جامعة بغداد

كلية العلوم

قسم التقنيات الاحيائية

مواد المرحلة الثانية

الكورس الاول / الكورس الثاني

Ministry of Higher Education and

Scientific Research - Iraq

University of Baghdad

College of Science
Department Biotechnology

MODULE DESCRIPTION FORM

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	BIOT23013				
ECTS Credits	5				
SWL (hr/sem)	125				
Module Level	UGII		**Semester of Delivery**	3	
Administering Department	Type Dept. Code		**College**	Type College Code	
Module Leader	Prof.Dr. Lamia Shaker Ashoor		**e-mail**	lamia .s@cs.uobaghdad.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	Prof.Dr. Ghazi Aziz		**e-mail**	ghazi.aziz@sc.uobaghdad.edu.iq	

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 Aims أهداف المادة الدراسية	1. Aims of biochemistry to study biomolecules and their components such as enzymes, proteins, hormones, antibiotics, and organic acids, and to identify their importance and role in the bodies of living organisms and to exploit them in diagnosing and treating diseases and abnormalities that afflict livingthings 2. Acquisition of practical, scientific, and laboratory information about the basics of biochemistry, which plays a very large role in the medical and pharmaceutical sectors and in many very important jobs. These fields or specializations include the industrial, health, academic, and many other fields. 3. Identify chemical compounds and understand the biochemical reactions that take place in the human body. 4. Understanding of the chemical properties of biomolecules and the ability to use and combine biochemical techniques with genetics and physical biology techniques as well as molecular biology. 5. The ability to diagnosis of diseases through blood indicators and give the ability to understand normal and pathological phenomena in the human body through theoretical and practical lessons. 6. Conducting advanced research in the fields of basic and clinical biochemistry that

	Serve the community.
Module Learning Outcomes مخرجات التعلم للمادة الدراسية	1. Learn what is carbohydrate and its importance, Carbohydrate is the nutritional component that gives energy. 2. Classification of carbohydrates, Hemiacetal formation of monosaccharide structure 3. Draw Haworth and Chair projection for Glucose and Fructose from Fischer projection, Formation of alpha and beta glycosidic linkages in disaccharides and polysaccharides. 4. General idea about lipid structure and properties. Classify lipids, Understanding the major physiological functions of fatty acids. 5. Understanding the structure of saturated or unsaturated fatty acids and study the relation between the structure and function of fatty acids. 6. Learning about amino acids, their structure, and types. 7. Identify how amino acids form proteins and Define essential and nonessential amino acids. 8. Distinguish between different types of amino acids and Detection of functional groups in amino acids. 9. Understanding the Solubility of amino acids and proteins and solubility as a function of solution PH. 10. Understanding the denaturation and Adaptation denaturation of Protein Altering protein's 3 dimensional structure.
Indicative Contents المحتويات الإرشادية يتضمن الكلمات المفتاحية المهمة للمحاضرات	Indicative content includes the following. Carbohydrate: properties of Carbohydrate. Classification of Carbohydrate (Monosaccharide's - Disaccharides, Polysaccharides), derivatives of monosaccharide's. Lipids : - Classification of lipid , saturated and unsaturated fatty acids , Essential fatty acids , Phospholipids , Cholesterol. Amino acids : Classification of Amino Acids , Properties of Amino Acids , Glutathione. Proteins : classification Based on Functions , Physical and chemical properties. Structure of Proteins , Denaturation of Proteins.

Learning and Teaching Strategies استراتيجيات التعلم والتعليم	
Strategies	Biochemistry teaching strategy for biotechnology specialty students, conducted through an improved lecture format with a brief content and multimedia courseware. This is done By using the brainstorming method, , and using the discussion method to stimulate thinking and participation of students and to provide an opportunity for questions and discussion, while respecting their opinions and suggestions, and this method helps in developing the student's personality cognitively, emotionally and skillfully. Also using the methods of thinking maps, it is an effective teaching strategy in representing

	knowledge through schematic forms that link concepts to each other. Concept maps are used to present new information, discover relationships between concepts, deepen understanding, summarize information, and evaluate the lesson. Encouraging students to prepare reports and present seminars with conducting tests to assess students' understanding and levels.

Student Workload (SWL)

الحمل الدراسي للطالب محسوب لـ ١٥ اسبوعا تملئ من قبل المقررية

Structured SWL (h/sem) الحمل الدراسي المنتظم للطالب خلال الفصل	79	**Structured SWL (h/w)** الحمل الدراسي المنتظم للطالب أسبوعيا	5.26
Unstructured SWL (h/sem) الحمل الدراسي غير المنتظم للطالب خلال الفصل	46	**Unstructured SWL (h/w)** الحمل الدراسي غير المنتظم للطالب أسبوعيا	3.06
Total SWL (h/sem) الحمل الدراسي الكلي للطالب خلال الفصل	125		

Module Evaluation

تقييم المادة الدراسية

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

Summative assessment	**Final Exam**	2hr	50% (50)	16	All
Total assessment			100% (100 Marks)		

Delivery Plan (Weekly Syllabus) المنهاج الاسبوعي النظري	
	Material Covered
Week 1	Carbohydrate- difination and classification
Week 2	Physical and chemical properties of Charbohydrate
Week 3	Monosaccharide's , isomerism , derivatives of monosaccharides
Week 4	Disaccharides , classification of disaccharides
Week 5	Polysaccharides , , classification of polysaccharides
Week 6	Lipids – Definition - Properties – Classification
Week 7	Midterm Exam
Week 8	Simple Lipids , Essential fatty acids , saturated and unsaturated fatty acids
Week 9	Compound Lipids - Phospholipids , sphingolipids, Cholesterol
Week 10	Amino acids - Classification of Amino Acids
Week 11	Properties of Amino Acids , Biologically Important Peptides , Glutathione
Week 12	Proteins - difination and classification Based on Functions
Week 13	classification Based on Physical and chemical properties (Simple proteins - Conjugated proteins and Derived proteins

Week 14	Structure of Proteins , Denaturation of Proteins
Week 15	**Preparatory week**
Week 16	**final Exam**

Delivery Plan (Weekly Lab. Syllabus) المنهاج الاسبوعي للمختبر	
	Material Covered
Week 1	Lab 1: Chemical laboratory safety.
Week 2	Lab 2: Methods expressing concentration.
Week 3	Lab 3: General test for carbohydrates, reducing tests, pentose's test and ketoses test of sugars.
Week 4	Lab 4: Osazones test, sucrose test, polysaccharides test and hydrolysis of starch.
Week 5	Lab 5: Qualitative tests of lipids.
Week 6	Lab 6: Quantitative tests of lipids.
Week 7	Lab 7: Ninhydrin test, xanthoprotic test, Millon test, glyoxylic test.
Week 8	Lab Lead sulphide test, Nitroprusside test, sakaguchi test.

Learning and Teaching Resources مصادر التعلم والتدريس		
	Text	**Available in the Library?**
Required Texts	Introduction to general organic and biochemistry	Yes

	University of Illinois, Urbana-Champaign	
Recommended Texts	Lippincott's Illustrated Reviews: Biochemistry ESSENTIALS OF BIOCHEMISTRY Pankaja Naik PhD ,Professor and Head Department of Biochemistry, MVPS Dr Vasantrao Pawar Medical College Nashik, Maharashtra , India	No
Websites	http://www.schoolarabia.net/kemya/kymia_hyatia/main.htm	

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 للاحياء المجهرية ١

Module Information معلومات المادة الدراسية					
Module Title	Microbiology I			**Module Delivery**	
Module Type	Core			☒ **Theory** ☒ **Lecture** ☒ **Lab** ☐ **Tutorial** ☐ **Practical** ☐ **Seminar**	
Module Code	BIOT23014				
ECTS Credits	5				
SWL (hr/sem)	125				
Module Level	UGII		**Semester of Delivery**	3	
Administering Department	Type Dept. Code		**College**	Type College Code	
Module Leader	- Dr. Aida Husain Ibrahim. - Dr. Israa Ali Zaidan		**e-mail**	aida.h@sc.uobaghdad.edu.iq Israa.Zaidan@sc.uobaghdad.edu.iq	

Module Leader's Acad. Title	Assistant 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	01/06/2023	**Version Number**	1.0

Relation with other Modules

العلاقة مع المواد الدراسية الأخرى

Prerequisite module	Pathogenic bacteria, mycology, immunology and virology.	**Semester**	
Co-requisites module	None	**Semester**	

Module Aims, Learning Outcomes and Indicative Contents

أهداف المادة الدراسية ونتائج التعلم والمحتويات الإرشادية

Module Aims أهداف المادة الدراسية	7. **Enable students to obtain knowledge and understanding of microbiology.** 8. **Providing students with basics and topics related to all branches of microbiology.** 9. **This course deals with the basic concept of microbiology.** 10. **Improving students' skills in scientific research and providing them with basic skills in conducting scientific research and all applications related to microbiology.**

	11. **Preparing specialized students familiar with the basics of microbiology, theoretically and practically, who are able to meet the needs of the labor market.** 12. **To develop practical microbiological skills principally diagnosis of causative agents of the infections and diseases of humans and Zoology in additions to learning the ways to controlling and overcome the healthy problems.**
Module Learning Outcomes مخرجات التعلم للمادة الدراسية	11. **After taken this course the students can recognize all branches of microbiology and Enhancing their knowledge about them.** 12. **List the various terms associated with microbiology.** 13. **Summarize what is meant by microorganisms and their relation to our life.** 14. **Discuss the most details of microorganisms and their involvement in many other fields such as healthy, ecology, epidemiology, industry and etc.** 15. **Be able to describe, recognize and identify the causative structures, shapes and their sizes and arrangement and other details.** 16. **Identify the basic requirements and ingredients for each pathogen invaders.** 17. **Be familiar with the using of the safe application of some of the basic laboratory equipment that's applying in microbiological studies and researches.** 18. **Also be familiar with different strategies for preventing all forms of contamination during the work in the lab. and how can the controlling it.**
Indicative Contents المحتويات الإرشادية يتضمن الكلمات المفتاحية المهمة للمحاضرات	**Microbes in our Lives:** History of Microbiology, Naming and Classify Microorganism Bacteria, Fungus ,Protozoa ,Algae, Virus **Supplies and Growth of microbes:** The Supplies for Growth - Physical elements Chemical and selective ,minimal ,enrich media Types of Chemical principle bonds, PH ,buffer, oxidation **Physiology and Metabolism of the bacteria** Microbial metabolism: Is the means by which a microbe obtains the energy and nutrients (e.g. carbon) it needs to live and reproduce **Microbial Genetics:** Structure and replication of DNA Genetic Transfer and Recombination Transformation, Conjugation,Transduction

	Principles of Diseases: Pathology, Normal Flora Infection and Disease and Opportunists Hosts, Nosocomial Infections, Transmission, Reservoirs **Antimicrobial agents:** Types of antimicrobial agents ,antibiotics ,bacteriocine source of isolates

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 type of simple experiments involving some sampling activities that are interesting to the students.

Student Workload (SWL)
الحمل الدراسي للطالب محسوب لـ ١٥ اسبوعا تملئ من قبل المقررية

Structured SWL (h/sem) الحمل الدراسي المنتظم للطالب خلال الفصل	79	**Structured SWL (h/w)** الحمل الدراسي المنتظم للطالب أسبوعيا	5.26
Unstructured SWL (h/sem) الحمل الدراسي غير المنتظم للطالب خلال الفصل	46	**Unstructured SWL (h/w)** الحمل الدراسي غير المنتظم للطالب أسبوعيا	3.06
Total SWL (h/sem) الحمل الدراسي الكلي للطالب خلال الفصل	125		

Module Evaluation

تقييم المادة الدراسية

		Time/Number	Weight (Marks)	Week Due	Relevant Learning Outcome
Formative assessment	**Quizzes**	2	10% (10)	5, 10	LO #1, 2, 10 and 11
	Assignments	2	10% (10)	2, 12	LO # 3, 4, 6 and 7
	Projects / Lab.	1	10% (10)	Continuous	All
	Report	1	10% (10)	13	LO # 5, 8 and 10
Summative assessment	**Midterm Exam**	2 hr.	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	Introduction and history of microbiology
Week 2	- Eukaryotes and prokaryotes cells. - Bacterial cell structure and their function
Week 3	Growth and Nutrition of the bacteria.
Week 4	Physiology and Metabolism of the bacteria.
Week 5	Bacterial virulence and pathogenesis.
Week 6	Sterilization and disinfection.
Week 7	Mid-term Exam.
Week 8	Antibiotics and chemotherapeutic agents.
Week 9	Bacterial genetics.
Week 10	Mycology / introduction.
Week 11	Fungi Structure, growth, nutrition and reproduction.
Week 12	Classification and pathogenesis.
Week 13	Fungal infection and their causative agents. (included three lectures).
Week 14	Fungal infection and their causative agents.
Week 15	Fungal infection and their causative agents.

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

Week 1	Lab 1: **Biosafety procedure, precautions and Microscope.**
Week 2	Lab 2: **Tools, instruments and equipment.**
Week 3	Lab 3: **Staining methods of bacteria.**
Week 4	**Lab 4: Acid fast stains** **(Ziehl – Nielson technique) and special stains.**
Week 5	Lab 5: **Capsule stain and their types.**
Week 6	Lab 6: **Examination.**
Week 7	Lab 7: **Culture media, preparation and their types.**
Week 8	**Lab.8: Growing and Cultivation of the bacterial species in the lab.**
Week 9	**Lab. 9: - Cultivation of the bacteria in the liquid media (broth) / Motility tests**
Week 10	**Biochemical test.**

Learning and Teaching Resources

مصادر التعلم والتدريس

	Text	Available in the Library?
Required Texts	1. Jawetz, Melnick and Adellberg's. (2011). Textbook of Medical Microbiology.26th Edition.	Yes
Recommended Texts	2. Connie,R. Mahon; Donald, C. Leham and George Manguselis. (2011): Text book of Diagnostic Microbiology. Fourth edition.	No
Websites	- https://www.microbiologyresearch.org	

	- https://microbiologysociety.org/why-microbiology-matters/what-is-microbiology.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 (علم الوظائف)

Module Information معلومات المادة الدراسية					
Module Title	Histology and Microtechniques			**Module Delivery**	
Module Type	Core			☒ **Theory** ☒ **Lecture** ☒ **Lab** ☐ **Tutorial** ☐ **Practical** √ **Seminar**	
Module Code	BIOT23015				
ECTS Credits	5				
SWL (hr/sem)	125				
Module Level		UGII	**Semester of Delivery**		3
Administering Department		Type Dept. Code	**College**	Type College Code	
Module Leader	Dr. Shaima Razaq Ibraheem		**e-mail**	Shaima.Ibraheem@sc.uobaghdad.edu.iq	
Module Leader's Acad. Title		Assistant Professor	**Module Leader's Qualification**		Ph.D.

Module Tutor	Haider Ahmed Hassan	**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	Microtechnique, cytology	**Semester**	
Co-requisites module	None	**Semester**	

Module Aims, Learning Outcomes and Indicative Contents أهداف المادة الدراسية ونتائج التعلم والمحتويات الإرشادية	
Module Aims أهداف المادة الدراسية	1. The course trains students in the skills of taking samples, making animal histological specimens, and proficiently using microscopes and other laboratory machines. 2. To provide knowledge of the preparation of tissues for light and fluorescence microscopy 3. To provide knowledge of the histological structure of tissues and organs at both the light and electron microscopic level. 4. To provide a good grounding in histological/histopathological techniques. 5. To the knowledge of laboratory management principles, quality management, and safety procedures in the histology laboratory.
Module Learning Outcomes	1. Receive, prepare, and process specimens for histopathological investigation. To include dissection, tissue selection cutting, fixation, and staining, as appropriate.

مخرجات التعلم للمادة الدراسية	2. Select the appropriate demonstration technique in the investigation of representative histopathology specimens. 3. Use microscopic examination techniques to investigate histopathological specimens. 4. Recognize normal cellular morphology of representative tissues and organs and common pathobiological processes associated with them. 5. Comply with quality assurance processes associated with histopathological investigations. 6. Describe the receipt, preparation, and processing of specimens for histopathological diagnosis. 7. Describe the appropriate demonstration technique as part of the diagnostic process. 8. Explain and evaluate microscopical examination techniques.
Indicative Contents المحتويات الإرشادية يتضمن الكلمات المفتاحية المهمة للمحاضرات	Indicative content includes the following. ● Compound Microscope ● Non –sectioning methods ● Paraffin methods ● Dissection ● Epithelial tissues ● Connective tissues ● Cartilage ● Bone ● Nervous tissue ● Muscular tissue

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, while at the same time refining and expanding their critical thinking skills. This will be achieved through the following: - Providing students with the basics and additional topics related to the pre-skills education outcomes to solve scientific problems - Students' participation during the lecture to solve some scientific issues - Summer training

Student Workload (SWL)

الحمل الدراسي للطالب محسوب لـ ١٥ اسبوعا تملئ من قبل المقررية

Structured SWL (h/sem) الحمل الدراسي المنتظم للطالب خلال الفصل	79	**Structured SWL (h/w)** الحمل الدراسي المنتظم للطالب أسبوعيا	5.26
Unstructured SWL (h/sem) الحمل الدراسي غير المنتظم للطالب خلال الفصل	46	**Unstructured SWL (h/w)** الحمل الدراسي غير المنتظم للطالب أسبوعيا	3.06
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
	Quizzes	2	10% (10)	5, 10	LO #1, 2, 10 and 11

Formative assessment	**Assignments**	2	10% (10)	2, 12	LO # 3, 4, 6 and 7
	Projects / Lab.	1	10% (10)	Continuous	All
	Report	1	10% (10)	13	LO # 5, 8 and 10
Summative assessment	**Midterm Exam**	2 hr	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	Definition & laboratory rules history, microscopy, types of microscopes, microscope technique, None sectioning methods for samples preparation
Week 2	Sectioning methods (Paraffin) Fixation, washing, dehydration, clearing, Embedding, , advantages and disadvantages
Week 3	Sectioning, microtomes, types of microtomes, frozen sections, mounting, Staining, classification of stains, labeling, Immunological staining
Week 4	Introduction in histology, Components of tissues, basic types of tissues, Epithelial tissue, classification, types
Week 5	Epithelial cell polarity, Specialization of the apical cell surface, Glandular epithelium, classification. Glands classification
Week 6	Connective tissues, components, proper conn. Tissue, Specialize connective tissues, adipose tissue, Cartilage

Week 7	**MID EXAM**
Week 8	Specialize in connective tissues, Cartilage,
Week 9	Bone, Process of Bone Formation
Week 10	Histology of the skin, cells, layers,
Week 11	Muscular system (structure. Arteries and veins sections
Week 12	Nervous system , component, neuron, supporting cells
Week 13	Digestive tract, Sections
Week 14	Liver, spleen, Pancreas,
Week 15	Urinary system, kidney

Delivery Plan (Weekly Lab. Syllabus) المنهاج الاسبوعي للمختبر	
Lab 1:	**Material Covered**
Week 1	Lab1: Compound Microscope- Inverted microscope, Fluorescence microscopy, Wet mounts slide
Week 2	Lab 2: The different methods in microscopic slide preparation- Dry Mount, Wet Mount, Squash Slides, Staining, Blood smear: Types of stains: Some blood abnormalities distinguished by a blood smear: Preparation of Peripheral Blood Smear: Leishman's Stain:
Week 3	Lab 3**:** Paraffin methods, killing process, Gross Examination, Fixation, Type of fixative solutions, Dehydration, Paraffin Embedding, Blocking, Sectioning, Staining, Mounting
Week 4	Lab 4-: Mouse Dissection
Week 5	Exam

Week 6	Lab 5: Epithelial tissues
Week 7	Lab 6: Glands
Week 8	Lab 7: Connective tissues: Part 1
Week 9	Lab 8: Connective tissues: Part 2
Week 10	Lab 9: Cartilage
Week 11	Lab 10: Bone
Week 12	Lab 11: Liver, spleen
Week 13	Lab 12: Pancreas, Kidney
Week 14	Exam

Learning and Teaching Resources

مصادر التعلم والتدريس

	Text	Available in the Library?
Required Texts	التحضيرات المجهرية / كواكب المختار Microtechnique /Gray /1977, A text and atlas / Ross and Pawlina /2006 المجلات العلمية الرصينة محاضرات الهيئة التدرسية	Yes
Recommended Texts	Junqueira's Basic Histology Text & Atlas (14th ed.) Anthony L Mescher ..2016	No
Websites	Histology guide http://www.histologyguide.com/about-us/atlas-of-human-histology.html	

	An Atlas of Histology https://www.springer.com/gp/book/9780387949543

Grading Scheme مخطط الدرجات				
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MODULE DESCRIPTION FORM

نموذج وصف المادة الدراسية

Module Information معلومات المادة الدراسية					
Module Title	Environmental Microbiology			**Module Delivery**	
Module Type	Core			☒ **Theory** ☒ **Lecture** ☒ **Lab** ☐ **Tutorial** ☐ **Practical** ☐ **Seminar**	
Module Code	BIOT23016				
ECTS Credits	5				
SWL (hr/sem)	125				
Module Level		UGII	**Semester of Delivery**		3
Administering Department		Type Dept. Code	**College**	Type College Code	
Module Leader	Dr. Nadhem Hasan Hayder		**e-mail**	Nadhim.Haider@sc.uobaghdad.edu.iq	
Module Leader's Acad. Title		Professor	**Module Leader's Qualification**		Ph.D.

Module Tutor	Dr. Wasan, Lecturer Hiba Abdul-Alrahman	**e-mail**	E-mail
Peer Reviewer Name	Dr. Khalid Jaber	**e-mail**	Nadhim.Haider@sc.uobaghdad.edu.iq
Scientific Committee Approval Date	1/06/2023	**Version Number**	1.0

Relation with other Modules العلاقة مع المواد الدراسية الأخرى			
Prerequisite module	Microbiology	**Semester**	3,4
Co-requisites module	Environmental Biotechnology	**Semester**	6

Module Aims, Learning Outcomes and Indicative Contents أهداف المادة الدراسية ونتائج التعلم والمحتويات الإرشادية	
Module Aims أهداف المادة الدراسية	13. This course deals with the study of microorganisms in different Environments such as soil, water and air. 14. To understand the role of microorganisms in metabolism and recycling of carbon, nitrogen, sulfur and phosphorous compounds. 15. Role of microorganism as pathogen transmission and as microbial indicators for water and food pollution
Module Learning Outcomes مخرجات التعلم للمادة الدراسية	19. To understand environmental microbiology, Components of Ecosystem (Environment), Some important terms in Environmental Microbiology 20. To know the types of Aquatic microbiology, Importance of aquatic microorganisms and microbial activity in water Column. 21. Understand the Role of Microorganisms in Metabolism of C and N compounds. 22. Understand Role of microorganisms in Phosphorous and Sulfur compounds metabolism.

	23. Identifying the types and transmission rout of pathogens in water and waste water, Water borne diseases, Water-washed route, Water-based route, Insect vector route. 24. Understanding the role of microbial Indicators in assessment of water quality. 25. To understand the concept of Soil Microbiology and microbial interaction, major roles and activities of Bacteria in soil. 26. Illustrate the general types and characteristics of Actinomycetes, and study The relation of Actinomycetes to Fungi and bacteria as well clarify Activity and function of Actinomycetes in the Soil, 27. Identify the major roles of Fungi in soil environment, Roles and activities of Fungi in soil, 28. Diagnosis of Pathogens and Parasites in domestic waste water 29. Study the concept of Epidemiology and Chain of Infection, transmission of Pathogens and Parasites Found IN Domestic Wastewater. 30. Study the relations between microorganisms such as MICROBE–MICROBE INTERACTIONS. 31. Illustrate the concept of Symbiosis between Bacteria and Protozoa, Fungus–Bacterium Symbiosis, Prokaryote–Prokaryote Interactions 32. Concept of INTERACTIONS BETWEEN MICROORGANISMS AND ANIMALS, Microbe–Animal Interactions: Parasitism, Mutualism, Grazing and Predation by Animals
Indicative Contents المحتويات الإرشادية يتضمن الكلمات المفتاحية المهمة للمحاضرات	Indicative content includes the following: Definitions of Environmental Microbiology, Components of Ecosystem (Environment). Aquatic microbiology, Importance of aquatic microorganisms, microbial flora and microbial activity in water Column. Role of Microorganisms in biogeochemical cycles (Metabolism of C and N compounds). Role of microorganism's in Phosphorus and Sulfur compounds metabolism. Water and Pathogens, Water borne diseases, classification of Water-associated diseases. Indicators of microbial water quality, Indicator Microorganism, Types of indicators. Soil Microbiology and microbial interaction, Soil Microflora, major roles of Bacteria in soil. Actinomycetes in the soil, Major groups of Actinomycetes, Activity and function of Actinomycetes in the Soil, antibiotics produced by Streptomyces spp. Fungi in soil environment, Common genera of Fungi in soil, Roles and activities of Fungi in soil, Pathogens and Parasites in domestic waste water

	Elements OF Epidemiology, Pathogens and Parasites Found IN Domestic Wastewater, MICROBE–MICROBE INTERACTIONS, Introduction, Classification of Microbial Interactions, Symbiotic Associations, Symbiosis between Bacteria and Protozoa, Fungus–Bacterium Symbiosis, Prokaryote–Prokaryote Interactions INTERACTIONS BETWEEN MICROORGANISMS AND ANIMALS, Microbe–Animal Interactions.

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 collection of different of water soil and clinical samples. Isolation and primitive identification according to the acquired skills from the theoretical and practical information through lectures and Lab.

Student Workload (SWL) الحمل الدراسي للطالب محسوب لـ ١٥ اسبوعا تملئ من قبل المقررية			
Structured SWL (h/sem) الحمل الدراسي المنتظم للطالب خلال الفصل	79	**Structured SWL (h/w)** الحمل الدراسي المنتظم للطالب أسبوعيا	5.25
Unstructured SWL (h/sem) الحمل الدراسي غير المنتظم للطالب خلال الفصل	46	**Unstructured SWL (h/w)** الحمل الدراسي غير المنتظم للطالب أسبوعيا	3.06
Total SWL (h/sem) الحمل الدراسي الكلي للطالب خلال الفصل	125		

Module Evaluation تقييم المادة الدراسية

		Time/Number	Weight (Marks)	Week Due	Relevant Learning Outcome
Formative assessment	**Quizzes**	2	10% (10)	5, 10	LO #1, 3, 5 , 8 and 12
	Assignments	2	10% (10)	2, 12	LO # 2, 4, 6 and 9
	Projects / Lab.	1	10% (10)	Continuous	All
	Report	1	10% (10)	13	LO # 3, 5, 6 and 9
Summative assessment	**Midterm Exam**	2 hr.	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	Definitions of Environmental Microbiology, the need to understand environmental microbiology, Components of Ecosystem (Environment), Some important terms in Environmental Microbiology
Week 2	Aquatic microbiology, Aquatic microorganisms obtain nutrition in a variety of ways, Importance of aquatic microorganisms, microbial flora and microbial activity in water Column, Metabolic Rate and Temperature, Factor affects the microbes in water such as temperature, gases, salinity
Week 3	Role of Microorganisms in biogeochemical cycles (Metabolism of C and N compounds), The Carbon Cycle, Biodegradation, Nitrogen Cycle, Nitrogen fixation, Ammonificant of N compounds, nitrification, denitrification
Week 4	Role of microorganisms P and S metabolism, Microorganisms in Phosphorus cycle, Microorganisms in Sulfur Cycle and Metabolism, Sulfur oxidizing and sulfur reducing bacteria, Characteristics of Sulfur-oxidizing and reducing prokaryotes are, Sulfate assimilation.
Week 5	Water and Pathogens, Water borne diseases, Main Sources of Water Microbial Pollution, Examples of waterborne diseases, classification of Water-associated diseases, A. Water-borne route, B. Water-washed route (Water shortage قلة او ندرة استخدام المياه), C. Water-based route (طرق انتقال الامراض بالاعتماد على المياه), D. Insect vector route ((طرق الانتقال عن طريق الحشرات

Week 6	Indicators of microbial water quality, Indicator Microorganism, Types of indicators, fecal coliform and total coliform, Fecal Streptococci, Current methods of detection Microbial indicators
Week 7	Mid-term Exam.
Week 8	Soil Microbiology and microbial interaction, Definition of soil environment, Soil Particles size and layers, Soil Living organic matter (Soil Biota or organisms), Soil Microflora, major roles of Bacteria in soil, Rhizosphere zone in soli, Microbial activity in rhizosphere zone.
Week 9	Actinomycetes in the soil, the general characteristics of Actinomycetes, the relation of Actinomycetes to Fungi, Distribution and abundance of Actinomycetes, comparison of Actinomycetes with the true bacteria, Environmental Influences on Actinomycetes in soil, Major groups of Actinomycetes, Activity and function of Actinomycetes in the Soil, Significance of Actinomycetes, Actinomycetes Antibiotics, antibiotics produced by Streptomyces spp.
Week 10	Fungi in soil environment, Environmental influences on the fungus in soil, Common genera of Fungi in soil, Yeast in soil, Roles and activities of Fungi in soil,
Week 11	Pathogens and Parasites in domestic waste water Elements OF Epidemiology, Some Definitions, Chain of Infection, Pathogens and Parasites Found IN Domestic Wastewater, Bacterial Pathogens, Viral Pathogens, Protozoan Parasites, Helminth Parasites
Week 12	MICROBE–MICROBE INTERACTIONS, Introduction, Classification of Microbial Interactions, Symbiotic Associations,
Week 13	Symbiosis between Bacteria and Protozoa, Fungus–Bacterium Symbiosis, Prokaryote–Prokaryote Interactions
Week 15	INTERACTIONS BETWEEN MICROORGANISMS AND ANIMALS, Introduction, Primary and Secondary Symbionts, Microbe–Animal Interactions: Parasitism, Microbe–Animal Interactions: Mutualism, Microbial–Vertebrate Interactions, Grazing and Predation by Animals
Week 16	**Preparatory week before the final Exam**

Delivery Plan (Weekly Lab. Syllabus) المنهاج الاسبوعي للمختبر	
	Material Covered
Week 1	Introduction to microbiology
Week 2	Dilution and plating of bacteria and growth curve
Week 3	Preparation of microbiolovical culture media

Week 4	Isolation of fungi and Actinomycetes from soil
Week 5	Bacteriological test of water: the coliform MPN test
Week 6	Water quality standarda and Isolation of Some Water borne Pathogens
Week 7	Effect of environmental factors on microbial growth
Week 8	Biological Oxygen demand (BOD)
Week 9	Antibacterial activity of bioactive compounds produced by Streptomyces spp. Isolated from agricultural soil
Week 10	

Learning and Teaching Resources مصادر التعلم والتدريس		
	Text	**Available in the Library?**
Required Texts	Environmental Microbiology, second edition Waste water microbiology third edition Environmental biotechnology, second edition	Yes
Recommended Texts	Waste water microbiology third edition Environmental biotechnology, second edition	Yes
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	Biological Control			**Module Delivery**	
Module Type	Core			☒ **Theory** ☒ **Lecture** ☒ **Lab** ☐ **Tutorial** ☐ **Practical** ☐ **Seminar**	
Module Code	BIOT23017				
ECTS Credits	5				
SWL (hr/sem)	125				
Module Level		UGII	**Semester of Delivery**		3
Administering Department		Type Dept. Code	**College**	Type College Code	
Module Leader	Dr. Hutaf A. A. Alsalim		**e-mail**	Hutaf.alsalim@sc.uobaghdad.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	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 Aims أهداف المادة الدراسية	16. To learn the general concepts of biological control and the important organisms involved in it. 17. This course deals with the basic concepts of natural control, pests, natural enemies (biological control agents). 18. To identify the strategies of biological control. 19. Understand the general methods of pest control. 20. To identify the Interactions between plants and beneficial microbes. 21. To understand the microbial insecticides 22. This course deals with the biological control of different plant pathogens (Bacteria, Fungi, Nematodes, filamentous Algae, and weeds). 23. To develop skills for detecting microorganisms that cause plant diseases.

Module Learning Outcomes مخرجات التعلم للمادة الدراسية	33. Enable students to obtain knowledge and understanding of biological control. 34. List the various terms associated with biological control. 35. Learn about traditional control methods and modern methods of pest control. 36. Discuss the general advantages and limitations of biological control. 37. Summarize the biological control strategies. 38. Describe the most important organisms used in the control of insects, nematodes, algae, weeds, and fungi and their mechanisms of action. 39. Discuss the use of bacteria, their metabolic products, or their spores, to control other organisms that cause economic damage. 40. Explain the use of fungi, their products to control other organisms that cause economic damage. 41. Discuss the use of insects to control other organisms that cause economic damage. 42. Explain the use of nematodes to control other organisms that cause economic damage.
Indicative Contents المحتويات الإرشادية يتضمن الكلمات المفتاحية المهمة للمحاضرات	Indicative content includes the following. <u>Part A – General concepts</u> Introduction to Biological Control – Important Terms, What is biological pest control?, General Advantages and Limitations of Biological Control, Natural Control, Pests, Natural enemies(Biological Control Agents), Strategies of Biological Control, Properties of Classical Biological Control, The general methods of pest control, Interactions between Plants and Beneficial Microbes. [20 hrs] <u>Part B -The Insecticides</u> Microbial Insecticides- Microbial Insecticides (Advantages and Disadvantages), Bacterial insecticide, Fungi as Agents of Biocontrol. [18 hrs] <u>Part C - Biological Control of Pathogens</u> Biological Control of Plant Pathogens- Biological control of Nematodes, Biological control of filamentous Algae, Biological control of weeds. [22 hrs]

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 type of simple experiments involving some sampling activities that are interesting to the students.

Student Workload (SWL) الحمل الدراسي للطالب محسوب لـ ١٥ اسبوعا تملئ من قبل المقررية			
Structured SWL (h/sem) الحمل الدراسي المنتظم للطالب خلال الفصل	79	**Structured SWL (h/w)** الحمل الدراسي المنتظم للطالب أسبوعيا	5.26
Unstructured SWL (h/sem) الحمل الدراسي غير المنتظم للطالب خلال الفصل	46	**Unstructured SWL (h/w)** الحمل الدراسي غير المنتظم للطالب أسبوعيا	3.06
Total SWL (h/sem) الحمل الدراسي الكلي للطالب خلال الفصل	125		

Module Evaluation تقييم المادة الدراسية

		Time/Number	Weight (Marks)	Week Due	Relevant Learning Outcome
Formative assessment	**Quizzes**	2	10% (10)	5, 10	LO #1, 2, 10 and 11
	Assignments	2	10% (10)	2, 12	LO # 3, 4, 6 and 7
	Projects / Lab.	1	10% (10)	Continuous	All
	Report	1	10% (10)	13	LO # 5, 8 and 10
Summative assessment	**Midterm Exam**	2 hr	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	Important Terms in Biological control
Week 2	Introduction, What is biological pest control?, General Advantages and Limitations of Biological Control, Natural Control, Pests, Natural enemies
Week 3	Strategies of Biological Control, Properties of Classical Biological Control
Week 4	The general methods of pest control
Week 5	Interactions between Plants and Beneficial Microbes
Week 6	Microbial Insecticides (Advantages and Disadvantages), Bacterial insecticide(P1)
Week 7	MID TERM EXAM

Week 8	Microbial Insecticides (Advantages and Disadvantages), Bacterial insecticide(P2)
Week 9	Fungi as Agents of Biocontrol
Week 10	Biological Control of Plant Pathogens
Week 11	Biological control of Nematodes(P1)
Week 12	Biological control of Nematodes(P2)
Week 13	Biological control of filamentous Algae
Week 14	Biological control of weeds
Week 15	**Preparatory week before the final Exam**
Week 16	

Delivery Plan (Weekly Lab. Syllabus) المنهاج الاسبوعي للمختبر	
	Material Covered
Week 1	Lab 1: Definition, History and development, Classical examples, Factors governing biological control
Week 2	Lab 2: Five Major Types of Species (Natural enemies)
Week 3	Lab 3: Interactions; Examples of Symbiotic Species, Parasitism, Mutualism, Commensalism, Competition,
Week 4	Lab 4: Sampling Methods and Tools
Week 5	Lab 5: Mid Exam 1
Week 6	Lab 6: Biological Control of Weeds

Week 7	Lab 7: Biological Control of Nematodes
Week ٨	Lab 8: Biological control of Fungi
Week ٩	Lab 9: Biological control of filamentous Algae
Week 10	Lab 10: Biological Control of Plant Pathogens
Week 11	Lab 11: Mid Exam 2

Learning and Teaching Resources

مصادر التعلم والتدريس

	Text	**Available in the Library?**
Required Texts	- Biological Control: Benefits and Risks. 1995. Heikki M. T. Hokkanen and James M. Lynch. Cambridge, University Press. - Biological Control A Global Perspective. 2007. Charles Vincent, Mark S.Goettel, and George Lazarovits. CABI, UK, USA.	No
Recommended Texts	- Plant Defence: Biological Control. 2012. Jean Michel Merillon & Kishan Gopal Ramawat. Springer, Dordrecht Heidelberg London New York -Trophic and Guild in Biological Control. 2006. Jacques Brodeur and Guy Boivin. Springer. Dordrecht, The Netherlands.	No
Websites	https://biocontrol.entomology.cornell.edu/links.php https://cals.cornell.edu/new-york-state-integrated-pest-management/eco-resilience/biocontrol https://www.youtube.com/channel/UCJlzzBwuorwLbviAhEgbnqQ	

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	Computer II	**Module Delivery**	
Module Type	Basic	☒ **Theory** ☐ **Lecture** ☒ **Lab** ☐ **Tutorial** ☐ **Practical** ☐ **Seminar**	
Module Code	UOB203		
ECTS Credits	3		
SWL (hr/sem)	75		
Module Level	UGII	**Semester of Delivery**	3

Administering Department		**College**	College of Science
Module Leader	Mela Ghazi Abdul-Haleem	**e-mail**	a.mela@sc.uobaghdad.edu.iq
Module Leader's Acad. Title	LECTURE	**Module Leader's Qualification**	
Module Tutor		**e-mail**	
Peer Reviewer Name	Dr. Assmaa A. Fahad	**e-mail**	Assmaa.fahad@sc.uobaghdad.edu.iq
Scientific Committee Approval Date	1/6/2023	**Version Number**	1.0

Relation with other Modules

العلاقة مع المواد الدراسية الأخرى

Prerequisite module	Computer Skills I	**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. Learn programming for non-CS students a programming language that is as suitable as the purpose for which it is being used in the department, like Python, R, or Matlab. 2. Learn basic syntax and logic of things like variables, data types, input/output, if-else statements, loops, functions, and data visualization.
Module Learning Outcomes	By the end of this module, students should be:

مخرجات التعلم للمادة الدراسية	1. Learn the basics of a program code as a collection of one or more standard functions, syntax rules, semantic rules, symbols, special words, and comments. 2. Learn what a stream is and examine input and output streams. 3. Learn mathematical operators and expressions. 4. Learn how to form and evaluate logical (Boolean) expressions. 5. Learn how to use the selection control structures: if, if... else, nested if, and nested if…else. 6. Learn how to construct and use looping structures. 7. Learn to program any loop. 8. Learn how to form and use single, multiple disjoint, and nested loop structures. 9. Learn how to exploit built-in functions. 10. Learn how to visualize data with different plot structures.
Indicative Contents المحتويات الإرشادية	Indicative content includes the following.

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 and daily quizzes, 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	49	**Structured SWL (h/w)** الحمل الدراسي المنتظم للطالب أسبوعيا	3.26

Unstructured SWL (h/sem) الحمل الدراسي غير المنتظم للطالب خلال الفصل	26	**Unstructured SWL (h/w)** الحمل الدراسي غير المنتظم للطالب أسبوعيا	1.73
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**	3	١5% (١5)	3 and 7	3, 7
	Assignments	3	15% (15)	9 and 10	9 and 10
	Projects / Lab.	1	5% (5)	Continuous	3, 5, 7 (Lab)
	Report	1	5% (5)	Continuous	All
Summative assessment	**Midterm Exam**	2hr	١٠% (١٠)	8	All
	Final Exam	4hr	٥0% (50)	16	All
Total assessment			100% (100 Marks)		

Delivery Plan (Weekly Syllabus)

المنهاج الاسبوعي النظري

	Material Covered
Week 1	Main rules for problem-solving techniques.

Week 2	Output statements.
Week 3	Input statements.
Week 4	Assignment operator, declaration, and assignment statements.
Week 5	Mathematical operators and expressions.
Week 6	If statements and nested if statements.
Week 7	MID TERM EXAM
Week 8	if…else statements.
Week 9	Loop and body of loop.
Week 10	Nested loops.
Week 11	Arrays.
Week 12	Arrays: continue.
Week 13	Data Visualization 1: Visualizing data with several types of visualizations, for example: Scatter plots bar charts Box plots Histograms Area charts
Week 14	Data Visualization 2: continue.
Week 15	Preparatory week before the final Exam.

Delivery Plan (Weekly Lab. Syllabus)

المنهاج الاسبوعي للمختبر

	Material Covered
Week 1	Lab 1: Be familiar with the Editor and run window.
Week 2	Lab 2: output statements.
Week 3	Lab 3: Input statements.
Week 4	Lab 4: Assignment statement
Week 5	Lab 5: Playing with mathematical operators and expressions.
Week 6	Lab 6: if statement and nested if statements.
Week 7	Lab 7: if…else statement.
Week 8	Midterm Exam.
Week 9	Lab 8: loop.
Week 10	Lab. 9: nested loops.
Week 11	Lab 10: 1D arrays and 2D arrays.
Week 12	Lab. 11: 1D arrays and 2D arrays: continue.
Week 13	Lab 12: Data visualization.
Week 14	Lab. 13: Data visualization: continue.
Week 15	**Preparatory week before the final Exam.**

Learning and Teaching Resources

مصادر التعلم والتدريس

	Text	**Available in the Library?**

Required Texts	Wallace Wang, Absolute Beginners Guide to Computing, Apress, 2016. Michael Miller, Absolute Beginner's Guide to Computer Basics, Que, 2022. Chris Ewin, Carrie Ewin, Cheryl Ewin, Computers for Seniors: Email, Internet, Photos, and More in 14 Easy Lessons, William Pollock, 2017.	**Available online**
Recommended Texts	https://ebooks.lpude.in/library_and_info_sciences/DLIS/Year_1/DCAP101_BASIC_COMPUTER_SKILLS.pdf	
Websites	Wallace Wang, Absolute Beginners Guide to Computing, Apress, 2016. Michael Miller, Absolute Beginner's Guide to Computer Basics, Que, 2022. Chris Ewin, Carrie Ewin, Cheryl Ewin, Computers for Seniors: Email, Internet, Photos, and More in 14 Easy Lessons, William Pollock, 2017.	

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
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	F – Fail	راسب	(0-44)	Considerable amount of work required

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

Ministry of Higher Education and

Scientific Research - Iraq

University of Baghdad

College of Science
Department Biotechnology

MODULE DESCRIPTION FORM

نموذج وصف المادة الدراسية

Module Information معلومات المادة الدراسية			
Module Title	Baath Regime Crimes in Iraq	**Module Delivery**	
Module Type	Basic	☒ **Theory** ☐ **Lecture** ☐ **Lab** ☐ **Tutorial** ☐ **Practical** ☐ **Seminar**	
Module Code	**UOB105**		
ECTS Credits	2		
SWL (hr/sem)	50		
Module Level	UGII	**Semester of Delivery**	3

Administering Department		Type Dept. Code	**College**	Type College Code	
Module Leader	**Dr. Mohanad Ahmed Yaseen**		**e-mail**	mohannad.ahmed@sc.uobaghdad.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		Name Dr farah diea hussain mubarak	**e-mail**	E-mail Farah@copolicy.uobaghdad	
Scientific Committee Approval Date		13/09/2023	**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- ان الأجيال الحالية لم تعيش فترة الدكتاتورية والكثير منهم لايعرف معاناة الشعب والجرائم التي ارتكبها النظام المقبور. 2- بيان مدى سوء حكم النظام الشمولي والذي لم يقتصر فقط على داخل العراق بل على دول المجاور له 3- توعية الطلبة على الأضرار الكبيرة التي احدثها النظام البائد والجرائم التي ارتكبها بحق الشعب العراقي . 4- أظهار الاضرار الاقتصادية والاجتماعية والتنموية التي أحدثها النظام السابق . 5- بيان مدى وحشية النظام البائد والإعدامات الجماعية. 6- بيان الاساليب القمعية التي مارسها النظام البائد والتهجير القصري .

	. كبح الحريات العامة وتدهور مستوى الاعلام والثقافة–**7** .توضيح الأضرار البيئية والزراعية التي ظهرت آثارها في السنوات السابقة والحالية–**8** .بيان مدى سوء حكم النظام الشمولي والذي لم يقتصر فقط على داخل العراق بل على دول المجاورة ايضا –**9** .ان الهدف من تدريس هذه المادة لمعرفة تاريخ تلك الحقبة السوداء –**10** الهدف من هذه المادة ان الحكم في العراق لن يدوم باستخدام أدوات العنف والقوة مهما كانت مفرطة –**11** .والعراق يجب ان يحكم بنظام سياسي يحترم العراقيين ومعتقدات ودياناتهم وقومياتهم وان يؤمن بالتعدد في المجتمع العراقي
Module Learning Outcomes مخرجات التعلم للمادة الدراسية	التعرف على الجرائم النظام البائد في كبح الحريات العامة–**1** دراسة الانظمة السياسية في العراق نبذة تاريخية –**2** معرفة ابرز انتهاكات النظام البعثي للحقوق والحريات –**3** معرفة اثر سلوكيات النظام البعثي المقبور على المجتمع العراقي –**4** التوضيح للاجيال الحالية حقيقة حقبة تاريخية سوداء في تأريخ العراق المعاصر التي شهدت الظلم والاستبداد–**5** الاطلاع على وحشية واستبداد وقمع النظام البائد للشعب العراقي–**6** معرفة ان الظلم والاستبداد والحكم الدكتاتوري لن يدوم مهما كانت قسوته–**7** تعليم الطلبة وارشادهم على النظام السياسي الصحيح لحكم هذا الشعب الطيب. والذي يجب ان يبتعد عن –**8** الدكتاتورية والظلم وان يكون مبنى على العدالة واحترام التعددية الدينية والمذهبية والقومية توعية الطلبة الى حجم الدمار والتلوث البيئي الذي احدثته الحروب واستخدام اسلحة محرمة دوليا –**9** بيان مدى قسوة النظام البعثي وقمعه للشعب والمقابر الجماعية التي ضمت رفاة آلاف الشهداء الأبرياء–**10** توعية الطلبة الى ماقام به النظام السابق من تهجير ابناء هذا البلد وكفائته العلمية والادبية–**11**
Indicative Contents	يتضمن المحتوى الإرشادي ما يلي:

المحتويات الإرشادية	مقدمة في البداية تتضمن نبذة تاريخية عن النظام السياسي في العراق من قبل بريطانيا وصولاً الوصول حزب البعث المقبور الى السلطة وكذلك دراسة جرايم حزب البعث منذ توليه السلطة والعبث بها كذلك توضيح ما اصاب العراق من اثار وكوارث على يد هذا النظام الدكتاتوري المجرم الذي جسد اقسى انواع التعسف والظلم والطغيان والاستبداد كذلك ارشاد الطلبة الى ان الظلم والاستبداد يدمر الشعوب ويجر الويلات عليها وبيان الاثار التي حدثت نتيجة الحروب العبثية التي خلفت ورائها تدمير في كل مفاصل البلاد فدمرت البنى التحتية والتربة والمياه والسماء والاشجار وكل شئ في هذه البلاد والتي كانت من افضل بلدان الشرق الاوسط .كذلك تم تدمير حتى البيئة المائية من خلال تسريب النفط في حرب الكويت والخسائر الاقتصادية الهائلة وتضرر الابار النفطية والبنى التحتية والصناعة وفرض حصار دمر البيئة الاجتماعية والاقتصادية التي لازلنا الى يومنا هذا نرفع اثار النظام البائد على الصعيد الدولي والداخلي.

Learning and Teaching Strategies استراتيجيات التعلم والتعليم	
Strategies	الإستراتيجية المهمة التي تم تبنيها في هذه الوحدة هي توعية الطلبة وعملية تنمية مداركهم العقلية على فهم النظام السياسي العراقي البائد ومعرفة الجرائم التي ارتكبها النظام البائد وعمليه تحفيز الطلبة على التامل والتفكير في التحليل هذه الجرائم وانعكاساتها والعمل على محاربة الظلم ولاستبداد ورفض اي شكل من اشكال الدكتاتورية كذلك استخدام البرامج التفاعلية والتعليمية في استخدام الادوات التحليلية والنقدية وتشجيع الطلبة على البحث والحوار والنقاش على اسس معرفية تستند الى عمليات البحث العلمي والتدقيق والقراءة العميقة والفهم الجيد والرصانة العلمية وكذلك استخدام الوسائل العلمية والاساليب التفاعلية سواء كانت المسموعة والمرئية واعطاء الادلة المادية الواضحة على وحشية النظام السابق لكي يطلع الطلبة وتصبح لديهم قناعة علمية راسخة على هذة الحقبة السوداء والجرائم التي لم تشهد لها البشرية مثال .كذلك تنمية القدرة الذهنية والفكرية لدى الطلبة على معرفة الأنظمة الصالحة. كذلك تفعيل الدور الأخلاقي وزرع الأخلاق والقيم والمبادئ الحميدة لدى الطلبة.

Student Workload (SWL) الحمل الدراسي للطالب محسوب لـ ١٥ اسبوعا

Structured SWL (h/sem) الحمل الدراسي المنتظم للطالب خلال الفصل	33	Structured SWL (h/w) الحمل الدراسي المنتظم للطالب أسبوعيا	2.2
Unstructured SWL (h/sem) الحمل الدراسي غير المنتظم للطالب خلال الفصل	17	Unstructured SWL (h/w) الحمل الدراسي غير المنتظم للطالب أسبوعيا	1.13
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	2	10% (10)	5 and 10	LO #1, #2 and #10, #11
	Assignments	8	10% (10)	2,3,6,8,10 and 12	LO #3, #4 and #6, #7
	Projects / Lab.		10% (10)	Continuous	All
	Report	1	10% (10)	13	LO #5, #8 and #10
Summative assessment	Midterm Exam	1hr:	10% (10)	8	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	مقدمة عن انتهاكات الحقوق والحريات
Week 2	نبذة وصفية عن الانظمة السياسية في العراق
Week 3	انتهاكات النظام البعثي للحقوق والحريات العامة
Week 4	اثر سلوكيات النظام البعثي في المجتمع وتسلطه على الدولة
Week 5	اثر المرحلة الانتقالية في محاربة السياسة الاستبدادية
Week 6	الميدان النفسي والاجتماعي
Week 7	الدين والدولة
Week 8	**Mid Exam**
Week 9	عسكرة المجتمع والثقافة والاعلام
Week 10	اثر القمع والحروب على البيئة والسكان
Week 11	التلوث البيئي واستعمال الاسلحة المحرمة دوليا
Week 12	سياسة الارض المحروقة وتجفيف الاهوار
Week 13	المقابر الجماعية وتدمير البيئة الزراعية
Week 14	**Mid Exam**

Learning and Teaching Resources

مصادر التعلم والتدريس		
	Text	**Available in the Library?**
Required Texts	منهاج جرائم حزب البعث البائد ٢٠٢٣/جمهورية العراق/وزارة التعليم العالي والبحث العلمي/دائرة الدراسات والتخطيط	
Recommended Texts		
Websites		

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

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.

الكورس الثاني

MODULE DESCRIPTION FORM

نموذج وصف المادة الدراسية

Module Information معلومات المادة الدراسية		
Module Title	Phycology	**Module Delivery**
Module Type	CORE	☒ **Theory** ☒ **Lecture** ☒ **Lab** ☐ **Tutorial** ☐ **Practical**
Module Code	Biot24023	
ECTS Credits	6	
SWL (hr/sem)	150	

			☐ **Seminar**		
Module Level		UGII	**Semester of Delivery**		4
Administering Department		Biotechnology	**College**	College of Science	
Module Leader	Dr. Abdulkareem Jasim Hashim		**e-mail**	Abdulkareem.hashim@sc.uobaghdad.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		Dr.Zainb Anas	**e-mail**	E-mail	
Scientific Committee Approval Date		30/06/	**Version Number**		1.0

Relation with other Modules
العلاقة مع المواد الدراسية الأخرى

Prerequisite module	Microbiology	**Semester**	3,4
Co-requisites module	Fermentation technology	**Semester**	5

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

Module Aims أهداف المادة الدراسية	1. This course deals with the basic concept of Phycology. 2. To understand the role of Phycology in biotechnology field.
Module Learning Outcomes	To recognize the : 1. Older classification systems of algae, fossils records, distribution of algae,

مخرجات التعلم للمادة الدراسية	forms of algal bodies. 2. Cell structures of algae, Plastids, Pigments, Storage products 24. Types of flagella, types of growth, Reproduction and life cycles 25. Newer classification system of algae into ten divisions, Division 1: Cyanophycophyta, Cell structure, morphology, Reproduction, Classification. 26. Division2: Chlorophycophyta, main characteristics, Classification into 15 orders with examples. 27. Division 3: Charophycophyta and Division 4: Euglenophycophyta, Devision 5 : main characteristics, Classification,with examples. 28. Division: 5 Xanthophycophyta: Classification of this division into three classes, Class 1: Chrysophycea, Class 2: Xanthophyceae Class 3: Bacillariophyceae While consider as division in other classification system. 29. Division 8: Phaeophycophyta, general characteristics, Reproduction organs, Growth, and classification. 30. Division 9: Pyrrhophycophyta: general characteristics,and classification with examples. 31. Division 10: Rhodophycophyta: general characteristics**,** Commercial utilization of red algal mucilages, Application in Biotechnology, Classification with examples.
Indicative Contents المحتويات الإرشادية يتضمن الكلمات المفتاحية المهمة للمحاضرات	Indicative content includes the following: - Older classification systems for algae, Fossil recode, Distribution, Algal forms - Growth and reproduction, Cell structure, Pigments and chloroplast, storage product and life cycles. - Others classification systems, Cyanophyta, Cholorophyta - Charophyta and Euglenophyta. - Xanthophytan, Chrysophyta, and Bacillariophyta. - Phaeophyta and Pyrrhophyta - Rhodophyta and its application in Biotechnology.

Learning and Teaching Strategies استراتيجيات التعلم والتعليم	
Strategies	

	Type something like: Type something like: The main strategy that will be adopted in delivering this module is to encourage students' participation in the collection of different samples, media preparation. Isolation and primitive identification according to the acquired skills from the theoretical and practical information through lectures and Lab.

Student Workload (SWL) الحمل الدراسي للطالب محسوب لـ ١٥ اسبوعا تملئ من قبل المقررية			
Structured SWL (h/sem) الحمل الدراسي المنتظم للطالب خلال الفصل	79	**Structured SWL (h/w)** الحمل الدراسي المنتظم للطالب أسبوعيا	5.26
Unstructured SWL (h/sem) الحمل الدراسي غير المنتظم للطالب خلال الفصل	71	**Unstructured SWL (h/w)** الحمل الدراسي غير المنتظم للطالب أسبوعيا	4.73
Total SWL (h/sem) الحمل الدراسي الكلي للطالب خلال الفصل	150		

Module Evaluation تقييم المادة الدراسية					
		Time/Number	**Weight (Marks)**	**Week Due**	**Relevant Learning Outcome**
Formative assessment	**Quizzes**	2	10% (10)	5, 10	LO #1, 2, 10 and 11
	Assignments	2	10% (10)	2, 12	LO # 3, 4, 6 and 7
	Projects / Lab.	1	10% (10)	Continuous	All
	Report	1	10% (10)	13	LO # 5, 8 and 10
Summative assessment	**Midterm Exam**	2 hr	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	Introduction , Old classification systems, Fossils record, Occurrence and distribution, Alga forms
Week 2	Cell structure, Cell wall, Protoplast, Plastid and pigments, Storage products
Week 3	Nucleus, Flagella, Growth in algae, Reproduction and life cycles
Week 4 **Week 5**	Others classification systems, Division: Cyanophycophyta, General characteristics, Morphology, Cell wall structure and gliding, Protoplasmic structures, Pigments, Akinetes , Heterocysts , Reproduction, ,Occurrence and Habitat, Classification
Week 6	Division: Chlorophycophyta, Introduction, Occurrence and Habitat , General characteristics, Cell fine structure, Phototaxis and eyespots, Classification, Order: Chlorellales, Order: Vovocales
Week 7	Mid examine
Week 8 **Week 9**	Genus: Volvox, Order: Tetrasporales, Order: Ulothrichales, Order: Oedogoniales, Order: Cladophorales, Order: Zygnematales, Order: Siphonocladales
Week 10	Division: Charophycophyta, Order: Charales, General characteristics, Growth, Reproduction
Week 11	Division: Euglenophycophyta, General characteristics, Cell structure and Nutrition,Classification, Order: Euglenales, Genus: Euglena, Description under light and electronic Microscope.
Week 12	Division: Xanthophycophyta, Introduction, General characteristics , Classification, Order: Mischococcales, Order: Tribonematales, Order: Botrydiales, Order: Vaucheriales
Week 13	Division: Phaeophycophyta ,General characteristics, Reproduction, Life cycle and Growth, Classification, Order:Ectocarpales , Family: Ectocarpaceae
Week 14	Division: Pyrrhophycophyta, General characteristics, Classification, Toxins, Red tides and its csuses.
Week 15	Division: Rhodophycophyta, General characteristics, Commercial utilization of red algal mucilages,Reproductive structures, Classification, Order: Ceramiales
Week 16	**Preparatory week before the final Exam**

Delivery Plan (Weekly Lab. Syllabus) المنهاج الاسبوعي للمختبر	
	Material Covered
Week 1	Lab 1: Algal forms
Week 2	Lab 2: Taxonomic and collection methods for algae
Week 3	Lab 3: Division: Cyanophyta
Week 4	Lab 4: Chlorophyta part1
Week 5	Lab 5: Cholorophyta part 2
Week 6	Lab 6: Euglanophyta and Pyrrhophyta
Week 7	Lab 7: Xanthophyta and Chrysophyta
Week 8	Lab 8: Phaeophyta and Bacillariophyta
Week 9	Lab 9: Rhodophyta

Learning and Teaching Resources مصادر التعلم والتدريس		
	Text	**Available in the Library?**
Required Texts	Phycology, by Robert Edward Lee, Fourth Edition, Cambridge 2008.	No
Recommended Texts		No
Websites	https://www.twinkl.com	

Grading Scheme مخطط الدرجات				
Group	**Grade**	التقدير	**Marks (%)**	**Definition**
Success Group (50 - 100)	**A -** Excellent	امتياز	90 - 100	Outstanding Performance
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MODULE DESCRIPTION FORM

نموذج وصف المادة الدراسية

Module Information معلومات المادة الدراسية		
Module Title	Biochemistry II	**Module Delivery**

Module Type	Core		☒ **Theory** ☒ **Lecture** ☒ **Lab** ☐ **Tutorial** ☐ **Practical** ☐ **Seminar**	
Module Code	BIOT24120			
ECTS Credits	5			
SWL (hr/sem)	125			
Module Level	UGII	**Semester of Delivery**	4	
Administering Department	Type Dept. Code	**College**	Type College Code	
Module Leader	Prof.Dr. Lamia Shaker Ashoor	**e-mail**	lamia .s@cs.uobaghdad.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	Prof.Dr. Ghazi Aziz	**e-mail**	ghazi.aziz@sc.uobaghdad.edu.iq	
Scientific Committee Approval Date	01/06/2023	**Version Number**	1.0	

Relation with other Modules

العلاقة مع المواد الدراسية الأخرى

Prerequisite module	Biochemistry1	**Semester**	1
Co-requisites module	None	**Semester**	

Module Aims, Learning Outcomes and Indicative Contents

أهداف المادة الدراسية ونتائج التعلم والمحتويات الإرشادية

Module Aims أهداف المادة الدراسية	32. Aims of biochemistry to study biomolecules and their components such as enzymes, proteins, hormones, antibiotics, and organic acids, and to identify their importance and role in the bodies of living organisms and to exploit them in diagnosing and treating diseases and abnormalities that afflict livingthings 33. Acquisition of practical, scientific, and laboratory information about the basics of biochemistry, which plays a very large role in the medical and pharmaceutical sectors and in many very important jobs. These fields or specializations include the industrial, health, academic, and many other fields. 34. Identify chemical compounds and understand the biochemical reactions that take place in the human body. 35. Understanding of the chemical properties of biomolecules and the ability to use and combine biochemical techniques with genetics and physical biology techniques as well as molecular biology. 36. The ability to diagnosis of diseases through blood indicators and give the ability to understand normal and pathological phenomena in the human body through theoretical and practical lessons. 37. Conducting advanced research in the fields of basic and clinical biochemistry that Serve the community.
Module Learning Outcomes مخرجات التعلم للمادة الدراسية	43. Identify the principles of bioenergetics and enzyme catalysis and understand the behavior of enzymes, by describing the catalytic properties and ways to regulate these properties. 44. Understanding the chemical reactions catalyzed by enzymes that contribute to all biochemical processes within an organism. 45. Carbohydrates - glucose provides energy for the brain and ½ of energy for muscles and tissues, glycogen is stored glucose, glucose is immediate energy, glycogen is reserve energy 46. Carbohydrates also help to digest protein and fat. 47. Carbohydrates also play a vital part of the metabolism and oxidation of protein, Carbs help feed the brain and nervous system and helps keep the body lean. 48. Define the major pathways of intermediary metabolism of biomolecules, and discuss their bioenergetics, physiological adaptation, metabolic and main hormonal regulation. 49. Understanding major catabolic and anabolic pathways in metabolism of carbohydrates and lipids . 50. Explain the key regulatory points in metabolic pathways and understanding hormonal signaling in metabolic pathways. 51. Explain molecular mechanisms underlying major inherited diseases of metabolism.
Indicative Contents المحتويات الإرشادية	Indicative content includes the following. Enzymes, Mechanism of enzymes action, Factors Affecting the Velocity of Enzyme Reaction, Enzyme kinetics, Enzyme inhibition.

يتضمن الكلمات المفتاحية المهمة للمحاضرات	Metabolism, Carbohydrates metabolism, glycolysis, Citric acid cycle. Gluconeogenesis, Glycogen metabolism – Glycogenesis and Glycogenolysis. Lipid metabolism, Fatty acid oxidation, regulation of beta oxidation.

Learning and Teaching Strategies استراتيجيات التعلم والتعليم	
Strategies	Biochemistry teaching strategy for biotechnology specialty students, conducted through an improved lecture format with a brief content and multimedia courseware. This is done By using the brainstorming method, , and using the discussion method to stimulate thinking and participation of students and to provide an opportunity for questions and discussion, while respecting their opinions and suggestions, and this method helps in developing the student's personality cognitively, emotionally and skillfully. Also using the methods of thinking maps, it is an effective teaching strategy in representing knowledge through schematic forms that link concepts to each other. Concept maps are used to present new information, discover relationships between concepts, deepen understanding, summarize information, and evaluate the lesson. Encouraging students to prepare reports and present seminars with conducting tests to assess students' understanding and levels.

Student Workload (SWL) الحمل الدراسي للطالب محسوب لـ ١٥ اسبوعا تملئ من قبل المقررية			
Structured SWL (h/sem) الحمل الدراسي المنتظم للطالب خلال الفصل	79	**Structured SWL (h/w)** الحمل الدراسي المنتظم للطالب أسبوعيا	5.26
Unstructured SWL (h/sem) الحمل الدراسي غير المنتظم للطالب خلال الفصل	46	**Unstructured SWL (h/w)** الحمل الدراسي غير المنتظم للطالب أسبوعيا	3.06
Total SWL (h/sem) الحمل الدراسي الكلي للطالب خلال الفصل	125		

Module Evaluation

تقييم المادة الدراسية

		Time/Number	Weight (Marks)	Week Due	Relevant Learning Outcome
Formative assessment	Quizzes	2	10% (10)	5, 10	LO #1, 2, 8 and 11
	Assignments	2	10% (10)	2, 12	LO # 3, 4, 6 and 5
	Projects / Lab.	1	10% (10)	Continuous	All
	Report	1	10% (10)	13	LO # 5, 9 and 10
Summative assessment	Midterm Exam	2hr	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	Enzymes –Definition –Cofactors -Location of enzyme - How Enzymes work
Week 2	Mechanism of enzymes action -Enzymes classification
Week 3	Specificity of enzyme action - Factors Affecting the Velocity of Enzyme Reaction
Week 4	Enzyme kinetics - Enzyme inhibition - Allosteric enzyme-Isozymes
Week 5	Metabolism - Definition-Carbohydrates metabolism - Digestion of carbohydrate

Week 6	Glycolysis - Reaction of glycolysis - Regulation of glycolysis
Week 7	Midterm Exam
Week 8	Citric acid cycle - Reaction and significance of TCA- Regulation of TCA
Week 9	Gluconeogenesis- Definition-Location-Characteristic- Reaction of gluconeogenesis- Regulation and significance
Week 10	Glycogen metabolism – Glycogenesis – Definition-Location-Characteristic - Reaction of glycogenesis
Week 11	Glycogenolysis - Definition-Location-Characteristic - Reaction of glycogenolysis
Week 12	Regulation of glycogenesis and glycogenolysis
Week 13	Lipid metabolism - Digestion of lipid -Fatty acid oxidation .
Week 14	Reaction and regulation of beta oxidation .
Week 15	**Preparatory week**
Week 16	**final Exam**

Delivery Plan (Weekly Lab. Syllabus) المنهاج الاسبوعي للمختبر	
	Material Covered
Week 1	Lab 1: Blood-Types and serum, plasma
Week 2	Lab 2: General urine examination
Week 3	Lab 3: lBlood glucose
Week 4	Lab 4: Iipid profile , Cholesterol , Triglycerides

Week 5	Lab 5: Uric acid
Week 6	Lab 6: Urea , Creatinine
Week 7	Lab 7: Total protein
Week 8	Lab 8 Liver enzymes

Learning and Teaching Resources

مصادر التعلم والتدريس

	Text	Available in the Library?
Required Texts	Introduction to general organic and biochemistry University of Illinois, Urbana-Champaign	Yes
Recommended Texts	Lippincott's Illustrated Reviews: Biochemistry ESSENTIALS OF BIOCHEMISTRY Pankaja Naik PhD ,Professor and Head Department of Biochemistry, MVPS Dr Vasantrao Pawar Medical College Nashik, Maharashtra , India	No
Websites	http://www.schoolarabia.net/kemya/kymia_hyatia/main.htm	

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 للاحياء المجهرية ١

Module Information معلومات المادة الدراسية		
Module Title	Microbiology II	**Module Delivery**

Module Type	Core			☒ **Theory** ☒ **Lecture** ☒ **Lab** ☐ **Tutorial** ☐ **Practical** ☐ **Seminar**
Module Code	BIOT24121			
ECTS Credits	5			
SWL (hr/sem)	125			
Module Level	UGII	**Semester of Delivery**	4	
Administering Department	Type Dept. Code	**College**	Type College Code	
Module Leader	- Dr. Aida Husain Ibrahim. - Dr. Israa Ali Zaidan	**e-mail**	aida.h@sc.uobaghdad.edu.iq Israa.Zaidan@sc.uobaghdad.edu.iq	
Module Leader's Acad. Title	Assistant 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	01/06/2023	**Version Number**	1.0	

Relation with other Modules

العلاقة مع المواد الدراسية الأخرى

Prerequisite module	Pathogenic bacteria, mycology, immunology and virology.	**Semester**	
Co-requisites module	None	**Semester**	

Module Aims, Learning Outcomes and Indicative Contents أهداف المادة الدراسية ونتائج التعلم والمحتويات الإرشادية	
Module Aims أهداف المادة الدراسية	**38. Enable students to obtain knowledge and understanding of microbiology.** **39. Providing students with basics and topics related to all branches of microbiology.** **40. This course deals with the basic concept of microbiology.** **41. Improving students' skills in scientific research and providing them with basic skills in conducting scientific research and all applications related to microbiology.** **42. Preparing specialized students familiar with the basics of microbiology, theoretically and practically, who are able to meet the needs of the labor market.** 43. **To develop practical microbiological skills principally diagnosis of causative agents of the infections and diseases of humans and Zoology in additions to learning the ways to controlling and overcome the healthy problems.**
Module Learning Outcomes مخرجات التعلم للمادة الدراسية	**52. After taken this course the students can recognize all branches of microbiology and Enhancing their knowledge about them.** **53. List the various terms associated with microbiology.** **54. Summarize what is meant by microorganisms and their relation to our life.** **55. Discuss the most details of microorganisms and their involvement in many other fields such as healthy, ecology, epidemiology, industry and etc.** **56. Be able to describe, recognize and identify the causative structures, shapes and their sizes and arrangement and other details.** **57. Identify the basic requirements and ingredients for each pathogen invaders.** **58. Be familiar with the using of the safe application of some of the basic laboratory equipment that's applying in microbiological studies and researches.** **59. Also be familiar with different strategies for preventing all forms of contamination during the work in the lab. and how can the controlling it.**
Indicative Contents المحتويات الإرشادية يتضمن الكلمات المفتاحية المهمة للمحاضرات	**Microbes in our Lives:** History of Microbiology, Naming and Classify Microorganism Bacteria, Fungus ,Protozoa ,Algae, Virus **Supplies and Growth of microbes:** The Supplies for Growth

	- Physical elements Chemical and selective ,minimal ,enrich media Types of Chemical principle bonds, PH ,buffer, oxidation **Physiology and Metabolism of the bacteria** Microbial metabolism: Is the means by which a microbe obtains the energy and nutrients (e.g. carbon) it needs to live and reproduce **Microbial Genetics:** Structure and replication of DNA Genetic Transfer and Recombination Transformation, Conjugation,Transduction Principles of Diseases: Pathology, Normal Flora Infection and Disease and Opportunists Hosts, Nosocomial Infections, Transmission, Reservoirs **Antimicrobial agents:** Types of antimicrobial agents ,antibiotics ,bacteriocine source of isolates

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 type of simple experiments involving some sampling activities that are interesting to the students.

Student Workload (SWL) الحمل الدراسي للطالب محسوب لـ ١٥ اسبوعا تملئ من قبل المقررية			
Structured SWL (h/sem) الحمل الدراسي المنتظم للطالب خلال الفصل	79	**Structured SWL (h/w)** الحمل الدراسي المنتظم للطالب أسبوعيا	5.26
Unstructured SWL (h/sem) الحمل الدراسي غير المنتظم للطالب خلال الفصل	46	**Unstructured SWL (h/w)** الحمل الدراسي غير المنتظم للطالب أسبوعيا	3.06
Total SWL (h/sem) الحمل الدراسي الكلي للطالب خلال الفصل	125		

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

Summative assessment	**Midterm Exam**	2 hr.	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	**Introduction and history of microbiology**
Week 2	- **Eukaryotes and prokaryotes cells.** - **Bacterial cell structure and their function**
Week 3	**Growth and Nutrition of the bacteria.**
Week 4	**Physiology and Metabolism of the bacteria.**
Week 5	**Bacterial virulence and pathogenesis.**
Week 6	**Sterilization and disinfection.**
Week 7	**Mid-term Exam.**
Week 8	**Antibiotics and chemotherapeutic agents.**
Week 9	**Bacterial genetics.**
Week 10	**Mycology / introduction.**
Week 11	**Fungi Structure, growth, nutrition and reproduction.**
Week 12	**Classification and pathogenesis.**
Week 13	**Fungal infection and their causative agents. (included three lectures).**

Week 14	**Fungal infection and their causative agents.**
Week 15	**Fungal infection and their causative agents.**
Week 16	**Preparatory week before the final Exam**

Delivery Plan (Weekly Lab. Syllabus) المنهاج الاسبوعي للمختبر	
	Material Covered
Week 1	Lab 1: **Biosafety procedure, precautions and Microscope.**
Week 2	Lab 2: **Tools, instruments and equipment.**
Week 3	Lab 3: **Staining methods of bacteria.**
Week 4	**Lab 4: Acid fast stains** **(Ziehl – Nielson technique) and special stains.**
Week 5	Lab 5: **Capsule stain and their types.**
Week 6	Lab 6: **Examination.**
Week 7	Lab 7: **Culture media, preparation and their types.**
Week 8	**Lab.8: Growing and Cultivation of the bacterial species in the lab.**
Week 9	**Lab. 9: - Cultivation of the bacteria in the liquid media (broth) / Motility tests**
Week 10	**Biochemical test.**

Learning and Teaching Resources

مصادر التعلم والتدريس		
	Text	**Available in the Library?**
Required Texts	2. Jawetz, Melnick and Adellberg's. (2011). Textbook of Medical Microbiology.26th Edition.	Yes
Recommended Texts	2. Connie,R. Mahon; Donald, C. Leham and George Manguselis. (2011): Text book of Diagnostic Microbiology. Fourth edition.	No
Websites	- https://www.microbiologyresearch.org - https://microbiologysociety.org/why-microbiology-matters/what-is-microbiology.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 (علم الوظائف)

Module Information معلومات المادة الدراسية		
Module Title	Animal physiology	**Module Delivery**
Module Type	Core	☒ **Theory**

Module Code	BIOT24022		☒ **Lecture** ☒ **Lab** ☐ **Tutorial** ☐ **Practical** √ **Seminar**		
ECTS Credits	5				
SWL (hr/sem)	125				
Module Level	UGII		**Semester of Delivery**	4	
Administering Department	Type Dept. Code		**College**	Type College Code	
Module Leader	Dr. Shaima Razaq Ibraheem Dr. Athraa Hussain Ali Dr. Ali Kasim Khazal Dr. Hind mahmood Jumaah		**e-mail**	Shaima.Ibraheem@sc.uobaghdad.edu.iq Athraa.ali@sc.uobaghdad.edu.iq ali.k@sc.uobaghdad.edu.iq hind.mahmood@sc.uobaghdad.edu.iq	
Module Leader's Acad. Title	Assistant Professor		**Module Leader's Qualification**	Ph.D.	
Module Tutor	Haider Ahmed Hassan		**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	Histology, Microtechnique , cytology	**Semester**	
Co-requisites module	None	**Semester**	

Module Aims, Learning Outcomes and Indicative Contents

أهداف المادة الدراسية ونتائج التعلم والمحتويات الإرشادية	
Module Aims أهداف المادة الدراسية	1. To provide a course of study in mammalian, principally human, systems physiology, introducing students to the principles of normal biological function in the Human body 2. To explore the fundamental concepts of human physiology from cellular functions through to systems that are responsible for homeostasis. 3. To prepare students for subsequent biological courses that require an understanding of the physiology of the Human body 4. To understand how human maintains an internal steady state, how they acquire nutrients, and how they detect and respond to changes in their environments 5. To develop practical biological skills principally Physiology, Development & Neuroscience, but also Pharmacology, Pathology, and Zoology, among others.
Module Learning Outcomes مخرجات التعلم للمادة الدراسية	At the end of the course, students should: 1. Have an enhanced knowledge and appreciation of mammalian physiology 2. Understand the functions of important physiological systems including the cardio-respiratory, renal, reproductive, and metabolic systems 3. Understand how these separate systems interact to yield integrated physiological responses to challenges such as exercise, fasting, and ascent to high altitude, and how they can sometimes fail 4. be able to perform, analyses, and report on experiments and observations in physiology 5. be able to recognize and identify principal tissue structures 6. Be familiar with the safe use and application of some of the basic laboratory equipment used in physiological studies of animals
Indicative Contents المحتويات الإرشادية يتضمن الكلمات المفتاحية المهمة للمحاضرات	Indicative content includes the following. • Physiology: Definitions, Methods of Physiology • Homeostasis, mechanisms, examples • Nervous systems, neuron types, myelin • Impulse formation, synapses • Muscular system, types, sarcomere, contractile filaments • Sliding theory, neuromuscular junction, muscle twitch • Circulatory system, heart, vessels, valves, heart sounds • Heart circuits, heart rate, conduction system • Respiratory system, lung, alveoli, respiratory volumes

	• Urinary system, kidney, nephrons, urine formation • Filtration, Reabsorption, secretion • Digestive system, stomach, mechanical, chemical digestion, • Digestive enzymes, liver, pancreas • Endocrine system, hormones, pheromones

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, while at the same time refining and expanding their critical thinking skills. This will be achieved through the following: - Providing students with the basics and additional topics related to the pre-skills education outcomes to solve scientific problems -Solve a set of practical examples by the academic staff -Students' participation during the lecture to solve some scientific issues - Summer training

Student Workload (SWL) الحمل الدراسي للطالب محسوب لـ ١٥ اسبوعا تملئ من قبل المقررية			
Structured SWL (h/sem) الحمل الدراسي المنتظم للطالب خلال الفصل	79	**Structured SWL (h/w)** الحمل الدراسي المنتظم للطالب أسبوعيا	6.25
Unstructured SWL (h/sem) الحمل الدراسي غير المنتظم للطالب خلال الفصل	46	**Unstructured SWL (h/w)** الحمل الدراسي غير المنتظم للطالب أسبوعيا	3.06

Total SWL (h/sem) الحمل الدراسي الكلي للطالب خلال الفصل	125

Module Evaluation

تقييم المادة الدراسية

		Time/Number	Weight (Marks)	Week Due	Relevant Learning Outcome
Formative assessment	**Quizzes**	2	10% (10)	5, 10	LO #1, 2, 10 and 11
	Assignments	2	10% (10)	2, 12	LO # 3, 4, 6 and 7
	Projects / Lab.	1	10% (10)	Continuous	All
	Report	1	10% (10)	13	LO # 5, 8 and 10
Summative assessment	**Midterm Exam**	2 hr	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	Introduction to physiology, scientific method, measurements, history of physiology, homeostasis, Homeostatic mechanisms

Week 2	Nervous system , the function of NS, Division of NS, Neuron (structure and types) , supporting cells (types and function) , myelin
Week 3	Electrical activity of nerves, impulse formation, active potential, resting potential ,refractory period , synapses electrical – gap junction- , chemical synapses, neurotransmitters (types , functions)
Week 4	Muscular system, types of muscles (skeletal , cardiac,smooth0 (structure and function) , sarcomere (structure and function) ,
Week 5	muscle contraction mechanism, Motor unit isometric and isotonic contractions, muscle fatigue muscle fuels
Week 6	Circulatory system, (cardiovascular system and lymphatic system), Arteries, and veins, (pulmonary circuit and systemic circuit) function of circulatory system , role of capillaries , blood flow.
Week 7	**MID TERM EXAM**
Week 8	Heart (structure and function) , Heart chambers and valves , cardiac cycle , heart sounds , heart murmers , electrical activity of heart , conduction system , pulse , blood pressure , cardiac output , control of h^eart rate.
Week 9	Respiratory system , component of RS , lung , function of RS, Respiration , Cellular respiration , breathing (external and internal respiration) , factors of normal respiration , breathing cycle , inspiration and expiration mechanism , respiratory values ,
Week 10	Gas exchange between alveoli and blood and between blood and tissue , respiratory quotient , gas transport , respiratory pigments, Alveolar ventilation ,exchange of gases, composition of air and partial pressure of gases ,transport of gases in the blood stream (O2,CO2)
Week 11	Urinary system, (structure and function), kidney (structure and function), nephron, glomerular filtration, rate of glomerular filtration, measurements using inulin, absorption of material in each part of the nephron, tubular secretion, nervous and hormonal regulation of kidney function, calcium balance, pH balance, sodium and potassium balance, water balance, the composition of urine,anti-diuretic hormone.
Week 12	Digestive system, structure and function of DS, phases of digestion, Stomach, HCl formation, Small intestine, villi, large intestine,
Week 13	auxiliary glands, gall bladder, bile acids, bile pigments, bilirubin, biliverdin, liver
Week 14	Endocrine glands: pituitary, thyroid, adrenal, pancreas,
Week 15	The preparatory week before the Final Exam

Delivery Plan (Weekly Lab. Syllabus) المنهاج الاسبوعي للمختبر	
Lab 1:	**Material Covered**
Week 1	Lab 1: Hematology. Blood collection &
Week 2	Lab 1:Anticoagulants
Week 3	Determination of Hb,
Week 4	Lab 1:Determination of ESR
Week 5	Lab 1:Determination of bleeding time & clotting time
Week 6	Lab 1:RBC count,
Week 7	Lab 1:WBC count
Week 8	Exam
Week 9	Lab 1:Differential count of WBC
Week 10	Lab 1:Blood group & Rh typing
Week 11	Determination of Blood pressure
Week 12	Lab 1:Blood disease
Week 13	Lab 1:Fragility test

Week 14	Lab 1:Liver function tests
Week 15	Exam

Learning and Teaching Resources مصادر التعلم والتدريس		
	Text	**Available in the Library?**
Required Texts	Human Physiology/ Stuart Iron Fox/2004 أساسيات علم الفسلجة / عبد الرحيم عشير وصباح ناصر العلوجي	Yes
Recommended Texts	A textbook of practical physiology, 2013 (8th edition) ENDOCRINE SECRETS, 6th ed., Michael T. McDermott,2013	No
Websites	https://en.wikipedia.org/wiki/Physiology https://www.medicalnewstoday.com/articles/248791	

Grading Scheme مخطط الدرجات				
Group	**Grade**	التقدير	**Marks (%)**	**Definition**
Success Group (50 - 100)	**A -** Excellent	امتياز	90 - 100	Outstanding Performance
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	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	**FX –** Fail	راسب (قيد المعالجة)	(45-49)	More work required but credit awarded
(0 – 49)	**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	Nanobiotechnology			**Module Delivery**	
Module Type	CORE			☒ **Theory** ☒ **Lecture** ☒ **Lab** ☐ **Tutorial** ☐ **Practical** ☐ **Seminar**	
Module Code	BIOT24024				
ECTS Credits	5				
SWL (hr/sem)	125				
Module Level		UGII	**Semester of Delivery**		4
Administering Department		Type Dept. Code	**College**	Type College Code	
Module Leader	Dr. Israa Ali Zaidan Al-Ogaidi		**e-mail**	Israa.zaidan@sc.uobaghdad.edu.iq	

Module Leader's Acad. Title	Professor	**Module Leader's Qualification**	Ph.D.
Module Tutor		**e-mail**	E-mail
Peer Reviewer Name	Dr. Laith Ahmed Yaaqoob	**e-mail**	E-mail Laith.yaaqoob@sc.uobaghdad.edu.iq
Scientific Committee Approval Date		**Version Number**	

Relation with other Modules العلاقة مع المواد الدراسية الأخرى			
Prerequisite module	Biotechnology	**Semester**	
Co-requisites module	Principle of biotechnology	**Semester**	

Module Aims, Learning Outcomes and Indicative Contents أهداف المادة الدراسية ونتائج التعلم والمحتويات الإرشادية	
Module Aims أهداف المادة الدراسية	1. This course deals with the basic concept of nanotechnology 2. To understand the important of nanotechnology and its applications in biotechnology.
Module Learning Outcomes مخرجات التعلم للمادة الدراسية	1. To know the definition and history of nanotechnology 2. To know the new properties of nanomaterilas 3. To Describe the different methods of synthesis nanomaterials 4. To know the types of nanomaterials 5. Explain the characterization of nanomaterial by using different techniques 6. Explain Direct methods of characterization 7. Explain indirect methods of characterization 8. Determine the applications of nanotechnology in different aspects

	9. Applications of nanotechnology in biomedical field 10. Learning about the toxicity and how can be reduced it
Indicative Contents المحتويات الإرشادية يتضمن الكلمات المفتاحية المهمة للمحاضرات	Indicative content includes the following:- -Introduction, history different between micro and nan scale - Understand various chemical and physical methods for the synthesis of nanomaterials -information on the specific details of both bottom up and top-down synthesis - Understand various biological methods for the synthesis of nanomaterials -Classification of nanomaterials ,metal and organic nanomaterials - Understand phase rule/phase diagrams -Coating thin-film metals and semiconductors using different methods -The principle and working of UV -Vis absorption spectroscopy relation of absorption peak of metal nanoparticles with size and shape changes and SEM ,TEM and AFM techniques.

Learning and Teaching Strategies استراتيجيات التعلم والتعليم	
Strategies	.Visualization, Teamwork Cooperative Learning, Differentiated Instruction Using new Technology, Student-led Classroom: ,Student Centred Inquiry and Professional Development

Student Workload (SWL) الحمل الدراسي للطالب محسوب لـ ١٥ اسبوعا تملئ من قبل المقررية			
Structured SWL (h/sem)	79	**Structured SWL (h/w)**	5.26

الحمل الدراسي المنتظم للطالب خلال الفصل		الحمل الدراسي المنتظم للطالب أسبوعيا	
Unstructured SWL (h/sem) الحمل الدراسي غير المنتظم للطالب خلال الفصل	46	**Unstructured SWL (h/w)** الحمل الدراسي غير المنتظم للطالب أسبوعيا	3.06
Total SWL (h/sem) الحمل الدراسي الكلي للطالب خلال الفصل	125		

Module Evaluation
تقييم المادة الدراسية

		Time/Number	Weight (Marks)	Week Due	Relevant Learning Outcome
Formative assessment	**Quizzes**	2	10% (10)	5, 10	LO #1, 2, 10 and 11
	Assignments	2	10% (10)	2, 12	LO # 3, 4, 6 and 7
	Projects / Lab.	1	10% (10)	Continuous	All
	Report	1	10% (10)	13	LO # 5, 8 and 10
Summative assessment	**Midterm Exam**	2 hr	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	Introduction to the course
Week 2	Historical perspective of micro and nano scale
Week 3	Nano manufacturing technology, Advantages and applications of nanotechnology
Week 4	Nano manufacturing technology, Advantages and disadvantages
Week 5	Overview of Nano Fabrication Methods: Top-down and bottom-up approaches

Week 6	Types of nanomaterials organic and inorganic nanomaterials
Week 7	MID TERM EXAM
Week 8	Quantum dots, etc., Organic compounds and bio-applications of nano materials
Week 9	Characterization Tools, Optical microscopy and Spectrophotometer, Scanning Electron Microscope, AFM
Week 10	Application of nano materials, Carbon Nano Tubes
Week 11	Nanopharmaceuticals and Nanomedical Device
Week 12	Bioengineered Nanomaterials
Week 13	Nanosensors
Week 14	Nanotoxicology
Week 15	Nanobiotechnology and Tissue Engineering
Week 16	**Preparatory week before the final Exam**

Delivery Plan (Weekly Lab. Syllabus) المنهاج الاسبوعي للمختبر	
	Material Covered
Week 1	Lab 1: Introduction
Week 2	Lab 2: Synthesis Metal Nanoparticles
Week 3	Lab 3: Synthesis of nanomaterials by chemical method
Week 4	Lab 4: Synthesis of nanomaterials by physical method
Week 5	Lab 5: Synthesis of nanomaterials by biological method
Week 6	Lab 6: Nanomaterial characterization techniques
Week 7	Lab 7: Biological bio-medical applications: Antibacterial activity test
Week 8	Lab 8: Antifungal activity test
Week 9	Lab 9: Nanosensers
Week 10	Lab 10: nanocomposites

Learning and Teaching Resources مصادر التعلم والتدريس		
		Available in the Library?
Required Texts	Textbook of Nanoscience Nanotechnology B S Murty, P Shankar, Baldev Raj, B B Rath and James Murday.2013	
Recommended Texts	Nanomaterials in Bionanotechnology: Fundamentals and Applications. Singh and Kshitij RB Singh.ISBN: 9780367689445.2021	
Websites	file:///C:/Users/Toshiba/Downloads/TextbookofNanoscienceandNanotechnology.pdf https://web.pdx.edu/~pmoeck/phy381/intro-nanotech.pdf	

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

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

	Ministry of Higher Education and Scientific Research - Iraq University of Baghdad College of Engineering Department of Electrical Engineering	

MODULE DESCRIPTION FORM

نموذج وصف المادة الدراسية (اللغة العربيَّة)

Module Information

معلومات المادة الدراسية

Module Title	Arabic Language II			**Module Delivery**	
Module Type	Basic			☒ **Theory** ☐ **Lecture** ☐ **Lab** ☐ **Tutorial** ☐ **Practical** ☐ **Seminar**	
Module Code	UOB201				
ECTS Credits	2				
SWL (hr/sem)	50				
Module Level	UGII		**Semester of Delivery**	4	
Administering Department	Type Dept. Code		**College**	Type College Code	
Module Leader	**Dr. Leqaa faleh owdaa**		**e-mail**	leqaa.falih@ircoedu.uobaghdad.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	**Assistant lecturer. A'laa Sabah Hammood**		**e-mail**	alaa.sabah@sc.uobaghdad.edu.iq	
Scientific Committee Approval Date	1/06/2024		**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	**١- تهدف إلى تنمية روح الإعتزاز باللغة العربيَّة للمحافظة على الهوية العربيَّة.**

أهداف المادة الدراسية	**٢- تهدف إلى تأهيل الطلبة بالمعارف والمخرجات الخاصة علم النحو، والصرف، والإملاء؛ لتمكنه من الكتابة الصحيحة والتعبير السليم وتقويم لسانه.** **٣- تهدف إلى تنمية ذوق الطالب الأدبي وإثراء تحصيله وإغناء زاده من الفكر العربي والإسلامي.** **٤- تهدف إلى تطوير مهارات الطلاب اللغويَّة التي تؤهلهم للإبداع المتميز.** **٥- تهدف إلى تنمية مهارات التحدث بـ (اللغة العربيَّة).** **٦- تهدف إلى الارتقاء بمستوى الطلبة من الجانب المهني والبحثي.**
Module Learning Outcomes مخرجات التعلم للمادة الدراسية	**١-التعرف على الظواهر اللغويَّة كونها إحدى خصائص اللغة العربيَّة التي تميزت بها.** **٢- التعرف على قواعد كتابة الألف اللينة في آخر الكلمة، والتمييز بين الألف الطويلة والقصيرة عن طريق ذكر مواضع كل منهما وتوضيح ذلك بذكر الأمثلة.** **٣- التعرف على الإستثناء من حيث تعريفه وأدواته وحكمه وبيان ذلك بالأمثلة التوضيحية.** **٤- التعرف على الحال من حيث تعريفه وحكمه وبيان ذلك بالأمثلة التوضيحية.** **٥- التعرف على التمييز من حيث تعريفه وحكمه وبيان ذلك بالأمثلة التوضيحية.** **٦- التعرف على المفاعيل الخمسة وبيان أحكامها بكونها من منصوبات الأسماء وبيان ذلك بالأمثلة التوضيحية.** **٧- التعرف على حروف الجر بكونها من مجرورات الأسماء، والتمييز بين معانيها، وبيان حكمها مع توضيح ذلك بذكر الأمثلة.** **٨- التعرف على الاسم المذكر والاسم المؤنث من حيث تعريفهما، وأقسامهما مع ذكر الأمثلة التوضيحية.** **٩- التمييز بين اللام الشمسية واللام القمرية من حيث النطق والكتابة، وذلك من حيث تعريفهما ومعرفة حروف كل منهما.** **١٠- التعريف بحروف الحذف والزيادة في الكلمة، وبيان ذلك بالأمثلة التوضيحية .** **١١- تعريف الطالب بمواضع الوقف في اللغة العربيَّة لما فيه من أهمية لإصال المعلومات إلى المتلقي بشكل صحيح فضلاً عن تمكنه من فهم النص فهماً صحيحاً .** **١٢- تمكين الطالب من معرفة المواضع الإعرابية للكلمات داخل النص، ومعرفة معاني بعض الكلمات ، فضلاً عن استخراج الأهداف منه.** **١٣- التعرف على الشاعر المتنبي بكونه من شعراء العصر العباسي.** **١٤- التعرف على الشاعرة نازك الملائكة بكونها إحدى رواد الشعر الحر الحديث في العراق.**
Indicative Contents المحتويات الإرشادية تتضمن الكلمات المفتاحية المهمة للمحاضرات	- **الظواهر اللغوية: التَّرادف ، المشترك اللفظي، التَّضاد.** - **الألف اللينة: الألف الطويلة، الألف القصيرة.** - **الإستثناء.** - **الحال.**

	- التمييز. - المفاعيل الخمسة: منصوبات الأسماء ، المفعول به، المفعول فيه، المفعول المطلق، المفعول لأجله، المفعول معه. - حروف الجر: مجرورات الأسماء، معاني حروف الجر. - الاسم المذكر والمؤنث: تعريف الاسم المذكر، والاسم المؤنث، أقسام الاسم المذكر والمؤنث. - اللام الشمسية، اللام القمرية، الحذف والزيادة. - الوقف. - سورة لقمان، إعراب سورة لقمان ، تفسير سورة لقمان. - الشاعر المتنبي: حياته، مؤلفاته. - الشاعرة نازك الملائكة : حياتها، مؤلفاتها.

Learning and Teaching Strategies استراتيجيات التعلم والتعليم	
Strategies	الاستراتيجية الرئيسية التي سيتم تبنيها في تقديم هذه الوحدة هي تشجيع الطلاب على المشاركة في التمارين والتطبيقات النحوية والإملائية، مع تحسين مهارات التفكير والتحليل في الوقت نفسه. ويتم تحقيق ذلك عن طريق الفصول والبرامج التعليمية التفاعلية والنظر في أنواع التطبيقات التي تتضمن بعض الأنشطة التي تهم الطلبة.

Student Workload (SWL) الحمل الدراسي للطالب محسوب لـ ١٥ اسبوعا

Structured SWL (h/sem) **الحمل الدراسي المنتظم للطالب خلال الفصل**	33	Structured SWL (h/w) **الحمل الدراسي المنتظم للطالب أسبوعيا**	2.2
Unstructured SWL (h/sem) **الحمل الدراسي غير المنتظم للطالب خلال الفصل**	17	Unstructured SWL (h/w) **الحمل الدراسي غير المنتظم للطالب أسبوعيا**	**1.13**
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**	2	10% (10)	٣, ٩	LO #١ ,٢ and ٨
	Assignments	2	10% (10)	٥, ٨	LO # 4 and ٦
	Projects / Lab.	1	10% (10)	Continuous	All
	Report	1	10% (10)	١٠	LO # ,١,٢ ,٣,٤,٥,٦,٨,٩,١٠,١١,١٢, ١٣and١٤
Summative assessment	**Midterm Exam**	٢hr	10% (10)	٧	LO # 1-٦
	Final Exam	٣hr	50% (50)	16	All
Total assessment			100% (100 Marks)		

Delivery Plan (Weekly Syllabus)

المنهاج الاسبوعي النظري	
	Material Covered
Week 1	**الظواهر اللغويَّة: الترادف ، المشترك اللفظي، التضاد.**
Week 2	**قواعد كتابة الألف اللينة في آخر الكلمة.**
Week 3	**الإستثناء.**
Week 4	**الحال.**
Week 5	**التمييز.**
Week 6	**المفاعيل الخمسة: المفعول به، المفعول فيه، المفعول المطلق، المفعول لأجله، المفعول معه.**
Week 7	**امتحان نصف الفصل.**
Week 8	**حروف الجر ومعانيها.**
Week 9	**الاسم المذكر والمؤنث.**
Week 10	**الحروف من حيث النطق والكتابة: اللام الشمسية والقمرية، الحذف والزيادة.**
Week 11	**الوقف.**
Week 12	**نص من سورة لقمان.**
Week 13	**الشاعر المتنبي.**
Week 14	**الشاعرة نازك الملائكة.**
Week 15	**مراجعة للمنهج قبل الإمتحان النهائي.**
Week 16	

Learning and Teaching Resources

مصادر التعلم والتدريس

	Text	Available in the Library?
Required Texts	القرآن الكريم - الأدب العربي في العصر العباسي: د. ناظم رشيد. - إعراب القرآن وبيانه: محيي الدين درويش. - التطبيق الصرفي: د. عبده الراجحي. - تفسير الكشاف: للزمخشري. - جامع الدروس العربيَّة: الشيخ مصطفى الغلاييني. - ديوان المتنبي. - ديوان نازك الملائكة. - شرح ابن عقيل: ابن عقيل، تحقيق: محمد محي الدين عبد الحميد. - الشعر العراقي الحديث مرحلة وتطور: د. جلال الخياط - فقه اللغة العربيَّة وخصائصها: د. إميل بديع يعقوب. - المفيد في أحكام التلاوة والتجويد: القارئ الشيخ رافع العامري. - الوجيز في اللغة العربيَّة: أ.د. محيي هلال السرحان.	Yes
Recommended Texts	Electromagnetic theory (book). 2000.vol.1	No
Websites	https://www.coursera.org/browse/physical-science-and-engineering/electrical-engineering	

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	**English Language II**	**Module Delivery**
Module Type	BASIC	☒ **Theory** ☒ **Lecture** ☐ **Tutorial** ☐ **Practical**
Module Code	UOB202	
ECTS Credits	2	

SWL (hr/sem)	50		☐ **Seminar**	
Module Level	UGII	**Semester of Delivery**		4
Administering Department	Type Dept. Code	**College**	Type College Code	
Module Leader	Dr. Muthana Hameed Khalaf	**e-mail**	muthana.khalaf@sc.uobaghdad.edu.iq	
Module Leader's Acad. Title	Assistant 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	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	a pre-intermediate level course aiming to build and further improve language proficiency for second year students/ college of science, 1. Listening Objectives: • Understand and respond appropriately to a variety of spoken English in familiar contexts. • Comprehend main ideas, specific details, and implied information in spoken texts.

	• Develop listening strategies to enhance understanding. 2. Speaking Objectives: • Engage in conversations on a range of topics using appropriate vocabulary and grammar. • Express opinions, preferences, and experiences. • Develop speaking strategies for effective communication, such as turn-taking and seeking clarification. 3. Reading Objectives: • Read and understand a variety of texts, including articles, stories, and informational passages. • Comprehend main ideas, details, and implied information in written texts. • Develop reading strategies for comprehension and vocabulary acquisition. 4. Writing Objectives: • Write coherent paragraphs and short texts on different topics. • Express ideas clearly and logically using appropriate grammar and vocabulary. • Develop writing strategies for organization, coherence, and accuracy. 5. Grammar and Vocabulary Objectives: • Develop a solid understanding and usage of a wide range of grammatical structures appropriate for the pre-intermediate level. • Expand vocabulary knowledge to include a broader range of words, idiomatic expressions, and collocations. • Apply grammar and vocabulary knowledge to express oneself accurately and effectively. 6. Pronunciation and Intonation Objectives: • Improve pronunciation accuracy of individual sounds, stress patterns, and intonation. • Use appropriate rhythm, stress, and intonation for effective communication. • Recognize and produce connected speech features to enhance fluency and naturalness. 7. Cultural Awareness Objectives: • Develop an understanding of cultural practices, customs, and social norms in English-speaking countries. • Demonstrate cultural sensitivity and adapt communication accordingly. • Recognize the impact of culture on language use and communication styles.
Module Learning Outcomes	Learner training is essential to the achievement of the Learning Outcomes. 1. Listening and Speaking:

مخرجات التعلم للمادة الدراسية	• Understand and respond appropriately to a range of everyday spoken English in familiar contexts. • Engage in conversations and discussions on a variety of topics using appropriate language and strategies. • Comprehend and extract information from spoken texts, such as interviews, dialogues, and narratives. 2. Reading: • Read and understand a variety of texts, including articles, stories, and informational passages. • Comprehend main ideas, details, and specific information from the texts. • Apply reading strategies to infer meaning from context and make predictions. 3. Writing: • Write coherent and well-organized paragraphs and short texts on various topics. • Express ideas and opinions clearly and concisely. • Demonstrate control of grammar, vocabulary, and sentence structures appropriate for the pre-intermediate level. 4. Grammar and Vocabulary: • Understand and use a wide range of grammatical structures and tenses, including present perfect, past simple, future forms, and conditionals. • Expand vocabulary knowledge to include a broader range of words, idiomatic expressions, and collocations. • Apply grammar and vocabulary in context to enhance communication skills. 5. Pronunciation and Intonation: • Develop accurate pronunciation of individual sounds and common word stress patterns. • Use appropriate intonation and stress patterns to convey meaning effectively. • Understand and produce connected speech features, such as linking sounds and contractions. 6. Cultural Awareness: • Gain insights into cultural practices, traditions, and customs in English-speaking countries. • Develop intercultural competence and sensitivity in communication. • Understand cultural influences on language use and behavior.
Indicative Contents المحتويات الإرشادية	Indicative content includes the following. 1: Greetings and Introductions • Vocabulary: Greetings, introductions, personal information

	• Grammar: Present simple, present continuous, subject pronouns, possessive adjectives • Skills: Listening to and giving personal information, role-playing introductions, writing short personal profiles 2: Daily Routines • Vocabulary: Daily activities, time expressions • Grammar: Present simple, adverbs of frequency, prepositions of time • Skills: Talking about daily routines, describing habits and schedules, writing a daily routine diary 3: Family and Relationships • Vocabulary: Family members, relationships, adjectives to describe people • Grammar: Possessive 's, can/can't, imperatives • Skills: Talking about family members, describing people's appearance and personality, writing about a family member 4: Free Time and Hobbies • Vocabulary: Leisure activities, hobbies, sports • Grammar: Present simple vs. present continuous, question words • Skills: Discussing leisure activities, talking about hobbies and interests, writing about favorite pastimes 5: Shopping and Money • Vocabulary: Shops, money, prices, clothes • Grammar: Countable and uncountable nouns, plurals, quantifiers • Skills: Role-playing shopping conversations, describing clothes, writing a shopping list 6: Travel and Transportation • Vocabulary: Means of transport, travel destinations, directions • Grammar: Present perfect, past simple, adverbs of time

	• Skills: Discussing travel experiences, giving and following directions, writing about a memorable trip 7: Food and Eating Habits • Vocabulary: Food items, meals, cooking, restaurants • Grammar: Countable and uncountable nouns, articles, some/any • Skills: Talking about food preferences, ordering in a restaurant, writing a recipe 8: Health and Well-being • Vocabulary: Health issues, symptoms, remedies • Grammar: Should/shouldn't, modals for advice and obligation • Skills: Discussing health problems, giving advice, writing a health blog post 9: Jobs and Careers • Vocabulary: Professions, job descriptions, skills • Grammar: Past continuous, comparatives and superlatives • Skills: Talking about jobs and career aspirations, describing job experiences, writing a resume 10: Future Plans and Ambitions • Vocabulary: Future forms (will, going to, present continuous), ambitions, goals • Grammar: Future forms, time clauses • Skills: Discussing future plans, setting goals, writing a letter to your future self 11: Technology and Communication • Vocabulary: Communication devices, social media, technology-related terms • Grammar: Present perfect continuous, future continuous, indirect questions • Skills: Discussing technology and its impact, describing communication habits, writing an email or text message 12: Environment and Sustainability • Vocabulary: Environmental issues, natural disasters, conservation

	• Grammar: Conditional sentences, passive voice • Skills: Discussing environmental concerns, expressing opinions on sustainability, writing an article on environmental conservation 13: Culture and Traditions • Vocabulary: Festivals, customs, cultural practices • Grammar: Reported speech, relative clauses • Skills: Talking about cultural events, comparing traditions, writing a description of a cultural celebration 14: Education and Learning • Vocabulary: School subjects, learning methods, educational institutions • Grammar: Past perfect, modals for possibility and certainty • Skills: Discussing educational experiences, describing favorite subjects, writing an opinion essay on the benefits of education 15: Travel and Tourism • Vocabulary: Tourist attractions, accommodation, travel experiences • Grammar: Comparative and superlative adjectives, phrasal verbs • Skills: Talking about travel preferences, recommending destinations, writing a travel blog post or itinerary

Learning and Teaching Strategies استراتيجيات التعلم والتعليم	
Strategies	

	1.Communicative Approach: Emphasize communicative activities that promote interaction among students. Encourage pair and group work, role-plays, and discussions to practice language skills in meaningful contexts. 2.Integrated Skills: Integrate the four language skills (speaking, listening, reading, and writing) in lessons to create a balanced approach to language learning. Provide opportunities for students to use and develop these skills simultaneously. 3.Vocabulary Expansion: Incorporate vocabulary-building exercises and activities throughout the course. Use real-life contexts, visuals, and practical examples to help students learn and remember new words. 4.Grammar Focus: Teach and reinforce grammar structures in a systematic and progressive manner. Provide clear explanations, examples, and practice exercises to ensure students understand and can apply the grammar rules correctly. 5.Authentic Materials: Include authentic texts, such as articles, newspaper clippings, songs, and videos, to expose students to real-world language usage. This helps develop their reading and listening comprehension skills and exposes them to cultural aspects of English-speaking countries. 6.Cultural Awareness: Integrate cultural topics and discussions into the lessons to foster cultural awareness and sensitivity. Encourage students to share their own cultural backgrounds and experiences to promote understanding and appreciation of diverse perspectives. 7.Error Correction: Provide constructive feedback and error correction during speaking and writing activities. Help students identify and correct their mistakes, focusing on accuracy while encouraging fluency and self-expression. 8.Technology Integration: Utilize technology tools, such as interactive whiteboards, online resources, and language learning apps, to engage students and enhance their language learning experience. Incorporate multimedia materials for listening and speaking practice. 9.Regular Assessment: Assess students' progress regularly through quizzes, tests, and assignments. Provide timely feedback to guide their learning and address areas that need improvement. 10.Individualization: Cater to the individual needs and learning styles of students. Offer differentiated tasks and activities to ensure all learners are appropriately challenged and supported.

	11.Cooperative Learning: Promote collaboration and teamwork among students through pair work, group projects, and peer feedback. This encourages active participation and a supportive learning environment. 12.Review and Revision: Schedule regular review sessions to consolidate previously learned material. Encourage students to revise and practice independently, providing resources for self-study and additional practice.

Student Workload (SWL) الحمل الدراسي للطالب محسوب لـ ١٥ اسبوعا			
Structured SWL (h/sem) الحمل الدراسي المنتظم للطالب خلال الفصل	33	**Structured SWL (h/w)** الحمل الدراسي المنتظم للطالب أسبوعيا	2.2
Unstructured SWL (h/sem) الحمل الدراسي غير المنتظم للطالب خلال الفصل	17	**Unstructured SWL (h/w)** الحمل الدراسي غير المنتظم للطالب أسبوعيا	1.13
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**	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	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	
	New Headway Plus provides an integrated skills course with each unit divided into grammar, vocabulary, skills work and everyday English segments as follows:
Week 1	Getting to know you p6 **Tenses** *Present, past, future* p6 Questions *Where were you born?* *What do you do?* p6 Question words *Who …?, Why …?,* *How much …?* p7 **Right word, wrong word**

	Verbs of similar meaning *speak/talk, say/tell* Adjectives and nouns that go together Prepositions *to, from, at, about, of, on, in,* etc. Words with two meanings *I met my husband on a blind date.* *Dates are good for you.* p12 **Social expressions** *Have a good weekend!* *Same to you.* p13
Week 2	Whatever makes you happy p14 **Present tenses** Present Simple *She lives alone in Bristol.* p14 Present Continuous *She's planning …* p14 *have/have got* *He has his own company.* *I've got an idea for …* p15 **Things I like doing** *play games* *have a lie-in*

	get up late p17 **Making conversation** *What a lovely day it is* *today!* *Are you having a good* *time in London?* *Have a good weekend!* p21
Week 3	What's in the news? p22 **Past tenses** Past Simple *How far did he walk?* *I had a shower last night.* p23 Past Continuous *I was having a shower when …* p23 **Adverbs** *drive carefully* *speak furiously* *work hard* p28 **Saying when** *What's the date today?* *It's June the twentysecond.* *When did you last go* *to the cinema?* *Two weeks ago.* p29

Week 4	Eat, drink, and be merry! p30 **Quantity** *much* and *many* *How much milk?* *How many eggs?* p31 *some* and *any* *some apples, any bananas* p31 *a few, a little, a lot/lots of* p31 *something / someone / somewhere* p32 Articles *a shopkeeper, an old village,* *the north of England, He came* *by bus.* p32 **Food** *apples, beer, bread, cake* p36 **Shopping** *newsagent's, chemist's,* *off-licence* p36 **Can you come for dinner?** *Would you like some* *more rice?* *Could you pass the* *salt, please?* *How would you like* *your coffee?*

	This is delicious! p37
Week 5	Looking forward p38 **Verb patterns** *want/hope to do* *like/enjoy doing* *looking forward to doing* *'d like to* p38 **Future forms** *going to*, *will* and Present Continuous *I'm going to stay with a friend.* *I'll call or text you.* *I'm working late this evening.* p40 **Phrasal verbs – literal** *move back* *take away* *grow up* p44 **Phrasal verbs – idiomatic** *give up* *take off* *look after* p44 **Expressing doubt and** **certainty** *Of course he will.* *He might do.* *Mmm … maybe.* *I doubt it.* *No chance.* p45

Week 6	The way I see it p46 ***What … like?*** *What's your teacher like?* p46 **Comparative and superlative adjectives** *big, bigger, biggest* *good, better, best* p47 *as … as* *It isn't as hot as Dubai.* p47 **Relative pronouns** *who/that/which/where* p110 **Synonyms and antonyms** *lovely, beautiful* *brilliant, terrible* p52 **What's on?** *How much is it to go* *in the museum?* *Is it open on Sunday?* *What film is suitable* *for children?* p53
Week 7	Mid-term Exam
Week 8	Living history p54 **Present Perfect** *John has lived there for three* *years.* p55 *for* and *since*

	for two hours *since six o'clock* p55 *ever* and *never* *Have you ever been …?* *I've never been to South America.* p56 **Present Perfect or Past Simple** *Have you had an ordinary job?* *I worked in a restaurant.* p57 **Word endings** Jobs *philosopher, historian,* *economist* p57 Nouns and adjectives *competition, famous* p57 **Word stress** *danger, dangerous* *invite, invitation* p57 **Agree with me!** *It's wonderful, isn't it?* *You come from* *Scotland, don't you?* *It wasn't easy, was it?* *You've lived here for* *years, haven't you?* p61
Week 9	Girls and boys p62 ***have to***

	She has to train hard. *I don't have to train every day.* *Do you have to work at* *weekends?* p63 ***should*** *You should show him this letter.* p64 ***must*** *He must get professional help.* p64 **Things to wear** *belt, cap, boots, jumper,* *make-up* p68 Materials *leather, wool, denim,* *cotton* p68 Situations *job interview, party, beach* *holiday* p68 **At the doctor's** *a sore throat, flu, food* *poisoning* *I've got a fever.* *My body aches.* *My glands are* *swollen.* p69
Week 10	Time for a story p70 **Past Perfect**

	They had walked twenty miles. p71 **Narrative tenses** *They saw a bear.* *They were looking for work.* p71 **Joining sentences** *although, because* *when, while, before, after, as, until,* *as soon as* p72 **Feelings** *angry, nervous, delighted,* *stressed* p76 **Exclamations with so and** **such** *I was so scared!* *It was such a shock!* *We had such terrible* *weather!* *I've got so much work!* p77
Week 11	Our interactive world p78 **Passives** *Mobile phones are used by almost* *6 billion people.* *The first mobile phone call was made* *in 1973.*

	Camera phones have been sold since *2002.* *Landline telephones will be replaced* *by mobile phones.* p79 **Words that go together** Noun + noun *text message,* *businessman* p81 Verb + noun *take notes,* *send a text message* p81 Adverb + adjective *well-known,* *badly-behaved* p81 **On the phone** *07700 900333* *Can I speak to* *Patrick, please?* *I'm calling because …* *Sorry, you're breaking* *up …* p85
Week 12	Life's what you make it! p86 **Present Perfect Continuous** *He's been making programmes*

	since 2007. *How long has she been working* *there?* p87 Present Perfect Simple versus Continuous *He's made three programmes.* *He's been teaching for three years.* p87 **Birth, marriage, death** *pregnant, born* *engaged, divorced* *funeral, died of* p92 **Good news, bad news** *Congratulations!* *That's fantastic news!* *What a shame!* *I'm so sorry.* p93
Week 13	Just wondering … p94 **First conditional *if* + *will*** *If it's sunny, we'll go for a picnic.* *We won't go out if it rains.* p95 *going to* and *might* *What are you going to do tonight?* *I might go out …* p95 **Second conditional *if* + *would*** *If I had a brother, I'd play with him.* *If I were you, I'd stop smoking.* p96 **Prepositions**

	connected to *on a date* *listen to* *think about* p100 **Thank you and goodbye!** *It's late. I must be* *going now.* *Thank you for a lovely* *evening.* *My pleasure!* p101
Week 14	**Living in a stately home** *Living history* Chatsworth House and the family who call it home p58 **A family history** David Taylor Bews from Perth, Australia researches his family history p60 **What do you think?** Stately homes Aristocracy Inherited wealth p58 **Talking about you** Have you ever …? p57 The lives of your grandparents p60

	What do you think? Family history p60 **A biography** Ordering paragraphs: Two Kennedys Researching facts about a famous person and writing a biography p111
Week 15	**Families with all boys or all** **girls** *Sons and daughters* The parents of four daughters swap homes with the parents of four sons p66 **Heptathlon champion** An interview with Jessica Ennis – Britain's first world heptathlon champion p65 **What do you think?** Talking about successful people p65 Pros and cons of all-girl or all-boy families The ideal family p66 **Dress person X** Describing an outfit p68 **Letters and emails** Formal and informal

	expressions *Dear Sir or Madam,* *Yours sincerely,* *Hi Cathy,* *Love Steve* Writing a formal letter to a language school and an email to an English friend p112
Week 16	**Preparatory week before the final Exam**

Learning and Teaching Resources

مصادر التعلم والتدريس

	Text	Available in the Library?
Required Texts	The core textbook is *Soars, John and Liz, (2011), New Headway Plus Pre-Intermediate Student's Book, Special Edition, Oxford University Press*	Yes
Recommended Texts	New Headway Plus provides an integrated skills course with each unit divided into grammar, vocabulary, skills work and everyday English segments	No
Websites	Oxford University Press: The New Headway series is published by Oxford University Press. Visit their website at www.oup.com and search for "New Headway Plus, Special Edition, pre-Intermediate" or browse their English language teaching section for information on the course.	

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.