of biochemistry	No
Websites	Any website	

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

Module Information معلومات المادة الدراسية					
Module Title	**Biochemistry II**			**Module Delivery**	
Module Type	**C**			☒ Theory ☒ Lecture ☒ Lab ☐ Tutorial ☐ Practical ☒ Seminar	
Module Code	**Bio-225**				
ECTS Credits	**4**				
SWL (hr/sem)	**100**				
Module Level		**UGII**	**Semester of Delivery**		**2**
Administering Department		**Bio. Dept.**	**College**	**Science**	
Module Leader	**Hameed Hussein Ali**		**e-mail**	**Sc.dr.hameedh.ali@uoanbar.edu.iq**	
Module Leader's Acad. Title		**Professor**	**Module Leader's Qualification**		**Ph.D.**
Module Tutor			**e-mail**		
Peer Reviewer Name			**e-mail**	**E-mail**	
Scientific Committee Approval Date		**12/012/2024**	**Version Number**		**1.0**

Relation with other Modules العلاقة مع المواد الدراسية الأخرى			
Prerequisite module	**Bio-225 Biochemistry I**	**Semester**	**2**
Co-requisites module	**None**	**Semester**	**None**

Module Aims, Learning Outcomes and Indicative Contents أهداف المادة الدراسية ونتائج التعلم والمحتويات الإرشادية	
Module Objectives أهداف المادة الدراسية	**Course objectives: Familiarizing students with the metabolism of basic life molecules in the body, such as carbohydrates, proteins, fats, and others, and how to represent them inside the body and convert them into vital energy that the human body invests in to perform various vital activities, such as growth and reproduction, for example.**
Module Learning Outcomes مخرجات التعلم للمادة الدراسية	**1-Knowing the resulting imbalance in any of the food metabolism pathways and the consequent severe health damage to the body** **2- Understanding the role that regulatory enzymes play in metabolic reactions.** **3- Knowing the biological importance of food metabolism pathways and their fate in the body**
Indicative Contents المحتويات الإرشادية	**1-nteractive teaching method (interactive lecture)** **2 - Use the method of discussion and dialogue and ensure the involvement of students** **3- The use of experimental education by combining theoretical lectures with the practical part** **4- The use of educational technologies, modern programs and means of explanation in lectures, including the electronic classroom and other electronic platforms in electronic and blended education.**

Learning and Teaching Strategies استراتيجيات التعلم والتعليم	
Strategies	**1 - The ability to understand the metabolic life processes that occur within the body** **2 - Realizing the consequences of any dietary behavior that an individual follows during his life.**

Student Workload (SWL) الحمل الدراسي للطالب محسوب لـ ١٥ أسبوعا			
Structured SWL (h/sem) الحمل الدراسي المنتظم للطالب خلال الفصل	**63**	**Structured SWL (h/w)** الحمل الدراسي المنتظم للطالب أسبوعيا	**4**
Unstructured SWL (h/sem) الحمل الدراسي غير المنتظم للطالب خلال الفصل	**37**	**Unstructured SWL (h/w)** الحمل الدراسي غير المنتظم للطالب أسبوعيا	**2.5**
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 of metabolism.
Week 2	Carbohydrate metabolism / Absorption and digestion
Week 3	Glycolysis, Tricarboxylic acid cycle, pentose phosphate pathway, gluconeogenesis
Week 4	Glycogenesis and glycogenlysis, photosynthesis
Week 5	Disorder of carbohydrate metabolism.
Week 6	Lipids metabolism / Absorption and digestion
Week 7	Lipolysis, Beta-Oxidation of fatty acids, fatty acids Biosynthesis, Triacylglycerol
Week 8	Mid-term Exam.
Week 9	Cholesterol metabolism, ketone bodies metabolism, Disorder of Lipids metabolism.
Week 10	Amino acids and Proteins metabolism / Absorption and digestion
Week 11	Amino acids/biosynthesis of non-essential amino acid
Week 12	Biosynthesis of protein/Urea cycle, Disorder of amino acids and proteins metabolism.
Week 13	Metabolism of nucleic acids , Disorder of Lipids metabolism
Week 14	Mineral metabolism / Introduction, Calcium metabolism
Week 15	Sulphur metabolism, Copper metabolism, Selenium metabolism.
Week 16	Preparatory week before the final Exam.

Delivery Plan (Weekly Lab. Syllabus) المنهاج الاسبوعي للمختبر	
	Material Covered
Week 1	**Introduction of clinical biochemistry**
Week 2	Training students on blood drawing rules
Week 3	Training students on using devices in the laboratory.
Week 4	Determination Of serum Glucose.
Week 5	Determination of Lipids profile
Week 6	Determination Of serum uric acid.
Week 7	Determination Of serum MDA.
Week 8	Liver Functions test (part I)
Week 9	Liver Functions test (part II)
Week 10	Renal function test.(part I)
Week 11	Renal function test.(part II)
Week 12	Determination of serum proteins.
Week 13	**Determination of Iron metabolism**
Week 14	**Determination of thyroid hormones**
Week 15	**Determination of parathyroid hormones**

Learning and Teaching Resources مصادر التعلم والتدريس		
	Text	**Available in the Library?**
Required Texts	Biochemistry books: Biochemistry by L. Stryer Harper, Text Book of Medical Biochemistry Lippincott, Lehninger principle of biochemistry Color atlas of biochemistry Fundamental of biochemistry	**Yes**
Recommended Texts	Color atlas of biochemistry, CLINICAL BIOCHEMISTRY & METABOLIC MEDICINE by Crook	**No**
Websites	Any website	

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**
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	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

Module Information معلومات المادة الدراسية					
Module Title	General Microbiology1			**Module Delivery**	
Module Type	**Core**			☒ **Theory** ☒ **Lecture** ☒ **Lab** ☒ **Tutorial** ☒ **Practical** ☒ **Seminar**	
Module Code	Bio-214				
ECTS Credits	5				
SWL (hr/sem)	**125**				
Module Level		2	**Semester of Delivery**		1
Administering Department		Bio	**College**	Sci	
Module Leader	Thamer Y. Mutter		**e-mail**	Mthamir78@uoanbar.edu.iq	
Module Leader's Acad. Title		Assist. Prof.	**Module Leader's Qualification**		Ph.D.
Module Tutor	Name (if available)		**e-mail**	E-mail	
Peer Reviewer Name		Name	**e-mail**	E-mail	
Scientific Committee Approval Date		01/09/2024	**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	This course covers the fundamental principles of microbiology by looking at the bacteria that live on our world and their impact on the ecosystem. This impact is examined in Introduction to Microbiology through the lens of all fields of microbiology. Students will evaluate the impact of microbiology as well as the problems and opportunities that result from our changing interaction with and understanding of microbes in the twenty-first century. Students will investigate the science of microbes as well as the social issues and concerns relevant to the field of microbiology, such as emerging infectious disease, antibiotic resistance, the anti-vaccine movement, and dual-use biological research, through short lectures, case studies, in-class group work, and homework projects.
Module Learning Outcomes مخرجات التعلم للمادة الدراسية	1 .Describe the structural and functional differences that exist among all microorganisms. 2 .Apply fundamental principles of life chemistry to microbial metabolism and physiology. 3 .Evaluate the impact of microorganisms in their native settings on biosphere maintenance. 4 .Compare and contrast the interactions of microbes with hosts in health and disease. 5 .Identify important microbial relationships and demonstrate how these interactions affect plant and animal health. 6 .Describe the fundamental ideas underpinning the methods employed to restrict microbial development. 7 .Explain the flow and control of genetic information, as well as its impact on the evolution of life on Earth. 8. Investigate the use of bacteria in water safety and food production.
Indicative Contents المحتويات الإرشادية	The targeted general learning outcomes. Students who successfully complete the program will be able to: Demonstrate the improvement of practical/technical abilities. Analyze, assess, and appropriately interpret data. Effectively communicate and deliver information. As part of self-directed learning, obtain and use information from a range of sources. Within the context of self-directed learning, they manage their time and employ their organizational abilities.

Learning and Teaching Strategies استراتيجيات التعلم والتعليم	
Strategies	The course grade will be based on exams, in-class participation & group work and homework assignments

Student Workload (SWL) الحمل الدراسي للطالب محسوب لـ ١٥ اسبوعا			
Structured SWL (h/sem) الحمل الدراسي المنتظم للطالب خلال الفصل	60	**Structured SWL (h/w)** الحمل الدراسي المنتظم للطالب أسبوعيا	4
Unstructured SWL (h/sem) الحمل الدراسي غير المنتظم للطالب خلال الفصل	62	**Unstructured SWL (h/w)** الحمل الدراسي غير المنتظم للطالب أسبوعيا	4.1
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**	6	10% (5)	5 and 10	LO #1, #2 and #10, #11
	Assignments	4	10% (5)	2 and 12	LO #3, #4 and #6, #7
	Projects / Lab.	1	10% (10)	Continuous	All
	Report	4	10% (5)	13	LO #5, #8 and #10
Summative assessment	**Midterm Exam**	1hr	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
Week 2	Microbial Taxonomy and Domain System
Week 3	Classification of Bacteria part one
Week 4	Classification of Bacteria part 2 and Systematic Bacteriology
Week 5	Morphology of Bacteria
Week 6	Growth and physiology of bacteria part one
Week 7	Mid Term exam
Week 8	Growth and physiology of bacteria part two

Week 9	Cytoplasmic Membrane part one
Week 10	Cytoplasmic Membrane part two (active and passive transport)
Week 11	Growth curve and Factors Affecting Growth of Bacteria
Week 12	Metabolism Part one
Week 13	Metabolism Part two
Week 14	Electron Transport Chain
Week 15	**Preparatory week before the final Exam**

Delivery Plan (Weekly Lab. Syllabus) المنهاج الاسبوعي للمختبر	
	Material Covered
Week 1	Biosafety procedure and precaution and microscope
Week 2	Tool, instruments and equipment
Week 3	Staining methods of bacteria
Week 4	Acid fast stains (Ziehl –Nielson technique) and special stains
Week 5	Capsules stain and their types
Week 6	Culture media preparation and their types
Week 7	Growing and cultivation of the bacterial species in the lab.
Week 8	Biochemical tests
Week 9	*Enterobactriaceae*
Week 10, 11, 12	*Ecoli* genus Klebsiella *Proteus* genus
Week 13-15	Project

Learning and Teaching Resources مصادر التعلم والتدريس		
	Text	**Available in the Library?**
Required Texts	Microbiology: an introduction / Gerard J. Tortora, Berdell R. Funke, Christine L. Case. - 12th ed.	Yes
Recommended Texts	Microbiology-Textbooks. I. Funke, Berdell R. II. Case, Christine L., 1948- III . Title. [DNLM: I . Microbiology. QW 4 T712m 20 I 6 I	No

Websites	www.pearsonhighered.com

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

Module Information معلومات المادة الدراسية					
Module Title	General Microbiology II			**Module Delivery**	
Module Type	Core			☒ Theory ☒ Lecture ☒ Lab ☒ Tutorial ☒ Practical ☒ Seminar	
Module Code	BIO-224				
ECTS Credits	5				
SWL (hr/sem)	125				
Module Level	2		**Semester of Delivery**	2	
Administering Department	Bio		**College**	Sci	
Module Leader	Thamer Y. Mutter		**e-mail**	Mthamir78@uoanbar.edu.iq	
Module Leader's Acad. Title	Assist. Prof		**Module Leader's Qualification**	Ph.D.	
Module Tutor	Name (if available)		**e-mail**	E-mail	
Peer Reviewer Name	Name		**e-mail**	E-mail	
Scientific Committee Approval Date	01/12/2024		**Version Number**	1.0	

Relation with other Modules العلاقة مع المواد الدراسية الأخرى			
Prerequisite module		**Semester**	2
Co-requisites module	None	**Semester**	

Module Aims, Learning Outcomes and Indicative Contents أهداف المادة الدراسية ونتائج التعلم والمحتويات الإرشادية	
Module Objectives أهداف المادة الدراسية	Topics include the various groups of microorganisms, their structure, physiology, genetics, microbial pathogenicity, infectious diseases, immunology, and selected practical applications. Upon completion, students should be able to demonstrate knowledge and skills including microscopy, aseptic technique, staining, culture methods, and identification of microorganisms.
Module Learning Outcomes مخرجات التعلم للمادة الدراسية	1. Comparative characteristics of microbial organisms 2. General bacteriology and microbial techniques. 3. Microbial metabolism and enzymes. 4. Physical and chemical microbial control 5. Collection and handling of laboratory specimens. 6. Microbial genetics, mutation and biotechnology. 7. Pathogenicity, virulence, and epidemiology 8. Disease transmission and control of nosocomial infections 9. Body defenses, immunology, and hypersensitivity 10. Common bacterial, fungal, and viral diseases. 11. Experimentation in clinical scenarios.
Indicative Contents المحتويات الإرشادية	The targeted general learning outcomes. Students who successfully complete the program will be able to: Demonstrate the improvement of practical/technical abilities. Analyze, assess, and appropriately interpret data. Effectively communicate and deliver information. As part of self-directed learning, obtain and use information from a range of sources. Within the context of self-directed learning, they manage their time and employ their organizational abilities.

Learning and Teaching Strategies استراتيجيات التعلم والتعليم	
Strategies	The course grade will be based on exams, in-class participation & group work and homework assignments

Student Workload (SWL) الحمل الدراسي للطالب محسوب لـ ١٥ اسبوعا			
Structured SWL (h/sem) الحمل الدراسي المنتظم للطالب خلال الفصل	63	**Structured SWL (h/w)** الحمل الدراسي المنتظم للطالب أسبوعيا	4
Unstructured SWL (h/sem)	62	**Unstructured SWL (h/w)** الحمل الدراسي غير المنتظم للطالب أسبوعيا	4

الحمل الدراسي غير المنتظم للطالب خلال الفصل			
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**	6	10% (10)	5 and 10	LO #1, #2 and #10, #11
	Assignments	4	10% (10)	2 and 12	LO #3, #4 and #6, #7
	Projects / Lab.	1	10% (10)	Continuous	All
	Report	4	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	Microbial Diversity – Prokaryotes, Eukaryotes, and Viruses
Week 2	Replication, Transcription, Translation part I
Week 3	Replication, Transcription, Translation Part II
Week 4	Replication, Transcription, Translation Part III
Week 5	Mutations and Genetic Control Part I
Week 6	Mutations and Genetic Control Part II
Week 7	Mid Term exam
Week 8	Microbial Interactions – The Build Environment
Week 9	The Human Microbiome
Week 10	Control of Microbes
Week 11	Clinical Microbiology (Epidemiology and Pathogenicity)
Week 12	Diseases of the gastrointestinal tract
Week 13	Diseases of the respiratory tract

Week 14	**Diseases of the genitourinary tract**
Week 15	**Diseases of the blood and lymph**
Week 16	**Preparatory week before the final Exam**

Delivery Plan (Weekly Lab. Syllabus) المنهاج الاسبوعي للمختبر	
	Material Covered
Week 1	Serial dilution
Week 2	Antimicrobial sensitivity
Week 3	Advanced Biochemical test
Week 4	DNA extraction
Week 5	Transformation
Week 6	Electrophoresis
Week 7	Pathogens identification
Week 8	Poster project
Week 9	Poster project
Week 10	Poster presentation
Week 11	Poster presentation
Week 12	Poster presentation
Week 13	Poster presentation
Week 14	Poster presentation
Week 15	

Learning and Teaching Resources مصادر التعلم والتدريس		
	Text	**Available in the Library?**
Required Texts	Microbiology: an introduction / Gerard J. Tortora, Berdell R. Funke, Christine L. Case. - 12th ed.	Yes
Recommended Texts	Microbiology-Textbooks. I. Funke, Berdell R. II. Case, Christine L., 1948- III . Title. [DNLM: I . Microbiology. QW 4 T712m 20 I 6 I	No
Websites	www.pearsonhighered.com	

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

Module Information معلومات المادة الدراسية					
Module Title	**Zoology**			**Module Delivery**	
Module Type	**C**			**Theory** **Lecture** **Lab** **Tutorial** **Practical** **Seminar**	
Module Code	**Bio-111**				
ECTS Credits	8				
SWL (hr/sem)	**60**				
Module Level	1		**Semester of Delivery**	1	
Administering Department	Bio		**College**	Sci	
Module Leader	Dr. Raheed M. Rasheed		**e-mail**		
Module Leader's Acad. Title	lecturer		**Module Leader's Qualification**	Ph.D.	
Module Tutor	Name (if available)		**e-mail**		
Peer Reviewer Name	Name		**e-mail**	E-mail	
Scientific Committee Approval Date	01/09/2024		**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	1. **Develop an understanding of the diversity of animal life and an appreciation of the significance of various taxa.** 2. **Demonstrate a basic understanding of the evolutionary history of the animal kingdom.** 3. **Develop an understanding of the form and function of animal systems.** 4. **Develop laboratory skills necessary for zoological study.**
Module Learning Outcomes مخرجات التعلم للمادة الدراسية	1. **Have developed an understanding of the diversity of animal life and an appreciation of the significance of various taxa.** 2. **Have developed a basic understanding of the evolutionary history of the animal kingdom.** 3. **Develop an understanding of the form and function of animal systems.** 4. **Develop laboratory skills necessary for zoological study.**
Indicative Contents المحتويات الإرشادية	**Zoology course covers three main themes:** **Comparative physiology - the functional characteristics of animals;** **Evolutionary biology - how animals adapt to their environment, and their genetics,** **Behaviour, ecology and conservation - how animals interact with their environment and each other to support biodiversity on the planet.** **Alongside your specialist zoology modules, you'll have the flexibility to study topics across the breadth of biology to complement your knowledge. These modules are available from your first year.** **Topics range from ecology and molecular genetics that underpin conservation, to pharmacology, neuroscience and even human physiology. This flexibility allows you to study zoology in greater depth, broaden your interests or even switch to another biosciences degree programme.**

Learning and Teaching Strategies استراتيجيات التعلم والتعليم	
Strategies	**As a zoology student, students will learn in lots of different ways, from lectures and small group tutorials to learning by doing during field work, practical lab sessions and research projects.** **Our staff are committed to great teaching and students will have lots of opportunities throughout your degree to be creative, think independently, and express your ideas.**

Student Workload (SWL) الحمل الدراسي للطالب محسوب لـ ١٥ اسبوعا			
Structured SWL (h/sem) الحمل الدراسي المنتظم للطالب خلال الفصل	60	**Structured SWL (h/w)** الحمل الدراسي المنتظم للطالب أسبوعيا	4
Unstructured SWL (h/sem) الحمل الدراسي غير المنتظم للطالب خلال الفصل	137	**Unstructured SWL (h/w)** الحمل الدراسي غير المنتظم للطالب أسبوعيا	9.1
Total SWL (h/sem) الحمل الدراسي الكلي للطالب خلال الفصل	**200**		

Module Evaluation تقييم المادة الدراسية					
		Time/Number	**Weight (Marks)**	**Week Due**	**Relevant Learning Outcome**
Formative assessment	**Quizzes**	6	10% (5)	Same week	1, 2, 3, 4
	Assignments	4	10% (5)	Each following week	1, 2, 3, 4
	Projects / Lab.	1	10% (10)	12	1, 2, 3, 4
	Report	4	10% (5)	3, 6, 8, 10	3, 4
Summative assessment	**Midterm Exam**	1hr	10% (10)	7	1, 2, 3
	Final Exam	3hr	50% (50)	16	1, 2, 3, 4
Total assessment			100% (100 Marks)		

Delivery Plan (Weekly Syllabus) المنهاج الاسبوعي النظري	
	Material Covered
Week 1	View of life
Week 2	Introduction to biology
Week 3	Chemistry of life (part 1)
Week 4	Chemistry of life (part 2)
Week 5	Cell structure and function(1)

Week 6	Cell structure and function(2)
Week 7	Cell structure and function(3)
Week 8	Cell cycle and cellular reproduction
Week 9	Histology and animal tissue
Week 10	Ecology
Week 11	Exam
Week 12	Animal world
Week 13	Animal physiology
Week 14	Genetics
Week 15	Immunology
Week 16	**Preparatory week before the final Exam**

Delivery Plan (Weekly Lab. Syllabus) المنهاج الاسبوعي للمختبر	
	Material Covered
Week 1	Microscope
Week 2	Microscopic preparations
Week 3	Biochemical molecules
Week 4	Investigation of carbohydrates
Week 5	Animal cell (part 1)
Week 6	Animal cell (part 2)
Week 7	Biological experiments
Week 8	Animal tissue (1)
Week 9	Exam
Week 10	Animal tissue (2)
Week 11	Animal classification
Week 12	Anatomy of mice
Week 13	Blood picture
Week 14	DNA isolation from blood
Week 15	Blood groups
Week 16	**Preparatory week before the final Exam**

Learning and Teaching Resources مصادر التعلم والتدريس		
	Text	**Available in the Library?**
Required Texts	**Integrated Principles of Biology 16th Ed. By Hickman et al. 2014. McGraw Hill Higher Education. Boston, MA. ISBN-13: 978-0073524214 ISBN-10: 0073524212**	Yes
Recommended Texts		No
Websites		

Grading Scheme				
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.

Prof. Dr. Mohammed Q. Abid

5 / 6 / 2023

MODULE DESCRIPTION FORM

نموذج وصف المادة الدراسية

Module Information معلومات المادة الدراسية					
Module Title	**General Mathematics**			**Module Delivery**	
Module Type	**Basic**			☐ **Theory** ☒ **Lecture** ☐ **Lab** ☒ **Tutorial** ☐ **Practical** ☐ **Seminar**	
Module Code	**CoS-111**				
ECTS Credits	**5**				
SWL (hr/sem)	**45**				
Module Level	1		**Semester of Delivery**	1	
Administering Department	Biology		**College**	Science	
Module Leader	Rafaat S. Abduljabar		**e-mail**		
Module Leader's Acad. Title	Lecturer		**Module Leader's Qualification**	Ph.D.	
Module Tutor	Name (if available)		**e-mail**	E-mail	
Peer Reviewer Name	Name		**e-mail**	E-mail	
Scientific Committee Approval Date	01/09/2024		**Version Number**	1.0	

Relation with other Modules العلاقة مع المواد الدراسية الأخرى			
Prerequisite module	Non	**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	This module aims to provide students with the necessary topics such as mathematical (whether classical or probabilistic) and statistical concepts that can be applied in Biology. Students will have acquired fundamental skills in the evaluation of experiments, the interpretation of readings and numbers as well as the mathematical description of biological processes.
Module Learning Outcomes مخرجات التعلم للمادة الدراسية	Mathematics is a very active and fast growing interdisciplinary area in which mathematical concepts, techniques, and models are applied to a variety of problems in developmental biology and biomedical sciences. Many biological processes can be quantitatively characterized by differential equations. This course introduces you to a variety of models mainly based on ordinary differential equations and techniques for analyzing these models. Mathematical concepts on nonlinear dynamics and chaos will be introduced. Population models (predator-prey, competition), epidemic models and reaction enzyme kinetics will be discussed. Some probabilistic modelling of molecular evolution will also be introduced. Use and interpret different types of data in biology. Choose and perform the appropriate statistical technique for the analysis of data. Apply knowledge of sampling to test hypotheses about problems. Interpret the results of a simple statistical analysis and communicate them in a clear, concise and appropriate manner. Discuss the principles of biology aspects and relate these to the decision-making and studies and the interpretation of results.
Indicative Contents المحتويات الإرشادية	lectures, tutorials, exercises and practice. Three-hours class and online lectures per week (total 45 hours). The tutorial will consist of a set questions put to the students to informally assess their understanding of the content of the lecture, to allow them to think about and solve example problems related to the lecture content, to express their understanding in English, and to correct any misunderstanding or gaps in their knowledge of the lecture's content.

Learning and Teaching Strategies استراتيجيات التعلم والتعليم	
Strategies	The main strategy that will be adopted in delivering this module is to encourage students' participation in the exercises as well as a series of lectures and practice classes designed to introduce you to Mathematics and Biostatistics. At the same time, they are refining and expanding their critical thinking skills through topics covered in lectures, including population models for single and interacting species, population dynamics, Modelling infectious disease transmission, Enzyme kinetics, modelling of molecular biology, and Descriptive and inferential statistics.

Student Workload (SWL) الحمل الدراسي للطالب محسوب لـ ١٥ اسبوعا			
Structured SWL (h/sem) الحمل الدراسي المنتظم للطالب خلال الفصل	45	**Structured SWL (h/w)** الحمل الدراسي المنتظم للطالب أسبوعيا	3
Unstructured SWL (h/sem) الحمل الدراسي غير المنتظم للطالب خلال الفصل	77	**Unstructured SWL (h/w)** الحمل الدراسي غير المنتظم للطالب أسبوعيا	5.1
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	10% (5)		
	Assignments	8	20% (5)		
	Projects / Lab.				
	Report	2	10% (10)		
Summative assessment	**Midterm Exam**	1	10% (10)		
	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 Calculus
Week 2	Slope of straight line
Week 3	Equation of straight line and circle
Week 4	Inequalities
Week 5	Absolute value function
Week 6	Graph of functions
Week 7	Limit and continuity
Week 8	Limit and continuity (continued)
Week 9	Derivative I

Week 10	Exam
Week 11	Derivative II
Week 12	Logarithmic functions
Week 13	Exponential function
Week 14	Trigonometric functions
Week 15	Applications of derivative
Week 16	**Preparatory week before the final Exam**

Learning and Teaching Resources
مصادر التعلم والتدريس

	Text	Available in the Library?
Required Texts	Mathematical Modeling in Systems Biology: An Introduction. Brian P. Ingalls (2022). MIT Press.	No
Recommended Texts		No
Websites	https://www.uoanbar.edu.iq/	

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

Module Information معلومات المادة الدراسية					
Module Title	**(Arabic language) اللغة العربية**			**Module Delivery**	
Module Type	**Support**			☒ **Theory** ☒ **Lecture** ☐ **Lab** ☐ **Tutorial** ☐ **Practical** ☒ **Seminar**	
Module Code	**UoA-112**				
ECTS Credits	**2**				
SWL (hr/sem)	**30**				
Module Level	1		**Semester of Delivery**	2	
Administering Department	Bio		**College**	Sci	
Module Leader	Ali M. Jurow		**e-mail**		
Module Leader's Acad. Title	Prof.		**Module Leader's Qualification**	Ph.D	
Module Tutor			**e-mail**		
Peer Reviewer Name			**e-mail**		
Scientific Committee Approval Date	01/09/2024		**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	أ - تنمية معارف الطلبة للغة العربية، وأهميتها لهم. ب - أن يتعرف على شرح بعض سور القرآن الكريم، ويحفظها. ت- ان يتعرف الطالب على تاريخ الأدب، وأهم مراحل تطوره . ث- الاطلاع على شعراء لم يسبق للطالب التعرف عليهم ج- أن يضبط الطلبة كتابة الأملاء وعلامات الترقيم.
Module Learning Outcomes مخرجات التعلم للمادة الدراسية	1. القدرة على الحفظ والاستذكار 2. القدرة على الموازنة بين لغة ادب العصر المذكور والآداب الاخرى. 3. القدرة على المشاركة الجماعية للمحتويات الادبية للمادة 4. القدرة على تقديم المقترحات وحل المشكلات 5. القدرة على التفاعل مع المصادر والمراجع
Indicative Contents المحتويات الإرشادية	القران الكريم- سور ة الملك ، الآيات 1-10 ، القواعد، المبتدأ والخبر الأدب- مصطلح الأدب والعصور الأدبية الإملاء- كتاب الهمزة القران الكريم- سور ة الملك الآيات 11-20 القواعد- كان وأخواتها الأدب- قصيدة قم للمعلم لأحمد شوقي الإملاء- كتابة الضاد والظاء القران الكريم- سور ة الملك الآيات 21-30 القواعد- إن وأخواتها الأدب- قصيدة اللغة العربية لحافظ إبراهيم الإملاء- علامات الترقيم القواعد- التوابع الأدب- النثر العربي، المقامات الأدبية

Learning and Teaching Strategies استراتيجيات التعلم والتعليم	
Strategies	تعبر استراتيجيات التراكيب عن قواعد تراكيب اللغة العربية، حيث أن أفضل أسلوب في تدريس القواعد النحوية، وهو الأسلوب الطبيعي الذي يعتمد على ممارسة اللغة استماعا، وكلاما، وقراءة، وكتابة، وعلى هذا الأساس فالاستعمال كما يقول ابن خلدون: ومحاكاة الأساليب اللغوية الصحيحة، والتدريب عليها تدريبا متصلا، هو الأسلوب الأمثل في تدريس القواعد النحوية، ومن ثم لا بد أن يفسح المدرس أمام التلاميذ المجال في دروس الاستماع، والتعبير والقراءة للتدريب على القواعد النحوية، حيث يشعرون بحاجتهم إليها للفهم والتعبير والكتابة دون ضغط أو إرغام. إضافة الى: 1 - استراتيجية الحوار 2 - استراتيجية السرد القصصي 3 - التدريس باستخدام التكنولوجيا 4 - استراتيجية إعداد المشاريع... 5 - استراتيجية تبادل الأدوار

Student Workload (SWL) الحمل الدراسي للطالب محسوب لـ ١٥ اسبوعا			
Structured SWL (h/sem) الحمل الدراسي المنتظم للطالب خلال الفصل	30	**Structured SWL (h/w)** الحمل الدراسي المنتظم للطالب أسبوعيا	2
Unstructured SWL (h/sem) الحمل الدراسي غير المنتظم للطالب خلال الفصل	17	**Unstructured SWL (h/w)** الحمل الدراسي غير المنتظم للطالب أسبوعيا	1.1
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	10% (5)	5 and 10	LO #1, #2 and #10, #11
	Assignments	4	20% (10)	2 and 12	LO #3, #4 and #6, #7
	Projects / Lab.				
	Essays	2	10% (10)	13	LO #5, #8 and #10
Summative assessment	**Midterm Exam**	1hr	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	-العلامات الأصلية والبديلة
Week 2	قواعد العدد والمعدود
Week 3	قصيدة للشاعر احمد شوقي مع حياة الشاعر
Week 4	كيفية التفريق بين التاء المفتوحة والمربوطة والهاء
Week 5	الأخطاء الشائعة في التحدث باللغة العربية.
Week 6	ان واخواتها
Week 7	**كان واخواتها**

Week 8	النداء
Week 9	درس في الصرف
Week 10	مواضع الهمزة.
Week 11	-قصيدة للشاعر حافظ ابراهيم
Week 12	علامات الترقيم
Week 13	درس في الصرف
Week 14	درس في الصرف
Week 15	القواعد- التوابع
Week 16	**final-term Exam**

Delivery Plan (Weekly Lab. Syllabus) المنهاج الاسبوعي للمختبر (**لا يوجد**)	
	Material Covered
Week 1	Lab 1:
Week 2	Lab 2:
Week 3	Lab 3:
Week 4	Lab 4:
Week 5	Lab 5:
Week 6	Lab 6:
Week 7	Lab 7:

Learning and Teaching Resources مصادر التعلم والتدريس		
	Text	**Available in the Library?**
Required Texts	كتاب اللغة العربية للأقسام غير الاختصاص	Yes
Recommended Texts	كتب اخرى ضمن الاختصاص ذات اسلوب أكاديمي مفصل	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

Module Information معلومات المادة الدراسية					
Module Title	**(Arabic language) 2 اللغة العربية**			**Module Delivery**	
Module Type	**Support**			☒ **Theory** ☒ **Lecture** ☐ **Lab** ☐ **Tutorial** ☐ **Practical** ☒ **Seminar**	
Module Code	UOA002				
ECTS Credits	**2**				
SWL (hr/sem)	**30**				
Module Level	2		**Semester of Delivery**	2	
Administering Department	Bio		**College**	Sci	
Module Leader	Ali M. Jurow		**e-mail**		
Module Leader's Acad. Title	Prof.		**Module Leader's Qualification**	Ph.D	
Module Tutor			**e-mail**		
Peer Reviewer Name			**e-mail**		
Scientific Committee Approval Date	01/12/2024		**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	أ - تنمية معارف الطلبة للغة العربية، وأهميتها لهم. ب - أن يتعرف على شرح بعض سور القرآن الكريم، ويحفظها. ت- ان يتعرف الطالب على تاريخ الأدب، وأهم مراحل تطوره . ث- الاطلاع على شعراء لم يسبق للطالب التعرف عليهم ج- أن يضبط الطلبة كتابة الأملاء وعلامات الترقيم.
Module Learning Outcomes مخرجات التعلم للمادة الدراسية	1. القدرة على الحفظ والاستذكار 2. القدرة على الموازنة بين لغة ادب العصر المذكور والآداب الاخرى. 3. القدرة على المشاركة الجماعية للمحتويات الادبية للمادة 4. القدرة على تقديم المقترحات وحل المشكلات 5. القدرة على التفاعل مع المصادر والمراجع
Indicative Contents المحتويات الإرشادية	القران الكريم- سور ة الملك ، الآيات 1-10 ، القواعد، المبتدأ والخبر الأدب- مصطلح الأدب والعصور الأدبية الإملاء- كتاب الهمزة القران الكريم- سور ة الملك الآيات 11-20 القواعد- كان وأخواتها الأدب- قصيدة قم للمعلم لأحمد شوقي الإملاء- كتابة الضاد والظاء القران الكريم- سور ة الملك الآيات 21-30 القواعد- إن وأخواتها الأدب- قصيدة اللغة العربية لحافظ إبراهيم الإملاء- علامات الترقيم القواعد- التوابع الأدب- النثر العربي، المقامات الأدبية

Learning and Teaching Strategies استراتيجيات التعلم والتعليم	
Strategies	تعبر استراتيجيات التراكيب عن قواعد تراكيب اللغة العربية، حيث أن أفضل أسلوب في تدريس القواعد النحوية، وهو الأسلوب الطبيعي الذي يعتمد على ممارسة اللغة استماعا، وكلاما، وقراءة، وكتابة، وعلى هذا الأساس فالاستعمال كما يقول ابن خلدون: ومحاكاة الأساليب اللغوية الصحيحة، والتدريب عليها تدريبا متصلا، هو الأسلوب الأمثل في تدريس القواعد النحوية، ومن ثم لا بد أن يفسح المدرس أمام التلاميذ المجال في دروس الاستماع، والتعبير والقراءة للتدريب على القواعد النحوية، حيث يشعرون بحاجتهم إليها للفهم والتعبير والكتابة دون ضغط أو إرغام. إضافة الى: 1 - استراتيجية الحوار 2 - استراتيجية السرد القصصي 3 - التدريس باستخدام التكنولوجيا 4 - استراتيجية إعداد المشاريع... 5 - استراتيجية تبادل الأدوار

Student Workload (SWL) الحمل الدراسي للطالب محسوب لـ ١٥ اسبوعا			
Structured SWL (h/sem) الحمل الدراسي المنتظم للطالب خلال الفصل	30	**Structured SWL (h/w)** الحمل الدراسي المنتظم للطالب أسبوعيا	2
Unstructured SWL (h/sem) الحمل الدراسي غير المنتظم للطالب خلال الفصل	17	**Unstructured SWL (h/w)** الحمل الدراسي غير المنتظم للطالب أسبوعيا	1.1
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**	3	10% (5)	5 and 10	LO #1, #2 and #10, #11
	Assignments	2	10% (10)	2 and 12	LO #3, #4 and #6, #7
	Reports	1	10% (10)		
	Essays	2	10% (10)	13	LO #5, #8 and #10
Summative assessment	**Midterm Exam**	1hr	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	المبتدا والخبر.
Week 2	اللغة ووظائفها في قواعد النحو والاعراب
Week 3	نصب الفعل المضارع
Week 4	جزم الفعل المضارع.
Week 5	الممنوع من الصرف
Week 6	الفاعل وأنواعه.
Week 7	**نائب الفاعل.**

Week 8	حفظ قصيدة لأحد الشعراء مع حياة الشاعر.
Week 9	درس في الصرف
Week 10	المفعول به
Week 11	المفعول به
Week 12	المفعول المطلق.
Week 13	المفعول فيه.
Week 14	قل ولا تقل.
Week 15	قل ولا تقل.
Week 16	**final-term Exam**

Delivery Plan (Weekly Lab. Syllabus) المنهاج الاسبوعي للمختبر (**لا يوجد**)	
	Material Covered
Week 1	Lab 1:
Week 2	Lab 2:
Week 3	Lab 3:
Week 4	Lab 4:
Week 5	Lab 5:
Week 6	Lab 6:
Week 7	Lab 7:

Learning and Teaching Resources مصادر التعلم والتدريس		
	Text	**Available in the Library?**
Required Texts	كتاب اللغة العربية للأقسام غير الاختصاص	Yes
Recommended Texts	كتب اخرى ضمن الاختصاص ذات اسلوب أكاديمي مفصل	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

Module Information معلومات المادة الدراسية					
Module Title	**جرائم حزب البعث**			**Module Delivery**	
Module Type	**Support**			☒ **Theory** ☒ **Lecture** ☐ **Lab** ☐ **Tutorial** ☐ **Practical** ☒ **Seminar**	
Module Code	UOA006				
ECTS Credits	**2**				
SWL (hr/sem)	**30**				
Module Level	2		**Semester of Delivery**	2	
Administering Department	Bio		**College**	Law	
Module Leader	Ahmed Arak Naif		**e-mail**		
Module Leader's Acad. Title	Assist teacher		**Module Leader's Qualification**	MSc	
Module Tutor			**e-mail**		
Peer Reviewer Name			**e-mail**		
Scientific Committee Approval Date	01/12/2024		**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	1. لتعرف على الأحكام القانونية الرئيسية التي تحكم ملاحقة الجرائم بموجب قانون محكمة الجنايات العليا العراقية لعام 2005. .تحليل الآثار النفسية على الأفراد والمجتمعات المتأثرة بجرائم نظام البعث .دراسة الآثار الاجتماعية لسياسات وأفعال نظام البعث على المجتمع العراقي .تقييم أبرز الانتهاكات التي ارتكبها نظام البعث، مع التركيز على تأثيرها على حقوق الإنسان .تقييم الأضرار البيئية الناجمة عن نظام البعث في العراق وتأثيرها على الصحة العامة .التحقيق في السياق التاريخي وأهمية القبور الجماعية كدليل على الجرائم المرتكبة خلال عصر البعث .فهم دور القانون الدولي في معالجة جرائم نظام البعث وضمان المساءلة .استكشاف آليات العدالة الانتقالية وأهميتها في التعامل مع إرث فظائع نظام البعث .تعزيز الوعي والفهم بجرائم نظام البعث وتأثيراتها المستمرة على المجتمع العراقي المساهمة في الحوار حول انتهاكات حقوق الإنسان والعدالة التاريخية في العراق ما بعد نظام البعث.
Module Learning Outcomes مخرجات التعلم للمادة الدراسية	أظهار فهماً شاملاً للإطار القانوني المتعلق بملاحقة الجرائم بموجب قانون محكمة الجنايات العليا العراقية لعام 2005. - . تحليل الأثر النفسي للفظائع التاريخية على الأفراد والمجتمعات في سياق نظام البعث في العراق .تقييم الآثار الاجتماعية لسياسات وأفعال نظام البعث، وتأثيراتها المستمرة على المجتمع العراقي بنقد بناء تقييم تأثير انتهاكات حقوق الإنسان الجسيمة التي ارتكبت خلال نظام البعث على النسيج السياسي والاجتماعي الأوسع في العراق. تقييم العواقب البيئية لأفعال نظام البعث في العراق، مع التركيز على فهم التأثيرات على الموارد الطبيعية والصحة العامة. .تفسير الأهمية التاريخية للقبور الجماعية كدليل على الجرائم المرتكبة خلال عصر البعث في العراق .معرفة بآليات القانون الدولي لتقييم مساءلة نظام البعث عن جرائمه بموجب القانون الدولي .تحليل فعالية آليات العدالة الانتقالية في التعامل مع ما خلفه انتهاكات حقوق الإنسان خلال نظام البعث .تقييم التأثير السياسي والاجتماعي والثقافي لجرائم نظام البعث في تشكيل المجتمع والسياسة العراقية المعاصرة ابنِ حججًا مستندة لتوضيح ضرورة العدالة التاريخية وتعزيز حقوق الإنسان في مرحلة ما بعد عصر البعث في العراق.
Indicative Contents المحتويات الإرشادية	مفهوم الجرائم واقسامها , تعريف الجريمة لغة واصطلاحا, جرائم نظام البعث وفق توثيق قانون المحكمة الجنائية العراقية العليا عام 2005 م , أنواع الجرائم الدولية, الجرائم النفسية ,اليات الجرائم النفسية, الجرائم الاجتماعية, موقف المظام البعثي من الدين, انتهاكات القوانين العراقية, الجرائم البيئية لنظام العث في العراق, التلوث الحربي والاشعاعي وانفجار الألغام, تجفيف الاهوار, جرائم المقابر الجماعية, احداث مقابر الإبادة الجماعية, التصنيف الزمني لمقابر الإبادة الجماعية.

Learning and Teaching Strategies استراتيجيات التعلم والتعليم	
Strategies	القاء المحاضارت، استخدام طريقة النقاش والحوار، العصف الذهني، الاختباارت . السريعة

Student Workload (SWL) الحمل الدراسي للطالب محسوب لـ ١٥ اسبوعا			
Structured SWL (h/sem) الحمل الدراسي المنتظم للطالب خلال الفصل	30	**Structured SWL (h/w)** الحمل الدراسي المنتظم للطالب أسبوعيا	2

Unstructured SWL (h/sem) الحمل الدراسي غير المنتظم للطالب خلال الفصل	17	**Unstructured SWL (h/w)** الحمل الدراسي غير المنتظم للطالب أسبوعيا	1.1
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**	3	10% (5)	5 and 10	LO #1, #2 and #10, #11
	Assignments	2	10% (10)	2 and 12	LO #3, #4 and #6, #7
	Reports	1	10% (10)		
	Essays	2	10% (10)	13	LO #5, #8 and #10
Summative assessment	**Midterm Exam**	1hr	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	التعريف بمفهوم الجريمة وانواعها
Week 2	التعريف بالأنظمة السياسية العراقية منذ عام 1921- 2003
Week 3	أنواع الجرائم الدولية
Week 4	انتهاكات النظام السابق للحقوق والحريات العامة
Week 5	أنواع الجرائم المرتكبة من قبل النظام السابق على المستوى الوطني
Week 6	الجرائم النفسية والاجتماعية
Week 7	الجرائم السياسية والثقافية
Week 8	الجرائم السياسية والثقافية
Week 9	انتهاك الحقوق والحريات وحصر السلطات الثلاث من قبل حزب البعث المنحل
Week 10	أنواع الجرائم المرتكبة من قبل النظام السابق على المستوى الدولي

Week 11	المرحلة الانتقالية في العراق ما بعد عام 2003
Week 12	اثر المرحلة الانتقالية في محاربة السياسية الاستبدادية لحزب البعث المنحل
Week 13	آثار الجرائم النفسية والاجتماعية على المجتمع العراقي
Week 14	مفهوم العدالة الانتقالية وآليات تحقيقها في العراق
Week 15	اثر سياسات حزب البعث المنحل على البيئة
Week 16	**final-term Exam**

Delivery Plan (Weekly Lab. Syllabus) المنهاج الاسبوعي للمختبر (**لا يوجد**)	
	Material Covered
Week 1	Lab 1:
Week 2	Lab 2:
Week 3	Lab 3:
Week 4	Lab 4:
Week 5	Lab 5:
Week 6	Lab 6:
Week 7	Lab 7:

Learning and Teaching Resources مصادر التعلم والتدريس		
	Text	**Available in the Library?**
Required Texts		NO
Recommended Texts		No
Websites		

Grading Scheme مخطط الدرجات				
Group	**Grade**	التقدير	**Marks %**	**Definition**
Success Group	**A** - Excellent	امتياز	90 - 100	Outstanding Performance

(50 - 100)	**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

Module Information معلومات المادة الدراسية					
Module Title	**Plant Taxonomy**			**Module Delivery**	
Module Type	**Core**			☒ **Theory** ☒ **Lecture** ☒ **Lab** ☐ **Tutorial** ☐ **Practical** ☐ **Seminar**	
Module Code	**Bio-222**				
ECTS Credits	**5**				
SWL (hr/sem)	**125**				
Module Level	2		**Semester of Delivery**	2	
Administering Department	Bio		**College**	sci	
Module Leader	Khader Saker Hashim		**e-mail**	sc.kadersasa@uoanbar.edu.iq	
Module Leader's Acad. Title	Lecturer		**Module Leader's Qualification**	Ph.D.	
Module Tutor			**e-mail**		
Peer Reviewer Name			**e-mail**		
Scientific Committee Approval Date	01/12/2024		**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	1. Definition of plant taxonomy and its relationship to other sciences. 2. Study of the vegetative structure of plants. 3. Study of the reproductive structures of plants. 4. Identification, isolation and classification of plant species of different plant families
Module Learning Outcomes مخرجات التعلم للمادة الدراسية	Important: Write at least 6 Learning Outcomes, better to be equal to the number of study weeks. 1. Understanding the vegetative and reproductive structures of different plants. 2. Knowing the methods of collecting plants and methods of diagnosing them. 3. Knowing the differences between flowering, seed, dicotyledonous and monocotyledonous plants. 4. Conducting field trips to teach students how to collect plant samples 5. Identifying plant species and identifying the plant families to which they belong. 6. 3- Drying and preserving plant samples for long periods
Indicative Contents المحتويات الإرشادية	Indicative content includes the following. Identify the objectives of taxonomy and important scientific terminology [4 hrs] Study the types and shapes of roots [4 hrs] Study the types and shapes of stems [4 hrs] Study the types and shapes of leaves [4 hrs] Study the types and shapes of flower [4 hrs] Identifying the type of diastasis in plants and the types and characteristics of fruits [8 hrs] Study of pollination methods [2 hrs]

Learning and Teaching Strategies استراتيجيات التعلم والتعليم	
Strategies	The main strategy that will be adopted in delivering this module is to encourage students' participation in the exercises as well as a series of lectures and practical classes designed to introduce them to plant taxonomy. Assign the student to make a diagnosis of different plant species. Conducting field trips to teach students how to collect plant samples

Student Workload (SWL) الحمل الدراسي للطالب محسوب لـ ١٥ اسبوعا			
Structured SWL (h/sem)	63	**Structured SWL (h/w)** الحمل الدراسي المنتظم للطالب أسبوعيا	4

الحمل الدراسي المنتظم للطالب خلال الفصل			
Unstructured SWL (h/sem) الحمل الدراسي غير المنتظم للطالب خلال الفصل	62	**Unstructured SWL (h/w)** الحمل الدراسي غير المنتظم للطالب أسبوعيا	4
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**	6	10% (10)	5 and 10	LO #1, #2 and #10, #11
	Assignments	4	10% (10)	2 and 12	LO #3, #4 and #6, #7
	Projects / Lab.	1	10% (10)	Continuous	All
	Report	4	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 in plant taxonomy
Week 2	Plant taxonomy goals
Week 3	Study the types and shapes of roots
Week 4	Study the types and shapes of roots
Week 5	Study the types and shapes of stems
Week 6	Study the types and shapes of stems
Week 7	Study the types and shapes of leaves
Week 8	Study the types and shapes of leaves
Week 9	Study the types and shapes of flower
Week 10	Study the types and shapes of flower
Week 11	Identifying the type of placentation in plants

Week 12	Identifying the type of diastasis in plants
Week 13	Identifying the types and characteristics of fruits
Week 14	Pollination methods
Week 15	**floral equation**
Week 16	**Preparatory week before the final Exam**

Delivery Plan (Weekly Lab. Syllabus) المنهاج الاسبوعي للمختبر	
	Material Covered
Week 1	Introduction in plant taxonomy
Week 2	Root
Week 3	Stem
Week 4	Stem
Week 5	Leaves
Week 6	Leaves
Week 7	Flower
Week 8	Flower
Week 9	placentation
Week 10	placentation
Week 11	Fruit
Week 12	Fruit
Week 13	Project
Week 14	Project
Week 15	Project

Learning and Teaching Resources مصادر التعلم والتدريس		
	Text	**Available in the Library?**
Required Texts	Plant taxonomy (Ali Hussein Al-Musawi)	Yes
Recommended Texts	Classification of the botanist (Dr. Raafat Hassan Abdel-Wahhab)	No
Websites	https://wfoplantlist.org/plant-list/ http://www.theplantlist.org/	

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.

Course Description

English Language MODULE DESCRIPTION FORM

نموذج وصف المادة الدراسية

Module Information معلومات المادة الدراسية					
Module Title	**English Language**			**Module Delivery**	
Module Type	**Support**			☒ **Theory**	
Module Code	**UNI-123**			☒ **Lecture**	
ECTS Credits	**3**			☐**Lab**	
SWL (hr/sem)	**75**			☐ **Tutorial** ☐ **Practical** ☐ **Seminar**	
Module Level	1		**Semester of Delivery**	2	
Administering Department	Bio		**College**	Sci	
Module Leader	Saad T. Mutlk		**e-mail**	Saad.t.mutalk@uoanbar.edu.iq	
Module Leader's Acad. Title	Lecturer		**Module Leader's Qualification**	Ph.D	
Module Tutor			**e-mail**		
Peer Reviewer Name			**e-mail**		
Scientific Committee Approval Date	01/06/2023		**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	to enable the learner to communicate effectively and appropriately in real life situation: b. to use English effectively for study purpose across the curriculum; c. to develop interest in and appreciation of Literature; d. to develop and integrate the use of the four language skills i.e. Reading, Listening, Speaking and Writing; e. to revise and reinforce structure already learnt.
Module Learning Outcomes مخرجات التعلم للمادة الدراسية	to develop the students' abilities in grammar, oral skills, reading, and study skills 1. Students will increase their awareness of correct usage of English grammar in writing and speaking. 2. Improve their speaking ability in English both in terms of fluency and comprehensibility. 3. Receive feedback on their performance through oral presentations. 4. Increase their reading speed and comprehension of academic articles. 5. improve their reading fluency skills through extensive reading. 6. Expand their vocabulary by keeping a vocabulary journal. 7. strengthen their ability to write academic papers, essays and summaries using the process approach.
Indicative Contents المحتويات الإرشادية	The course aims to develop communicative competence in English for intercultural contexts by teaching language items and communicative strategies essential for such scenarios, while at the same time giving students ample chances to output such items. The aims of this course are reflected in the content, which contains several themes, such as cultural awareness, intercultural awareness and English as a global language. Indicative content includes understanding the uniqueness of your own culture and other cultures, as well as being aware of the role culture plays in communication in

	English as a global language. In addition, this course allows for discussions about what it means for English to be a global language of communication and how misunderstandings and miscommunications when using English occurs. The course also includes practice in the pronunciation features that help improve intelligibility in intercultural contexts, namely the Lingua Franca Core.

Learning and Teaching Strategies استراتيجيات التعلم والتعليم	
Strategies	1. Cultivate relationships Speaking with students to know each student, helps you understand who they are, where they come from and, perhaps, gain some insight into what teaching and learning styles are most effective for them. 2. Teach language skills across all curriculum topics 3. Speak slowly and be patient: Speaking in a slower, measured cadence Being a bit more aware of your pronunciation 4. Prioritize “productive language” 5. Using a variety of methods to engage learning 6. Using visual aids by the use of pictures, diagrams, charts and other visual tools. 7. Coordinate with the ESL teacher: Such discussions can yield insights into individual students and their learning styles or challenges; they can also be helpful for sharing information about curriculum topics, potentially providing ESL teachers with ideas for highly relevant vocabulary words that can reinforce academic lessons. 8. Pre-teach new vocabulary words that may be unfamiliar to ELLs, or even to give them a copy of the article or link to the material ahead of time. 9. Build in some group work. 10. Respect moments of silence: Many new language learners tend to be a little reticent and quiet, opting for silence over speaking up and saying something “wrong” in a language that is still unfamiliar. Research-based strategies for differentiating instruction to promote student learning

Student Workload (SWL) الحمل الدراسي للطالب محسوب لـ ١٥ اسبوعا			
Structured SWL (h/sem) الحمل الدراسي المنتظم للطالب خلال الفصل	48	**Structured SWL (h/w)** الحمل الدراسي المنتظم للطالب أسبوعيا	7
Unstructured SWL (h/sem) الحمل الدراسي غير المنتظم للطالب خلال الفصل	27	**Unstructured SWL (h/w)** الحمل الدراسي غير المنتظم للطالب أسبوعيا	6
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**	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.	0	0 %		
	Essays	1	10% (10)	13	LO #5, #8 and #10
Summative assessment	**Midterm Exam**	2hr	20% (10)	7	LO #1 - #7
	Final Exam	2hr	50% (50)	16	All
Total assessment			100% (100 Marks)		

Delivery Plan (Weekly Syllabus) المنهاج الاسبوعي النظري	
	Material Covered
Week 1	Unit-1 (Hello)
Week 2	Unit-2 (Your world)
Week 3	Unit-3 (Personal information)
Week 4	Unit-4 (Family and friends)
Week 5	Unit-5 (It's my life)
Week 6	Unit-6 (Every day)
Week 7	**Mid-term Exam**
Week 8	Unit-7 (Places I like)
Week 9	Unit-8 (Where I live)
Week 10	Unit-9 (Happy birthday)
Week 11	Unit-10 (We had a good time)
Week 12	Unit-11 (we can do it)
Week 13	Unit-12 (Thank you very much)
Week 14	Unit-13 (Here and now)
Week 15	Unit-14 (It's time to go)
Week 16	**final-term Exam**

Delivery Plan (Weekly Lab. Syllabus) المنهاج الاسبوعي للمختبر (**لا يوجد**)	
	Material Covered
Week 1	Lab 1:

Week 2	Lab 2:
Week 3	Lab 3:
Week 4	Lab 4:
Week 5	Lab 5:
Week 6	Lab 6:
Week 7	Lab 7:

Learning and Teaching Resources مصادر التعلم والتدريس		
	Text	**Available in the Library?**
Required Texts	Headway. Beginner. Student's Book by Liz and John Soars, 2019.	Yes
Recommended Texts		No
Websites	https://elt.oup.com/student/headway/beg/?cc=global&selLanguage=en	

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

Module Information معلومات المادة الدراسية					
Module Title	**Analytical Chemistry**			**Module Delivery**	
Module Type	**C**			☒ **Theory** ☒ **Lecture** ☒ **Lab** ☒ **Tutorial** ☐ **Practical** ☒ **Seminar**	
Module Code	**CoS-112**				
ECTS Credits	**7**				
SWL (hr/sem)	**175**				
Module Level	1		**Semester of Delivery**	1	
Administering Department	Bio		**College**	Sci	
Module Leader	Wahran M. Suaad		**e-mail**		
Module Leader's Acad. Title	lecturer		**Module Leader's Qualification**	Ph.D.	
Module Tutor	Name (if available)		**e-mail**		
Peer Reviewer Name	Name		**e-mail**	E-mail	
Scientific Committee Approval Date	01/06/2023		**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	1. **The chemical separation methods course is determined according to the study plan prepared in the Applied Chemistry Department.** 2. **2. The course aims to introduce students to the general concepts of chemical separation methods used in chemical measurements** 3. **3. It also aims to study in detail the types of separation methods that depend on physical or chemical properties, as well as extraction processes, purification of drinking water, fractional distillation of crude oil products, and purification of medical and chemical extracts used in daily life. It helps the student to know the composition of these materials, including medicines and extracts, separating components from their raw materials, how reactions occur, and the measurement mechanism.**
Module Learning Outcomes مخرجات التعلم للمادة الدراسية	**1- That the student know the general concepts of compounds in the analytical chemistry curriculum.** **2- The student should be familiar with the basics and rules for naming different compounds, structural compositions, and different physical properties. .** **3- The student should know the basic principles of measurement methods and separation processes, choose the most appropriate property for separation processes for each compound, obtain the best results and pure extracts, and get acquainted with each method.** **4- The student should understand the importance of these methods and methods and their applications.**
Indicative Contents المحتويات الإرشادية	**a- Methods of teaching and learning** **1- Giving lectures.** **2- Using the method of recitation, discussion and solving questions.** **3- Giving assignments to students to strengthen them and prepare them for the final and final exams.** **b- Evaluation methods** **1- Daily and monthly exams** **2- Duties** **3- In-class exercises**

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 لـ ١٥ اسبوعا			
Structured SWL (h/sem) الحمل الدراسي المنتظم للطالب خلال الفصل	94	**Structured SWL (h/w)** الحمل الدراسي المنتظم للطالب أسبوعيا	7
Unstructured SWL (h/sem) الحمل الدراسي غير المنتظم للطالب خلال الفصل	81	**Unstructured SWL (h/w)** الحمل الدراسي غير المنتظم للطالب أسبوعيا	6
Total SWL (h/sem) الحمل الدراسي الكلي للطالب خلال الفصل	**200**		

Module Evaluation تقييم المادة الدراسية					
		Time/Number	**Weight (Marks)**	**Week Due**	**Relevant Learning Outcome**
Formative assessment	**Quizzes**	6	12% (5)	Same week	LO #1, #2 and #10, #11
	Assignments	6	12% (5)	Each following week	LO #3, #4 and #6, #7
	Projects / Lab.	1	8% (20)	Continuous	All
	Report	4	8% (5)	13	LO #5, #8 and #10
Summative assessment	**Midterm Exam**	1hr	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 separation methods**
Week 2	**Distillation and type of distillations**
Week 3	**Extraction, its types and types of extracts**
Week 4	**Methods for treating contamination and purification of extracts**
Week 5	**Distribution Coefficient in extraction methods**
Week 6	**Extraction devices, their types, specifications of each device**
Week 7	**Organic solvents used in extraction and conditions to be met**
Week 8	**First month exam**
Week 9	**Ion exchanges , types, components, manufacturing methods, and specifications**
Week 10	**General rules for selectivity in ion exchangers**
Week 11	**Introduction to Chromatography**
Week 12	**Types of chromatography, types of classification**
Week 13	**Types of Liquid-solid chromatography**
Week 14	**Types of Gas-solid chromatography**
Week 15	**HPLC chromatography**
Week 16	**Preparatory week before the final Exam**

Delivery Plan (Weekly Lab. Syllabus) المنهاج الاسبوعي للمختبر	
	Material Covered
Week 1	**Lab 1: Introduction to separation methods**
Week 2	**Lab 2: Extraction by funnel separation**
Week 3	**Lab 3: Extraction with a scicholite and clavanger device**
Week 4	**Lab 4: paper chromatography**
Week 5	**Lab 5: separation ions by Ion exchanges**
Week 6	**Lab 6: study The effect of pH in chromatography**
Week 7	**Lab 7: separation ions using chromatography**

Learning and Teaching Resources مصادر التعلم والتدريس		
	Text	**Available in the Library?**
Required Texts	1- General principles of chemical and weight analysis dr. Safaa Razouqi Al-mraab. The second part 2- Separation Methods in Chemical Analysis, Albertine Habboush, University of Baghdad. 3- Practical applications in automated chemical analyzes and separation methods - Ismail Khalil Al-Hiti	Yes
Recommended Texts	separation and purification of organic compounds Approach To Modern Separation Techniques. by C-Zhou, E Almatrafi, X Tang, B Shao, W Xia… (Ph.D) (Author), 2022	No
Websites	https://www.sciencedirect.com/journal/separation-and-purification-technology/vol/292/suppl/C https://www.amazon.com/Separation-Purification-Methods-Edmond-Perry/dp/082476319X	

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

Module Information معلومات المادة الدراسية					
Module Title	**General Zoology**			**Module Delivery**	
Module Type	**C**			☒ **Theory** ☒ **Lecture** ☒ **Lab** ☒ **Tutorial** ☐ **Practical** ☒ **Seminar**	
Module Code	**Bio-111**				
ECTS Credits	**8**				
SWL (hr/sem)	**200**				
Module Level	1		**Semester of Delivery**	1	
Administering Department	Bio		**College**	Sci	
Module Leader	Mohammed Q. Abid		**e-mail**		
Module Leader's Acad. Title	lecturer		**Module Leader's Qualification**	Ph.D.	
Module Tutor	Name (if available)		**e-mail**		
Peer Reviewer Name	Name		**e-mail**	E-mail	
Scientific Committee Approval Date	01/06/2023		**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	**1. Develop an understanding of the diversity of animal life and an appreciation of the significance of various taxa.** **2. Demonstrate a basic understanding of the evolutionary history of the animal kingdom.** **3. Develop an understanding of the form and function of animal systems.** **4. Develop laboratory skills necessary for zoological study.**
Module Learning Outcomes مخرجات التعلم للمادة الدراسية	**1. Have developed an understanding of the diversity of animal life and an appreciation of the significance of various taxa.** **2. Have developed a basic understanding of the evolutionary history of the animal kingdom.** **3. Develop an understanding of the form and function of animal systems.** **4. Develop laboratory skills necessary for zoological study.**
Indicative Contents المحتويات الإرشادية	**Zoology course covers three main themes:** **Comparative physiology - the functional characteristics of animals;** **Evolutionary biology - how animals adapt to their environment, and their genetics,** **Behaviour, ecology and conservation - how animals interact with their environment and each other to support biodiversity on the planet.** **Alongside your specialist zoology modules, you'll have the flexibility to study topics across the breadth of biology to complement your knowledge. These modules are available from your first year.** **Topics range from ecology and molecular genetics that underpin conservation, to pharmacology, neuroscience and even human physiology. This flexibility allows you to study zoology in greater depth, broaden your interests or even switch to another biosciences degree programme.**

Learning and Teaching Strategies استراتيجيات التعلم والتعليم	
Strategies	**As a zoology student, students will learn in lots of different ways, from lectures and small group tutorials to learning by doing during field work, practical lab sessions and research projects.**

	Our staff are committed to great teaching and students will have lots of opportunities throughout your degree to be creative, think independently, and express your ideas.

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	6
Unstructured SWL (h/sem) الحمل الدراسي غير المنتظم للطالب خلال الفصل	106	**Unstructured SWL (h/w)** الحمل الدراسي غير المنتظم للطالب أسبوعيا	7
Total SWL (h/sem) الحمل الدراسي الكلي للطالب خلال الفصل	**200**		

Module Evaluation تقييم المادة الدراسية					
		Time/Number	**Weight (Marks)**	**Week Due**	**Relevant Learning Outcome**
Formative assessment	**Quizzes**	6	12% (5)	Same week	1, 2, 3, 4
	Assignments	6	12% (5)	Each following week	1, 2, 3, 4
	Projects / Lab.	1	8% (20)	12	1, 2, 3, 4
	Report	4	8% (5)	3, 6, 8, 10	3, 4
Summative assessment	**Midterm Exam**	1hr	10% (10)	7	1, 2, 3
	Final Exam	3hr	50% (50)	16	1, 2, 3, 4
Total assessment			100% (100 Marks)		

Delivery Plan (Weekly Syllabus) المنهاج الاسبوعي النظري	
	Material Covered
Week 1	View of life
Week 2	Introduction to biology

Week 3	Chemistry of life (part 1)
Week 4	Chemistry of life (part 2)
Week 5	Cell structure and function(1)
Week 6	Cell structure and function(2)
Week 7	Cell structure and function(3)
Week 8	Cell cycle and cellular reproduction
Week 9	Histology and animal tissue
Week 10	Ecology
Week 11	Exam
Week 12	Animal world
Week 13	Animal physiology
Week 14	Genetics
Week 15	Immunology
Week 16	**Preparatory week before the final Exam**

Delivery Plan (Weekly Lab. Syllabus) المنهاج الاسبوعي للمختبر	
	Material Covered
Week 1	Microscope
Week 2	Microscopic preparations
Week 3	Biochemical molecules
Week 4	Investigation of carbohydrates
Week 5	Animal cell (part 1)
Week 6	Animal cell (part 2)
Week 7	Biological experiments
Week 8	Animal tissue (1)
Week 9	Exam
Week 10	Animal tissue (2)
Week 11	Animal classification
Week 12	Anatomy of mice
Week 13	Blood picture

Week 14	DNA isolation from blood
Week 15	Blood groups
Week 16	**Preparatory week before the final Exam**

Learning and Teaching Resources مصادر التعلم والتدريس		
	Text	**Available in the Library?**
Required Texts	**Integrated Principles of Biology 16th Ed. By Hickman et al. 2014. McGraw Hill Higher Education. Boston, MA. ISBN-13: 978-0073524214 ISBN-10: 0073524212**	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

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

Module Information معلومات المادة الدراسية					
Module Title	**General Mathematics**			**Module Delivery**	
Module Type	**Basic**			☐ **Theory** ☒ **Lecture** ☐ **Lab** ☒ **Tutorial** ☐ **Practical** ☐ **Seminar**	
Module Code	**CoS-111**				
ECTS Credits	**5**				
SWL (hr/sem)	**125**				
Module Level	1		**Semester of Delivery**	1	
Administering Department	Biology		**College**	Science	
Module Leader	Rafaat S. Abduljabar		**e-mail**		
Module Leader's Acad. Title	Lecturer		**Module Leader's Qualification**	Ph.D.	
Module Tutor	Name (if available)		**e-mail**	E-mail	
Peer Reviewer Name	Name		**e-mail**	E-mail	
Scientific Committee Approval Date	01/06/2023		**Version Number**	1.0	

Relation with other Modules العلاقة مع المواد الدراسية الأخرى			
Prerequisite module	Non	**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	This module aims to provide students with the necessary topics such as mathematical (whether classical or probabilistic) and statistical concepts that can be applied in Biology.

	Students will have acquired fundamental skills in the evaluation of experiments, the interpretation of readings and numbers as well as the mathematical description of biological processes.
Module Learning Outcomes مخرجات التعلم للمادة الدراسية	Mathematics is a very active and fast growing interdisciplinary area in which mathematical concepts, techniques, and models are applied to a variety of problems in developmental biology and biomedical sciences. Many biological processes can be quantitatively characterized by differential equations. This course introduces you to a variety of models mainly based on ordinary differential equations and techniques for analyzing these models. Mathematical concepts on nonlinear dynamics and chaos will be introduced. Population models (predator-prey, competition), epidemic models and reaction enzyme kinetics will be discussed. Some probabilistic modelling of molecular evolution will also be introduced. Use and interpret different types of data in biology. Choose and perform the appropriate statistical technique for the analysis of data. Apply knowledge of sampling to test hypotheses about problems. Interpret the results of a simple statistical analysis and communicate them in a clear, concise and appropriate manner. Discuss the principles of biology aspects and relate these to the decision-making and studies and the interpretation of results.
Indicative Contents المحتويات الإرشادية	lectures, tutorials, exercises and practice. Three-hours class and online lectures per week (total 45 hours). The tutorial will consist of a set questions put to the students to informally assess their understanding of the content of the lecture, to allow them to think about and solve example problems related to the lecture content, to express their understanding in English, and to correct any misunderstanding or gaps in their knowledge of the lecture's content.

Learning and Teaching Strategies استراتيجيات التعلم والتعليم	
Strategies	The main strategy that will be adopted in delivering this module is to encourage students' participation in the exercises as well as a series of lectures and practice classes designed to introduce you to Mathematics and Biostatistics. At the same time, they are refining and expanding their critical thinking skills through topics covered in lectures, including population models for single and interacting species, population dynamics, Modelling infectious disease transmission, Enzyme kinetics, modelling of molecular biology, and Descriptive and inferential statistics.

Student Workload (SWL) الحمل الدراسي للطالب محسوب لـ ١٥ اسبوعا			
Structured SWL (h/sem) الحمل الدراسي المنتظم للطالب خلال الفصل	63	**Structured SWL (h/w)** الحمل الدراسي المنتظم للطالب أسبوعيا	4
Unstructured SWL (h/sem) الحمل الدراسي غير المنتظم للطالب خلال الفصل	62	**Unstructured SWL (h/w)** الحمل الدراسي غير المنتظم للطالب أسبوعيا	4
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**	6	12% (5)		
	Assignments	6	12% (5)		
	Projects / Lab.	1	8% (20)		
	Report	4	8% (5)		
Summative assessment	**Midterm Exam**	1	10% (10)		
	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 Calculus
Week 2	Slope of straight line
Week 3	Equation of straight line and circle
Week 4	Inequalities
Week 5	Absolute value function
Week 6	Graph of functions
Week 7	Limit and continuity
Week 8	Limit and continuity (continued)

Week 9	Derivative I
Week 10	Exam
Week 11	Derivative II
Week 12	Logarithmic functions
Week 13	Exponential function
Week 14	Trigonometric functions
Week 15	Applications of derivative
Week 16	**Preparatory week before the final Exam**

Learning and Teaching Resources
مصادر التعلم والتدريس

	Text	**Available in the Library?**
Required Texts	Mathematical Modeling in Systems Biology: An Introduction. Brian P. Ingalls (2022). MIT Press.	No
Recommended Texts		No
Websites	https://www.uoanbar.edu.iq/	

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

Module Information معلومات المادة الدراسية					
Module Title	**(Arabic language) اللغة العربية**			**Module Delivery**	
Module Type	**Support**			☒ **Theory** ☒ **Lecture** ☐**Lab** ☐ **Tutorial** ☐ **Practical** ☒ **Seminar**	
Module Code	**UoA-112**				
ECTS Credits	**2**				
SWL (hr/sem)	**50**				
Module Level		1	**Semester of Delivery**		2
Administering Department		Bio	**College**	Sci	
Module Leader	Ali M. Jurow		**e-mail**		
Module Leader's Acad. Title		Prof.	**Module Leader's Qualification**		Ph.D
Module Tutor			**e-mail**		
Peer Reviewer Name			**e-mail**		
Scientific Committee Approval Date		01/06/2023	**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	أ - تنمية معارف الطلبة للغة العربية، وأهميتها لهم. ب - أن يتعرف على شرح بعض سور القرآن الكريم، ويحفظها. ت- ان يتعرف الطالب على تاريخ الأدب، وأهم مراحل تطوره . ث- الاطلاع على شعراء لم يسبق للطالب التعرف عليهم ج- أن يضبط الطلبة كتابة الأملاء وعلامات الترقيم.
Module Learning Outcomes مخرجات التعلم للمادة الدراسية	1. القدرة على الحفظ والاستذكار 2. القدرة على الموازنة بين لغة ادب العصر المذكور والآداب الاخرى. 3. القدرة على المشاركة الجماعية للمحتويات الادبية للمادة 4. القدرة على تقديم المقترحات وحل المشكلات 5. القدرة على التفاعل مع المصادر والمراجع
Indicative Contents المحتويات الإرشادية	القران الكريم- سور ة الملك ، الآيات 1-10 ، القواعد، المبتدأ والخبر الأدب- مصطلح الأدب والعصور الأدبية الإملاء- كتاب الهمزة القران الكريم- سور ة الملك الآيات 11-20 القواعد- كان وأخواتها الأدب- قصيدة قم للمعلم لأحمد شوقي الإملاء- كتابة الضاد والظاء القران الكريم- سور ة الملك الآيات 21-30 القواعد- إن وأخواتها الأدب- قصيدة اللغة العربية لحافظ إبراهيم الإملاء- علامات الترقيم القواعد- التوابع الأدب- النثر العربي، المقامات الأدبية

Learning and Teaching Strategies استراتيجيات التعلم والتعليم	
Strategies	تعبر استراتيجيات التراكيب عن قواعد تراكيب اللغة العربية، حيث أن أفضل أسلوب في تدريس القواعد النحوية، وهو الأسلوب الطبيعي الذي يعتمد على ممارسة اللغة استماعا، وكلاما، وقراءة، وكتابة، وعلى هذا الأساس فالاستعمال كما يقول ابن خلدون: ومحاكاة الأساليب اللغوية الصحيحة، والتدريب عليها تدريبا متصلا، هو الأسلوب الأمثل في تدريس القواعد النحوية، ومن ثم لا بد أن يفسح المدرس أمام التلاميذ المجال في دروس الاستماع، والتعبير والقراءة للتدريب على القواعد النحوية، حيث يشعرون بحاجتهم إليها للفهم والتعبير والكتابة دون ضغط أو إرغام. إضافة الى: 1 - استراتيجية الحوار 2 - استراتيجية السرد القصصي 3 - التدريس باستخدام التكنولوجيا 4 - استراتيجية إعداد المشاريع... 5 - استراتيجية تبادل الأدوار

Student Workload (SWL) الحمل الدراسي للطالب محسوب لـ ١٥ اسبوعا			
Structured SWL (h/sem) الحمل الدراسي المنتظم للطالب خلال الفصل	48	**Structured SWL (h/w)** الحمل الدراسي المنتظم للطالب أسبوعيا	7
Unstructured SWL (h/sem) الحمل الدراسي غير المنتظم للطالب خلال الفصل	27	**Unstructured SWL (h/w)** الحمل الدراسي غير المنتظم للطالب أسبوعيا	6
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**	6	12% (5)	5 and 10	LO #1, #2 and #10, #11
	Assignments	6	12% (5)	2 and 12	LO #3, #4 and #6, #7
	Projects / Lab.	1	8% (20)		
	Essays	4	8% (5)	13	LO #5, #8 and #10
Summative assessment	**Midterm Exam**	1hr	10% (10)	7	LO #1 - #7
	Final Exam	2hr	50% (50)	16	All
Total assessment			100% (100 Marks)		

Delivery Plan (Weekly Syllabus) المنهاج الاسبوعي النظري	
	Material Covered
Week 1	القران الكريم- سور ة الملك (الآيات 1-10)
Week 2	القواعد- المبتدأ والخبر
Week 3	الأدب- مصطلح الأدب والعصور الأدبية
Week 4	الإملاء- كتاب الهمزة

Week 5	القران الكريم- سور ة الملك (الآيات 11-20)
Week 6	القواعد- كان وأخواتها
Week 7	**first-term Exam**
Week 8	الأدب- قصيدة قم للمعلم لأحمد شوقي
Week 9	الإملاء- كتابة الضاد والظاء
Week 10	القران الكريم- سور ة الملك (الآيات 21-30)
Week 11	القواعد- إن وأخواتها
Week 12	الأدب- قصيدة اللغة العربية لحافظ إبراهيم
Week 13	الأدب- النثر العربي، المقامات الأدبية
Week 14	الإملاء- علامات الترقيم
Week 15	القواعد- التوابع
Week 16	**final-term Exam**

Delivery Plan (Weekly Lab. Syllabus) المنهاج الاسبوعي للمختبر (**لا يوجد**)	
	Material Covered
Week 1	Lab 1:
Week 2	Lab 2:
Week 3	Lab 3:
Week 4	Lab 4:
Week 5	Lab 5:
Week 6	Lab 6:
Week 7	Lab 7:

Learning and Teaching Resources مصادر التعلم والتدريس		
	Text	**Available in the Library?**
Required Texts	كتاب اللغة العربية للأقسام غير الاختصاص	Yes
Recommended Texts	كتب اخرى ضمن الاختصاص ذات اسلوب أكاديمي مفصل	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

Module Information معلومات المادة الدراسية					
Module Title	**Biophysics**			**Module Delivery**	
Module Type	**B**			☒ **Theory** ☒ **Lab** ☒ **Seminar**	
Module Code	**CoS-113**				
ECTS Credits	**6**				
SWL (hr/sem)	**150**				
Module Level	1		**Semester of Delivery**	1	
Administering Department	Bio		**College**	Sci	
Module Leader	Farid M. Mushib		**e-mail**	Fareedm1969@gmail.com	
Module Leader's Acad. Title	Assist professor		**Module Leader's Qualification**	Ph.D.	
Module Tutor	Name (if available)		**e-mail**	------	
Peer Reviewer Name	Name		**e-mail**	E-mail----	
Scientific Committee Approval Date	01/10/2023		**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	**1. Identify the foundations and systems of physics and link them to daily life activities and human activities** **2. Knowledge of vector and scalar quantities and the basic units of physics. Study and transform vectors, and addition, subtraction and multiplication of vectors.** **3. Study of movement in one dimension and calculate the acting forces and their resultant** **4. Study of simple harmonic motion, heat, heat quantity, friction, electricity, energy, and work, and their relationship to living organisms.**
Module Learning Outcomes مخرجات التعلم للمادة الدراسية	**5- A- Cognitive objectives** **6- A- 1 . Improving the level of comprehension (comprehension) developing the ability to interpret, predict and conclude** **7- A- 2 . Application capabilities development** **8- A-3. Providing the student with the ability to analyze** **9- A-4. Develop the student's ability to integrate ideas and information (synthesis level), which is the opposite of analysis** **10- A- 5. Evaluation: Developing the student's ability to make a judgment on the value of the material learned** **11- B- The skills objectives of the course** **12- B 1 . Improving the student's ability to observe** **13- B-2. To learn how to imitate and imitate.** **14- B-3. To learn the method of experimentation**
Indicative Contents المحتويات الإرشادية	**General and qualifying transferable skills (other skills related to employability and personal development).** **1. Teaching the student oral and written communication skills** **2. Using modern technological tools, such as computers, the Internet, and scientific programs for preparing reports, tables, figures, and presentations.** **3. Encouraging the student to work collectively within a work team** **4. Developing the student's abilities to make optimal use of time (time management).**

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 لـ ١٥ اسبوعا			
Structured SWL (h/sem) الحمل الدراسي المنتظم للطالب خلال الفصل	64	**Structured SWL (h/w)** الحمل الدراسي المنتظم للطالب أسبوعيا	6
Unstructured SWL (h/sem) الحمل الدراسي غير المنتظم للطالب خلال الفصل	86	**Unstructured SWL (h/w)** الحمل الدراسي غير المنتظم للطالب أسبوعيا	4
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**	6	12% (5)	Same week	LO #1, #2 and #10, #11
	Assignments	6	12% (5)	Each following week	LO #3, #4 and #6, #7
	Projects / Lab.	1	8% (20)	Continuous	All
	Report	4	8% (5)	13	LO #5, #8 and #10
Summative assessment	**Midterm Exam**	1hr	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	**Vectors and their analysis with drawing .**

Week 2	Numerical and vector multiplication with examples .
Week 3	Motion in one dimension.
Week 4	Free fall and examples.
Week 5	Simple harmonic motion.
Week 6	Classic Mechanics.
Week 7	Mid Exam
Week 8	Newton's laws of motion.
Week 9	Force and friction force
Week 10	Mathematical examples of force
Week 11	Work and its types
Week 12	Ability and examples
Week 13	Heat and amount of heat
Week 14	Optics.
Week 15	Static electricity
Week 16	Final Exam

Delivery Plan (Weekly Lab. Syllabus) المنهاج الاسبوعي للمختبر	
	Material Covered
Week 1	Lab 1: An introduction to the physics laboratory and tools
Week 2	Lab 2: Resultant force experiment.
Week 3	Lab 3: The squid pendulum experiment.
Week 4	Lab 4: Experiment to achieve Hooke's law.
Week 5	Lab 5: Fluid density experiment.
Week 6	Lab 6: Free Fall Experience.
Week 7	Lab 7: Ohm's law experiment.

Learning and Teaching Resources مصادر التعلم والتدريس		
	Text	Available in the Library?
Required Texts	4- "Mechanics Principles and Applications" part one, Dr. Hazem Falah Sakeek Associated Professor of Physics Al-Azhar University – Gaza (2001)	Yes

Recommended Texts	**1- "Mechanics Principles and Applications" part one, Dr. Hazem Falah Sakeek Associated Professor of Physics Al-Azhar University – Gaza (2001)** **2- "Electrostatic Principles and Applications" part two, Dr. Hazem Falah Sakeek Associated Professor of Physics Al-Azhar University – Gaza (2001)**	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

Module Information معلومات المادة الدراسية					
Module Title	**Biophysics**			**Module Delivery**	
Module Type	**B**			☒ **Theory** ☒ **Lab** ☒ **Seminar**	
Module Code	**CoS-113**				
ECTS Credits	**6**				
SWL (hr/sem)	**60**				
Module Level	1		**Semester of Delivery**	1	
Administering Department	Bio		**College**	Sci	
Module Leader	Farid M. Mushib		**e-mail**	Fareedm1969@gmail.com	
Module Leader's Acad. Title	Assist professor		**Module Leader's Qualification**	Ph.D.	
Module Tutor	Name (if available)		**e-mail**	------	
Peer Reviewer Name	Name		**e-mail**	E-mail----	
Scientific Committee Approval Date	01/09/2024		**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	**1. Identify the foundations and systems of physics and link them to daily life activities and human activities** **2. Knowledge of vector and scalar quantities and the basic units of physics. Study and transform vectors, and addition, subtraction and multiplication of vectors.** **3. Study of movement in one dimension and calculate the acting forces and their resultant** **4. Study of simple harmonic motion, heat, heat quantity, friction, electricity, energy, and work, and their relationship to living organisms.**
Module Learning Outcomes مخرجات التعلم للمادة الدراسية	**1- A- Cognitive objectives** **2- A- 1 . Improving the level of comprehension (comprehension) developing the ability to interpret, predict and conclude** **3- A- 2 . Application capabilities development** **4- A-3. Providing the student with the ability to analyze** **5- A-4. Develop the student's ability to integrate ideas and information (synthesis level), which is the opposite of analysis** **6- A- 5. Evaluation: Developing the student's ability to make a judgment on the value of the material learned** **7- B- The skills objectives of the course** **8- B 1 . Improving the student's ability to observe** **9- B-2. To learn how to imitate and imitate.** **10- B-3. To learn the method of experimentation**
Indicative Contents المحتويات الإرشادية	**General and qualifying transferable skills (other skills related to employability and personal development).** **1. Teaching the student oral and written communication skills** **2. Using modern technological tools, such as computers, the Internet, and scientific programs for preparing reports, tables, figures, and presentations.** **3. Encouraging the student to work collectively within a work team** **4. Developing the student's abilities to make optimal use of time (time management).**

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 لـ ١٥ اسبوعا			
Structured SWL (h/sem) الحمل الدراسي المنتظم للطالب خلال الفصل	60	**Structured SWL (h/w)** الحمل الدراسي المنتظم للطالب أسبوعيا	4
Unstructured SWL (h/sem) الحمل الدراسي غير المنتظم للطالب خلال الفصل	87	**Unstructured SWL (h/w)** الحمل الدراسي غير المنتظم للطالب أسبوعيا	5.8
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**	6	10% (5)	Same week	LO #1, #2 and #10, #11
	Assignments	4	10% (5)	Each following week	LO #3, #4 and #6, #7
	Projects / Lab.	1	10% (10)	Continuous	All
	Report	4	10% (5)	13	LO #5, #8 and #10
Summative assessment	**Midterm Exam**	1hr	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	**Vectors and their analysis with drawing .**
Week 2	**Numerical and vector multiplication with examples .**
Week 3	**Motion in one dimension.**
Week 4	**Free fall and examples.**
Week 5	**Simple harmonic motion.**
Week 6	**Classic Mechanics.**

Week 7	Mid Exam
Week 8	Newton's laws of motion.
Week 9	Force and friction force
Week 10	Mathematical examples of force
Week 11	Work and its types
Week 12	Ability and examples
Week 13	Heat and amount of heat
Week 14	Optics.
Week 15	Static electricity
Week 16	Final Exam

Delivery Plan (Weekly Lab. Syllabus) المنهاج الاسبوعي للمختبر	
	Material Covered
Week 1	Lab 1: An introduction to the physics laboratory and tools
Week 2	Lab 2: Resultant force experiment.
Week 3	Lab 3: The squid pendulum experiment.
Week 4	Lab 4: Experiment to achieve Hooke's law.
Week 5	Lab 5: Fluid density experiment.
Week 6	Lab 6: Free Fall Experience.
Week 7	Lab 7: Ohm's law experiment.

Learning and Teaching Resources مصادر التعلم والتدريس		
	Text	Available in the Library?
Required Texts	1- "Mechanics Principles and Applications" part one, Dr. Hazem Falah Sakeek Associated Professor of Physics Al-Azhar University – Gaza (2001)	Yes
Recommended Texts	1- "Mechanics Principles and Applications" part one, Dr. Hazem Falah Sakeek Associated Professor of Physics Al-Azhar University – Gaza (2001) 2- "Electrostatic Principles and Applications" part two, Dr. Hazem Falah Sakeek Associated Professor of Physics Al-Azhar University – Gaza (2001)	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.

1 / 10 / 2023

MODULE DESCRIPTION FORM

نموذج وصف المادة الدراسية

Module Information معلومات المادة الدراسية					
Module Title	**Parasitology**			**Module Delivery**	
Module Type	**Core**			☒ **Theory** ☒ **Lecture** ☒ **Lab** ☐ **Tutorial** ☐ **Practical** ☐ **Seminar**	
Module Code	**Bio-223**				
ECTS Credits	**5**				
SWL (hr/sem)	**125**				
Module Level		2	**Semester of Delivery**		2
Administering Department		Bio	**College**	Sci	
Module Leader	Meena sabah farman		**e-mail**	Meena.sabah@uoanbar.edu.iq	
Module Leader's Acad. Title		Assistant Professor	**Module Leader's Qualification**		PhD.
Module Tutor	Name (if available)		**e-mail**	E-mail	
Peer Reviewer Name		NON	**e-mail**		
Scientific Committee Approval Date		01/12/2024	**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	1. Realize the importance of parasitology. 2. Understand the scope and principles of parasitology. 3. Recognize parasitic criteria, adaptations and requirements from their hosts. 4. Illustrate the main parasitic animals with their life cycles. 5. Realize the impact of parasites on human health and economy. 6. Define the scope and importance of immunology. 7. Recognize the principles and types of immunity. 8. Identify the mechanisms of immune response. 9. Discuss the disorders of the immune system and their pathogenic impacts
Module Learning Outcomes مخرجات التعلم للمادة الدراسية	A. Knowledge and understanding 1 - Parasitology: - Demonstrate the taxonomic affiliation of specific parasitic examples. 2 - Discuss the adaptations of parasites and their host specificity. 3 - Compare the life cycles of various parasites. B. mental skills 1-Dissect selected parasitic examples. 2 - Identify the economic and medical losses due to parasitic infections. 3 - Gain the practical skills of identifying, classifying and drawing parasitic examples. C. Professional skills 1 - Immunology: -Correlate the immune disorders with certain pathological manifestation. 2 - Discuss the relation of immunity with allergy and environmental factors D. General skills 1 - Show the risk factors autoimmunity and the acquired immunity defecincy syndrome (AIDS) et
Indicative Contents المحتويات الإرشادية	1-Introducing parasitology 2-Medical veterinary and economic importance 3- Parasitic association, criteria and requirements 4- Host-parasitic relationships. 5- Survery of various taxa of parasites with life cycles of specific examples from: Protozoa-platyhelmenthes-nematodes-acanthocephala-arthropoda 6- Emphasis on local and human parasites with their distinctive features, impacts and control measures 7-Introducing immunology - Principles of immunology 8- Types of immunity - Specific and non specific 9- Innate and acquired - Tissue and humoral 10- Active and passive 11- Antigen- antibody reaction 12- Immunity failure and diseases 13- Immunity and allergy

	14-	Immunity and transplantation.
	15-	Future prospects of immunology.

Learning and Teaching Strategies استراتيجيات التعلم والتعليم	
Strategies	1 - Understanding parasitology as a term and its association in different fields. 2 - Identifying the stages of development of this topic and its achievements in various fields. 3 - Identify the most important techniques used to develop the ability to accurately diagnose parasites, develop the student's ability to describe and study parasites in different environments, and identify the classification keys to reach a knowledge of the genus and type of the parasite. 4 - Linking the theoretical information that the student had previously learned in the previous stages with its practical application in the laboratory.

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	4
Unstructured SWL (h/sem) الحمل الدراسي غير المنتظم للطالب خلال الفصل	63	**Unstructured SWL (h/w)** الحمل الدراسي غير المنتظم للطالب أسبوعيا	4
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**	6	10% (10)	5 and 10	LO #1, #2 and #10, #11
	Assignments	4	10% (10)	2 and 12	LO #3, #4 and #6, #7
	Projects / Lab.	1	10% (10)	Continuous	All
	Report	4	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	General characteristics of parasites
Week 2	Their benefits and harms parasite environment
Week 3	Sexual reproduction of parasites
Week 4	Asexual reproduction in parasites
Week 5	Classification of parasites
Week 6	Elementary Division
Week 7	Ciliate Division
Week 8	Division of Flatworms
Week 9	Phylum Sporoderms with a compound apex
Week 10	Cryptosporidium genus
Week 11	Condy's arcuate
Week 12	blood lace
Week 13	Important of flagellate
Week 14	Nematodes
Week 15	**platyhelminthes**
Week 16	**sarcodina**

Delivery Plan (Weekly Lab. Syllabus) المنهاج الاسبوعي للمختبر	
	Material Covered
Week 1	Lab 1: Introduction of parasitology
Week 2	Lab 2: Type of parasite
Week 3	Lab 3: Types of hosts
Week 4	Lab 4: Diagnosis of Parasitic Diseases
Week 5	Lab 5: FILARIASIS, LEISHMANIASIS, TOXOPLASMOSIS

	& TRYPANOSOMIASIS
Week 6	Lab 6: INTESTINAL AND UROGENITAL PROTOZOA COLLECTION OF FAECAL SAMPLES
Week 7	Lab 7: - INTESTINAL NEMATODES
Week 8	Project presentation
Week 9	Project presentation
Week 10	Project presentation
Week 11	Project presentation
Week 12	Project presentation
Week 13	Project presentation
Week 14	Project presentation

Learning and Teaching Resources
مصادر التعلم والتدريس

	Text	Available in the Library?
Required Texts	©2006 by Dawit Assafa, Ephrem Kibru, S. Nagesh,, Solomon Gebreselassie, Fetene Deribe, Jemal Ali	No
Recommended Texts	DT John - 2012 - books.google.com	No
Websites	2019Jan.16 [cited 2023Jun.14];29(2). Available from: http://journal.tishreen.edu.sy/index.php/hlthscnc/article/view/6465	

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

Module Information معلومات المادة الدراسية					
Module Title	**Plant anatomy**			**Module Delivery**	
Module Type	**C**			**Theory** **Lecture** **Lab** **Tutorial** **Practical** **Seminar**	
Module Code	**Bio 212**				
ECTS Credits	**5**				
SWL (hr/sem)	**60**				
Module Level	2		**Semester of Delivery**	1	
Administering Department	Bio		**College**	Sci	
Module Leader	Dr. Rajaa Fadhil Hamdi Dr. Khader Saker		**e-mail**	Sc.moh_n2002@uoanbar.edu.iq	
Module Leader's Acad. Title	lecturer		**Module Leader's Qualification**	Ph.D.	
Module Tutor	Name (if available)		**e-mail**		
Peer Reviewer Name	Name		**e-mail**	E-mail	
Scientific Committee Approval Date	01/09/2024		**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	**1. understanding the diversity of plant anatomy between different plants.** **2. Demonstrate a basic understanding of the evolutionary history of the plant tissue.** **3. understanding the form and function of plant tissue.** **4. Developing the laboratory skills necessary to study the anatomy of plant tissues.**
Module Learning Outcomes مخرجات التعلم للمادة الدراسية	**1. Have developed an understanding of the diversity of plant anatomy and an appreciation of the significance of various taxa.** **2. Have developed a basic understanding of the evolutionary history of the plant tissue.** **3. Develop an understanding of the form and function of plant tissue.** **4. Develop laboratory skills necessary to study the anatomy of plant and its parts.**
Indicative Contents المحتويات الإرشادية	**Plant anatomy course covers three main themes:** • **It includes the study of the functions of various plant organs, the function of each organ, how plants adapt to their environment, and how they adapt anatomically and functionally. How plants interact with their environment** • **The student learns the basics of plant anatomy, how to make histological sections of different plants from different environments, and the histological and anatomical differences between them.** • **Topics range from ecology, cell science, plant physiology, and plant taxonomy. This flexibility allows you to study plant anatomy in greater depth, and expand your interests for a degree in plant biosciences**

Learning and Teaching Strategies استراتيجيات التعلم والتعليم	
Strategies	**As a plant anatomy or botany student, students will learn in lots of different ways, from lectures and small group tutorials to learning by doing during field work, practical lab sessions and research projects. Our staff are committed to great teaching and students will have lots of opportunities throughout your degree to be creative, think independently, and express your ideas.**

Student Workload (SWL) الحمل الدراسي للطالب محسوب لـ ١٥ اسبوعا			
Structured SWL (h/sem) الحمل الدراسي المنتظم للطالب خلال الفصل	60	**Structured SWL (h/w)** الحمل الدراسي المنتظم للطالب أسبوعيا	4
Unstructured SWL (h/sem) الحمل الدراسي غير المنتظم للطالب خلال الفصل	62	**Unstructured SWL (h/w)** الحمل الدراسي غير المنتظم للطالب أسبوعيا	4.1
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**	6	10% (5)	Same week	1, 2, 3, 4
	Assignments	4	10% (5)	Each following week	1, 2, 3, 4
	Projects / Lab.	1	10% (10)	12	1, 2, 3, 4
	Report	4	10% (5)	3, 6, 8, 10	3, 4
Summative assessment	**Midterm Exam**	1hr	10% (10)	7	1, 2, 3
	Final Exam	3hr	50% (50)	16	1, 2, 3, 4
Total assessment			100% (100 Marks)		

Delivery Plan (Weekly Syllabus) المنهاج الاسبوعي النظري	
	Material Covered
Week 1	Definition of plant anatomy , plant cell, cell wall
Week 2	PROTOPLASMIC COMPONENTS (part 1)
Week 3	PROTOPLASMIC COMPONENTS (part 2)
Week 4	NONPROTOPLASMIC COMPONENTS (part 1)
Week 5	NONPROTOPLASMIC COMPONENTS (part 2)

Week 6	The tissues , meristematic tissues
Week 7	Permanent Tissues
Week 8	The epidermis
Week 9	Vascular tissue, xylem
Week 10	Vascular tissue , phloem
Week 11	Exam
Week 12	Root anatomy, longitudinal section
Week 13	Root anatomy , cross section
Week 14	The stem **,** structure of stem
Week 15	Stem, cross section
Week 16	Preparatory week before the final Exam

Delivery Plan (Weekly Lab. Syllabus) المنهاج الاسبوعي للمختبر	
	Material Covered
Week 1	Microscope
Week 2	**Microscopic preparations**
Week 3	Plant cell, living component
Week 4	**Plant cell, Non-living components**
Week 5	**Cell wall, primary pit fields**
Week 6	Cell wall, pits
Week 7	**Plant tissues , Meristematic Tissues**
Week 8	Plant tissue, permenant tissue
Week 9	Exam
Week 10	Parenchyma tissue
Week 11	Collenchyma tissue
Week 12	Sclerenchyma tissue
Week 13	The epidermis
Week 14	Vascular tissue, xylem, cross section of root
Week 15	Vascular tissue ,phloem, cross section of stem
Week 16	**Preparatory week before the final Exam**

Learning and Teaching Resources مصادر التعلم والتدريس		
	Text	**Available in the Library?**
Required Texts	**Evert, R. F. (2006). Esau's plant anatomy: meristems, cells, and tissues of the plant body: their structure, function, and development. John Wiley & Sons.**	Yes
Recommended Texts		No
Websites		

Grading Scheme				
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
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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.

Assist. Prof. Dr. Rajaa Fadhil Hamdi

20 / 8 / 2024

MODULE DESCRIPTION FORM

نموذج وصف المادة الدراسية

Module Information معلومات المادة الدراسية					
Module Title	Entomology II			**Module Delivery**	
Module Type	C			☒ **Theory** ☒ **Lecture** ☒ **Lab** ☐ **Practical**	
Module Code	Bio-221				
ECTS Credits	4				
SWL (hr/sem)	100				
Module Level	2		**Semester of Delivery**	2	
Administering Department	Bio		**College**	Sci	
Module Leader	Eman Abbas Khudhair		**e-mail**	Emanabbaskh59@ gmail . com	
Module Leader's Acad. Title	Lecturer		**Module Leader's Qualification**	Assistant lecturer	
Module Tutor			**e-mail**	E-mail	
Peer Reviewer Name			**e-mail**		
Scientific Committee Approval Date	12/12/2024		**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 Identify and distinguish types of insects. B. The student will be able to distinguish between beneficial and harmful insects. c. The possibility of dealing with insects in a scientific way.
Module Learning Outcomes مخرجات التعلم للمادة الدراسية	1. Know the terminology used in entomology 2. The possibility of classifying insects scientifically and can distinguish different species and learn about their environment 3. Breeding insects in laboratories 4. pest control 5. How to deal with insects 6. methods of collecting insects 7. Methods of hardening and collecting insects 8. Delivering information to society in a scientific way 9. Identify the areas where insects are found

Learning and Teaching Strategies استراتيجيات التعلم والتعليم	
Strategies	The main strategy that will be adopted in delivering this module is to encourage students' participation in the exercises as well as a series of lectures and practical classes. At the same time refining and expanding their critical thinking skills through topics covered in lectures include what are insecta, their basic characteristics, structure and classification.

Student Workload (SWL) الحمل الدراسي للطالب محسوب لـ ١٥ أسبوعا			
Structured SWL (h/sem) الحمل الدراسي المنتظم للطالب خلال الفصل	63	**Structured SWL (h/w)** الحمل الدراسي المنتظم للطالب أسبوعيا	4
Unstructured SWL (h/sem) الحمل الدراسي غير المنتظم للطالب خلال الفصل	37	**Unstructured SWL (h/w)** الحمل الدراسي غير المنتظم للطالب أسبوعيا	2.2

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**	6	10% (10)	5 and 10	LO #1, #2 and #10, #11
	Assignments	4	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	To study about characters of Phylum Arthropoda.
Week 2	classification of insects
Week 3	characters and classification of order Orthoptera.
Week 4	characters and classification of order Hemiptera.
Week 5	characters and classification of order Phtheraptera.
Week 6	characters and classification of order Lepidoptera.
Week 7	Mid exam
Week 8	characters and classification of order Hymenoptera.
Week 9	characters and classification of order Diptera
Week 10	characters and classification of order Coleoptera
Week 11	characters and classification of order Isoptera.
Week 12	characters and classification of order Neuroptera.
Week 13	Identification for different Orders using pictorial keys
Week 14	key to major families of Orthoptera, Hemiptera (Heteroptera , Homoptera) and Coleoptera

Week 15	**Entomological methods.**
Week 16	**Preparatory week before the final Exam**

Delivery Plan (Weekly Lab. Syllabus) المنهاج الاسبوعي للمختبر	
	Material Covered
Week 1	Introduction
Week 2	General thoughts
Week 3	Orthoptera.
Week 4	Hemiptera.
Week 5	Phtheraptera.
Week 6	Lepidoptera.
Week 7	Hymenoptera.
Week 8	Diptera and Neuroptera.
Week 9	Coleoptera and Isoptera.
Week 10	Project
Week 11	Project
Week 12	Project
Week 13	Project

Learning and Teaching Resources مصادر التعلم والتدريس		
	Text	**Available in the Library?**
Required Texts	1- PRACTICAL MANUAL CLASSIFICATION OF INSECTS((Prof. Neerja Agrawal Emeritus Professor (ICAR) 2021)) 2-The Insects(An Outline of Entomology) P.J. Gullan and P.S. Cranston/ Department of Entomology, University of California, Davis, USA	No

Recommended Texts	- PRACTICAL MANUAL CLASSIFICATION OF INSECTS((Prof. Neerja Agrawal Emeritus Professor (ICAR) 2021))	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

Module Information معلومات المادة الدراسية					
Module Title	Invertebrates			**Module Delivery**	
Module Type	Core			☒ **Theory** ☒ **Lecture** ☒ **Lab** ☐ **Tutorial** ☐ **Practical** ☐ **Seminar**	
Module Code	Bio-213				
ECTS Credits	5				
SWL (hr/sem)	125				
Module Level		56	**Semester of Delivery**		1
Administering Department		Bio	**College**	Sci	
Module Leader	Meena sabah farman		**e-mail**	Meena.sabah@uoanbar.edu.iq	
Module Leader's Acad. Title		Assistant Professor	**Module Leader's Qualification**		PhD.
Module Tutor	Name (if available)		**e-mail**	E-mail	
Peer Reviewer Name		NON	**e-mail**		
Scientific Committee Approval Date		01/09/2023	**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	1. Realize the importance of Invertebrates 2. Understand the scope and principles of. Invertebrates 3. Recognize parasitic criteria, adaptations and requirements from their hosts. 4. Illustrate the main Invertebrates animals with their life cycles. 5. Realize the impact of parasites on human health and economy. 6. Define the scope and importance of immunology. 7. Recognize the principles and types of immunity. 8. Identify the mechanisms of immune response. 9. Discuss the disorders of the immune system and their pathogenic impacts
Module Learning Outcomes مخرجات التعلم للمادة الدراسية	A. Knowledge and understanding 1 - Parasitology: - Demonstrate the taxonomic affiliation of specific parasitic examples. 2 - Discuss the adaptations of Invertebrates and their host specificity. 3 - Compare the life cycles of various parasites. B. mental skills 1-Dissect selected Invertebrates examples. 2 - Identify the economic and medical losses due to Invertebrates infections. 3 - Gain the practical skills of identifying, classifying and drawing Invertebrates examples. C. Professional skills 1 - Immunology: -Correlate the immune disorders with certain pathological manifestation. 2 - Discuss the relation of immunity with allergy and environmental factors D. General skills 1 - Show the risk factors autoimmunity and the acquired immunity defecincy syndrome (AIDS) et
Indicative Contents المحتويات الإرشادية	1-Introducing Invertebrates 2-Medical veterinary and economic importance 3- Parasitic association, criteria and requirements 4- Invertebrates relationships. 5- Survery of various taxa of Invertebrates with life cycles of specific examples from: Protozoa-platyhelmenthes-nematodes-acanthocephala-arthropoda 6- Emphasis on local and human parasites with their distinctive features, impacts and control measures 7-Introducing immunology - Principles of immunology 8- Types of immunity - Specific and non specific 9- Innate and acquired - Tissue and humoral 10- Active and passive 11- Antigen- antibody reaction 12- Immunity failure and diseases

	13- Immunity and allergy 14- Immunity and transplantation. 15- Future prospects of immunology.

Learning and Teaching Strategies استراتيجيات التعلم والتعليم	
Strategies	1 - Understanding parasitology as a term and its association in different fields. 2 - Identifying the stages of development of this topic and its achievements in various fields. 3 - Identify the most important techniques used to develop the ability to accurately diagnose parasites, develop the student's ability to describe and study parasites in different environments, and identify the classification keys to reach a knowledge of the genus and type of the parasite. 4 - Linking the theoretical information that the student had previously learned in the previous stages with its practical application in the laboratory.

Student Workload (SWL) الحمل الدراسي للطالب محسوب لـ ١٥ اسبوعا			
Structured SWL (h/sem) الحمل الدراسي المنتظم للطالب خلال الفصل	60	**Structured SWL (h/w)** الحمل الدراسي المنتظم للطالب أسبوعيا	4
Unstructured SWL (h/sem) الحمل الدراسي غير المنتظم للطالب خلال الفصل	62	**Unstructured SWL (h/w)** الحمل الدراسي غير المنتظم للطالب أسبوعيا	4.1
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**	6	10% (5)	5 and 10	LO #1, #2 and #10, #11
	Assignments	4	10% (5)	2 and 12	LO #3, #4 and #6, #7
	Projects / Lab.	1	10% (10)	Continuous	All
	Report	4	10% (5)	13	LO #5, #8 and #10
	Midterm Exam	1hr	10% (10)	7	LO #1 - #7

Summative assessment	**Final Exam**	3hr	50% (50)	16	All
Total assessment			100% (100 Marks)		

Delivery Plan (Weekly Syllabus) المنهاج الاسبوعي النظري	
	Material Covered
Week 1	General characteristics of Invertebrates
Week 2	Their benefits and harms Invertebrates environment
Week 3	Sexual reproduction of Invertebrates
Week 4	Asexual reproduction in Invertebrates
Week 5	Classification of Invertebrates
Week 6	Elementary Division
Week 7	Ciliate Division
Week 8	Division of Flatworms
Week 9	Phylum Sporoderms with a compound apex
Week 10	Cryptosporidium genus
Week 11	Condy's arcuate
Week 12	blood lace
Week 13	Imprtant of flagellate
Week 14	Nematodes
Week 15	**platyhelminthes**
Week 16	**sarcodina**

Delivery Plan (Weekly Lab. Syllabus) المنهاج الاسبوعي للمختبر	
	Material Covered
Week 1	مقدمة عن ممالك الكائنات الحية
Week 2	تصنيف الكائنات الحية
Week 3	مملكة الطليعيات
Week 4	مملكة الطليعيات

Week 5	الاسفنجيات
Week 6	اللاسعات
Week 7	الديدان المسطحة
Week 8	الديدان الكيسية
Week 9	الديدان الحلقية
Week 10	الديدان
Week 11	المفصليات
Week 12	المفصليات
Week 13	الحزازيات والنواعم
Week 14	Project
Week 15	Project

Learning and Teaching Resources
مصادر التعلم والتدريس

	Text	Available in the Library?
Required Texts	©2006 by Dawit Assafa, Ephrem Kibru, S. Nagesh,, Solomon Gebreselassie, Fetene Deribe, Jemal Ali	No
Recommended Texts	DT John - 2012 - books.google.com	No
Websites	2019Jan.16 [cited 2023Jun.14];29(2). Available from: http://journal.tishreen.edu.sy/index.php/hlthscnc/article/view/6465	

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

Module Information معلومات المادة الدراسية					
Module Title	**Plants groups**			**Module Delivery**	
Module Type	**C**			☒ **Theory** ☒ **Lecture** ☒ **Lab** ☐ **Tutorial** ☐ **Practical** ☐ **Seminar**	
Module Code	**Bio-216**				
ECTS Credits	**5**				
SWL (hr/sem)	**60**				
Module Level	3		**Semester of Delivery**	1	
Administering Department	Bio		**College**	Sci	
Module Leader	**Hiba Fouad Abdulfatah Ahmed Khames**		**e-mail**	Sc.hibbafouad@uoanbar.edu.iq	
Module Leader's Acad. Title	Lecturer		**Module Leader's Qualification**	Ph.D.	
Module Tutor	Name (if available)		**e-mail**	E-mail	
Peer Reviewer Name			**e-mail**		
Scientific Committee Approval Date	01/09/2024		**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	1. Identify the different types of plants groups and distinguish between vascular and non-vascular plants. 2. Study of cyanophyta and eukaryotic algae and their role in the environment. 3. Understanding the life cycles of algae, their types, and distinguishing between different generations of the same algae 4. Identify the different algae parts and their modifications 5. Study the mechanisms of sexual and asexual reproduction in different algae groups.
Module Learning Outcomes مخرجات التعلم للمادة الدراسية	1. 1Identify the most important plant groups and species in nature, their characteristics, and methods of reproduction and living. 2. 1Methods of feeding various plant groups (algae, ferns, mosses), their sexual and asexual reproduction, growth, nutritional needs, and methods of producing spores. 3. Knowing the most important functions that take place at the different tissues. 4. Know its different types 5. Understanding the mechanisms of sexual and asexual reproduction in different divisions 6. Identify the most important events that take place during the life cycle. 7. Microscopic examination of many samples from different places 8. Learn to prepare slides for various samples.
Indicative Contents المحتويات الإرشادية	plants Groups course covers four main themes: **Importance:** study of its importance from various medical, economic, agricultural, and environmental aspects. **Classification:** Dividing algae into groups according to the degree of similarity between them in genetic components and morphology **External morphology:** Studying the external structure of algae and its various parts **Their nutrition and life cycles:** Learn about the methods of nutrition for different types of algae, as well as their life cycles in different forms.

Learning and Teaching Strategies استراتيجيات التعلم والتعليم	
Strategies	The main strategy that will be adopted in delivering this module is to encourage students' participation in the exercises as well as a series of lectures and practical classes designed to introduce you to plants groups. At the same time, refining and expanding their critical thinking skills through topics covered in lectures include what are algae, their basic characteristics, nutrition, and life cycle. An interactive tutorial and by considering types of simple experiments In methods of preparing slides, identifying the shapes of algae, and observing some important phenomena in the in the reproductive stage.

Student Workload (SWL) الحمل الدراسي للطالب محسوب لـ ١٥ اسبوعا			
Structured SWL (h/sem) الحمل الدراسي المنتظم للطالب خلال الفصل	60	**Structured SWL (h/w)** الحمل الدراسي المنتظم للطالب أسبوعيا	4
Unstructured SWL (h/sem) الحمل الدراسي غير المنتظم للطالب خلال الفصل	60	**Unstructured SWL (h/w)** الحمل الدراسي غير المنتظم للطالب أسبوعيا	4.1
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**	6	10% (5)	Same week 1, 2, 3, 4	Same week 1, 2, 3, 4
	Assignments	4	10% (5)	2 and 12	LO #3, #4 and #6, #7
	Projects / Lab.	1	10% (10)	Continuous	All
	Report	4	10% (5)	13	LO #5, #8 and #10
Summative assessment	**Midterm Exam**	1hr	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	Algae,their importance, presence, nutrition,Forms of algae
Week 2	Reproduction in algae, growth in algae, life cycle of algae, classification of algae
Week 3	Cyanophyta
Week 4	Chlorophyta
Week 5	Chlorophyta
Week 6	Euglenophyta
Week 7	**Mid-term Exam**
Week 8	Chrysophyta
Week 9	Phaeophyta
Week 10	Phaeophyta
Week 11	Pyrrophyta
Week 12	Rhodophyta
Week 13	Mosses
Week 14	Ferns
Week 15	Seed plants
Week 16	**Preparatory week before the final Exam**

Delivery Plan (Weekly Lab. Syllabus) المنهاج الاسبوعي للمختبر	
	Material Covered
Week 1	Introduction to algae, methods of isolating them, the most important laboratory equipment, and sterilization methods
Week 2	Shapes of algae and spors.
Week 3	Shapes of algal colonies and aggregations
Week 4	project
Week 5	Cyanophyta slides
Week 6	Chlorophyta slides
Week 7	**Midterm exam**
Week 8	Euglenophyta slides
Week 9	Chrysophyta slides

Week 10	Phaeophyta slides
Week 11	Pyrrophyta slides
12	Collect samples from ponds and prepare slides with diagnosis
13	Rhodophyta slides
14	Project Discussion

Learning and Teaching Resources
مصادر التعلم والتدريس

	Text	Available in the Library?
Required Texts	-Freshwater Algae of North America (Second dition)Ecology and Classification Aquatic Ecology 2015, Pages 459-483 -Al-Kandari, M.; Al-Yamani, F. and Al-Rifaie, k. (2009). Marine phytoplankton atlas of Kuwait's waters. Kuwait Institute for Scientific Research, P.O. Box, 2488, 13109, Kuwait. -Desikachary, t. V. (1959). Cyanophyta Indian. Council of Agricultural Research, New Delhi, India. -Komárková, Jarka; Jezberová, Jitka; Komárek, Ondřej; Zapomělová, Eliška (2010). "Variability of Chroococcus (Cyanobacteria) morphospecies with regard to phylogenetic relationships". Hydrobiologia. 639: 69–83.	No
Recommended Texts		No
Websites	-https://www.britannica.com -https://www.vcbio.science.ru.nl/en/virtuallessons/redalgae - http://micro.magnet.fsu.edu/featuredmicroscopist/vanegmond/chroococcussmall.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
	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

Module Information معلومات المادة الدراسية					
Module Title	**Entomology I**			**Module Delivery**	
Module Type	**C**			**Theory** **Lecture** **Lab** **Tutorial** **Practical** **Seminar**	
Module Code	**Bio-211**				
ECTS Credits	**5**				
SWL (hr/sem)	**60**				
Module Level	2		**Semester of Delivery**	1	
Administering Department	Bio		**College**	Sci	
Module Leader	ريم خالد إبراهيم فهام جاسم محمد ايمان عباس خضير		**e-mail**	Reem.khalid@uoanbar.edu.iq	
Module Leader's Acad. Title	lecturer		**Module Leader's Qualification**	Ph.D.	
Module Tutor	Name (if available)		**e-mail**		
Peer Reviewer Name	Name		**e-mail**	E-mail	
Scientific Committee Approval Date	20/9/2024		**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	**Helping the student to understand the shape and general anatomy of insects**
Module Learning Outcomes مخرجات التعلم للمادة الدراسية	**1- Identify the branches of the arthropod** **2-Identify the insect classification** **3- Identify the external appearance of insects** **4- Identify the internal systems of insects** **5- Identify the classification of insects**
Indicative Contents المحتويات الإرشادية	**Insect body dissection to identify internal organs**

Learning and Teaching Strategies استراتيجيات التعلم والتعليم	
Strategies	Study of the general characteristics of insects and the structure and function of each organ and system in them, including the head, abdomen, and body appendages.

Student Workload (SWL) الحمل الدراسي للطالب محسوب لـ ١٥ أسبوعا			
Structured SWL (h/sem) الحمل الدراسي المنتظم للطالب خلال الفصل	60	**Structured SWL (h/w)** الحمل الدراسي المنتظم للطالب أسبوعيا	4
Unstructured SWL (h/sem) الحمل الدراسي غير المنتظم للطالب خلال الفصل	62	**Unstructured SWL (h/w)** الحمل الدراسي غير المنتظم للطالب أسبوعيا	4.1
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**	6	10% (5)	Same week	

	Assignments	4	10% (5)	Each following week	
	Projects /	1	10% (10)		
	Report	4	10% (5)	4,5,6	
Summative assessment	**Midterm Exam**	1hr	10%	7	
	Final Exam	3hr	50%	16	
Total assessment			100% (100 Marks)		

Delivery Plan (Weekly Syllabus) المنهاج الاسبوعي النظري	
	Material Covered
Week 1	Introduction
Week 2	General classification of insects
Week 3	**General anatomy of the insect's**
Week 4	body, head area
Week 5	**Eyes and antea in an insects**
Week 6	**The thorax region in insects**
Week 7	The thorax region in insects
Week 8	The thorax region in insects
Week 9	Digestive system in insects
Week 10	Digestive system in insects
Week 11	Exam
Week 12	**The nervous system in insects**
Week 13	**The nervous system in insects**
Week 14	**Circulatory system in insects**
Week 15	**Circulatory system in insects**
Week 16	**Preparatory week before the final Exam**

Delivery Plan (Weekly Lab. Syllabus) المنهاج الاسبوعي للمختبر	
	Material Covered

Week 1	Introduction
Week 2	General charecters of insects
Week 3	The Head and its types according mouth parts directs
Week 4	Antenna types
Week 5	Eyes
Week 6	Mouth parts(part1)
Week 7	Mouth parts (types 2)
Week 8	The legs
Week 9	The wings
Week 10	Scales dissection
Week 11	Couplings of wings
Week 12	Abdomen appendags
Week 13	Distinguish between genders
Week 14	Quizzes
Week 15	Assignments
Week 16	Projects

Learning and Teaching Resources مصادر التعلم والتدريس		
	Text	**Available in the Library?**
Required Texts	**Entomology (Morphology - anatomy - transformation)\ Ali Ali Al Morsi**	yes
Recommended Texts		No
Websites		

Grading Scheme				
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.

Dr.Reem Khalid Ibrahim

20/8/2024