Academic Program Description

University Name: Al-Rafidain University

Scientific Department: Department of Biology

Academic or Professional Program Name:

Final Degree Title: Bachelor of science in Biology

Academic System: Bologna Process

Description Date: 1/10/2025

Form Completion Date :1/10/2025

Head of Department
Signature:
Name: Dr. Ibrahim Mahmood Mahdi
Date:

Associate Dean of for Scientific Affairs
Signature:
Name: Dr. Aseel Khalid Ahmed
Date: 1/ 10/2025

Quality Assurance and Institutional Effectiveness
Signature:

Name: Dr. Hashim Raed
Date: 1/10/2025

Dean's of the College
Signature:
Name: A. Prof. Dr. Mohammed Khodayer Hassan
Date: 1/10/2025

1. **Program Vision**

The Department of Biology seeks to equip students with the knowledge and skills necessary in the field of life sciences, while fostering their critical and creative thinking and encouraging them to explore and understand biodiversity and biological processes at the cellular and ecosystem levels.

The Department is committed to providing a supportive and stimulating educational environment that promotes innovation, scientific research, and community engagement. It strives to graduate highly qualified professionals in the field of life sciences who are capable of contributing to the advancement of society and the nation through scientific research and technological innovation.

2. **Program Mission**

The Department of Biology is committed to providing students with the knowledge and competencies required in the field of life sciences, while fostering their critical and creative thinking and encouraging them to explore and develop a comprehensive understanding of biodiversity and biological processes at the cellular and ecosystem levels.

The Department is further committed to maintaining a supportive and stimulating educational environment that promotes innovation, scientific research, and active community engagement. It seeks to prepare and graduate highly qualified professionals in the field of life sciences, equipped with the knowledge, competencies, and professional capabilities necessary to contribute effectively to the advancement of society and the development of the nation through scientific research and technological innovation

3- **Program Objectives**

1. To provide distinguished and diverse academic programs in the fields of life sciences that address the needs of the labor market and enable students to achieve academic and professional excellence.
2. To broaden students' scientific horizons by providing advanced and up-to-date curricula covering a diverse range of specializations within the life sciences.
3. To promote scientific research and innovation in the fields of life sciences and encourage students to actively and effectively participate in research activities.

4. To strengthen interaction and communication with the local and industrial communities through the organization of workshops, seminars, and educational and awareness-raising activities in the fields of life sciences.
5. To equip students with practical skills and modern techniques in the fields of microbiology, zoology, mycology, plant sciences, biotechnology, cytogenetics, and ecology.
6. To foster students' critical thinking and innovative capabilities and encourage them to develop independent research projects.
7. To provide students with academic support and continuous guidance to assist them in achieving their academic and professional objectives.
8. To encourage students to participate in student and community activities and to develop their leadership and teamwork skills, while equipping them with the competencies necessary to progress to specialized study in Computer and Information Security.

4. **Program Accreditation**

The program has not yet obtained program accreditation.

5- **Other external influences**

Practical Training – Desk-Based Research – Extracurricular Activities – Voluntary Activities – Other Activities

6- **Program Structure**

Program Structure	Number of Courses	Credit hours	Percentage	Reviews*
Institution Requirements				
College Requirements				
Department Requirements				
Summer Training				
Other				

* This can include notes whether the course is basic or optional.

7. Program Description				
Year/Level	**Course Code**	**Course Name**	**Credit Hours**	
			Lab	CL
First Year	MU010401101	Zoology	2	3
	MU010401102	Analytical Chemistry	2	3
	MU010401103	Biophysics	2	2
	MU04	Computer Science	2	2
	MU02	Democrysy and Human Rights		2
	MU06	Arabic Language		2
	MU010401201	Botany	2	3
	MU010401203	Organic chemistry	2	3
	MU010401202	Biostatistics		4
	MU010401204	Biosafety		2
	MU010401205	Radiation		2
	MU01	English language		**2**
Second Year	MU010402101	Entomology	2	2
	MU010402102	Plant Anatomy	2	2
	MU010402103	Invertebrates	2	2
	MU010402104	Microbiology	2	2
	MU11	English language		2
	MU14	computer science	2	2
	MU010402201	cell biology	2	2
	MU010402202	Parasitology	2	2
	MU010402203	Biochemistry	2	2
	MU010402204	Microscopy Techniques	2	2
	MU03	baath crimes		2
	Mu16	arabic lanugue		2

8. Expected learning outcomes of the program
Knowledge
- Demonstrate knowledge of the fundamental principles of zoology, botany, microbiology, genetics, ecology, and biotechnology. - Develop students' ability to acquire the knowledge and skills required to perform and interpret pathological analyses. - Enable students to operate and appropriately utilize laboratory equipment and instruments in accordance with established scientific and safety standards. - Familiarize students with the major applications of molecular technologies in the field of biology and their relevance to contemporary biological research.

- Develop students' ability to identify and formulate scientific problems clearly and systematically, while applying appropriate scientific concepts and principles acquired from the fundamental disciplines of life sciences.

Skills

- Scientific Testing and Experimentation: Students shall acquire the skills necessary to design and conduct scientific experiments and tests in accordance with appropriate quality assurance standards. They shall be able to accurately analyze and interpret results through the effective application of laboratory and field-based techniques to investigate and develop solutions to various biological problems.
- Application of Biological Principles: Students shall be able to apply biological concepts, principles, laws, and theories across various fields, including medicine and healthcare, agriculture, food industries, and natural and ecological systems.
- Communication Skills: Students shall demonstrate the ability to communicate clearly, effectively, and professionally, both orally and in writing, with individuals and groups across different professional and administrative levels.
- Ethical and Professional Awareness: Students shall demonstrate an understanding of ethical and professional responsibilities and recognize the economic, environmental, social, and global implications of applying scientific and technological solutions to biological and environmental problems

Ethics

- Teamwork: Students shall demonstrate the ability to work effectively and collaboratively within scientific teams.
- Goal Setting, Planning, and Risk Management: Students shall demonstrate the ability to identify common goals, plan activities effectively, and manage potential risks in accordance with established procedures and professional standards.
- Community Engagement and Collaboration: Students shall demonstrate the ability to communicate effectively with the community and work collaboratively in a team-oriented environment.
- Adaptability to Technological Developments: Students shall acquire the skills necessary to keep pace with advances in modern technologies, enabling them to effectively utilize technological tools and applications in medical, industrial, and laboratory fields.

9. Teaching and Learning Strategies

- Encourage students to actively participate in interactive discussions, seminars, and workshops.
- Encourage students to work in small groups to undertake projects or volunteer activities related to their local communities and relevant industrial sectors.
- Organize field visits to institutions and organizations relevant to the professional roles and career pathways of Life Sciences graduates.
- Provide students with self-directed learning resources to promote continuous learning beyond the classroom, including books, academic articles, and online educational resources.

10. Evaluation methods

- Individual and Group Assignments and Reports -Daily and Weekly Assessments
- Assessment of Practical Skills in the Laboratory
- Midterm and Final Examinations
- Graduation Projects for Fourth-Year Students

11. Faculty

Faculty Members

Academic Rank	Specialization		Special Requirements/Skills		Number of the teaching staff	
	General	Specialized	(if applicable)			
Professor					Staff	Lecturer
Assistant Professor	✓				1	2
Lecturer	✓				4	2
Assistant Lecturer	✓				2	2

Professional Development

Mentoring new faculty members

The Department is committed to enhancing the academic and research capabilities and competencies of its teaching staff through the following measures:

1. Providing training and opportunities for participation in teaching methodology courses.
2. Organizing specialized training workshops, scientific sessions, and academic discussion forums.
3. Promoting awareness and effective adoption of modern teaching methodologies and educational practices.
4. Fostering a culture of continuous professional development and improvement to achieve the highest standards of academic and professional excellence.
5. Providing individual and group mentoring and guidance programs for teaching staff to assist them in addressing and overcoming challenges encountered throughout their professional careers.

Professional development of faculty members

- Develop the skills and competencies of teaching staff in academic, research, and practical fields.
- Provide support to university teaching staff in carrying out their educational, research, and practical responsibilities.
- Provide, develop, and enhance diverse academic and research resources and contribute to the achievement of the institution's strategic objectives.
- Provide a supportive and professional environment that promotes creativity, innovation, and professional growth among teaching staff.
- Support the roles and responsibilities of teaching staff in the area of community service and engagement.
- Establish, maintain, and continuously develop information databases and relevant resources to support teaching staff in their academic and professional activities.

12. Acceptance Criterion

Academic Performance and Physical Fitness in accordance with the requirements approved by the Ministry of Higher Education and Scientific Research

13. The most important sources of information about the program

Main Sources of Information about the Program

- The official website of the Ministry of Higher Education and Scientific Research.
- The official website of Al-Rafidain University, available in both Arabic and English, as well as the College's official social media platforms.
- Recent academic publications, books, and research studies related to developments in the field of specialization.
- Online information resources and the World Wide Web.

14. Program Development Plan

- Teamwork: Promote effective and active participation in group work and collaborative activities.
- Time Management: Develop students' ability to manage time effectively, set priorities, and perform tasks in an organized manner while adhering to established deadlines.
- Scientific Research and Reporting: Develop the skills required to prepare scientific research papers and reports for the analysis and critical evaluation of events and issues.
- Integration of Technology in Education: Increase the use of modern technological tools and applications in teaching and learning.
- Interdisciplinary Collaboration: Encourage and promote collaboration and cooperation among different scientific disciplines.
- Academic and Career Guidance: Provide specialized guidance and counseling programs to assist students in selecting appropriate academic and professional pathways.

Program Skills Outline																
				Required program Learning outcomes												
Year/Level	Course Code	Course Name	Basic or optional	Knowledge				Skills				Ethics				
				A1	A2	A3	A4	B1	B2	B3	B4	C1	C2	C3	C4	
First Year	MU010401101	Zoology	C	✓	✓	✓	✓	✓	✓	✓	✓	✓	✓	✓	✓	
	MU010401102	Analytical Chemistry	S	✓	✓	✓	✓	✓	✓	✓	✓	✓	✓	✓	✓	
	MU010401103	Biophysics	S	✓	✓	✓	✓	✓	✓	✓	✓	✓	✓	✓	✓	
	MU04	Computer Science	B	✓	✓	✓	✓	✓	✓	✓	✓	✓	✓	✓	✓	
	MU02	Democrysy and Human Rights	B	✓	✓	✓	✓	✓	✓	✓	✓	✓	✓	✓	✓	
	MU06	Arabic Language	B	✓	✓	✓	✓	✓	✓	✓	✓	✓	✓	✓	✓	
	MU010401201	Botany	C	✓	✓	✓	✓	✓	✓	✓	✓	✓	✓	✓	✓	
	MU010401203	Organic chemistry	S	✓	✓	✓	✓	✓	✓	✓	✓	✓	✓	✓	✓	
	MU010401202	Biostatistics	S	✓	✓	✓	✓	✓	✓	✓	✓	✓	✓	✓	✓	
	MU010401204	Biosafety	C	✓	✓	✓	✓	✓	✓	✓	✓	✓	✓	✓	✓	
	MU010401205	Radiation	S	✓	✓	✓	✓	✓	✓	✓	✓	✓	✓	✓	✓	
	MU01	English language	B	✓	✓	✓	✓	✓	✓	✓	✓	✓	✓	✓	✓	
Second Year	MU010402101	Entomology	C	✓	✓	✓	✓	✓	✓	✓	✓	✓	✓	✓	✓	
	MU010402102	Plant Anatomy	C	✓	✓	✓	✓	✓	✓	✓	✓	✓	✓	✓	✓	
	MU010402103	Invertebrates	C	✓	✓	✓	✓	✓	✓	✓	✓	✓	✓	✓	✓	
	MU010402104	Microbiology	C	✓	✓	✓	✓	✓	✓	✓	✓	✓	✓	✓	✓	
	MU11	English language	B	✓	✓	✓	✓	✓	✓	✓	✓	✓	✓	✓	✓	
	MU14	computer science	B	✓	✓	✓	✓	✓	✓	✓	✓	✓	✓	✓	✓	
	MU010402201	cell biology	C	✓	✓	✓	✓	✓	✓	✓	✓	✓	✓	✓	✓	

	MU010402202	Parasitology	C	✓	✓	✓	✓	✓	✓	✓	✓	✓	✓	✓	✓
	MU010402203	Biochemistry	S	✓	✓	✓	✓	✓	✓	✓	✓	✓	✓	✓	✓
	MU010402204	Microscopy Techniques	C	✓	✓	✓	✓	✓	✓	✓	✓	✓	✓	✓	✓
	MU03	baath crimes	B	✓	✓	✓	✓	✓	✓	✓	✓	✓	✓	✓	✓
	Mu16	arabic lanugue	B	✓	✓	✓	✓	✓	✓	✓	✓	✓	✓	✓	✓

Zoology – علم الحيوان

Module Information معلومات المادة الدراسية					
Module Title	**Zoology**			**Module Delivery**	
Module Type	**Core**			☒ **Theory** ☒ **Lecture** ☒ **Lab** ☐ **Tutorial** ☐ **Practical** ☐ **Seminar**	
Module Code	**MU010401101**				
ECTS Credits	**8**				
SWL (hr/sem)	**200**				
Module Level	1		**Semester of Delivery**	1	
Administering Department	**Biology** (04)		**College**	**College of Science** (01)	
Module Leader	Name: Khalid Mahdi Salih		**e-mail**	E-mail khalid.salih11@yahoo.com	
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 Farha A. Ali Shafi		**e-mail**	szfs@uomustansiriyah.edu.iq	
Scientific Committee Approval Date	**19/06/2023**		**Version Number**	**1.0**	

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

Module Aims, Learning Outcomes and Indicative Contents

أهداف المادة الدراسية ونتائج التعلم والمحتويات الإرشادية

Module Objectives أهداف المادة الدراسية	This course is considered an introduction to all courses that will be studied by the students later in this department such as 1. Cell biology 2. Ecology 3. Histology 4. Entomology 5. Invertabrates 6. Parasitology
Module Learning Outcomes مخرجات التعلم للمادة الدراسية	1. Learn what is the difference between living and nonliving things 2. Knowledge of the most important physiological activities of cells, especially feeding & reproduction. 3. Learn how to classify the living things 4. Learn what is the difference between the prokaryotic and eukaryotic cells 5. Take short details about different kingdoms a. Bacteria b. Protista c. Fungi d. Plantae e. Animalia 6. Lean about invertebrates and vertebrates and their cells, tissues, organs and systems
Indicative Contents المحتويات الإرشادية	nonliving and Living things,(Reproduce and Develop,, Multicellular organisms, Adapt to Change Organization of the Biosphere, Human Populations, Classification, Domains, Scientific Names
	Kingdoms, General Characters of Animals, Asexual Reproduction, Sexual Reproduction Taxonomy : Classifying Life , Classification of Living Organisms Prokaryotic and eukaryotic cells inverttebrate : Porifera & Cnidaria Porifera & Cnidaria Platyhelminthes & Miscellaneous, rotifers, Mollusca & Annelida Nematoda & Arthropoda Crustaceans & Hexapoda Echinoderms & Chordates

Learning and Teaching Strategies

استراتيجيات التعلم والتعليم

Strategies	It is possible to ensure the progress of the educational process well and the student's understanding of what is presented in the lectures through periodic exams. In addition. Sudden exams could make to ensure the student's attention and focus on what was presented in the lecture. The student's thinking and analysis skills are also tested by presenting scientific reports for practical tests. To increase the student's love for this course and his passion for it, field visits could made to museums and any related places.

Student Workload (SWL) الحمل الدراسي للطالب محسوب لـ ١٥ اسبوعا			
Structured SWL (h/sem) الحمل الدراسي المنتظم للطالب خالل الفصل	79	**Structured SWL (h/w)** الحمل الدراسي المنتظم للطالب أسبوعيا	5
Unstructured SWL (h/sem) الحمل الدراسي غير المنتظم للطالب خالل الفصل	121	**Unstructured SWL (h/w)** الحمل الدراسي غير المنتظم للطالب أسبوعيا	8
Total SWL (h/sem) الحمل الدراسي الكلي للطالب خالل الفصل	200		

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

Delivery Plan (Weekly Syllabus) المنهاج االسبوعي النظري	
	Material Covered
Week 1	**Definition** of (Biology & Zoology), **Characteristics of Living things** (nutrition, respiration, excretion, growth, movement, reproduction, sensation)
Week 2	**Organization levels of living things:** at cellular level (formation of biomolecules, organells, cell); at organism level (formation of tissues, organs, system); at population level (population, community, biome, Biosphere)
Week 3	**Organisms in ecosystem:** definition of (Niche, Habitat); Types of interaction: Predation, competition (interspecific & intraspecific), Symbiosis (parasitism, mutualism, commensalism)
Week 4	**Trophic levels: definition; Types: Producers 'autotrophes'** (photoautotrophes & chemoautotrophes); **Consumers 'heterotrophes'** (herbivores, **carnivores, omnivores); Decomposers 'detritivores'** (bacteria, worms, fungi, and others)
Week 5	**Classification of organisms:** History of Taxanomists; hierarchic system of classification; binomial system; Concept of species; concept of kingdome (Archaebacteria, Eubacteria, Protista, Fungi, Plantae, Animalia)
Week 6	**Grouping of animals: Protozoa 'unicellular'; Parazoa 'sponges'; Eumetazoa: diploblastic animals, Triploblastic animals** (Acoelomata, Pseudocoelomata, Coelomata)
Week 7	**Protozoa: Definition; Characteristics; Cellular structure & functions** (digestion, respiration, reproduction, adaptations)**; Classification**
Week 8	**Phylum Sarcodina: charactristics; Examples** (Amoeba, foraminifera, radiolarian, Entamoeba histolytica)

	Phylum Zoomastigina: charactristics; Examples (Trypanasoma, Leishmania, Giardia, Trichonympha)
Week 9	**Phylum Ciliophora: charactristics; Examples** (Paramecium, Vorticella, Balantidium)**; Phylum Sporozoa: charactristics; Examples** (Plasmodium, Toxoplama)
Week 10	**Phylum Porifera: Definition; Structure of sponges; body wall layers** (outer, inner, mesohel)**; Water flow & sponge shape** (Asconoid, syconoid, leuconoid)

Week 11	**Phylum Porifera: Sponge skeleton; Classification:** (calcaria, hexactinellida, demospongia)**; sponge feeding** (phagocytosis, carnivores, endosymbiosis)**; Sponge reproduction** (fragmentation, budding, gemmule, sexual reproduction)
Week 12	**Phylum Cnidaria**: **Definition; Body structure** (ectoderm, endoderm, mesoglea, gastrovascular cavity, tentacles, cnidocytes)**; Polymorphism** (polyp & medusa)
Week 13	**Phylum Cnidaria**: **Classification** (Hydrozoa, Anthozoa, Scyphozoa, Cubozoa)**; Reproduction** (asexual, sexual)
Week 14	**Other invertebrates Phyla:** (Platyhelminthes, Nematoda, Annelida, Arthropoda, Mollusca, Echinodermata)
Week 15	**Vertebrates 'Chordates':** (fish, amphibians, reptiles, birds, mammals)

Delivery Plan (Weekly Lab. Syllabus)

المنهاج الاسبوعي للمختبر

	Material Covered
Week 1	**Lab 1: Microscope** (types, structure, magnification power)
Week 2	**Lab 2: Slide preparation for microscopic examination** (oral cavity smear, blood smear)
Week 3	**Lab 3: Animal cells** (Structure, shape)
Week 4	**Lab 4: Animal Primary Tissues: (1) Epithelial tissues: Simple** (squamous, cuboidal, columnar, pseudostratified); **Compound** (squamous, cuboidal, columnar, transitional)
Week 5	**Lab 5: : Animal Primary Tissues: (2) Connective tissues: Irregular** (areolar, adipose); **regular** (tendon, ligament); **special** (bone, blood)
Week 6	**Lab 6: Animal Primary Tissues: (3) Muscular tissue** (smooth, skeletal, cardiac)**; Nervous tissue** (nerve cell, glial cells)
Week 7	**Mid-term exam**
Week 8	**Lab7: Classification of animals: Phylum protozoa**: **Locomotion structures** (Pseudopodia, cilia, flagella); **Examples** (Amoeba, Paramecium, Giardia, Plasmodium)
Week 9	**Lab8: Phylum Porifera** (Sponges); **Phylum** Cnidaria (Hydra, polyp & medusa)
Week 10	**Lab 9 Phylum Platyhelminthes** (Tape worm); **Phylum Nematoda** (Ascaris)

Week 11	**Lab 10: Phylum Annelida** (Earth worm, Leech)
Week 12	**Lab 11: Phylum Arthropoda** (Insects, spiders, scorpions)
Week 13	**Lab 12: Phylum Mollusca** (Pila); **Phylum Echinodermata** (Starfish)
Week 14	**Lab 13: Phylum Chordata** (Fish, amphibians, reptiles)
Week 15	**Lab 14: Phylum Chordata** (Bird, Mammals)
Week 16	**Final Exam.**

Learning and Teaching Resources
مصادر التعلم والتدريس

	Text	Available in the Library?
Required Texts	Shrestha R. and Kandel R. N. (2023) A complete handbook of Zoology. 1st Ed.Hertage Publisher & Distributors Pvt. Ltd.	Electronic book
Recommended Texts	Paydel A. (2022). A Textbook of Zoology: practical and semester. 1st Ed. Hertage Publisher & Distributors Pvt. Ltd. ISBN: 9789937754712	Electronic book
Websites	https://education.tiu.edu.iq/biology/course-description/	

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.

Analytical Chemistry– الكيمياء التحليلية

Module Information معلومات المادة الدراسية					
Module Title	**Analytical Chemistry**			**Module Delivery**	
Module Type	Support			☒ **Theory** ☒ **Lecture** ☒ **Lab** ☐ **Tutorial** ☐ **Practical** ☐ **Seminar**	
Module Code	**MU010401102**				
ECTS Credits	**8.00**				
SWL (hr/sem)	**200**				
Module Level	1		**Semester of Delivery**	1	
Administering Department	03		**College**	01	
Module Leader	**Dr.Jwan Oday Abdulsattar**		**e-mail**	**jwan.abdulsattar@uomustansiriyah.edu.iq**	
Module Leader's Acad. Title	Assist. Professor		**Module Leader's Qualification**	Ph.D.	
Module Tutor	Name (if available)		**e-mail**	E-mail	
Peer Reviewer Name	Assist. Professor Nagham Majid		**e-mail**	Naghammejed@uomustansiriyah.edu.iq	

Scientific Committee Approval Date	01/06/2023	**Version Number**	1.0

Relation with other Modules العالقة مع المواد الدراسية ألخرى			
Prerequisite module	None	**Semester**	
Co-requisites module	None	**Semester**	

Module Aims, Learning Outcomes and Indicative Contents

أهداف المادة الدراسية ونتائج التعلم والمحتويات اإلرشادية

Module Objectives أهداف المادة الدراسية	1. Learn the fundamental concepts of analytical chemistry. 2. Identify chemical and biological mixture using qualitative and quantitative analysis. 3. Understanding the basics and principles of analytical chemistry, especially Qualitative and Quantitative analysis. 4. Acquire knowledge of analytical chemistry analysis principles, procedures, and techniques such as gravimetric, volumetric and instrumental analysis. 5. Recognize different types of Stoichiometric calculation including molar, molal, formal, normal, and part per million concentration. 6. Know about basic buffer solution concepts and preparation. 7. Study important theories in acid and base in chemistry. 8. Learn about the recent development in analytical chemistry.
Module Learning Outcomes مخرجات التعلم للمادة الدراسية	Important: Write at least 6 Learning Outcomes, better to be equal to the number of study weeks. 1. Describe the basic information of analytical chemistry types. 2. Distinguish between different types of solutions based on amount of solute and based on particle size of solute. 3. Define buffer solution and their applicably in real experiments. 4. A full explain of acid-base theories for the solutions. 5. Differentiate between different analytical chemistry techniques. 6. A comprehensive explanation of the concept of Stoichiometric Calculations. 7. Know the application of analytical chemistry in real life.

Indicative Contents المحتويات الإرشادية	Indicative content includes the following. <u>Part A - Analytical chemistry fundamentals</u> – Analytical chemistry theory, historical overview of analytical chemistry, definition of analytical chemistry, classification of analytical chemistry. [15 hrs] – Qualitative and Quantitative analysis, Volumetric analysis (Titrimetric analysis), Gravimetric analysis, and Instrumental analysis. [15 hrs] – Solutions: Classification of solutions according to the solute amount and solute particle size. [10 hrs] –Acid-Base theories: Arrhenius theory, Bronsted theory, and Lewis theory. [7 hrs] – Buffer solution. [8 hrs] <u>Part B- Stoichiometric Calculations</u> –Mole concept, Calculation the number of moles, the number of molecules, Molarity, Normality and Equivalent weight, Formality, Diluting solutions, and Molality concentration. [15 hrs] – Concentration in part per thousand, million, and billion, concentration by percent.[15 hrs] – The relationship between molarity, normality and part per million [7 hrs] – Group seminar and open class discussion [6 hrs]

Learning and Teaching Strategies استراتيجيات التعلم والتعليم	
Strategies	Students learn about Analytical Chemistry through this course and textbook. In addition, discussion, activities, and on exams, students will be asked to apply knowledge that learned in a critical-thinking questions. Students will be engaged in discussion, Group activities, and seminar which help students to lead each other to success.

Student Workload (SWL) الحمل الدراسي للطالب محسوب لـ ١٥ اسبوعا			
Structured SWL (h/sem) الحمل الدراسي المنتظم للطالب خالل الفصل	79	**Structured SWL (h/w)** الحمل الدراسي المنتظم للطالب أسبوعيا	5
Unstructured SWL (h/sem) الحمل الدراسي غير المنتظم للطالب خالل الفصل	121	**Unstructured SWL (h/w)** الحمل الدراسي غير المنتظم للطالب أسبوعيا	8
Total SWL (h/sem) الحمل الدراسي الكلي للطالب خالل الفصل	**200**		

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

Delivery Plan (Weekly Syllabus) المنهاج االسبوعي النظري	
	Material Covered
Week 1	Introduction to analytical Chemistry, classification, historical view
Week 2	Definition of analytical chemistry

Week 3	Qualitative chemical analysis
Week 4	Quantitative chemical analysis (gravimetric, volumetric, and instrumental analysis)
Week 5	Classification of solutions
Week 6	Types of titrations (Neutralization, reduction-oxidation, complexation, precipitation)
Week 7	Middle exam
Week 8	Acid-base theories
Week 9	Buffer solutions
Week 10	Recent development in analytical chemistry
Week 11	Formality and Molarity concentration
Week 12	Normality concentration and Molality
Week 13	Concentration in parts per thousand or million or billion and by percent
Week 14	The relationship between molarity, normality and part per million
Week 15	**Preparatory week before the final Exam**

Delivery Plan (Weekly Lab. Syllabus) المنهاج الاسبوعي للمختبر	
	Material Covered
Week 1	Lab 1: Explanation of chemical safety and security conditions, tools, and materials.
Week 2	Lab 2: Explanation of quantitative analysis, volumetric analysis, and types of titration.
Week 3	Lab 3: Explanation of solution types.
Week 4	Lab 4: Preparation and standardization of (0.1M) HCL solution with Na_2CO_3.
Week 5	Middle exam
Week 6	Lab 5: Determination of acetic acid content in vinegar.
Week 7	Lab 6: Preparation and standardization of(0.1M) NaOH solution with HCL.
Week 8	Lab 7: Practical final exam.

Learning and Teaching Resources مصادر التعلم والتدريس		
	Text	**Available in the Library?**

Required Texts	Analytical Chemistry" by Gary D. Christian, 6th Edition, 2004, John Wiley and Sons, Inc.	Yes
Recommended Texts	An Introduction to Analytical Chemistry" by Doglas A. Skooge & Donald M.West, 4th Edition, 1986.	Yes
Websites		

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

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

Biophysics الفيزياء الحياتية

Module Information معلومات المادة الدراسية					
Module Title	**Biophysics**			**Module Delivery**	
Module Type	Support			☒ **Theory** ☒ **Lecture** ☒ **Lab** ☐ **Tutorial** ☐ **Practical** ☐ **Seminar**	
Module Code	**MU010401103**				
ECTS Credits	7				
SWL (hr/sem)	175				
Module Level		1	**Semester of Delivery**		1
Administering Department		02	**College**	01	
Module Leader	Dr Ehssan Salah Hassan		**e-mail**	ehsanphysicyan@uomustansiriyah.edu.iq	
Module Leader's Acad. Title		Assistant Prof.	**Module Leader's Qualification**		Ph.D.
Module Tutor	Name (if available)		**e-mail**	E-mail	
Peer Reviewer Name		Maysam T. Al-obaidi	**e-mail**	maysam_1000@uomustansiriyah.edu.iq	
Scientific Committee Approval Date		01/06/2023	**Version Number**		01

Relation with other Modules العالقة مع المواد الدراسية ألخرى			
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. To develop problem-solving skills and understanding of Motion in a straight line and Rectilinear motion with constant acceleration 2. To understand Temperature and heat, the Kind of thermometers and the first law of thermodynamic. 3. This course deals with the basic concept of Heat transfer. 4. This is the basic subject for all Fluid properties and the flow of ideal fluids. 5. To understand the structure of the atom, Properties of electric charges. 6. To understand Gravitational Force, Coulomb's Low and Ohm's Law
Module Learning Outcomes مخرجات التعلم للمادة الدراسية	1. Recognize how a particle moves in a straight line 2. Make a list of the different terms associated with speed, launch and acceleration. 3. Summarize what is meant by heat and its transmission methods. 4. Discuss the interaction of specific heat and heat capacity. 5. Description of the types of thermometers. 6. Determination of Ohm's Law. 7. Learn about the law of universal gravitation and Coulomb's law. 8. Discuss the electric field. 9. Discuss Coulomb's law. 10. Explanation of wattage. 11. 11. Identify the relationship between voltage and current.
Indicative Contents المحتويات الإرشادية	Indicative content includes the following. <u>Part A - Motion Theory</u> Motion in a straight line - definitions of velocity and acceleration, recognition of constant acceleration and instantaneous velocity and the difference between distance and displacement, [15 hour] Heat capacity, specific heat, thermal current and heat transfer methods. [15 hour] Learn about acquired heat, lost heat, Stephen – Boltzman law, and Fourier law. [15 hours] Identifying the atom and the particles inside the nucleus, protons and neutrons, as well as identifying electrons. [15 hour] Solving problems on the law of Gravitational Force, Coulomb's law and Ohm's law [15 hours]

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

Student Workload (SWL) الحمل الدراسي للطالب محسوب لـ ١٥ أسبوعا			
Structured SWL (h/sem) الحمل الدراسي المنتظم للطالب خلال الفصل	64	**Structured SWL (h/w)** الحمل الدراسي المنتظم للطالب أسبوعيا	4
Unstructured SWL (h/sem) الحمل الدراسي غير المنتظم للطالب خلال الفصل	111	**Unstructured SWL (h/w)** الحمل الدراسي غير المنتظم للطالب أسبوعيا	7
Total SWL (h/sem) الحمل الدراسي الكلي للطالب خلال الفصل	**175**		

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

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

Delivery Plan (Weekly Syllabus) المنهاج االسبوعي النظري	
	Material Covered
Week 1	Introduction - Motion in straight line
Week 2	Rectilinear motion with constant acceleration
Week 3	Temperature and heat
Week 4	Kind of thermometers
Week 5	Heat and the first law of thermodynamic
Week 6	Temperature and Heat
Week 7	Heat transfer
Week 8	Heat capacity and latent heat
Week 9	Fluid properties and The flow of ideal fluids
Week 10	The triple point P_{tp} Of a water
Week 11	The structure of the atom
Week 12	Properties of electric charges
Week 13	Gravitational Force, Coulomb's Low and Ohm's Law
Week 14	Magnetism , Electric field, Magnetic field

Week 15	Magnetic Fields and Forces,
Week 16	**Preparatory week before the final Exam**

Delivery Plan (Weekly Lab. Syllabus) المنهاج الاسبوعي للمختبر	
	Material Covered
Week 1	Lab 1: Determination of the Acceleration of Gravity by Means of Simple Pendulum
Week 2	Lab 2: Restoring Torque of the Torsion Axle
Week 3	Lab 3: Equilibrium of Forces
Week 4	Lab 4: Hooke's Law
Week 5	Lab 5: Determination of the Coefficient of Rigidity of a Rod Statically
Week 6	Lab 6: Mid-course exam
Week 7	Lab 7: Boyle's Law
Week 8	Lab 8: Determination of Surface Tension of Liquid by Rising in a Capillary Tube
Week 9	Lab 9: Determination of the Frequency of a Tuning-Fork Using a Sonometer
Week 9	Lab 9: Determination of the Frequency of a Tuning-Fork Using a Sonometer2
Week 10	Lab 10: Determination of Young's Modulus for a Metallic Wire
Week 11	Lab 11: Determination of Young's Modulus for a Metallic Wire2
Week 12	Lab 12: Determination of Young's Modulus for a Metallic Wire3
Week 13	Lab 13: Finding an unknown resistance using the Wheatstone bridge
Week 14	Lab 12: End of course exam

Learning and Teaching Resources

مصادر التعلم والتدريس

	Text	Available in the Library?
Required Texts	D.M.Burns and S.G.G. MacDonald. Physics for Biology and Pre-Medical student 2nd	Yes
Recommended Texts	Addison – Wesley	No
Websites	1- https://byjus.com/physics/differences-between-acceleration-and-velocity/ 2- https://www.britannica.com/science/Stefan-Boltzmann-law 3- https://byjus.com/jee/coulombs-law/	

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.

Democracy and Human Rights - الديمقراطية و حقوق الانسان

Module Information معلومات المادة الدراسية					
Module Title	**Democracy and Human Rights**			**Module Delivery**	
Module Type	**B**			☒ **Theory** ☒ **Lecture** ☐ **Lab** ☐ **Tutorial** ☐ **Practical** ☐ **Seminar**	
Module Code	**MU02**				
ECTS Credits	**2**				
SWL (hr/sem)	**33**				
Module Level	1		**Semester of Delivery**	1	
Administering Department	0003		**College**	01	
Module Leader	Hussein Hezam		**e-mail**	hussein_hezam@uomustansiriyah.edu.iq	
Module Leader's Acad. Title	Professor		**Module Leader's Qualification**	MSc	
Module Tutor			**e-mail**		
Peer Reviewer Name	Ghassan Kareem mijthab		**e-mail**	drghassankareem@uomustansiriyah.edu.iq	
Scientific Committee Approval Date	01/06/2023		**Version Number**	1.0	

Relation with other Modules العالقة مع المواد الدراسية ألخرى			
Prerequisite module	None	**Semester**	
Co-requisites module	None	**Semester**	

Module Aims, Learning Outcomes and Indicative Contents أهداف المادة الدراسية ونتائج التعلم والمحتويات إلرشادية	
Module Objectives أهداف المادة الدراسية	1- تعريف الطالب بما يعنيه مصطلح الديمقراطية والنظام الديمقراطي وحقوق االنسان وحرياته ألساسية، فضا ً ل عن زيادة معرفة الطالب بالجانب المفاهيمي النظري والتطور التاريخي للديمقراطية وحقوق االنسان. 2- تمكين الطالب من ممارسة حقوقه بصورة فعالة من خالل التنمية الشاملة لشخصيته واالحساس بكرامتها واحترام حقوق اآلخرين وحرياتهم الساسية بما يتفق وقيم المجتمع الديمقراطي. 3- تنمية مهارات ومعارف الطالب فيما يتعلق بادراك حقوق االنسان والديمقراطية وتأثيراتها على المجتمع. 4- فهم واستنباط اهم التجارب العالمية فيما يتعلق بالديمقراطية او تلك التي حاولت النهوض بحقوق االنسان، ومحاولة استنباط ما يمكن تطبيقه في مجتمعاتنا المحلية. 5- - التعريف بالدستور وباالنتخابات وابرز التجارب االنتخابية، وتحفيز الطلبة على أهمية المشاركة الفاعلة في الحياة السياسية.
Module Learning Outcomes مخرجات التعلم للمادة الدراسية	1- التعريف بحقوق االنسان 2- التعرف على أبرز سمات ومزايا وخصائص حقوق االنسان 3- مراجعة جذور وتاريخ حقوق االنسان 4- تحليل تطور فكرة حماية حقوق االنسان في العصر الحديث 5- التعرف على ما تضمنته الشرعة الدولية لحقوق االنسان 6- تسليط الضوء على المنظمات والهيئات الدولية المعنية بالدفاع عن حقوق النسان 7- التعريف بالديمقراطية -8 التعرف على اشكال وصور الديمقراطية 9- مراجعة جذور وتاريخ الديمقراطية 10- تسليط الضوء على الدستور والديمقراطية 11- معرفة ما تعنيه جرائم إلبادة الجماعية 12- التعرف على الضمانات التي تكفل النظام الديمقراطي
Indicative Contents	

المحتويات الإرشادية	يمثل التعليم والتثقيف في مجال الديمقراطية وحقوق الانسان عملية تدوم مدى الحياة وتنمي المعارف والمهارات كما انها تعزز الشخصية واوجه السلوك سعياً لتحقيق حماية مستدامة لحقوق الانسان وحرياته، فضا "ل عن ان التثقيف بحقوق الانسان تسهم في صون كرامة البشر سعياً" إلقامة مجتمعات تحترم وتقدر حقوق االنسان، ومن ثم تعمل على إقامة نظام ديمقراطي رصين.

Learning and Teaching Strategies

استراتيجيات التعلم والتعليم

Strategies	الستراتيجية الرئيسة التي سيتم تبنيها في تقديم هذه المادة ستركز على تشجيع الطلبة على تقبل المواضيع المرتبطة بالديمقراطية وحقوق االنسان، ومحاولة تحسين بعض المهارات المرتبطة بها، وسيتم تحقيق ذلك من خالل البرامج التعليمية التفاعلية او من خالل اتباع بعض الطرق تدريس الحديثة.

Student Workload (SWL)

الحمل الدراسي للطالب محسوب لـ ١٥ أسبوعا

Structured SWL (h/sem) الحمل الدراسي المنتظم للطالب خالل الفصل	33	**Structured SWL (h/w)** الحمل الدراسي المنتظم للطالب أسبوعيا	2
Unstructured SWL (h/sem) الحمل الدراسي غير المنتظم للطالب خالل الفصل	17	**Unstructured SWL (h/w)** الحمل الدراسي غير المنتظم للطالب أسبوعيا	1
Total SWL (h/sem) الحمل الدراسي الكلي للطالب خالل 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
	Report	1	10% (10)	13	LO #5, #8 and #10
	Projects	1	10% (10)	12	LO #5, #6 and #9
Summative assessment	**Report**	1	10% (10)	13	LO #5, #8 and #10
	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 االسبوعي النظري	
	Material Covered
Week 1	المفهوم العام لحقوق االنسان
Week 2	التعريف باإلنسان والحق وحقوق االنسان
Week 3	سمات وخصائص وأنواع حقوق االنسان
Week 4	جذور حقوق اإلنسان وتطورها في تاريخ البشرية
Week 5	تطور فكرة حماية حقوق االنسان في العصر الحديث
Week 6	حقوق اإلنسان في الحضارات القديمة والشرائع السماوية
Week 7	Mid-term Exam + Unit-Step Forcing, Forced Response, the RLC Circuit
Week 8	مفهوم ومعنى الديمقراطية
Week 9	اشكال وصور الديمقراطية
Week 10	الخلفية التأريخية للديمقراطية
Week 11	سمات النظام الديمقراطي ومزاياه
Week 12	المكونات الرئيسة للديمقراطية
Week 13	الدستور والديمقراطية
Week 14	الدستور الدائم لجمهورية العراق 2005
Week 15	االنتخابات
Week 16	**Preparatory week before the final Exam**

Learning and Teaching Resources مصادر التعلم والتدريس		
	Text	**Available in the Library?**
Required Texts	محاضرات في الديمقراطية وحقوق االنسان	نعم
Recommended Texts	الديمقراطية وحقوق االنسان: تطورها مضامينها وحمايتها	نعم
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.

Arabic Language - اللغة العربية

Module Information معلومات المادة الدراسية					
Module Title	**Arabic Language**			**Module Delivery**	
Module Type	**Basic**			☒ **Theory** ☒ **Lecture** ☐ **Lab** ☐ **Tutorial**	
Module Code	**MU06**				
ECTS Credits	**2**				
SWL (hr/sem)	**50**			☐ **Practical** ☐ **Seminar**	
Module Level	1		**Semester of Delivery**	1	
Administering Department	05		**College**	01	
Module Leader	بتول زكي فهيم		**e-mail**		
Module Leader's Acad. Title	Assist. Professor		**Module Leader's Qualification**	Ph.D.	
Module Tutor	No available		**e-mail**	E-mail	
Peer Reviewer Name	ميسم عدنان عبدالرسول		**e-mail**	E-mail	
Scientific Committee Approval Date	01/11/2023		**Version Number**	1.0	

Relation with other Modules العالقة مع المواد الدراسية ألخرى			
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- مساعدة الطالب على حب ال ُلغة العرب ية لغة القرآن الكريم. 2- التع ّرف على مواطن الجمال في الل ُغة العربي ة وآدابها. 3- أن يكتسب الطالب القدرة على دراسة فروع ال ُلغة العربي ة. 4- تعريف الطالب بألفاظ الل ُغة العربي ة الصحيحة وتراكيبها وأساليبها السليمة بطريقة مشوقة وجذابة. 5- تنمية الطالب مهارات اللغة السليمة في المخاطبات الرسمية
Module Learning Outcomes مخرجات التعلم للمادة الدراسية	1- تعلم خصائص اللغة ومميزاتها عن اللغات االخرى 2- تحقيق الكفاءات اللغوي والقواعدية في اداء الطلبة للغة العربية في كل من االنشاء والقواعد واالمالء 3- تشخيص مواطن االعراب في مادة اللغة العربية 4- معرفة الحركات)الفتحة والضمة والكسرة (واصوات اخرى مثل همزة الفصل والوصل. 5- قراءة الكلمات والجمل وفهم معانيها والربط بينها 6- اكتساب الطالب القدرة على التعبير الصحيح في التخاطب ، والتحدث، و الكتابة. 7- تعلم اساسيات كتابة العداد 8- يتضح لدية عالمات االصلية والفرعية للجمل العربية 9- رفع مستوى الطالب على القراءة الصحيحة ، والنطق السليم ، و فهم ألفكار 10- تعليم الطالب بحفظ قدر كاف من النصوص ألدبية ، و أن يستمتع بها ، و يتذوق مظاهر الجمال فيها
Indicative Contents المحتويات الإرشادية	جلسة الإرشادية تحقيق فرصة المسترشد ليعبر ع ّما بداخله ويسلك بحرية فعلى المرشد حسن االصغاء ودقة المالحظة وتركيز االنتباه لكل قول أو فعل كي يدرك المرشد الجوانب المختلفة للمشكلة والمحافظة على اللغة الفصحى و االبتعاد عن العامية و معالجة ألخطاء الشائعة.

Learning and Teaching Strategies استراتيجيات التعلم والتعليم	
Strategies	التعليم هو انتقال الطالب من مرحلة التركيز على المهارات بالدرجات البتدائية إلى مرحلة التركيز على تبني وأن الطالب يقوموا بمواجهه كثير من المطالب من أجل قراءة المعلومات عبر الكتب الدراسية، ويقوموا كذلك بتدوين المالحظات أثناء المحاضرات، كما يتم العمل بطريقة مستقلة، بجانب التعبير.

Student Workload (SWL) الحمل الدراسي للطالب محسوب لـ ١٥ أسبوعا			
Structured SWL (h/sem) الحمل الدراسي المنتظم للطالب خالل الفصل	33	**Structured SWL (h/w)** الحمل الدراسي المنتظم للطالب أسبوعيا	2
Unstructured SWL (h/sem) الحمل الدراسي غير المنتظم للطالب خالل الفصل	17	**Unstructured SWL (h/w)** الحمل الدراسي غير المنتظم للطالب أسبوعيا	1
Total SWL (h/sem) الحمل الدراسي الكلي للطالب خالل الفصل	**50**		

Module Evaluation
تقييم المادة الدراسية

		Time/Number	Weight (Marks)	Week Due	Relevant Learning Outcome
Formative assessment	**Quizzes**	2	10% (10)	4 and 14	LO #1, #2 and #10, #11
	Assignments	2	10% (10)	5 and 9	LO #2, #3 and #7, #8
	Projects	1	10% (10)	12	LO #5, #6 and #9
	Report	1	10% (10)	13	LO #5, #8 and #10
Summative assessment	**Midterm Exam**	2hr	10% (10)	8	LO #1 - #7
	Final Exam	3hr	50% (50)	16	All
Total assessment			100% (100 Marks)		

Delivery Plan (Weekly Syllabus)
المنهاج االسبوعي النظري

	Material Covered

Week 1	نبذة مختصرة عن أهمية اللغة
Week 2	محاضرة عن اقسام اللغة العربية
Week 3	محاضرة عن اقسام الجملة العربية في لغتنا
Week 4	محاضرة عن اقسام الجملة االسمية والفعلية في اللغة
Week 5	محاضرة عن كتابة العدد
Week 6	محاضرة عن جمل التميز
Week 7	محاضرة كيفية وضع عالمات التنقيط
Week 8	**Midterm Exam**
Week 9	محاضرة عن االدب العربي
Week 10	محاضرة عن اقسام االدب العربي
Week 11	محاضرة عن اقسام الشعر العربي مع نموذج من قصائده
Week 12	محاضرة عن اقسام النثر مع نموذج من نثرة
Week 13	محاضرة تضم تطبيقات عملية لكل المواد اللغة
Week 14	(محاضرة)اختبارات عملية لكل مواد االدب
Week 15	معرفة الهمزة المتوسطة والمتطرفة
Week 16	**Preparatory week before the final Exam**

Learning and Teaching Resources

مصادر التعلم والتدريس

	Text	Available in the Library?
Required Texts	محاضرات في اللغة العربية العامة	نعم
Recommended Texts	اللغة العربية لغير الختصاص	نعم
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.

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.

Computer Science – علوم الحاسوب

معلومات المادة الدراسية					
Module Title	**Computer Science**			**Module Delivery**	
Module Type	**B**			☒ **Theory** ☒ **Lecture** ☒ **Lab** ☐ **Tutorial** ☐ **Practical** ☐ **Seminar**	
Module Code					
ECTS Credits	**3**				
SWL (hr/sem)	**75**				
Module Level	1		**Semester of Delivery**	1	
Administering Department	**Biology** (04)		**College**	**College of Science** (01)	
Module Leader	Majd Sami Ahmed		**e-mail**	majdsami@uomustansiriyah.edu.iq	
Module Leader's Acad. Title	assistant lecturer		**Module Leader's Qualification**	MSc	
Module Tutor	Name (if available)		**e-mail**	E-mail	
Peer Reviewer Name	Name		**e-mail**	E-mail	
Scientific Committee Approval Date	**19/06/2023**		**Version Number**	**1.0**	

Relation with other Modules

العالقة مع المواد الدراسية ألخرى

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

Module Aims, Learning Outcomes and Indicative Contents

أهداف المادة الدراسية ونتائج التعلم والمحتويات اإلرشادية

Module Objectives أهداف المادة الدراسية	The course is intended to teach the students of the biology department the basics and principles of the computer operating system, Microsoft Office, and ChemBio Draw. As well as the other concerns, that related to biology computing.
Module Learning Outcomes مخرجات التعلم للمادة الدراسية	**1-** Understand the computer components and how they work. **2-** The student acquires knowledge of the role of computers in the field of biology science and its applications. **3-** Students will have the knowledge to use the operating system (windows 10) **4-** Students will have the knowledge to create and modify documents with MS Word. **5-** Students will have the ability to create an academic report with MS Word. **6-** Students will have knowledge of creating Excel tables and conducting data analysis. **7-** Students will have the ability to create charts in MS Excel and interpret their data. **8-** Students learn and use the ChemBioDraw software, which provides a variety of tools to create biology-related drawings. 7.
Indicative Contents المحتويات الإرشادية	<u>Part A - Circuit Theory</u> **1-** Understand the basic components of a computer system and their importance in the field of biology. **2-** To learn dealing with the operating system Windows 10 as a user **3-** To learn to work on the MS Word program to create reports and documents that benefit the student in their field of specialization. **4-** To learn work on the MS Excel program to organize and process data through tables and analyze and interpret the results. **5-** To learn the ChemBioDraw program to draw biology tools quickly and easily through specialized tools for this purpose.

Learning and Teaching Strategies استراتيجيات التعلم والتعليم	
Strategies	It is possible to ensure the progress of the educational process well and the student's understanding of what is presented in the lectures through periodic exams. In addition. Sudden exams could make to ensure the student's attention and focus on what was presented in the lecture. The student's thinking and analysis skills are also tested by presenting scientific reports for practical tests. To increase the student's love for this course and his passion for it, field visits could made to museums and any related places.

Student Workload (SWL) الحمل الدراسي للطالب محسوب لـ ١٥ أسبوعا			
Structured SWL (h/sem) الحمل الدراسي المنتظم للطالب خالل الفصل	64	**Structured SWL (h/w)** الحمل الدراسي المنتظم للطالب أسبوعيا	4
Unstructured SWL (h/sem) الحمل الدراسي غير المنتظم للطالب خالل الفصل	11	**Unstructured SWL (h/w)** الحمل الدراسي غير المنتظم للطالب أسبوعيا	1
Total SWL (h/sem) الحمل الدراسي الكلي للطالب خالل الفصل	75		

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

Delivery Plan (Weekly Syllabus) المنهاج االسبوعي النظري	
	Material Covered
Week 1	**<u>General Introduction to the component of computers and their importance in Biology.</u>** Components of Computer System, Concept of Hardware and Software, Basic Applications of Computers in Biology, Examples of how computers are used in different fields of Biology, along with fundamentals on how computers work.
Week 2	**<u>Operating System Basics</u>** An introduction to the operating system (Windows 10) Understanding Windows 10 interface, taskbar, date and time, types of icons, activating windows, and

	running applications.
Week 3	**<u>Operating System Basics</u>** Personalizing the Desktop: Creating Folders on the Desktop, Changing the Desktop Background, Changing Your Screen Saver, Changing Screen Resolution.
Week 4	**<u>Operating System Basics</u>** Managing Files and Folders: Searching for files from Windows Explorer, Moving Files and Folders, Copying Files and Folders, Renaming Files and Folders, Deleting Files or Folders, Restoring Deleted Files or Folders, Printing documents, and Accessing the Control Panel.
Week 5	**<u>Microsoft Word 2016</u>** Understand Microsoft Word interface, Create and manage documents, Enter and edit text, and modify the structure and appearance of text.
Week 6	**<u>Microsoft Word 2016</u>** Organize information in columns and tables and insert and modify diagrams, Insert and modify charts, create an equation, and modify it with Biology variables.
Week 7	**<u>Microsoft Word 2016</u>** Use advanced Word functions: Create and modify a table of Reference and table of contents.
Week 8	**Mid Exam**
Week 9	**<u>Microsoft Excel (2016) [</u>Use of Excel with examples for Biology variables]** Introduction: Basic elements of a spreadsheet, Editing a Worksheet, Formatting a Worksheet.
Week 10	**<u>Microsoft Excel (2016)</u>** Tables in MS Excel for Biology variables, sorting a Table, filtering a Table, and creating a Pivot Table to analyze worksheet data.
Week 11	**<u>Microsoft Excel (2016)</u>** Charts in MS Excel for Biology variables, Types of Charts and Their Uses, Changing the Chart Type, Formatting a Chart.
Week 12	**<u>Microsoft Excel (2016)</u>** Managing Workbooks Review: Functions and Formulas, Working with Data Ranges.
Week 13	**<u>Learn and use ChemBio Draw software.</u>** Understand Chem & Bio Draw Interface Application to Bio Draw Tools
Week 14	**<u>Learn and use ChemBio Draw software.</u>** Bio Draw for Customizable Objects and Drawing sequences
Week 15	**Project Discussion**
Week 16	**Final Exam.**

Delivery Plan (Weekly Lab. Syllabus) المنهاج الاسبوعي للمختبر	
	Material Covered
Week 1	**Lab 1:** Components of Computer System, Concept of Hardware and Software
Week 2	**Lab 2:** Windows 10 interface, taskbar, date and time, types of icons, activating windows, and running applications.
Week 3	**Lab 3:** Creating Folders on the Desktop, Changing the Desktop Background, Changing Screen Saver, Changing Screen Resolution.
Week 4	**Lab 4:** Managing Files and Folders
Week 5	**Lab 5:** Microsoft Word interface, Create and manage documents
Week 6	**Lab 6:** Organize information in columns and tables
Week 7	**Lab 7:** Create and modify a table of Reference and table of contents.
Week 8	**Mid-term exam**
Week 9	**Lab8: introduction to Microsoft Excel.**
Week 10	**Lab 9 :** Tables in MS Excel
Week 11	**Lab 10:** Charts in MS Excel
Week 12	**Lab 11:** Managing Excel Workbooks Review
Week 13	**Lab 12:** Application to Bio Draw Tools
Week 14	**Lab 13:** Bio Draw for Customizable Objects and Drawing sequences
Week 15	**Lab 14: Project Discussion**
Wee6 16	**Final Exam.**

Learning and Teaching Resources مصادر التعلم والتدريس

	Text	Available in the Library?
Required Texts	1- **CCI Learning, 2017,** IC3 Certification Guide Using Microsoft Windows 10 & Microsoft Office 2016 **2nd Edition,** 2- **Joan Lambert, (2015),** Microsoft Office 2016 Step by Step. 3- **CambridgeSoft Corporation "Chem & Bio Draw Chem** & Bio Drawing Standard", InChI™ is a trademark of the International Union of Pure and Applied Chemistry. InChI™ Material in ChemDraw is © IUPAC 2005.	Electronic book
Recommended Texts	1- **Fernandes, J. M. (2022).** Essentials of computing systems. Essentials of computing systems. UMinho Editora. 2- **Abraham, s.** Operating systems concepts/abraham silberschatz; peter baer galvin; greg gagne (no. 005.12 s719o.).	Electronic book
Websites	https://doi.org/10.21814/uminho.ed.93	

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

Biosafety and biosecurity - السلامة والامن

Module Information معلومات المادة الدراسية					
Module Title	**Safety and security**			**Module Delivery**	
Module Type	**support**			☒**Theory** ☒**Lecture** ☐**Lab** ☒**Tutorial** ☒**Practical** ☒**Seminar**	
Module Code					
ECTS Credits	**5**				
SWL (hr/sem)	**125**				
Module Level	1		**Semester of Delivery**	2	
Administering Department	**Biology**		**College**	**College of Science**	
Module Leader	Name: Rana sabah Jawad		**e-mail**	dr.ranajawad79@uomustansiriyah.edu.iq	
Module Leader's Acad. Title	Assist 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	**19/06/2023**		**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	This course is considered an introduction to all courses that will be studied by the students later This subject presents the Ignorance of biological safety leads to exposure of workers and students to extremely dangerous cases that may lead to death. Knowledge of practices in the handling of biological materials leads to a reduction in risksin this department
Module Learning Outcomes مخرجات التعلم للمادة الدراسية	1. Learn what is the safety and security . 2. Learn what is the the safety and security the safety and the security 3. Knowledge of the risk, hazard , threat 4. Learn how to Transportation of biological materials 5. Learn what is the Biorisk management 6. Take short details about Accident response 7. Knowledge of the Types of biological wastes
Indicative Contents المحتويات الإرشادية	Part A - Circuit Theory the safety and security and the safety and security the Biorisk management

Learning and Teaching Strategies اس رتائيجيات التعلم والتعليم	
Strategies	It is possible to ensure the progress of the educational process well and the student's understanding of what is presented in the lectures through periodic exams. In addition. Sudden exams could make to ensure the student's attention and focus on what was presented in the lecture. The student's thinking and analysis skills are also tested by presenting scientific reports for practical tests. To increase the student's love for this course and his passion for it, field visits could made to museums and any related places.

Student Workload (SWL) الحمل الدرا يس للطالب محسوب لـ ١٥ اسبوعا			
Structured SWL (h/sem) الحمل الدرا يس المنتظم للطالب خلال الفصل	34	**Structured SWL (h/w)** الحمل الدرا يس المنتظم للطالب أسبوعيا	2
Unstructured SWL (h/sem) الحمل الدرا يس غ رت المنتظم للطالب خلال الفصل	91	**Unstructured SWL (h/w)** الحمل الدرا يس غ رت المنتظم للطالب أسبوعيا	6
Total SWL (h/sem) الحمل الدرا يس الك يل للطالب خلال الفصل	125		

Module Evaluation

تقييم المادة الدراسية

		Time/Number	Weight (Marks)	Week Due	Relevant Learning Outcome
Formative assessment	Quizzes	5	25% (25)	All	All
	Lab.	0	0	0	
	Report	2	10% (10)	15	5 (e)
	Assignments	2	5% (5)		
Summative assessment	Midterm Exam	2hr	10% (10)	6,10	1-5, 6-10
	Final Exam	4hr	50% (50)	15	All
Total assessment			100% (100 Marks)		

Delivery Plan (Weekly Syllabus)

المنهاج الاسبو يع النظري

	Material Covered
Week 1	Introduction of biosafety and biosecurity)
Week 2	Biosafety barriers in labs
Week 3	Biosafety levels
Week 4	Biological agent
Week 5	Bio risk and biohazard
Week 6	Bio risk management
Week 7	Mid term exam
Week 8	Accident response
Week 9	Types of biological wastes
Week 10	Transportation of biological materials
Week 11	Types contamination
Week 12	First Aid
Week 13	Biological waste management
Week 14	Introduction of biosecurity
Week 15	Prepartory week before the final exam

Learning and Teaching Resources
مصادر التعلم والتدريس

	Text	Available in the Library?
Required Texts	Training and educational materiales of biosafety and biosecurity (2020)	Electronic book
Recommended Texts	LABORATORY BIOSAFETY MANUAL FOURTH EDITION -WHO (2020)	Electronic book
Websites	https://www.who.int/publications/i/item/9789240011311	

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 الإحصاء

الحيا : يت

Module Information معلومات المادة الدراسية					
Module Title	**biostatistics**			**Module Delivery**	
Module Type	**BSC-BIo**			☒ **Theory** ☒**Lecture** ☐**Lab** ☐**Tutorial** ☐**Practical** ☐**Seminar**	
Module Code	**MU010401205**				
ECTS Credits	**6**				
SWL (hr/sem)	**150**				
Module Level		1	**Semester of Delivery**		1
Administering Department		04	**College**	01	
Module Leader	Faria Ali chechen		**e-mail**	fiariaalii@gmail.com	
Module Leader's Acad. Title		Assist. Professor	**Module Leader's Qualification**		Ph.D.
Module Tutor	Name (if available)		**e-mail**	E-mail	
Peer Reviewer Name		كتاب المدخل الى الاحصاء خاشع محمود الراوي	**e-mail**	E-mail	
Scientific Committee Approval Date			**Version Number**		

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

Module Aims, Learning Outcomes and Indicative Contents أهداف المادة الدراسية ونتائج التعلم والمحتويات الإرشادية	
Module Objectives أهداف المادة الدراسية	1. Dealing with and tabulating the subject of data. 2. It deals with measures of central tendency. 3. View the topic of correlation and regression. 4. Dealing with Possibilities
Module Learning Outcomes مخرجات التعلم للمادة الدراسية	Important: Write at least 6 Learning Outcomes, better to be equal to the number of study weeks. 1. Determine the phenomenon problem or situation on which the study will be conducted 2. Gathering information related to the phenomenon or situation. 3. Classifying dividing and coordinating information so that it is ready for study. 4. Creating and calculating statistical indicators and making estimates for the members of the study community. 5. Finding values for Specific metrics and associations whose value can be determined from the data 6. Develop appropriate reports on a specific issue

Indicative Contents المحتويات الإرشادية	Indicative content includes the following. Part A - Statistical terms Statistics,varable, Descriptive variables, quantitative variables, continuous variables,discrete variables, population, Sample, parameter, Statistic,statistical operations, Data collection, Data organization, Processing mathematical tables, Interpretation and conclusion. [15 hrs] Display data– Tabular view,The display methed is graphic, frequency distribution ,frequency, Classes, unclassified data, classified data, Categories limits, The upper limit, the lower limit, class center, class length. [15 hrs] Frequency distribution -The frequency distribution table is relative,frequency Percentile distribution table, Clustered frequency distribution table, frequency distribution table is ascending,frequency distribution table is down . [15 hrs] Graphic display – Histogram, Freguency Polygon, Freguency curve. [7 hrs] Measures of central tendency- arithmetric mean, properties of arithmetic mean, The median, The mode, The geometric mean , The Harmonic mean.[15 hrs] Measures of dispersion- Rang, The mean deriation, Variance, Standard deriation coefficient of variation, standard error., Coefficient of variation [15 hrs] Part B -Probabilety Theory The random Experiment, Sample Space, The event, probability, The laws of probability, The Probability distribution is Continuous, The Probability distribution I discontinuous, Predict and Variance for a Vandom Variable.[38 hrs]

Learning and Teaching Strategies اس ٔتاتيجيات 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 classes, interactive tutorials and by considering types of simple experiments involving some sampling activities that are interesting to the students.

Student Workload (SWL) الحمل الدرا يس للطالب محسوب لـ ١٥ اسبوعا			
Structured SWL (h/sem) الحمل الدرا يس المنتظم للطالب خلال الفصل	64	**Structured SWL (h/w)** الحمل الدرا يس المنتظم للطالب أسبوعيا	4
Unstructured SWL (h/sem) الحمل الدرا يس غ رت المنتظم للطالب خلال الفصل	86	**Unstructured SWL (h/w)** الحمل الدرا يس غ رت المنتظم للطالب أسبوعيا	6
Total SWL (h/sem) الحمل الدرا يس الك يل للطالب خلال الفصل	**150**		

Module Evaluation تقييم المادة الدراسية					
		Time/Number	**Weight (Marks)**	**Week Due**	**Relevant Learning Outcome**
Formative assessment	**Quizzes**	2	20% (10)	All	LO #1, #2 and#9, #10, #11
	Assignments	2	10%	2 and 12	LO #3, #4 and #6, #7
	Projects / Lab.	0	0		
	Report	1	10% (10)	5	LO #3
Summative assessment	**Midterm Exam**	2hr	10% (10)	7	LO #1 - #7
	Final Exam	4hr	50% (50)	16	All
Total assessment			100% (100 Marks)		

Delivery Plan (Weekly Syllabus) المنهاج الاسبو يع النظري	
	Material Covered
Week 1	Statistics,varable, Descriptive variables, quantitative variables, continuous variables,discrete variables, population, Sample
Week 2	parameter, Statistic,statistical operations, Data collection, Data organization, Processing mathematical tables, Interpretation and conclusion.
Week 3	Tabular view,The display methed is graphic, frequency distribution ,frequency, Classes, unclassified data,
Week 4	classified data, Categories limits, The upper limit, the lower limit, class center, class length.

Week 5	The frequency distribution table is relative,frequency Percentile distribution table, Clustered frequency distribution table, frequency distribution table is ascending,frequency distribution table is down
Week 6	arithmetric mean, properties of arithmetic mean
Week 7	**Midterm Exam**
Week 8	The median, The mode,
Week 9	The geometric mean , The Harmonic mean.
Week 10	Rang, The mean deriation, Variance,
Week 11	Standard deriation coefficient of variation, standard error., Coefficient of variation
Week 12	The random Experiment, Sample Space, The event, probability,
Week 13	The laws of probability
Week 14	The Probability distribution is Continuous, The Probability distribution I discontinuous,
Week 15	Predict and Variance for a Vandom Variable
Week 16	**Preparatory week before the final Exam**

Delivery Plan (Weekly Lab. Syllabus)

المنهاج الاسبو يع للمخت .ت

	Material Covered
Week 1	
Week 2	لا يوجد مختبر
Week 3	
Week 4	
Week 5	
Week 6	
Week 7	

Learning and Teaching Resources

مصادر التعلم والتدريس

	Text	**Available in the Library?**
Required Texts	كتاب المدخل الى الاحصاء,خاشع محمود الراوي, موصل ,1984	Yes
Recommended Texts	An Introduction to statistical Learning, Hastie, Tibshiranand Friedman , 2001	No
Websites	https://www.elmarjaa.com/2020/05/blog-post_60.html	

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

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

MODULE DESCRIPTION FORM

نموذج وصف المادة الدراسية

Module Information معلومات المادة الدراسية					
Module Title	**English Language -1-**			**Module Delivery**	
Module Type	B			☒ **Theory** ☒ **Lecture** ☐ **Lab** ☐ **Tutorial** ☐ **Practical** ☐ **Seminar**	
Module Code					
ECTS Credits	2				
SWL (hr/sem)	50				
Module Level	1		**Semester of Delivery**	1	
Administering Department	04		**College**	01	
Module Leader	Farah A. Raheem		**e-mail**	E-mail	
Module Leader's Acad. Title	Lecturer		**Module Leader's Qualification**	M A English Literature	
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**		

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. Urging students to acquire and revise their previous knowledge of the basics of English language in general. 2. Urging students to learn and master the use of English grammar for the first seven units of the curriculum approved by the Iraqi Ministry of Higher Education. 3. Enabling students to acquire, improve and practice the various skills of English language (listening, speaking, reading and writing) for the first seven units of the curriculum approved by the Iraqi Ministry of Higher Education. 4. Enabling students to use English language in their academic study of science instead of the Arabic language to achieve scientific progress. 5. Enabling students to communicate in English with others in their daily life inside/outside the campus.
Module Learning Outcomes مخرجات التعلم للمادة الدراسية	1- Students will be able to speak English as fluently as possible. 2- Students will be able to listen and understand English conversations, talks or lectures in English better than before. 3- Students will be able to read and comprehend written works such as scientific books, lectures, reports and papers in English easier than before. 4- Students will be able to write in English better than before, such as lab reports, explanations, and definitions . 5- Students will be able to use English grammar correctly more than before. 6- Students will be able to use their improved English language skills in their academic career more than ever before
Indicative Contents المحتويات الإرشادية	**Unite 1 . Hello (4 hr.)** Grammar :V. to be , This is… Vocabulary: Greetings , Numbers, Introduction. Everyday English: Greetings & conversation **Unite 2 . Your world (4 hr.)** Grammar : Subject pronouns, V. to be in questions Vocabulary: Countries, Nouns, Adjectives Everyday English: Numbers, Countries. **Unite 3 . All about you (4 hr.)** Grammar : V. to be in questions, Negative, & Short Answers Vocabulary: Jobs & personal Information& interviews.

	Everyday English: Social Expressions **Unite 4 . Family and friends (4 hr.)** Grammar : Possessive adjectives, Possessive 's , has/have& Adjective + noun Vocabulary: The family & Describing a friend Everyday English: The alphabet , On the phone, & Saying email addresses **Unite 5 . The way I live (4 hr.)** Grammar : Present Simple, a and an & Adjective + noun. Vocabulary: Sports/ Food/ Drinks, Adjectives & Languages and nationalities. Everyday English: How much is it? , Numbers1-100 & prices. **Unite 6 . Every day (4 hr.)** Grammar : Present Simple, Questions and negatives & Adverbs of frequency. Vocabulary: The time, Verbs and nouns & Words that go together. Everyday English: Days of the week & Prepositions of time **Unite 7 . My favourites (4 hr.)** Grammar : Question words ,Pronouns(Subject/Object/Possessive) & this and that Vocabulary: Adjectives, Opposite adjectives, & Places Everyday English: Can (questions)

Learning and Teaching Strategies استراتيجيات التعلم والتعليم	
Strategies	During the 14- 15 weeks of the first semester, The following learning and Teaching Strategies will be used : 1- Beginner students need more careful staged approach with plenty of drillings, repetition, and revisions. So, a step by step technique will be effective. 2- Use question technique to stimulate discussion, emphasize the value of students' answers, and encourage active participation. 3- Emphasizing and improving previously acquired English language skills and abilities. 4- Encouraging learners to work together in chat groups to improve their speaking skills. Ask them to do a written homework to improve their writing skills as well.

	5- Make use of *iTools* or *New Headway Plus Beginner Digital Edition*, videos and audio tracks using the smart board to motivate learners to hear and acquire better English pronunciation especially to improve listening and speaking skills. 6- Using social media, YouTube channels and reliable applications to facilitate the independent learning process and make it more fun. 7- Encourage learners to participate in language activities, online courses and international language tests such as TOEFL and IELTS as an optional extracurricular activity. 8- Linking different English language skills with learners' other scientific curriculums by presenting short scientific lectures in English on smart boards and asking them to answer questions, write reports, prepare oral presentations as homework, or participate in a group discussion inside the class

Student Workload (SWL)

الحمل الدراسي للطالب محسوب لـ 15 اسبوعا

Structured SWL (h/sem) الحمل الدراسي المنتظم للطالب خلال الفصل	33	**Structured SWL (h/w)** الحمل الدراسي المنتظم للطالب أسبوعيا	2
Unstructured SWL (h/sem) الحمل الدراسي غير المنتظم للطالب خلال الفصل	17	**Unstructured SWL (h/w)** الحمل الدراسي غير المنتظم للطالب أسبوعيا	1
Total SWL (h/sem) الحمل الدراسي الكلي للطالب خلال الفصل	**50**		

Module Evaluation

تقييم المادة الدراسية

		Time/Number	Weight (Marks)	Week Due	Relevant Learning Outcome
Formative assessment	**Quizzes**	4	20% (20)	10,12	LO #3, #4 and # 5
	Assignments	2	10% (10)	14	LO #4, #5, and #6

	Reports	1	10% (10)	All	All
Summative assessment	**Midterm Exam**	2hr	10% (10)	1-6	All
	Final Exam	3hr	50% (50)	All	All
Total assessment			100% (100 Marks)		

Delivery Plan (Weekly Syllabus) المنهاج الاسبوعي النظري	
	Material Covered
Week 1	Introductory lecture: "English Language: Importance, Concepts, & Methods of Teaching". Notes about *New Headway plus : beginner* Unit -1- Student's book : Hello! WHAT'S YOUR NAME? p.6 INTRODUCTIONS p.7 HOW ARE YOU? p.8 EVERYDAY ENGLISH: Good morning! p.9 VOCABULARY AND SPEAKING: What's this in English? p.10-11
Week 2	Unit -1- Workbook: Hello! INTRODUCTIONS p. 4 Nice to meet you P.5 Vocabulary: p.6-7 EVERYDAY ENGLISH: Good morning! p.8 Do not forget! p.9 Writing : p.10-11

Week 3	Unit -2- Student's book : Your world SHE'S FROM JAPAN p.12 QUESTIONS p.13 PRACTICE : Cities and countries p.14-15 READING AND SPEAKING : Where are they from? p.16 EVERYDAY ENGLISH : Numbers 11-30 p.17
Week 4	Unit -2- Workbook: Your world Countries p.12 Am/are/ is p.13 Listening: At a wedding p. 14 Questions p. 14 Adjectives p. 14 Reading : Where are they p.15 Listening p. 16 Everyday English : Numbers 11-30 p. 16 Do not Forget! p.17 Writing : p.18-19
Week 5	Unit -3- Student's book : All about you Jobs p. 18 Negatives and questions p.18 Personal information p.19 STUDENTS WALK FOR CHARITY p.20 Practice p. 21

	READING AND LISTENING : The charity walk p.22 EVERYDAY ENGLISH : Social expressions (1 p.23
Week 6	Unit -3- Workbook: All about you Jobs p.20 Questions and negatives : is/isn't p.21 Negatives and questions : I'm not/they aren 't p.22 Listening p.23 Vocabulary p.23 Everyday English : Social expressions (1) p. 24 Do not forget p.25 Writing: p.26-27
Week 7	Midterm Exam
Week 8	Unit -4- Student's book : Family and Friends MY FAMILY : Possessive' S p.24-25 Practice p. 26 Annie's brother p.27 Practice p. 28 READING AND WRITING : My best friend p28-29 EVERYDAY ENGLISH : The alphabet p.30 On the phone p.31
Week 9	Unit -4- Workbook: Family and friends Possessives p.28-29 Vocabulary p.29

	Alfie and his family p.30 Reading : Who's happy? p.31 Vocabulary p.32 Everyday English :The alphabet p.32 Do not forget p.33 Writing: p.34-35
Week 10	Unit -5- Student's book : The Way I Live Sports/Food/Drinks p. 32 Present Simple -I/you/we/they p.32 -33 Reading and speaking : COLIN BRODIE FROM DUNDEE p.34-35 VOCABULARY AND PRONUNCIATION : Languages and nationalities p.36-37 LISTENING AND SPEAKING : At a dinner Party p.38 Everyday English p.39
Week 11	Unit -5- Workbook: The Way I Live Sports, food, drink p.36 Things I like p.37 Present Simple : The swimmer Michael Phelps p.38 LISTENING p.39 Everyday English : How much is it? p.40 Do not forget p.41 Writing: p. 42-43
Week 12	Unit -6- Student's book : Every day The time p.40

	WHAT TIME DO YOU GET UP? p.41 Elliot's DAY p.42-43 PRACTICE : Lois's day p. 44-45 VOCABULARY AND SPEAKING : Words that go together p.46 EVERYDAY ENGLISH : Days of the week p.47
Week 13	Unit -6- Workbook: Every day The time p.44 Present Simple p.45-46 Pronunciation p.47 Prepositions p.47 Vocabulary p.47 Reading: Barack Obama, America's first black President p.48 EVERYDAY ENGLISH : Days of the week p.49 Writing: p. 50-51
Week 14	Unit -7- Student's book : My favourites Question words p.48-49 THIS IS MY FAVOURITE ... p.50 PRACTICE : I like them! p.51 VOCABULARY : Adjectives p. 52 READING AND WRITTING : A postcard from San Francisco p.53 EVERYDAY ENGLISH p.54-55

Week 15	Unit -7- Workbook: My favourites Questions p.52-53 Pronouns and possessives p.54 this/ that p.54-55 Vocabulary : Adjectives : happy/miserable p.55 EVERYDAY ENGLISH p.56 Don't forget! p.57 Writing: p. 58-59
Week 16	**Final Exam**

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

Learning and Teaching Resources مصادر التعلم والتدريس		
	Text	**Available in the Library?**
Required Texts	1- Soars, John and Liz. New Headway Plus : Beginner Student's Book, 1st Edition, Oxford University Press, Oxford , (2014). Digital Edition , With DVD- ROM. Required Units 1-7 only. Soars, John and Liz. New Headway Plus : Beginner Workbook without Key , 1st Edition, Oxford University Press, Oxford ,	Both Books are available as printed copies & PDF Notes : Most of PDF and printed copies are different from the required edition. Besides, some printed

	(2014). Digital Edition , With new writing Micro- skills. Required Units 1-7 only.	editions and PDF of the Workbook are with Key.
Recommended Texts	1- Murphy, Raymond. English Grammar In Use. 3rd Edition, Oxford University Press, Oxford,(2012). 2- Soars, John and Liz & Merifield, Sue. Headway Beginner Teachers' Guide. 5th Edition, Oxford University Press, Oxford , (2019). (For Teachers)	Available as a printed copy & PDF Available as a PDF
Websites	1- Oxford University Press/English Language Teaching Worldwide, https://elt.oup.com/, an online website supports teachers who teach Headway plus Beginner text books. 2- BBC Learning English , https://www.bbc.co.uk /learning English , an online website also available as an application on Google play, and social media sites. It presents free different programs to improve English Language Skills.	

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

Radiation - الاشعاع

Module Information معلومات المادة الدراسية					
Module Title	**Radiation**			**Module Delivery**	
Module Type	**support**			☒**Theory** ☒**Lecture** ☐**Lab** ☒**Tutorial** ☒**Practical** ☒**Seminar**	
Module Code					
ECTS Credits	**5**				
SWL (hr/sem)	**125**				
Module Level		----------	**Semester of Delivery**		----------
Administering Department		**Biology**	**College**	**College of Science**	
Module Leader	**Name: Methak Jasim Hussain**		**e-mail**	drmethak@uomustansiriyah.edu.iq	
Module Leader's Acad. Title		**Assist 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			**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	**Everyone is exposed daily to various kinds of radiation: heat, light, ultraviolet, microwave, ionizing, and so on. For the purposes of this section, only the ionizing radiation (such as x-rays, gamma rays, neutrons, and other high-speed atomic particles) is considered. Actually, all human activities involve exposure to radiation. People are exposed to different amounts of natural "background" ionizing radiation depending on where they live. Radon gas in homes is a problem of growing concern.**
Module Learning Outcomes مخرجات التعلم للمادة الدراسية	**At the end of the course, students are expected to learn:** • **Electromagnetic spectrum** • **Types of ionizing radiation** • **Sources of ionizing radiation** • **Biological effects of ionizing radiation** **A. Short-term effects** - **Acute radiation syndrome** - **Cutaneous radiation burn** **B. Long-term effect of radiation** - **Somatic effects of radiation (Cancers, Infertility, Cataract)** - **Genetic effect of radiation** - **Teratogenic effect of radiation**
Indicative Contents المحتويات الإرشادية	Part A - Circuit Theory 1. **Being able to independently assess the safety situation of especially the worker, but also the patient, when working with ionizing radiation.** 2. **Acquiring the knowledge and understanding required by the authorities to manage a rays machine.**

Learning and Teaching Strategies استراتيجيات التعلم والتعليم	
Strategies	**t is possible to ensure the progress of the educational process well and the student's understanding of what is presented in the lectures through periodic exams. In addition, Sudden exams could make to ensure the student's attention and focus on what was presented in the lecture. The student's thinking and analysis skills are also tested by presenting scientific reports for practical tests. To increase the student's love for this course, field visits can be made to relevant departments and places.**

Student Workload (SWL) الحمل الدراسي للطالب محسوب لـ ١٥ اسبوعا			
Structured SWL (h/sem) الحمل الدراسي المنتظم للطالب خلال الفصل	**34**	**Structured SWL (h/w)** الحمل الدراسي المنتظم للطالب أسبوعيا	**2**
Unstructured SWL (h/sem) الحمل الدراسي غير المنتظم للطالب خلال الفصل	**91**	**Unstructured SWL (h/w)** الحمل الدراسي غير المنتظم للطالب أسبوعيا	**3**
Total SWL (h/sem) الحمل الدراسي الكلي للطالب خلال الفصل	125		

Module Evaluation تقييم المادة الدراسية					
		Time/Number	**Weight (Marks)**	**Week Due**	**Relevant Learning Outcome**
Formative assessment	**Quizzes**	4	5 (20)		
	Lab.	None			
	Report	3	20		
Summative assessment	**Mid term Exam**	2H	10		
	Final Exam	4H	50		
Total assessment			100% (100 Marks)		

Delivery Plan (Weekly Syllabus) المنهاج الاسبوعي النظري	
	Material Covered
Week 1	**Definition & history of radiation Biology**
Week 2	**Spectrum of electromagnetic waves**
Week 3	**Radioactive isotopes**
Week 4	**Types of ionizing radiation**
Week 5	**Radiation interaction with matter**
Week 6	**Sources of radiation**
Week 7	**Radiation doses & units**
Week 8	**First mid-exam**
Week 9	**Cellular damage of radiation**
Week 10	**Health effect of radiation**

Week 11	**Short term effect of radiation**
Week 12	**Long term effect of radiation**
Week 13	**Genetic effect of radiation**
Week 14	**Embryological effect of radiation**
Week 15	**Second mid-exam**

Learning and Teaching Resources
مصادر التعلم والتدريس

	Text	Available in the Library?
Required Texts	[1] Radiation Biology: A handbook for teachers & students. International Atomic Energy Agency Vienna International Centre (2010). http://www.iaea.org/books [2] Biological effects of radiation. USNRC Technical Training Center; 0603: 9-23. https://www.nrc.gov/reading-rm/basic-ref/students/for-educators/09.pdf [3] National Council on Radiation Protection and measurements, *Ionizing Radiation Exposure of the Population of the United States*, NCRP Report No. 160, 2009. [4] Hematopoietic subsyndrome of acute radiation syndrome (US Department of Health and Human Services, Radiation Emergency Medical Management, updated March 14, 2011). http://www.remm.nlm.gov/hemeguidelines.htm	
Recommended Texts	[1] Effects of radiation on living organisms [2] : Facts about acute radiation syndrome [3] : Essentials of radiation biology	

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	**Organic Chemistry**			**Module Delivery**	
Module Type	**Core**			☒**Theory** ☒**Lecture** ☒**Lab** ☐**Tutorial** ☐**Practical** ☐**Seminar**	
Module Code					
ECTS Credits	**6**				
SWL (hr/sem)	**150**				
Module Level	1		**Semester of Delivery**	2	
Administering Department	Type Dept. Code		**College**	Type College Code	
Module Leader	Amjad Gali		**e-mail**	a_amjdd@uomustansiriyah.edu.iq	
Module Leader's Acad. Title	Professor assistant		**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	30/06/2023		**Version Number**	1.0	

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

Module Aims, Learning Outcomes and Indicative Contents أهداف المادة الدراسية ونتائج التعلم والمحتويات الإرشادية	
Module Objectives أهداف المادة الدراسية	1. To develop problem solving skills and understanding of the basic theory about the most important topic in organic chemistry. 2. Knowing and understanding the basics and principles of organic chemistry, especially the name and types of hydrocarbon compounds. 3. Learn about the preparation and reactions of hydrocarbon compounds and their physical properties. 4. Learn about the principles, procedures, and techniques used to know the differences between the aromatic and non-aromatic chemical compounds. 5. This course deals with the basic concept of electronic distribution of atoms of the periodic table's elements. 6. To understand the type of bonds and their hybridization. 7. Enabling students to obtain and know all the terms of organic chemistry.
Module Learning Outcomes مخرجات التعلم للمادة الدراسية	Important: Write at least 6 Learning Outcomes, better to be equal to the number of study weeks. 1. Recognize the basic information about the hydrocarbon compound and its structure. 2. Discuss the most important differences between the various hydrocarbon compounds in terms of effectiveness and their ability to react with some reagents. 3. List the various types associated with hydrocarbon compounds. 4. Summarize the chemical methods for the preparation of various hydrocarbon compounds. 5. Discuss all names of normal, branched and ringed hydrocarbons compound of both aromatic and non-aromatic types. 6. Discuss the hybridization and distinction between organic compounds in terms of aromatics. 7. Clarification of the most important reactions and their type on the benzene ring and their exploitation in the preparation of organic derivatives.
Indicative Contents المحتويات الإرشادية	Indicative content includes the following. Part A – *Organic Chemistry-hydrocarbons compounds* Basic concept of organic chemistry-Functional group, Classification of organic compounds-concept of resonance. [10 hrs] Types of organic reactions –Fission of bonds, Electrophiles and nucleophiles-Free radicals. [10 hrs] Classification of hydrocarbons-IUPAC nomenclature, General methods of preparation-Physical and chemical properties of Alkanes, Cyclic alkanes. [15 hrs] Alkenes- IUPAC nomenclature of Alkenes, General methods of preparation-Physical and chemical properties of Alkenes. [10 hrs]

	Alkynes- IUPAC nomenclature of Alkynes, General methods of preparation-Physical and chemical properties of Alkynes. [10 hrs] Revision problem classes [6 hrs] Part B – *Aromatic Hydrocarbons-Benzene* Structure of benzene. [7 hrs] Aromatic hydrocarbons. Reactions of benzene ring. [15 hrs] Orientation of substituent on the benzene ring [15 hrs]

Learning and Teaching Strategies اس رتاتيجيات التعلم والتعليم	
Strategies	The main goal and strategy that was relied upon in this model is to work on motivating students to exert effort and active and scientific participation in lectures and laboratory work. Taking into account the improvement of constructive scientific thinking skills and positive posts. This goal will be reached through interactive and competitive programs during the semester, by conducting scientific experiments that concern all student samples

Student Workload (SWL) الحمل الدرا يس للطالب محسوب لـ ١٥ اسبوعا			
Structured SWL (h/sem) الحمل الدرا يس المنتظم للطالب خلال الفصل	79	**Structured SWL (h/w)** الحمل الدرا يس المنتظم للطالب أسبوعيا	5
Unstructured SWL (h/sem) الحمل الدرا يس غ رت المنتظم للطالب خلال الفصل	71	**Unstructured SWL (h/w)** الحمل الدرا يس غ رت المنتظم للطالب أسبوعيا	6
Total SWL (h/sem) الحمل الدرا يس الك يل للطالب خلال الفصل	**150**		

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

Summative assessment	**Midterm Exam**	2hr	10% (20)	16	LO #1 - #7
	Final Exam	4hr	50% (60)		All
Total assessment			100% (100 Marks)		

Delivery Plan (Weekly Syllabus) المنهاج الاسبو يع النظري	
	Material Covered
Week 1	Basic concept of organic chemistry-Functional group
Week 2	Classification of organic compounds-concept of resonance
Week 3	Types of organic reactions –Fission of bonds
Week 4	Electrophiles and nucleophiles-Free radicals
Week 5	Classification of hydrocarbons-IUPAC nomenclature
Week 6	Mid exam
Week 7	Cyclic alkanes
Week 8	Mid exam
Week 9	General methods of preparation-Physical and chemical properties of Alkenes
Week 10	Alkynes- IUPAC nomenclature of Alkynes
Week 11	General methods of preparation-Physical and chemical properties of Alkynes
Week 12	Structure of benzene
Week 13	aromatic hydrocarbons
Week 14	Reactions of benzene ring
Week 15	Orientation of substituent on the benzene ring
Week 16	**Preparatory week before the final Exam**

Delivery Plan (Weekly Lab. Syllabus) المنهاج الاسبو يع للمخت .ت	
	Material Covered
Week 1	Lab 1: Boiling point measurement
Week 2	Lab 2: Melting point measurement
Week 3	Lab 3: recrystallization
Week 4	Lab 4: mid exam(theoretical exam)

Week 5	Lab 5: sublimation
Week 6	Lab 6: Chromatography
Week 7	Lab 7: distillation
Week 8	Lab 8: Mid exam (Practical exam)
Week 9	Lab 9 :final exam
Week 10	

Learning and Teaching Resources
مصادر التعلم والتدريس

	Text	Available in the Library?
Required Texts	***Organic Chemistry,*** William H. Brown, Brent L. Iverson, Eric V. Anslyn, Christopher S. Foote, Seventh Edition, 2014, 2012 Brook/Cole, Cengage Learning	Online Free download
Recommended Texts	R. T. Morrison and R. N. Boyd ***''Organic Chemistry''*** 6th ed, Prentice Hall, P. 1205 (1992)	Online Free download
Websites		

Grading Scheme
مخطط الدرجات

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

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

MODULE DESCRIPTION FORM

نموذج وصف المادة الدراسية

Botany - علم النبات

Module Information معلومات المادة الدراسية					
Module Title	**Botany**			**Module Delivery**	
Module Type	**Core**			☒**Theory** ☒**Lecture** ☒**Lab** ☐**Tutorial** ☐**Practical** ☐**Seminar**	
Module Code					
ECTS Credits	**6**				
SWL (hr/sem)	**150**				
Module Level	1		**Semester of Delivery**	1	
Administering Department	**Biology**		**College**	**College of Science**	
Module Leader	Name		**e-mail**	E-mail	
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	**/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 student completing the course is able to understand different banches of Botany such as 1. Cell biology of plant 2. Ecology of plants 3. To understand plant anatomy and types of plant tissues 4. To Knowledge of Anatomy of flowering plants, Cell the unit of life and cell cycle and cell division 5. To study Plant Metabolism 6. To understand reproduction, genetics and molecular biology of plants 7. Finally , recognize types of algae and lichens
Module Learning Outcomes مخرجات التعلم للمادة الدراسية	Important: Write at least 6 Learning Outcomes, better to be equal to the number of study weeks. 1. Cellular components of plant. 2. Types of Tissues 3. External plant parts: roots, leaves, stems, flowers, seed , fruits 4. Water in Plants, Plant Metabolism, 5. Growth , Meiosis and Alternation of Generations, Genetics 6. Plant Breeding and Propagation , Evolution 7. Plant Names and Classification, Introduction to the Plant Kingdom: Bryophytes 8. The Seedless Vascular Plants: Ferns and Their Relatives . Introduction to Seed Plants: Gymnosperms. 9. Seed Plants: Angiosperms , Flowering Plants and Civilization
Indicative Contents المحتويات الإرشادية	Indicative content includes the following. <u>Part A - Circuit Theory</u> Introduction , Importance of plants. Definitions Botany, plant science, plant biology. Botanist, Botany discipline (branches) Plant cell components : Cell Wall The formation of the cell wall is guided by microtubules. It consists of three layers, namely, primary, secondary and the middle lamella. Cell membrane is the semi-permeable membrane that is present within the cell wall. It is composed of a thin layer of protein and fat.Nucleus, **Nucleolus**: It manufactures cells' protein-producing structures Plastids[15 hrs] ****types of tissues in plant cells:**1/ meristematic tissuesm2/ tissues produced by meristems: A// simple T. B// complex meristematic tissues: .Types of meristems:1/ apical meristem2/ lateral meristemvascular cambium ,cork cambium5/ intercalary meristemTissues produced by meristems:A/ Simple tissues: 1/ Parenchyma 2/ Collenchyma 3/ Sclerenchyma 4/ Fiberparenchyma: it's the most abundant tissue and are found in almost all major parts of higher plantscharacteristics of parenchyma cell [15 hrs]

	Plant organs: into two groups: 1-sexual reproductive 2-vegetative **sexual reproductive: it produces seed, they include flower buds, flowers, fruit and seeds. **vegetative parts: it include roots, stems, shoots, nodes, buds and leaves, they are not directly involved in sexual reproduction. And they are often used in asexual forms of reproduction. **kinds of asexual reproduction forms in plants:1-cutting 2-budding 3-grafting [10 hrs] . **The stems** All stems have *nodes, internodes,* and *axillary buds*; these features distinguish them from roots and leaves Function support the leaves Some Differences Between Dicots and Monocots [15 hrs] **Leaves Parts of leaf: leaf base:** structure called stipules.petiole:is Types of leaves: Simple leaf: Compound leaf , Venation of leaves [6 hrs] The flower Flower parts: peduncle: this is the stalk of the flower. receptacle Classification of Fruits On basis of the number of ovaries 1-simple: one fruit has developed from the ovary of a single flower (ex: fleshy like tomato, dry like coconut). Aggregate Fruits: [15 hrs] SEEDS Structure of a Seed A typical seed consists of the following parts: Functions of Seeds Dispersal of seed Dispersal by Wind [7 hrs]

Learning and Teaching Strategies استراتيجيات التعلم والتعليم	
Strategies	The main strategy that will be adopted in delivering this module is to encourage students' participation in the exercises, while at the same time refining and expanding their critical thinking skills. This will be come true through classes, Group Work , reports , Concept Mapping and Charts , botanical gardens or herbaria .

Student Workload (SWL) الحمل الدراسي للطالب محسوب لـ ١٥ اسبوعا			
Structured SWL (h/sem) الحمل الدراسي المنتظم للطالب خلال الفصل	79	**Structured SWL (h/w)** الحمل الدراسي المنتظم للطالب أسبوعيا	5
Unstructured SWL (h/sem)	71	**Unstructured SWL (h/w)**	5

الحمل الدراسي غير المنتظم للطالب خلال الفصل		الحمل الدراسي غير المنتظم للطالب أسبوعيا	
Total SWL (h/sem) الحمل الدراسي الكلي للطالب خلال الفصل	150		

Module Evaluation
تقييم المادة الدراسية

		Time/Number	Weight (Marks)	Week Due	Relevant Learning Outcome
Formative assessment	**Quizzes**	5	3% (15)	1,3,5,7,9	All
	Lab.	1	15 % (15)	All	All
	Report	1	10% (10)	15	-
Summative assessment	**Midterm Exam**	2hr	10% (10)	6,15	1-7, 8-15
	Final Exam	4hr	50% (60)	15	All
Total assessment			100% (100 Marks)		

Delivery Plan (Weekly Syllabus)
المنهاج الاسبوعي النظري

	Material Covered
Week 1	Introduction, CELLULAR COMPONENTS
Week 2	Tissues, MERISTEMATIC TISSUES, Simple Tissues: Parenchyma, Collenchyma, , Sclerenchyma, Fibers. Complex Tissues: Xylem, Phloem, Epidermis.
Week 3	External plant parts: ROOT STRUCTURE (1) the root cap, (2) the region of cell division, (3) the region of elongation, and (4) the region of maturation (Fig. 5.2).), modifications (Specialized Roots). SOILS, Parent Material, Climate, Living Organisms and Organic Composition
Week 4	Steles, Dicots and Monocots, Herbaceous Dicotyledonous Stems, Woody Dicotyledonous Stems, Monocotyledonous Stems, modifications (SPECIALIZED stem)
Week 5	Leaf Arrangements and Types, Internal Structure of Leaves, Stomata, Mesophyll and Veins, Specialized Leaves
Week 6	Flowers, Structure of Flowers, Fruits, Fruit Regions, Kinds of Fruits. Seeds, Seed Structure, Dispersal of Seed.
Week 7	Seed Structure, Dispersal of seed.
Week 8	Growth, Alternation of Generations, Ecology.

Week 9	Plant Metabolism
Week 10	Meiosis and Genetics
Week 11	Classification,: Bryophytes, The Seedless Vascular Plants: Ferns
Week 12	Seed Plants: Gymnosperms,
Week 13	Seed Plants: Angiosperms
Week 14	Flowering Plants
Week 15	Algae, Lichines
Week 16	Examination

Delivery Plan (Weekly Lab. Syllabus) المنهاج الاسبوعي للمختبر	
	Material Covered
Week 1	Lab 1: Introduction, CELLULAR COMPONENTS
Week 2	Lab 2: Tissues, MERISTEMATIC TISSUES, Simple Tissues: Parenchyma, Collenchyma, Sclerenchyma, Fibers
Week 3	Lab 3: Complex Tissues: Xylem, Phloem, Epidermis
Week 4	Lab 4: T.S. of dicot root, T.S. of monocot root, SPECIALIZED root
Week 5	Lab 5: T.S. of dicot stem (Herbaceous, Woody), T.S. of monocot stem, SPECIALIZED stem
Week 6	Lab 6: T.S. of dicot leaf. vi. T.S. of monocot leaf, SPECIALIZED leaf.
Week 7	Lab8: Flowers, STRUCTURE OF FLOWERS,
Week 8	Lab9: FRUITS, Fruit Regions, Kinds of Fruits
Week 9	Lab 10: SEEDS, Seed Structure, Dispersal of seed
Week 10	Lab 11: Meiosis, mitosis and Genetics
Week 11	Lab 12: Classification: Bryophytes, The Seedless Vascular Plants: Ferns
Week 12	Lab 13: Seed Plants: Gymnosperms
Week 13	Lab 14: Angiosperms
Week 14	Lab 15: Flowering Plants
Week 15	Lab 16: Algae, Lichens
Week 16	Examination

Learning and Teaching Resources مصادر التعلم والتدريس		
	Text	**Available in the Library?**
Required Texts	Pollard, Thomas D., William C. Earnshaw, Jennifer Lippincott-Schwartz, and Graham Johnson. Cell biology E-book. Elsevier Health Sciences, 2022., Lucas, M. (Ed.). (2022). Plant Systems Biology. Humana Press.	Yes
Recommended Texts	Stern, Kingsley R.; Bidlack, James E. and Jansky, Shelley H.2022. Introductory plant biology. 11 th Ed. . Published by McGraw-Hill Pag 432. SBN 978-0-07-283067-5	Yes
Websites	http://herba.msu.ru/shipunov/school/biol_154/textbook/intro_botany.pdf https://brill.com/display/serial/BIOEB?language=enhttps://brill.com/display/serial/BIOEB?language=en	

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

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

Course Description for the Second Stage

MODULE DESCRIPTION FORM

نموذج وصف المادة الدراسية

Entomology علم الحشرات

Module Information معلومات المادة الدراسية					
Module Title	**Entomology**			**Module Delivery**	
Module Type	**Core**			☒ **Theory** ☒ **Lecture** **Lab** **Tutorial** **Practical** **Seminar**	
Module Code					
ECTS Credits	**6**				
SWL (hr/sem)	**150**				
Module Level	2		**Semester of Delivery**	1	
Administering Department	**Biology**		**College**	**College of Science**	
Module Leader	Name: Prof. Dr. Maan Abdul Azeez Shafeeq		**e-mail**	maanalsalihi@uomustansiriyah.edu.iq	
Module Leader's Acad. Title	Professor		**Module Leader's Qualification**	Ph.D.	
Module Tutor	Dr.Nebrass Faleh Chachain		**e-mail**	gmoon4444@uomustansiriyah.edu.iq	
Peer Reviewer Name	Dr. Nassreen N Mzhr		**e-mail**	E-mailnasren_a2002@uomustansiriyah.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 أهداف المادة الدراسية	The objectives of the course include: The student will learn about the ranks of the arthropod phylum and the most important characteristics and features of insects from a morphological and physiological perspective, in terms of the appendages in the head, the appendages in the thorax, the mouth parts of insect types, the abdominal appendages, and the most important organs that insects possess.
Module Learning Outcomes مخرجات التعلم للمادة الدراسية	1. The student will be familiar with the existing types 2. their environments, their feeding methods, their living methods 3- how each of the insect's body systems works, as well as the number of legs and wings, 4- the method of their flight, the appendices in each part of the insect's body 5. the method of their reproduction
Indicative Contents المحتويات الإرشادية	Using pictures and models of insects, insect parts, and appendages, You will be "assigned" a compound microscope; use this scope throughout the course; keep it clean & in good condition

Learning and Teaching Strategies استراتيجيات التعلم والتعليم	
Strategies	It is possible to ensure the progress of the educational process well and the student's understanding of what is presented in the lectures through periodic exams. In addition. Sudden exams could ensure the student's attention and focus on what was presented in the lecture. The student's thinking and analysis skills are also tested by presenting scientific reports for practical tests. To increase the student's love for this course and his passion for it, field visits could made to museums and any related places.

Student Workload (SWL) الحمل الدراسي للطالب محسوب لـ ١٥ اسبوعا			
Structured SWL (h/sem) الحمل الدراسي المنتظم للطالب خلال الفصل	**64**	**Structured SWL (h/w)** الحمل الدراسي المنتظم للطالب أسبوعيا	**4**
Unstructured SWL (h/sem) الحمل الدراسي غير المنتظم للطالب خلال الفصل	**86**	**Unstructured SWL (h/w)** الحمل الدراسي غير المنتظم للطالب أسبوعيا	**6**
Total SWL (h/sem) الحمل الدراسي الكلي للطالب خلال الفصل	**175**		

Module Evaluation تقييم المادة الدراسية					
		Time/Number	**Weight (Marks)**	**Week Due**	**Relevant Learning Outcome**
Formative assessment	**Quizzes**	2	10% (10)	All	1 ,2, 3
	Lab.	1	15% (15)	all	All
	Report	1	5% (5)	15	4,5
	Assignments	2	10 % (10)	All	3,4,5
Summative assessment	**Midterm Exam**	2hr	10% (10)		
	Final Exam	4hr	50% (50)	15	All
Total assessment			100% (100 Marks)		

Delivery Plan (Weekly Syllabus) المنهاج الاسبوعي النظري	
	Material Covered
Week 1	Phylum: Arthropoda
Week 2	Structure of the body wall
Week 3	Body region
Week 4	Mouthparts
Week 5	Thorax
Week 6	Abdomen
Week 7	Midterm exam
Week 8	Digestive system
Week 9	Excretory system
Week 10	Respiration system
Week 11	Circulatory system
Week 12	Reproductive system
Week 13	Nervous system
Week 14	Sensory organs
Week 15	Preparatory week before the final exam

Delivery Plan (Weekly Lab. Syllabus) المنهاج الاسبوعي للمختبر	
	Material Covered
Week 1	Collecting Equipmentm, Mounting and Preserving insects
Week 2	HEAD
Week 3	Antennae
Week 4	Types of Mouth parts insects
Week 5	Types of Legs
Week 6	Types of Wings
Week 7	Midterm exam
Week 8	Abdomen
Week 9	Digestive system
Week 10	Metamorphosis
Week 11	Circulatory system
Week 12	Reproductive system
Week 13	Nervous system
Week 14	Sensory organs
Week 15	Preparatory week before the final exam

Learning and Teaching Resources مصادر التعلم والتدريس		
	Text	**Available in the Library?**
Required Texts	Principle of General Entomology	Paper book
Recommended Texts	Introduction to insect Biology and Diversity: Oxford University Press.	Electronic book
Websites	https://www.google.iq/search?tbo=p&tbm=bks&q=inauthor:%22Howell+V.+Daly%22	

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 is required but credit is 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 OF INVERTEBRATA

نموذج وصف مادة اللافقريات

Module Information معلومات المادة الدراسية					
Module Title	Invertebrates			**Module Delivery**	
Module Type	MODULE DESCRIPTION OF INVERTEBRATA			☒ **Theory** ☒ **Lecture** ☐x **Lab** ☐ **Tutorial** ☐ **Practical** ☐ **Seminar**	
Module Code					
ECTS Credits	6				
SWL (hr/sem)	150				
Module Level	1		**Semester of Delivery**	1	
Administering Department	Biology		**College**	01	
Module Leader	Dr .Nebrass Faleh Chachain		**e-mail**	Gmoon4444@uomustansiriyah.edu.iq	
Module Leader's Acad. Title	Professor		**Module Leader's Qualification**	Ph.D.	
Module Tutor	Dr. Sabaa taher mohammed.		**e-mail**	E-mail : Dr.saba@uomustansiriyah.edu.iq	
Peer Reviewer Name	Dr. Hadeel abdalateef		**e-mail**	E-mail	
Scientific Committee Approval Date	2-6-2024		**Version Number**	1	

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

Module Aims, Learning Outcomes and Indicative Contents أهداف المادة الدراسية ونتائج التعلم والمحتويات الإرشادية	
Module Objectives أهداف المادة الدراسية	This course introduce students to the field of invertebrate , topics covered include animals of invertebrate , diversity , classification , all body systems of the body , giving examples for each Phylum .
Module Learning Outcomes	1- To develop an understanding of invertebrate animals and the species that diversity in I RAQ .

مخرجات التعلم للمادة الدراسية	2- To develop an understanding of the terminology used in Invertebrata. 3- To understand the ecology , life cycle , diversity , Classification of invertebrate.
Indicative Contents المحتويات الإرشادية	Indicative content includes the following. Microscope slides for study will be provided preserved models of animals being studied . You will be assigned a compound microscope and dissecting microscope .

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 classes, interactive tutorials and by considering types of simple experiments involving some sampling activities that are interesting to the students.

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

Structured SWL (h/sem) الحمل الدراسي المنتظم للطالب خلال الفصل	60	**Structured SWL (h/w)** الحمل الدراسي المنتظم للطالب أسبوعيا	4
Unstructured SWL (h/sem) الحمل الدراسي غير المنتظم للطالب خلال الفصل	90	**Unstructured SWL (h/w)** الحمل الدراسي غير المنتظم للطالب أسبوعيا	6
Total SWL (h/sem) الحمل الدراسي الكلي للطالب خلال الفصل	**150**		

Module Evaluation
تقييم المادة الدراسية

		Time/Number	Weight (Marks)	Week Due	Relevant Learning Outcome
Formative assessment	**Quizzes**	2	10% (10)	5 and 10	LO #1,
	Assignments	2	10 % (10)	6 and 12	#2 and #3,
	Projects / Lab.	1	15 %(15)	All	All
	Report	1	5% (5)	14	LO #3
Summative assessment	**Midterm Exam**	2hr	10% (10)		
	Final Exam	4hr	50% (50)		All
Total assessment			100% (100 Marks)		

Delivery Plan (Weekly Syllabus)
المنهاج الاسبوعي النظري

	Material Covered
Week 1	Brief Invertebrata and types of Coelom
Week 2	Phylum : Prptozoa , Classification and characteristics
Week 3	Spp of Protozoa Amoeba , Paramecium , Euglena .

Week 4	Phylum : Porifera , Classification , Characteristics and examples .
Week 5	Phylum L: Cnidaria , classification and characteristics .
Week 6	Hydra , biology systems 1
Week 7	Hydra , biology systems 2
Week 8	Bivalva , Classification and Characteristics .
Week 9	Phylum : Annelida Classification and Characteristics
Week 10	Phylum Echinodermat Classification and Characteristics,
Week 11	Phylum : Platyhelminthes Classification and Characteristics
Week 12	Phylum : Aschelminthes Classification and Characteristics
Week 13	Phylum Arthropoda Classification and Characteristics
Week 14	Phylum : Chordata Classification and Characteristics
Week 15	**Preparatory week before the final Exam**
Week 16	

Delivery Plan (Weekly Lab. Syllabus)
المنهاج الاسبوعي للمختبر

	Material Covered
Week 1	What are Invertebrata .
Week 2	Phylum :Protozoa .
Week 3	Spp of Protozoa Amoeba , Paramecium , Euglena , Cyclops , volvox.
Week 4	Phylum : Porifera , Sycon , Leucosolena .
Week 5	Phylum : Cnideria , Hydra , Favia , Aurella 1
Week 6	Phylum : Cnideria , Hydra , Favia , Aurella 2
Week 7	Phylum : Mollusca , classification and characteristics
Week 8	Phylum : Anodont , Octopes , Dentallium .
Week 9	Phylum : Annelida, classification and characteristics , Lumbricus , Tubifex , Leeches .
Week 10	Phylum Echinodermat Classification and Characteristics.
Week 11	Phylum : Platyhelminthes Classification and Characteristics
Week 12	Phylum : Aschelminthes Classification and Characteristics
Week 13	Phylum Arthropoda Classification and Characteristics
Week 14	Phylum : Chordata Classification and Characteristics
Week 15	**Preparatory week before the final Exam**
Week 16	

Learning and Teaching Resources
مصادر التعلم والتدريس

	Text	**Available in the Library?**
Required Texts	Non chordate , 2017	No
Recommended Texts	MEDICAL OF Invertebrata . 2015	No
Websites	https://www.vet-ebooks.com/biology-of-the-invertebrates-7th-edition-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.

MODULE DESCRIPTION FORM

نموذج وصف المادة الدراسية

Module Information معلومات المادة الدراسية					
Module Title	**English Language -2-**			**Module Delivery**	
Module Type	B			☒ **Theory** ☒ **Lecture** ☐ **Lab** ☐ **Tutorial** ☐ **Practical** ☐ **Seminar**	
Module Code					
ECTS Credits	2				
SWL (hr/sem)	50				
Module Level	2		**Semester of Delivery**		
Administering Department	04		**College**	01	
Module Leader	Farah A. Raheem		**e-mail**	muttalibifar@gmail.com	
Module Leader's Acad. Title	Lecturer		**Module Leader's Qualification**	M A English Literature	
Module Tutor	Dr. Yosra Badri Noori		**e-mail**	yossra@uomustansiriyah.edu.iq	
Peer Reviewer Name	Name		**e-mail**	E-mail	
Scientific Committee Approval Date	02/06/2024		**Version Number**	1	

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	Upgrading Student's Knowledge of English Language to a pre-intermediate Level. Integrating Students' previous language studied Lessons in E1 with the new ones in E2. Urging students to practice previous different acquired Language skills i.e (listening, speaking, reading and writing) in E1 in their daily life. Encouraging students to use their previous acquired Language skills in their scientific academic fields replacing Arabic Language with English.. Encouraging students to communicate with international colleagues in the equivalent field of study in international Universities.
Module Learning Outcomes مخرجات التعلم للمادة الدراسية	1-Students will develop their speaking skills more than before. 2-Students will develop their listening - comprehending skills for most of Audio 3-Products such as Long talks, reports , Lectures & etc. . 4-Students will develop their reading - comprehending skills more than before . 5-Students will develop their writing skills more than before. 6-Students will develop their using of English grammar in to a pre-intermediate level.
Indicative Contents المحتويات الإرشادية	Present Simple & continuous Units 1&2 Past Simple & continuous Unit 3 Simple Perfect Past & Present Units 7& 14 Future Tense Unit 5 Modal Auxiliary Verbs Units 5, 8 ,9, 10 &12 Expressions of Quantity & Articles Unit 4 Prepositions & Verb Patterns 1 &2 Unit 3 , 5 & 10 Social Expressions 1 &2 Units 1 & 12 Note 1 : Teachers should ask student to do some exercises as a weekly homework from the Student Book &Workbook. Note 2 : Teachers should ask student to study selected reading Passages, Writing , and Listening as a weekly homework from the Student book &Workbook.

Learning and Teaching Strategies استراتيجيات التعلم والتعليم	
Strategies	Teachers of this curriculum should use the following learning and teaching Strategies and techniques during this semester: 1- A rapid review of what the students learned in the Beginner's level in brief will revise their linguistic knowledge and abilities in English Language. 2- Short and direct oral questions will stimulate students to participate in class activities such as group/individual discussions that improve their linguistic knowledge and abilities. 3- To supply students with clear & correct pronunciation, teachers should use the *i Tools* or *New Headway Plus Pre Intermediate Digital Edition*. This technique will help to draw the students' attention to the teacher and curriculum

	completely. Besides it will connect their sight of pictures, colors or writings appeared on the smart board with their listening and reading skills. In this way, teaching - learning process will be emphasized more. 4- To keep in touch with modern life, teachers should make use of social media in teaching process using reliable web sites such as B B C learning English web site and you tube channel to support self learning process. Also. students can use the chatGPT (English Teacher) to practice long talks and conversations using English Language in Virtual Reality. 5- Teachers should urge their students to make use of their language abilities in their scientific study. This can be achieved easily by asking them to explain. define, enumerate or even classify some scientific terms in a listened or read text. 6- Moreover, teachers should give a direct general notes concerning the writing style of reports & Papers students will be asked to write in their scientific study.

Student Workload (SWL)

الحمل الدرا يس للطالب محسوب لـ 15 اسبوعا

Structured SWL (h/sem) الحمل الدرا يس المنتظم للطالب خلال الفصل	33	**Structured SWL (h/w)** الحمل الدرا يس المنتظم للطالب أسبوعيا	2
Unstructured SWL (h/sem) الحمل الدرا يس غ ري المنتظم للطالب خلال الفصل	17	**Unstructured SWL (h/w)** الحمل الدرا يس غ ري المنتظم للطالب أسبوعيا	1
Total SWL (h/sem) الحمل الدرا يس الك يل للطالب خلال الفصل	**50**		

Module Evaluation

تقييم المادة الدراسية

		Time/Number	Weight (Marks)	Week Due	Relevant Learning Outcome
	Quizzes	3	15% (15)	6-10	LO # 1,2 ; 5: 6

Formative assessment	**Assignments**	3	15% (15)	5, 14	LO #3, #4, and #5
	Reports	1	10% (10)	All	All
	Project/lab				
Summative assessment	**Midterm Exam**	2hr	10% (10)		All
	Final Exam	3hr	50% (50)	All	All
Total assessment			100% (100 Marks)		

Delivery Plan (Weekly Syllabus)

المنهاج الاسبو يع النظري

	Material Covered
Week 1	Tenses Revision Present Simple & continuous Units 1&2 1.1 Tenses 1.2 Questions 2.1 Present Simple 2.2 Present Continuous 2.3 Present Simple and Present Continuous
Week 2	Tenses Revision Past Simple & continuous Unit 3 3.1 Past Simple 3.2 Past Continuous 3.3 Past Simple and Present Continuous
Week 3	Tenses Revision Simple Perfect Past & Present Units 7& 14 7.1 Present Perfect 7.2 Present Perfect & Past Simple 14.1 Past Perfect
Week 4	Future Tense : Will & Going To Unite 5& 9 5.3 Will 9.2 Will 5.3 Going to
Week 5	The Passive Unite 11 11.1 The Passive Form & Use 1
Week 6	The Passive Unite 11 11.1 The Passive Form & Use 2
Week 7	Introduction to Modal Auxiliary Verbs Units 5, 8 ,9, 10 &12 8.2 Introduction to Modal Auxiliary Verbs

	8.3 Should 8.4 Must 5.3 Will 9.2 Will
Week 8	Introduction to Modal Auxiliary Verbs Units 5, 8 ,9, 10 &12 10.2 Used to !0.3 Used to and the Past simple 12.2 Might
Week 9	Expressions of Quantity & Articles Unit 4 4.1 Expressions of Quantity 4.2 Articles - a and the
Week 10	Prepositions & Verb Patterns 1 &2 Unit 3 , 5 & 10 3.4 Prepositions in Time expressions 5.1 Verb Patterns 1 10.1 Verb Patterns 2
Week 11	Selected Listening Skills : Social Expressions 1 &2 Units 1 & 12 Social Expressions 1 P.13 Social Expressions 2 P.101 Note: Teachers can select any Listening tracks to train students
Week 12	Selected Writing Skills Note: Teachers can select any Writing subject from the syllabus (in the Workbook) to train students
Week 13	Selected Speaking Skills Note: Teachers can select any Speaking subject from the syllabus to train students
Week 14	Selected Reading Skills Note: Teachers can select any Reading Passages from the syllabus to train students
Week 15	Selected Reading Skills Note: Teachers can select any Reading Passages from the syllabus to train students
Week 16	**Final Exam**

Delivery Plan (Weekly Lab. Syllabus) المنهاج الاسبو يع للمخت.ي	
	Material Covered
	Non

Learning and Teaching Resources

مصادر التعلم والتدريس

	Text	Available in the Library?
Required Texts	1- Soars, John and Liz. New Headway Plus : Pre-Intermediate Student's Book, 1st Edition, Oxford University Press, Oxford , (2014). Digital Edition , With DVD- ROM. Soars, John and Liz. New Headway Plus : Pre-Intermediate Workbook with Key , 1st Edition, Oxford University Press, Oxford , (2014). Digital Edition , With new writing Micro- skills. Required Units 1-7 only.	Both Books are available as printed copies & PDF Notes : Most of PDF and printed copies are different from the required edition. Besides, some printed editions and PDF of the Workbook are with Key.
Recommended Texts	1- Murphy, Raymond. English Grammar In Use. 3rd Edition, Oxford University Press, Oxford,(2012). 2- Soars, John and Liz & Merifield, Sue. Headway Pre-Intermediate Teachers' Guide. 5th Edition, Oxford University Press, Oxford , (2019). (For Teachers)	Available as a printed copy & PDF Available as a PDF
Websites	1- Oxford University Press/English Language Teaching Worldwide, https://elt.oup.com/, an online website supports teachers who teach Headway plus Pre-Intermediate text books. 2- BBC Learning English , https://www.bbc.co.uk /learning English , an online website also available as an application on Google play, and social media sites. It presents free different programs to improve English Language Skills.	

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	**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	**Plant anatomy**			**Module Delivery**	
Module Type	**Core**			☐ **Theory** ☒ **Lecture** ☒ **Lab** ☐ **Tutorial** ☐ **Practical** ☐ **Seminar**	
Module Code					
ECTS Credits	**6**				
SWL (hr/sem)	**150**				
Module Level	2		**Semester of Delivery**	2	
Administering Department	04		**College**	01	
Module Leader	**Dr. Hashim Kadhim Mohammed**		**e-mail**	**hashimkadhum@yahoo.com**	
Module Leader's Acad. Title	**Professor**		**Module Leader's Qualification**	**Ph.D.**	
Module Tutor	**Dr. Hadeel Radawi Hussein**		**e-mail**	**sphh@uomustansiriyah.edu.iq**	
Peer Reviewer Name	**Dr. Zina Khalil Ibrahim**		**e-mail**	**drzinakhalil@uomuastansiriyah.edu.iq**	
Scientific Committee Approval Date	2/6/2024		**Version Number**	1.0	

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

Module Aims, Learning Outcomes and Indicative Contents أهداف المادة الدراسية ونتائج التعلم والمحتويات الإرشادية	
Module Objectives أهداف المادة الدراسية	A student completing the course is able to understand different branches of Plant anatomy such as 1. Understanding the anatomy of different plant organs in different plant forms 2. Developing problem solving skills and understanding of the basic theory about the most important topic in plant anatomy. 3. Recognizing the basics and principles of plant anatomy. 4. The development the skills of preparation plant sectioning types and differentiate tissue types in the slides 5. Learning the new techniques used in plant anatomy 6. Enabling the students to obtain and know the terms related to plant anatomy 7. Describe current understanding of the components of shoot, root, and floral development.
Module Learning Outcomes مخرجات التعلم للمادة الدراسية	Important: Write at least 6 Learning Outcomes, better to be equal to the number of study weeks. 1. Recognizing the basic information about the plant anatomy theories and concepts 2. Discussing the most important differences between the various plant organs anatomy 3. Numerating the different types of meristems associated with plant anatomy 4. Understanding the permanent tissues types, distribution and functions 5. Discuss the structural components of plant cell walls and membranes 6. Understanding the arrangement of tissue and cells types within the dermal, ground, and vascular tissue systems in vascular plants. 7. Draw, identify, and describe leaf anatomy and leaf adaptations associated with specific habitats.
Indicative Contents المحتويات الإرشادية	Indicative content includes the following. <u>Plant anatomy concepts</u> Basic concept and history of plant anatomy and its relation to other sciences. Plant cell components-I Plant cell components-II. Meristematic tissues types and theories Permanent tissues types Revision problem classes Plant organs anatomy -I. Plant organs anatomy -II. Comparison of dicot and monocot anatomy

Learning and Teaching Strategies اس رتاتيجيات التعلم والتعليم	
Strategies	The main goal and strategy that was relied upon in this model is to work on motivating students to exert effort and active and scientific participation in lectures and laboratory work. Also, the improvement of constructive scientific thinking skills and positive posts. This goal will be reached through interactive and competitive programs during the semester, by conducting scientific experiments that concern all student samples

Student Workload (SWL) الحمل الدرا يس للطالب محسوب لـ ١٥ اسبوعا			
Structured SWL (h/sem) الحمل الدرا يس المنتظم للطالب خلال الفصل	64	**Structured SWL (h/w)** الحمل الدرا يس المنتظم للطالب أسبوعيا	4
Unstructured SWL (h/sem) الحمل الدرا يس غ رت المنتظم للطالب خلال الفصل	86	**Unstructured SWL (h/w)** الحمل الدرا يس غ رت المنتظم للطالب أسبوعيا	6
Total SWL (h/sem) الحمل الدرا يس الك يل للطالب خلال الفصل	**150**		

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

Delivery Plan (Weekly Syllabus)

المنهاج الاسبو يع النظري	
	Material Covered
Week 1	An introduction to plant structure and development; Plant cell - I
Week 2	An introduction to plant structure and development; Plant cell - II
Week 3	An introduction to plant structure and development; Plant cell - III
Week 4	Meristem tissues and theories
Week 5	Permanent tissues parenchyma and collenchyma
Week 6	Permanent tissues sclerenchyma 1
Week 7	Permanent tissues sclerenchyma 2
Week 8	Epidermis and stomata
Week 9	Conducting tissues Xylem
Week 10	Conducting tissues phloem
Week 11	Secondary xylem (wood types)
Week 12	Roots and stems anatomy in monocots and dicots
Week 13	Floral anatomy-I
Week 14	Floral anatomy-2
Week 15	revision week

Delivery Plan (Weekly Lab. Syllabus) المنهاج الاسبو يع للمخت .ت	
	Material Covered
Week 1	Lab 1: Plant Cell wall and plant sectioning types
Week 2	Lab 2: Pits
Week 3	Lab 3: Plant cell contents-living contents
Week 4	Lab 4: Plant cell contents- nonliving contents
Week 5	Lab 5: Meristematic tissues
Week 6	Lab 6: Epidermis tissue 1
Week 7	Lab 7: Epidermis tissue 2
Week 8	Lab 8: Parenchyma and collenchyma tissues
Week 9	Lab 9 Sclerenchyma tissue

Week 10	Lab 10 Xylem tissue
Week 11	Lab 11 Phloem tissue
Week 12	Lab 12 Anatomy of dicot and monocot roots
Week 13	Lab 13 Anatomy of dicot and monocot stems
Week 15	Lab 14 Anatomy of leaves
Week 15	revision week

Learning and Teaching Resources

مصادر التعلم والتدريس

	Text	Available in the Library?
Required Texts	**Anatomy of Flowering Plants An Introduction to Plant Structure and Development**, 2020, PAULA J. RUDALL. Fourth ed. Cambridge University Printing House, Cambridge CB2 8BS, United Kingdom.	Online Free download
	Plant Anatomy: A Concept-Based Approach to the Structure of Seed Plants, 2018, Richard Crang, Sheila Lyons-Sobaski and Robert Wise, Springer Nature Switzerland AG (ebook).	Online Free download
Recommended Texts	**Essentials of Developmental Plant Anatomy**, 2017, Taylor A. Steeves and Vipen K. Sawhney. Oxford university press.	Online Free download
Websites	https://archive.org/details/EsausPlantAnatomy	

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
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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.

MODULE DESCRIPTION FORM

نموذج وصف المادة الدراسية

Module Information معلومات المادة الدراسية					
Module Title	**Microbiology**			**Module Delivery**	
Module Type	**Core**			☒ **Theory** ☒ **Lecture** ☒ **Lab** ☐ **Tutorial** ☐ **Practical** ☐ **Seminar**	
Module Code					
ECTS Credits	7				
SWL (hr/sem)	175				
Module Level	2		**Semester of Delivery**	1	
Administering Department	Type Dept. Code:04		**College**	Type College Code :01	
Module Leader	Dr.Sawsan Hassan Authman		**e-mail**	dr.sawsanh@uomustansiriyah.edu.iq	
Module Leader's Acad. Title	Professor		**Module Leader's Qualification**	Ph.D.	
Module Tutor	Dr. Khawla jabber Dr. Saba Talib Hashim		**e-mail**	E-mail khawlahfalah@uomustansiriyah.edu.iq dr.sabatalib@uomustansiriyah.edu.iq	
Peer Reviewer Name	Dr.Raghad abdul lateif		**e-mail**	E-mail ragadlatif65@uomustansiriyah.edu.iq	
Scientific Committee Approval Date	26/05/2024		**Version Number**	1.0	

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

Module Aims, Learning Outcomes and Indicative Contents أهداف المادة الدراسية ونتائج التعلم والمحتويات الإرشادية	
Module Objectives أهداف المادة الدراسية	1. To develop problem solving skills and understanding of the basic theory about the most important topic in Microbiology. 2. Knowing and understanding the basics and principles of Microbiology, especially the name and types of microorganism. 3. Learn about the principles, procedures, and techniques used to know the identification of microorganisms. 4. This course deals with the basic concept of type and structure of the microorganisms. 5. To understand the growth and microbial metabolisms. 6. Enabling students to obtain and know all the terms of microbiology.
Module Learning Outcomes مخرجات التعلم للمادة الدراسية	Important: Write at least 6 Learning Outcomes, better to be equal to the number of study weeks. 1. Recognize the basic information about the microorganisms and their structure. 2. Discuss the most important differences between the various microorganisms in terms of effectiveness and their ability to react with some reagents. 3. List the various types associated with microorganisms. 4. Summarize the methods for identification of various microorganisms. 5. Discuss all names of normal and pathogenic microorganisms 6. Discuss the hybridization and distinction between microorganisms in terms of their structure and growth. 7. Clarification of the most important factors affect the microbial control..
Indicative Contents المحتويات الإرشادية	Indicative content includes the following. Part A – Introduction, Tool in the microbiology methods of studying microorganisms Basic concept of microbiology, Classification of microorganisms and their structures. Types of microbial cells include: prokaryotic, eukaryotic. viruses. Classification and nomenclature, General methods of -Physical and chemical in microbial control. General methods of microbial identification and types of cultures. [10 hrs] An introduction to microbial genetics and basic concept of immunology. [10 hrs] Revision problem classes Part B – *microbial growth* Microbial multiplication.

	Factors effects on microbial growth . Control and measuring of microbial growth.

Learning and Teaching Strategies استراتيجيات التعلم والتعليم	
Strategies	The main goal and strategy that was relied upon in this model is to work on motivating students to exert effort and active and scientific participation in lectures and laboratory work. Taking into account the improvement of constructive scientific thinking skills and positive posts. This goal will be reached through interactive and competitive programs during the semester, by conducting scientific experiments that concern all student samples

Student Workload (SWL) الحمل الدراسي للطالب محسوب لـ ١٥ اسبوعا			
Structured SWL (h/sem) الحمل الدراسي المنتظم للطالب خلال الفصل	64	**Structured SWL (h/w)** الحمل الدراسي المنتظم للطالب أسبوعيا	4
Unstructured SWL (h/sem) الحمل الدراسي غير المنتظم للطالب خلال الفصل	111	**Unstructured SWL (h/w)** الحمل الدراسي غير المنتظم للطالب أسبوعيا	7
Total SWL (h/sem) الحمل الدراسي الكلي للطالب خلال الفصل	**175**		

Module Evaluation تقييم المادة الدراسية					
		Time/Number	**Weight (Marks)**	**Week Due**	**Relevant Learning Outcome**
Formative assessment	**Quizzes**	2	10% (10)	5 and 10	LO #1, #2 and #5
	Assignments	2	10% (10)	6 and 12	LO #3, #4 and #6, #7
	Projects / Lab.	1	15% (15)	Continuous	All
	Report	1	5 %(5)	14	LO #6, #7
Summative assessment	**Midterm Exam**	2hr	10% (10)		
	Final Exam	4hr	50% (50)		All
Total assessment			100% (100 Marks)		

Delivery Plan (Weekly Syllabus) المنهاج الاسبوعي النظري	
	Material Covered
Week 1	Introduction, Tool in the microbiology methods of studying microorganisms
Week 2	Survey of Prokaryotic cells &microorganisms
Week 3	Survey of Eukaryotic cells & microorganisms
Week 4	An introduction to viruses
Week 5	Microbial Ecology and Growth .
Week 6	Microbial nutrition 1
Week 7	Microbial nutrition 2
Week 8	Control of microorganism by physical method
Week 9	Control of microorganism by chemical agents
Week 10	An introduction to Fungi.
Week 11	An introduction to Protozoa.
Week 12	An introduction to microbial genetics
Week 13	An introduction in immunology
Week 14	Review before final exam
Week 15	**Preparatory week before the final Exam**

Delivery Plan (Weekly Lab. Syllabus) المنهاج الاسبوعي للمختبر	
	Material Covered
Week 1	Lab 1: Tool in microbiology
Week 2	Lab 2: The compound light microscope
Week 3	Lab 3: Sterilization
Week 4	Lab 4: Disinfection
Week 5	Lab 5: theoretical exam
Week 6	Lab 6: Samples collection 1
Week 7	Lab 7 : Samples collection 2
Week 8	Lab 8: Handling & examine media
Week 9	Lab 9: Preparation of culture media
Week 10	Lab 10: type of microbial culturing

Week 11	Lab 11: Samples culturing and test the results.
Week 12	Lab 12 : Simple stain
Week 13	Lab 13 :Differential stain
Week 14	Lab 14: Special stain
Week 15	Lab 15: **Preparatory week before the final Exam**

Learning and Teaching Resources
مصادر التعلم والتدريس

	Text	Available in the Library?
Required Texts	1-Talaro, K.P, and Ghess, B.(2015) .Foundation in Microbiology .ninth-ed. McGraw-Hill. International edition. New York.	Online Free download
Recommended Texts	1. New Central Book Agency, Delhi. 2. 2-Morello, A.M, Mizer,R.N and Granato, P.A.(2010).Laboratory Manual & Workbook in Microbiology. Eighth Edition. McGraw-Hill. International edition. New York. 3. 3-Patrica, M.T. (2015). Diagnostic Microbiology. Thirteenth edition. Springhouse, Pennsylvania	Online Free download
Websites		

Grading Scheme
مخطط الدرجات

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

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

1-4 MODULE DESCRIPTION FORM

نموذج وصف المادة الدراسية

Computer Science – الحاسوب

Module Information معلومات المادة الدراسية					
Module Title	**Computer Science**			**Module Delivery**	
Module Type	**B**			☒ **Theory** ☒ **Lecture** ☒ **Lab** ☐ **Tutorial** ☐ **Practical** ☐ **Seminar**	
Module Code					
ECTS Credits	**3**				
SWL (hr/sem)	**75**				
Module Level	2		**Semester of Delivery**	1	
Administering Department	**Biology** (04)		**College**	**College of Science** (01)	
Module Leader	Majd Sami Ahmed		**e-mail**	majdsami@uomustansiriyah.edu.iq	
Module Leader's Acad. Title	assistant lecturer		**Module Leader's Qualification**	MSc	
Module Tutor	Name (if available)		**e-mail**	E-mail	
Peer Reviewer Name	Name		**e-mail**	E-mail	
Scientific Committee Approval Date	**19/06/2023**		**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	The course is intended to teach the students of the biology department the basics and principles of the computer operating system, Microsoft Office, and ChemBio Draw. As well as the other concerns, that related to biology computing.
Module Learning Outcomes مخرجات التعلم للمادة الدراسية	**1-** Understand the computer components and how they work. **2-** The student acquires knowledge of the role of computers in the field of biology science and its applications. **3-** Students will have the knowledge to use the operating system (windows 10) **4-** Students will have the knowledge to create and modify documents with MS Word. **5-** Students will have the ability to create an academic report with MS Word. **6-** Students will have knowledge of creating Excel tables and conducting data analysis. **7-** Students will have the ability to create charts in MS Excel and interpret their data. **8-** Students learn and use the ChemBioDraw software, which provides a variety of tools to create biology-related drawings. 1.
Indicative Contents المحتويات الإرشادية	<u>Part A - Circuit Theory</u> **1-** Understand the basic components of a computer system and their importance in the field of biology. **2-** To learn dealing with the operating system Windows 10 as a user **3-** To learn to work on the MS Word program to create reports and documents that benefit the student in their field of specialization. **4-** To learn work on the MS Excel program to organize and process data through tables and analyze and interpret the results. **5-** To learn the ChemBioDraw program to draw biology tools quickly and easily through specialized tools for this purpose.

Learning and Teaching Strategies استراتيجيات التعلم والتعليم	
Strategies	It is possible to ensure the progress of the educational process well and the student's understanding of what is presented in the lectures through periodic exams. In addition. Sudden exams could make to ensure the student's attention

	and focus on what was presented in the lecture. The student's thinking and analysis skills are also tested by presenting scientific reports for practical tests. To increase the student's love for this course and his passion for it, field visits could made to museums and any related places.

Student Workload (SWL)

الحمل الدراسي للطالب محسوب لـ ١٥ أسبوعا

Structured SWL (h/sem) الحمل الدراسي المنتظم للطالب خلال الفصل	64	**Structured SWL (h/w)** الحمل الدراسي المنتظم للطالب أسبوعيا	4
Unstructured SWL (h/sem) الحمل الدراسي غير المنتظم للطالب خلال الفصل	11	**Unstructured SWL (h/w)** الحمل الدراسي غير المنتظم للطالب أسبوعيا	1
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	15 % (15)	3,5,7,9,11	All
	Lab.	1	15% (15)	All	All
	Report	1	5% (10)	15	5 (e)
	Assignment	1	5% (5)	All	All
Summative assessment	**Midterm Exam**	2hr	10% (10)	6,10	1-5, 6-10
	Final Exam	4hr	50% (50)	15	All
Total assessment			100% (100 Marks)		

Delivery Plan (Weekly Syllabus)

المنهاج الاسبوعي النظري

	Material Covered
Week 1	**General Introduction to the component of computers and their importance in Biology.**

	Components of Computer System, Concept of Hardware and Software, Basic Applications of Computers in Biology, Examples of how computers are used in different fields of Biology, along with fundamentals on how computers work.
Week 2	**Operating System Basics** An introduction to the operating system (Windows 10) Understanding Windows 10 interface, taskbar, date and time, types of icons, activating windows, and running applications.
Week 3	**Operating System Basics** Personalizing the Desktop: Creating Folders on the Desktop, Changing the Desktop Background, Changing Your Screen Saver, Changing Screen Resolution.
Week 4	**Operating System Basics** Managing Files and Folders: Searching for files from Windows Explorer, Moving Files and Folders, Copying Files and Folders, Renaming Files and Folders, Deleting Files or Folders, Restoring Deleted Files or Folders, Printing documents, and Accessing the Control Panel.
Week 5	**Microsoft Word 2016** Understand Microsoft Word interface, Create and manage documents, Enter and edit text, and modify the structure and appearance of text.
Week 6	**Microsoft Word 2016** Organize information in columns and tables and insert and modify diagrams, Insert and modify charts, create an equation, and modify it with Biology variables.
Week 7	**Microsoft Word 2016** Use advanced Word functions: Create and modify a table of Reference and table of contents.
Week 8	**Mid Exam**
Week 9	**Microsoft Excel (2016) [Use of Excel with examples for Biology variables]** Introduction: Basic elements of a spreadsheet, Editing a Worksheet, Formatting a Worksheet.
Week 10	**Microsoft Excel (2016)** Tables in MS Excel for Biology variables, sorting a Table, filtering a Table, and creating a Pivot Table to analyze worksheet data.
Week 11	**Microsoft Excel (2016)** Charts in MS Excel for Biology variables, Types of Charts and Their Uses, Changing the Chart Type, Formatting a Chart.
Week 12	**Microsoft Excel (2016)** Managing Workbooks Review: Functions and Formulas, Working with Data Ranges.

Week 13	**Learn and use ChemBio Draw software.** Understand Chem & Bio Draw Interface Application to Bio Draw Tools
Week 14	**Learn and use ChemBio Draw software.** Bio Draw for Customizable Objects and Drawing sequences
Week 15	**Project Discussion**
Week 16	**Final Exam.**

Delivery Plan (Weekly Lab. Syllabus)

المنهاج الاسبوعي للمختبر

	Material Covered
Week 1	**Lab 1:** Components of Computer System, Concept of Hardware and Software
Week 2	**Lab 2:** Windows 10 interface, taskbar, date and time, types of icons, activating windows, and running applications.
Week 3	**Lab 3:** Creating Folders on the Desktop, Changing the Desktop Background, Changing Screen Saver, Changing Screen Resolution.
Week 4	**Lab 4:** Managing Files and Folders
Week 5	**Lab 5:** Microsoft Word interface, Create and manage documents
Week 6	**Lab 6:** Organize information in columns and tables
Week 7	**Lab 7:** Create and modify a table of Reference and table of contents.
Week 8	**Mid-term exam**
Week 9	**Lab8: introduction to Microsoft Excel.**
Week 10	**Lab 9 :** Tables in MS Excel
Week 11	**Lab 10:** Charts in MS Excel
Week 12	**Lab 11:** Managing Excel Workbooks Review
Week 13	**Lab 12:** Application to Bio Draw Tools
Week 14	**Lab 13:** Bio Draw for Customizable Objects and Drawing sequences
Week 15	**Lab 14: Project Discussion**

Learning and Teaching Resources مصادر التعلم والتدريس		
	Text	**Available in the Library?**
Required Texts	1- **CCI Learning, 2017,** IC3 Certification Guide Using Microsoft Windows 10 & Microsoft Office 2016 **2nd Edition,** 2- **Joan Lambert, (2015),** Microsoft Office 2016 Step by Step. 3- **CambridgeSoft Corporation "Chem & Bio Draw Chem** & Bio Drawing Standard", InChI™ is a trademark of the International Union of Pure and Applied Chemistry. InChI™ Material in ChemDraw is © IUPAC 2005.	Electronic book
Recommended Texts	1-**Fernandes, J. M. (2022).** Essentials of computing systems. Essentials of computing systems. UMinho Editora. 2- **Abraham, s.** Operating systems concepts/abraham silberschatz; peter baer galvin; greg gagne (no. 005.12 s719o.).	Electronic book
Websites	https://doi.org/10.21814/uminho.ed.93	

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	**parasitology**			**Module Delivery**	
Module Type	**core**			☒ **Theory** ☒ **Lecture** ☐ **Lab** ☐ **Tutorial** ☐ **Practical** ☐ **Seminar**	
Module Code					
ECTS Credits	**7**				
SWL (hr/sem)	**175**				
Module Level		1	**Semester of Delivery**		2
Administering Department		**Biology**	**College**	**College of Science**	
Module Leader	**Name: Sabaa taher mohammed** **–Dr. shatha khudhair** **-DrNebraska Faleh Chachain**		**e-mail**	**dr.saba@uomustansiriyah.edu.iq** **dr.shatha@uomustansiriyah.edu.iq** **gmoon4444@uomustansiriyah.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			**e-mail**	E-mail	
Scientific Committee Approval Date		**1/06/2023**	**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	**This course introduces students to the field of parasitology. Topics covered include parasite diversity, life cycles, host defense mechanisms, parasite evasion, host pathology,ecology, evolution, and control. The laboratory component of the course will examine parasites of medical and veterinary importance..**
Module Learning Outcomes مخرجات التعلم للمادة الدراسية	**1-To develop an understanding of and appreciation for the nature and evolution of parasitic associations.** **2-To develop an understanding of the terminology used in parasitology.** **3-To understand the ecology and life cycles of a variety of host-parasite associations.**
Indicative Contents المحتويات الإرشادية	**A Color Atlas of Parasitology** **Microscope slides for study will be provided** **You will be "assigned" a compound microscope; use this scope throughout the course; keep it clean & in good condition**

Learning and Teaching Strategies استراتيجيات التعلم والتعليم	
Strategies	**It is possible to ensure the progress of the educational process well and the student's understanding of what is presented in the lectures through periodic exams. In addition. Sudden exams could make to ensure the student's attention and focus on what was presented in the lecture. The student's thinking and analysis skills are also tested by presenting scientific reports for practical tests. To increase the student's love for this course and his passion for it, field visits could made to museums and any related places.**

Student Workload (SWL) الحمل الدراسي للطالب محسوب لـ ١٥ اسبوعا			
Structured SWL (h/sem) الحمل الدراسي المنتظم للطالب خلال الفصل	64	**Structured SWL (h/w)** الحمل الدراسي المنتظم للطالب أسبوعيا	4
Unstructured SWL (h/sem) الحمل الدراسي غير المنتظم للطالب خلال الفصل	111	**Unstructured SWL (h/w)** الحمل الدراسي غير المنتظم للطالب أسبوعيا	7
Total SWL (h/sem) الحمل الدراسي الكلي للطالب خلال الفصل	**175**		

Module Evaluation

تقييم المادة الدراسية

		Time/Number	Weight (Marks)	Week Due	Relevant Learning Outcome
Formative assessment	Quizzes	2	20% (10)	5,10	LO #1, 2
	Assignments	1	5% (5)	11	LO # 2,3
	Projects / Lab.	1	15% (15)	15	
	Report	0			
Summative assessment	Midterm Exam	2hr	10% (10)	16	
	Final Exam	4hr	50% (50)		All
Total assessment			100% (100 Marks)		

Delivery Plan (Weekly Syllabus)

المنهاج الاسبوعي النظري

	Material Covered
Week 1	Introduction Basic concepts in Parasitology Host-parasite relationships Vector,host, control programs
Week 2	Introduction into Protozoa & *Entamoeba histolytica* and human ameobiasis
Week 3	*Trichomonas, Giardia*
Week 4	American Trypanosomes, African Trypansomes ,*Leishmania spp*
Week 5	Intro to Apicomplexa *Toxoplasma, Cryptosporidium*
Week 6	Malaria, Parasite biology, disease , Pathogenesis & treatment,
Week 7	Platyhelminthes – Flukes Introduction into platyhelminth biology,
Week 8	Platyhelminthes life cycles , human lung and liver fluke disease.
Week 9	Intestine fluke &Schistosomiasis
Week 10	Platyhelminthes - Tapeworms Biology of cestodes
Week 11	Nematoda Introduction into the biology of Nematodes Important human diseases caused by nematodes , nematodes, immunity & hygiene hypothesis.. and Ascaradids
Week 12	Whipworms and Strongyloides
Week 13	Hookworms and Pinworms
Week 14	Blood and Tissue Dwelling Nematodes Filariasis, Pathogenesis of river blindness and lympahtic filariasis, control programs

Week 15	Cutaneous and visceral larva migrants'
Week 16	

Delivery Plan (Weekly Lab. Syllabus) المنهاج الاسبوعي للمختبر	
	Material Covered
Week 1	Introduction Basic concepts in Parasitology Host-parasite relationships Vector,host, control programs
Week 2	Introduction into Protozoa & *Entamoeba histolytica* and human ameobiasis
Week 3	*Trichomonas, Giardia ,Balantidium coli*
Week 4	, American Trypanosomes ,African Trypansomes ,*Leishmania spp*
Week 5	Intro to Apicomplexa *Toxoplasma, Cryptosporidium*
Week 6	Malaria, :plasmodium spp.
Week 7	Platyhelminthes -liver fluke :fasciola hepatica
Week 8	Platyhelminthes -,fasciola gegintica,Heterophyes,
Week 9	lung fluke :paragonimus westermanni,Blood fluke:schistosomma spp.
Week 10	Cestoda:Taenia solium and T>saginata,Diphyllobothrium latum,Dipylidium caninum,
Week 11	Echinococcus granulosis, hymenolepis nana and diminuta
Week 12	, Nematoda :Enterobius vermicullaris,Ascaris lumbricoid,Trichuris trichuria ,Tichinella
Week 13	Strongyloides, Hookworms :Neccator .Ancylostoma
Week 14	Blood and Tissue Dwelling Nematodes Filariasis, :Loa loa ,wuchereria bancrofti,onchocerca
Week 15	Preparatory week before exam

Learning and Teaching Resources مصادر التعلم والتدريس		
	Text	**Available in the Library?**
Required Texts	Textbook of Medical Parasitology, 6th Edition by CKJ Paniker	Electronic book
Recommended Texts	Medical Parasitology,2th edition by **Elizabeth A. Gockel-Blessing**	Electronic book
Websites	https://www.muhadharaty.com	

Grading Scheme مخطط الدرجات

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

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

MODULE DESCRIPTION FORM

نموذج وصف المادة الدراسية

Module Information معلومات المادة الدراسية					
Module Title	**Arabic Language**			**Module Delivery**	
Module Type	**Basic**			☒ **Theory** ☐ **Lecture** ☐ **Lab** ☐ **Tutorial** ☐ **Practical** ☐ **Seminar**	
Module Code	**MU16**				
ECTS Credits	**2**				
SWL (hr/sem)	**50**				
Module Leve	2		**Semester of Delivery**	2	
Administering Department	05		**College**	01	
Module Leader	Dr. Entiha Abbas Aliwi		**e-mail**	Enteaaabbas@uomustansiriyah.edu.iq	
Module Leader's Acad. Title	Assist. Professor		**Module Leader's Qualification**	Ph.D.	
Module Tutor	No available		**e-mail**	E-mail	
Peer Reviewer Name			**e-mail**	E-mail	
Scientific Committee Approval Date	01/11/2024		**Version Number**	1.0	

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

Module Aims, Learning Outcomes and Indicative Contents أهداف المادة الدراسية ونتائج التعلم والمحتويات الإرشادية	
Module Objectives أهداف المادة الدراسية	1- مهارة الاستماع بدرس اللغة العربية دراسة علمية . 2- مهارة الحديث عن طريق المناقشة داخل قاعات الدرس . 3- مهارة الكتابة العلمية للغة العربية . 4- القدرة على التمي زي ب زي الجمل العربية ا. 5- القدرة على قراءة البحوث العلمية بالعربية .
Module Learning Outcomes مخرجات التعلم للمادة الدراسية	1- القدرة على كتابة المقال العل يم . 2- تحقيق الكفاءات اللغوي والقواعدية زيف اداء الطلبة للغة العربية زيف كل من الانشاء والقواعد والاملاء 3- تشخيص مواطن الاعراب زيف مادة اللغة العربية 4- معرفة الحركات (الفتحة والضمة والكسرة) واصوات اخرى مثل همزة الفصل والوصل. 5- قراءة الكلمات والجمل وفهم معانيها والربط بينها 6- اكتساب الطالب القدرة على التعب ي الصحيح زيف التخاطب ، والتحدث، و الكتابة. 7- تعلم اساسيات كتابة الاعداد 8- يتضح لدية علامات الاصلية والفرعية للجمل العربية 9- رفع مستوى الطالب على القراءة الصحيحة ، والنطق السليم ، و فهم الأفكار 10- تعليم الطالب بحفظ قدركافٍ من النصوص الأدبية ، و أن يستمتع بها ، و يتذوق مظاهر الجمال فيها
Indicative Contents المحتويات الإرشادية	يتيح تعريف الطلبة بالاحكام المهمة الخاصة باللغة العربية والقواعد الضرورية لصقل لغتهم العربية باطار سليم يتناسب مع ضرورات عملهم في المهن المدنية ليع ري عمّا بداخله ويسلك بحرية فعلى المرشد حسن الاصغاء ودقة الملاحظة وترك زي الانتباه لكل قول أو فعل يك بدرك المرشد الجوانب المختلفة للمشكلة والمحافظة على اللغة الفصحى و الأبتعاد عن العامية و معالجة الأخطاء الشائعة.

Learning and Teaching Strategies اس رياتيجيات التعلم والتعليم	
Strategies	اس رياتيجيات هذا المقرر هو تمك زي المتعلم من استخدام اللغة العربية استخداما صحيحا للإفهام والفهم وبناء الجمل بالشكل اللغوي السليم وتحديد اللغة الفصيحة السليمة .

Student Workload (SWL) الحمل الدرا يس للطالب محسوب لـ ١٥ أسبوعا			
Structured SWL (h/sem) الحمل الدرا يس المنتظم للطالب خلال الفصل	33	**Structured SWL (h/w)** الحمل الدرا يس المنتظم للطالب أسبوعيا	2
Unstructured SWL (h/sem) الحمل الدرا يس غ ي المنتظم للطالب خلال الفصل	17	**Unstructured SWL (h/w)** الحمل الدرا يس غ ي المنتظم للطالب أسبوعيا	1
Total SWL (h/sem) الحمل الدرا يس الك يلى للطالب خلال الفصل	**50**		

Module Evaluation

تقييم المادة الدراسية

		Time/Number	Weight (Marks)	Week Due	Relevant Learning Outcome
Formative assessment	Quizzes	3	30% (30)	4 and 14	LO #1, #2 and #10, #11
	Assignments	2	5% (10)	5 and 9	LO #2, #3 and #7, #8
	Projects / Lab.			12	LO #5, #6 and #9
	Report	1	5% (5)	13	LO #5, #8 and #10
Summative assessment	Midterm Exam	2hr	10% (10)	8	LO #1 - #7
	Final Exam	3hr	50% (50)	16	All
Total assessment			100% (100 Marks)		

Delivery Plan (Weekly Syllabus)

المنهاج الاسبو يع النظري

	Material Covered
Week 1	الاسماء المعربة
Week 2	النصوص الشعرية العصر العبا يس |ابو تمام
Week 3	أدوات النحو
Week 4	الفعل الصحيح والمعتل
Week 5	**Midterm Exam**
Week 6	الاحرف المشبه بالفعل
Week 7	اعراب الافعال الخمسة
Week 8	فتح همزة ان وكسرها
Week 9	الشعر العربي المعاصر : بدر شاكر السياب
Week 10	الضاد والظاء مع الامثلة
Week 11	**Midterm Exam**
Week 12	الفنون النثرية :قصة حي بن يقظان
Week 13	محاضرة تضم تطبيقات عملية لكل المواد اللغة
Week 14	محاضرة (اختبارات عملية لكل مواد الادب)
Week 15	Preparatory week before the final Exam

Learning and Teaching Resources

مصادر التعلم والتدريس		
	Text	**Available in the Library?**
Required Texts	اللغة العربية العامة لأقسام غ ي الاختصاص :د. عبد القادر حسن ام زي ،وزارة التعليم العا يل والبحث العل يم الجامعة المستنصرية 1890م	نعم
Recommended Texts	اللغة العربية للأقسام غ ي الاختصاص د. سعد ع يلي زاير – د. بيمان جلال أحمد	نعم
Websites	العربية الجامعية لغ ي المتخصص زي ، د. عبده الراج يحي ،دار النهضة العربية ، لبنان ، 2007	

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	**Microscopic Techniques**			**Module Delivery**	
Module Type	**Core**			☒ **Theory** ☒ **Lecture** ☒ **Lab** ☐ **Tutorial** ☐ **Practical** ☐ **Seminar**	
Module Code	**MU010402204**				
ECTS Credits	6				
SWL (hr/sem)	4				
Module Level	2		**Semester of Delivery**	2	
Administering Department	Type Dept. Code		**College**	Type College Code	
Module Leader	Name:Methaq Jasim Hussien		**e-mail**	E-mail	
Module Leader's Acad. Title	**Assist 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	This is a course on each lecture day consisting of theoretical lectures, followed by hands-on wet lab or microscopy experimentation on the next day. In addition, social events allow time for networking with colleagues. This course provides an: 1- Introduction to microscopy 2- operation of a simple light microscope, of the type found in Microbiology, histology courses, and teaching laboratories. 3- It outlines different methods used for preparing and staining Bacterial slides and tissue sections for microscopy 4- Explains how different stains can be used to identify particular cell components, pathogens, and anatomical structures. 5- Plant preserving techniques 6- Applications of Microscopy in Biological Sciences
Module Learning Outcomes مخرجات التعلم للمادة الدراسية	Important: Write at least 6 Learning Outcomes, better to be equal to the number of study weeks. 1- Identify and understand the principle components of a light microscope 2- Understand in outline, the principles of optics that apply to light microscopes 3- Set up and use a light microscope 4- Understand types of Microscopes and their function in Biological science 5- Understand types of different staining procedures are used in biological science. 6- Understand the principles of histological and plant slide preparation
Indicative Contents المحتويات الإرشادية	PartA: **Theoretical** Introduction to the Microscope, Electron Microscopes, Slide preparation, Anesthetization, Fixation, Staining of sample techniques, Mounting of sample, Labelling and Storage of slides, Plant preserving techniques, Applications of Microscopy in Biological Sciences B – **Practical** Type of microscopic and microtomes,Microscopic measurement (ocular and stage) ,Smear preparation , simple staining ,Negative and capsular staining Negative and capsular staining , Gram stain , spore staining Tissue processing (fixation ,alcohol dehydration , block, embedding, Sectioning and Staining.

Learning and Teaching Strategies استراتيجيات التعلم والتعليم	
Strategies	Students learn about Microscopic Techniques **through this course and textbook.** The student's thinking exams, **discussion, activities,** tested by presenting scientific reports for practical tests. In addition, social events allow time for networking with colleagues. To increase the student's love for this course and his passion for it, field visits could made to Laboratories and any related places.

Student Workload (SWL) الحمل الدراسي للطالب محسوب لـ ١٥ اسبوعا			
Structured SWL (h/sem) الحمل الدراسي المنتظم للطالب خلال الفصل	64	**Structured SWL (h/w)** الحمل الدراسي المنتظم للطالب أسبوعيا	4
Unstructured SWL (h/sem) الحمل الدراسي غير المنتظم للطالب خلال الفصل	86	**Unstructured SWL (h/w)** الحمل الدراسي غير المنتظم للطالب أسبوعيا	6
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	20% (20)	5 and 10	LO #1, #2 and #4, #5
	Assignments	2	5% (5)	7 and 12	LO #3 and #6
	Projects / Lab.	1	15% (15)	Continuous	All
	Report				
Summative assessment	**Midterm Exam**	2hr	10% (10)	16	All
	Final Exam	4hr	50% (50)		All
Total assessment			100% (100 Marks)		

Delivery Plan (Weekly Syllabus) المنهاج الاسبوعي النظري	
	Material Covered
Week 1	Introduction to the Microscope

Week 2	Electron Microscopes
Week 3	Slide preparation
Week 4	Anesthetization
Week 5	Fixation
Week 6	Staining of sample techniques
Week 7	Mounting of sample
Week 8	Labelling and Storage of slides
Week 9	Plant preserving techniques
Week 10	Dry mount of plant
Week 11	Microscopic techniques for plant organs analysis
Week 12	Applications of Light microscopy in Biological Sciences
Week 13	Applications of Transmission electron microscopy (TEM):
Week 14	Immunofluorescent Techniques / Fluorescence Microscopy
Week 15	Molecular Techniques
Week 16	Preparatory week before the final Exam

Delivery Plan (Weekly Lab. Syllabus)

المنهاج الاسبوعي للمختبر

	Material Covered
Week 1	Lab 1: Introduction to Laboratory Safety
Week 2	Lab 2: Type of microscopic and microtomes
Week 3	Lab 3: Microscopic measurement (ocular and stage)
Week 4	Lab 4: Smear preparation , simple staining
Week 5	Lab 5: Negative and capsular staining
Week 6	Lab 6: Gram stain , spore staining
Week 7	Lab 7: Tissue processing (fixation ,alcohol dehydration , block, embedding)
Week 8	Lab 8: Sectioning
Week 9	Lab 9: Sectioning
Week 10	Lab 10: Staining

Learning and Teaching Resources

مصادر التعلم والتدريس		
	Text	**Available in the Library?**
Required Texts	**Clinical Laboratory Science** *9th Edition - Concepts, Procedures, and Clinica...* Mary Louise Turgeon, (2022)	Online Free download
Recommended Texts	2- Terence Allen. 2015. Microscopy: A Very Short Introduction. Oxford University Press 3-Michael Hoppert, Cambridge University Press; 4 edition (April 13, 2000), Microscopic Techniques in Biotechnology 1st Edition	Online Free download
Websites		

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

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

MODULE DESCRIPTION FORM

نموذج وصف المادة الدراسية

Module Information معلومات المادة الدراسية					
Module Title	**The Crimes of the Baath Regime in Iraq**			**Module Delivery**	
Module Type	**Basic**			☒ **Theory** ☐ **Lecture** ☐ **Lab** ☐ **Tutorial** ☐ **Practical** ☐ **Seminar**	
Module Code	**MU03**				
ECTS Credits	**2**				
SWL (hr/sem)	**50**				
Module Level	2		**Semester of Delivery**	2	
Administering Department	05		**College**	01	
Module Leader	Ahmed Akeel Abd		**e-mail**	ahmed.aqeel@uomustansiriyah.edu.iq	
Module Leader's Acad. Title	Assistant Lecturer		**Module Leader's Qualification**	M.Sc.	
Module Tutor	No available		**e-mail**	E-mail	
Peer Reviewer Name			**e-mail**		
Scientific Committee Approval Date	01/06/2023		**Version Number**	1.0	

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

Module Aims, Learning Outcomes and Indicative Contents أهداف المادة الدراسية ونتائج التعلم والمحتويات الإرشادية	
Module Objectives أهداف المادة الدراسية	تبص ري هذه الاجيال باسلوب فكري وثائ : يق يكشف لهم عن جرائم هذا النظام البع $ يث بحق الشعب العرا : يق ، وتضمن هذا المنهج مفاتيح معرفية وضعت بيد الطالب الجام يع يقوى بها على مرو . يج اكاذيب البعث واعلامه المزيف
Module Learning Outcomes مخرجات التعلم للمادة الدراسية	1- تعريف الشباب الجام يع بجرائم ارتكبها نظام جائر : يق العراق خاصة واثرها : يق المنطقة الاقليمية العامة و العالم كله 2- الوقوف على بطش هذا النظام بالوثائق والصور و التواري••••خ ح :ث يتس ·ث لهذا الجيل التاكد من كل تلك الجرائم بحق كل من انتهج سبيل الحق وحب الوطن و رفض النهج البع $ يث المجرم.
Indicative Contents المحتويات الإرشادية	تعليم الطالب الجام يع كيفية مواجهة الاعلام الزائف مستند على الوقائع التاريخية لما مر به العراق من حكم دكتاتوري وبالتا يل مواجهة أي محاولة لاثارة الفكر البع $ يث او محاولة التمجيد له : يق الاوساط الشبابية .

Learning and Teaching Strategies اس :ياتيجيات التعلم والتعليم	
Strategies	الاس :ياتيجية الرئيسة ال : يث سيتم تبنيها : يق تقديم هذه المادة س :يتكز على : المناقشة ، الاستجواب ، المحا ·ضة ، اوراق العمل ، السماح لطلبة بطرح الاسئلة.

Student Workload (SWL) الحمل الدرا يس للطالب محسوب ل• ١٥ أسبوعا			
Structured SWL (h/sem) الحمل الدرا يس المنتظم للطالب خلال الفصل	33	**Structured SWL (h/w)** الحمل الدرا يس المنتظم للطالب أسبوعيا	2
Unstructured SWL (h/sem) الحمل الدرا يس غ ري المنتظم للطالب خلال الفصل	17	**Unstructured SWL (h/w)** الحمل الدرا يس غ ري المنتظم للطالب أسبوعيا	1
Total SWL (h/sem) الحمل الدرا يس الك يلى 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)	4 and 9	LO #1, #2 and #7, #8
	Projects / Lab.	1	10% (10)	10	LO #5, #6 and #9
	Report	1	10% (10)	13	LO #5, #8 and #10
Summative assessment	Midterm Exam	2hr	10% (10)	8	LO #1 - #7
	Final Exam	3hr	50% (50)	16	All
Total assessment			100% (100 Marks)		

Delivery Plan (Weekly Syllabus)

المنهاج الاسبو يع النظري

	Material Covered
Week 1	مفهوم الجرائم واقسامها
Week 2	انواع الجرائم
Week 3	القرارات الصادرة من المحكمة
Week 4	الجرائم النفسية
Week 5	اليات الجرائم النفسية
Week 6	اثار الجرائم النفسية
Week 7	عسكرة المجتمع
Week 8	Midterm Exam
Week 9	موقف النظام البع $ يث من الدين
Week 10	صور انتهاكات حقوق الانسان
Week 11	اماكن السجون والاحتجاز لنظام البعث
Week 12	تدم ري المدن والقرى سياسة الارض المحروقة
Week 13	احداث مقابر الابادة الجماعية المرتكبة من النظام
Week 14	جرائم المقابر الجماعية
Week 15	مقابر الابادة الجماعية ل : يث تعود للاحداث االمذكورة
Week 16	Preparatory week before the final Exam

Learning and Teaching Resources مصادر التعلم والتدريس		
	Text	**Available in the Library?**
Required Texts	كتاب جرائم حزب البعث ٬يق العراق / وزارة التعليم العا يل	نعم
Recommended Texts	المراجع ومواقع الان :ينت	نعم
Websites		

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

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

MODULE DESCRIPTION FORM

نموذج وصف المادة الدراسية

Module Information معلومات المادة الدراسية					
Module Title	**Cell biology**			**Module Delivery**	
Module Type	**core**			☒ **Theory** ☒ **Lecture** ☐ **Lab** ☐ **Tutorial** ☐ **Practical** ☐ **Seminar**	
Module Code					
ECTS Credits	**7**				
SWL (hr/sem)	**175**				
Module Level	2		**Semester of Delivery**	2	
Administering Department	**Biology**		**College**	**College of Science**	
Module Leader	Dr. Ghaidaa Husain Abd-Ali, Dr. sanaa kakei ; [Dr. Israa hussein hamzah ; dr.Saba Talib H dr. Tahreer hadi saleh]		**e-mail**	**E-Mail**: ghaidaalrubaie@gmail .com	
Module Leader's Acad. Title	**Professor**		**Module Leader's Qualification**	Ph.D.	
Module Tutor	Name (if available)		**e-mail**	E-mail	
Peer Reviewer Name			**e-mail**	E-mail	
Scientific Committee Approval Date	**1/06/2023**		**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	Strong background in the cellular of biology with particular emphasis on eukaryotes.. Cell organelles experiment involving microscopes let students see the size of cells, the nucleus, cell division, and depending on the microscope's power, see other cell organelles. Another great cell biology experiment is about diffusion of water through a cell membrane. Many great cell biology activities are also included, letting students learn cell biology in a fun and interactive process. Several cell biology projects are included, letting students use their imagination and problem solving skills. Cell biology worksheets and exam / test / quiz questions provide help in evaluating the student's understanding
Module Learning Outcomes مخرجات التعلم للمادة الدراسية	The chemistry of the cell macromolecules. Endomembrane system and its functions Organelles of the cells and its functions Genetic code and gene expression Cell cycle regulation and apoptosis Cell-cell interaction Mitosis and meiosis reproduction
Indicative Contents المحتويات الإرشادية	**Indicative content includes the** **Cell biology theory , discovery of the cell, definition of the cell, properties of the cells , Prokaryotic and eukaryotic cells characteristics [15 hrs]** **Organelles insides the cells, macromolecules: basic structure of proteins, lipids, carbohydrates, nucleic acids [15 hrs]** **Cell membrane structure(Fluid mosaic model). Movement of Solutes , types of transport insides the cells: passive and active transport[10 hrs]** **Membrane bound organelles insides the cell and study their importance like RE, nucleus, cytoplasm , cytoskeleton [15 hrs]** **Group discussion open class about cell biology theory [6 hrs]** **Eukaryotic cells. Structure of nucleic acids: DNA and RNA and how to determine protein structure and how this effect the cell** **[15 hrs]**

Learning and Teaching Strategies

استراتيجيات التعلم والتعليم	
Strategies	**Students learn about Cell Biology through this course and textbook. In addition, discussion, activities, and on exams, students will be asked to apply knowledge that learned in a critical-thinking questions.** **Students will be engaged in discussion and Group activities, which help students to lead each other to success.**

Student Workload (SWL)

الحمل الدراسي للطالب محسوب لـ ١٥ اسبوعا

Structured SWL (h/sem) الحمل الدراسي المنتظم للطالب خلال الفصل	64	**Structured SWL (h/w)** الحمل الدراسي المنتظم للطالب أسبوعيا	4
Unstructured SWL (h/sem) الحمل الدراسي غير المنتظم للطالب خلال الفصل	111	**Unstructured SWL (h/w)** الحمل الدراسي غير المنتظم للطالب أسبوعيا	7
Total SWL (h/sem) الحمل الدراسي الكلي للطالب خلال الفصل	**175**		

Module Evaluation

تقييم المادة الدراسية

		Time/Number	Weight (Marks)	Week Due	Relevant Learning Outcome
Formative assessment	**Quizzes**	2	20% (10)	5,10	LO #1, 2
	Assignments	2	5% (5)	11	LO # 2,3
	Projects / Lab.	1	15% (15)	15	
	Report	0			
Summative assessment	**Midterm Exam**	2hr	10% (10)	16	
	Final Exam	4hr	50% (50)		All
Total assessment			100% (100 Marks)		

Delivery Plan (Weekly Syllabus)

المنهاج الاسبوعي النظري	
	Material Covered
Week 1	Preview of the cell ,Evaluation of the cell ,Prokaryotic cell, virus
Week 2	The chemistry of the cell macromolecules: Proteins, Nucleic Acids (Part One)
Week 3	The chemistry of the cell macromolecules: Proteins, Nucleic Acids(Part Two)
Week 4	Cytoskeleton of cell, cell movement, cilia and flagella(Part One)
Week 5	Cytoskeleton of cell, cell movement, cilia and flagella (Part Two)
Week 6	membranes models, fluid mosaic model ;Transport across membranes
Week 7	Types of Cellular Transport
Week 8	Endomembrane system; endoplasmic reticulum,
Week 9	Ribosomes, Golgi apparatus
Week 10	Lysosomes, Vacuoles
Week 11	Mitochondria Respiration
Week 12	Chloroplast and photosynthesis
Week 13	Genetic code and gene expression
Week 14	Cell-cell interaction
Week 15	Mitosis and meiosis (part one)
Week 16	Mitosis and meiosis (part Two)

Delivery Plan (Weekly Lab. Syllabus) المنهاج الاسبوعي للمختبر	
	Material Covered
Week 1	Microscope, type of Microscope, animal and plant cell strucrture.
Week 2	Test of proteins
Week 3	Test of starch and test of sugars
Week 4	Recognizing flagella in organisms
Week 5	Learn the difference between flagella and cilia.
Week 6	membranes models ; movement molecules and ion across, ex: RBC, Allium cepa epidermis

Week 7	Diffusion,osmosis
Week 8	Measurement of cells. Slid and ocular micrometer
Week 9	Analysis of electron microscope photograph
Week 10	Identifying vacuoles in plants
Week 11	Respirometers
Week 12	Paper chromatography for separation of pigments
Week 13	DNA structures
Week 14	PCR mechanism and uses
Week 15	Animal mitosis stage and plant mitosis stage

Learning and Teaching Resources
مصادر التعلم والتدريس

	Text	Available in the Library?
Required Texts	**1- Principles of Cell Biology , by** Alberts **.(2023)** **2- Essentials of biology 3rd edition Mader, S.S. and Windelspencht, M. (2012) .McGraw-Hill.** **3- Cell biology, Gerald karp . sixth edition. (2010).** **4- The cell a molecular approach 3rd edition Cooper, G.M. and Hausman, R.E.(2004)**	
Recommended Texts	- Introduction of cell biology. Kelany , A.; Akeel , M. A.;Maqbool, T. K. AL-Handsaw -Bookshop Published (2012). 2-Essential Cell Biology 3 rd edition, by Alberts, Bray, Hopkin, Johnson, Lewis, Raff, Roberts, and Walter (2014).	
Websites		

Grading Scheme
مخطط الدرجات

Group	Grade	التقدير	Marks %	Definition
Success Group (50 - 100)	**A -** Excellent	امتياز	90 - 100	Outstanding Performance
	B - Very Good	جيد جدا	80 - 89	Above average with some errors
	C - Good	جيد	70 - 79	Sound work with notable errors
	D - Satisfactory	متوسط	60 - 69	Fair but with major shortcomings
	E - Sufficient	مقبول	50 - 59	Work meets minimum criteria

Fail Group (0 – 49)	**FX –** Fail	راسب (قيد المعالجة)	(45-49)	More work required but credit awarded
	F – Fail	راسب	(0-44)	Considerable amount of work required

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

MODULE DESCRIPTION FORM

نموذج وصف المادة الدراسية

Module Information معلومات المادة الدراسية					
Module Title	**Biochemistry**			**Module Delivery**	
Module Type	**Core**			☒ **Theory** ☒ **Lecture** ☒ **Lab** ☐ **Tutorial** ☐ **Practical** ☐ **Seminar**	
Module Code					
ECTS Credits	**6**				
SWL (hr/sem)	**150**				
Module Level	1		**Semester of Delivery**	2	
Administering Department	Type Dept. Code		**College**	Type College Code	
Module Leader	Dr. Sura Mohsin Abbood		**e-mail**	Dr.Suram@uomustansiriyah.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		**e-mail**	E-mail	
Scientific Committee Approval Date	30/06/2023		**Version Number**	1.0	

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

Module Aims, Learning Outcomes and Indicative Contents

أهداف المادة الدراسية ونتائج التعلم والمحتويات الإرشادية

Module Objectives أهداف المادة الدراسية	1. The course is designed to provide students basic concepts of biochemistry and the nature of its interdisciplinary importance. 2. Knowing and understanding the chemical nature, names and types of biological macromolecules that form the basis of life, including proteins, lipids, and carbohydrates. 3. To equip the students with the ability to identify and analyze the fundamental chemistry of biomolecules, while acknowledging the interplay between structure, functions, and properties of biomolecules. 4. To study the basics of enzymes: classification, enzyme action, regulations and characteristics of various enzymes applicable in pharmaceuticals and clinical diagnosis 5. To understand the structure, physico-chemical properties, and function of biological membranes. 6. Acquiring knowledge and understanding of current concepts in the subject of the course and develop critical thinking skills for students.
Module Learning Outcomes مخرجات التعلم للمادة الدراسية	Important: Write at least 6 Learning Outcomes, better to be equal to the number of study weeks. 1. Describe the basic types and structure of biomolecules and their importance. Students should be able to identify and know properties (functions) of biomacromolecules 2. Acquire the knowledge of the chemical structures of carbohydrates, and their biological function in cellular system 3. Learn about structure and function of lipids, circulating lipids and inflammatory lipid mediators etc. in addition to their role as a risk factor to related diseases 4. Understand membrane physicochemical properties, functions and main components 5. Evaluate and describe unique properties of amino acids, classification and structure as a building block of protein. Students will also learn about primary, secondary, tertiary, quaternary structure of proteins. 6. Discuss the protein architecture, refolding and denaturation. 7. Understand the basic principle of enzymology: enzymes classification, nomenclature and mechanism of action. 8. Study the factors that affect the enzyme activities, the importance of enzymes and their clinical significance. 9. Apply the knowledge of enzyme regulation and its relevance to drug discovery.
Indicative Contents المحتويات الإرشادية	Indicative content includes the following. **Part** A – ***Biochemistry-carbohydrates and lipids*** **Basic concept of biochemistry** **Carbohydrates** - Definition , Classification and Biological important [10 hrs] **Lipids** - Definition and Classification [8] Fatty acids- Saturated and unstated, Naming, Characteristics of fatty acids Steroid- cholesterol and prostaglandin [10 hrs] Lipoproteins, Coronary heart diseases- [10 hrs] Biological membrane. [8 hrs] Revision problem classes [6 hrs]

	Part B – Protein and enzyme **Amino acids** -Definition, nomenclature, classification and separation [10 hrs]. **From monomer to polymer peptide and protein**. Peptide bond, Naming of peptide. Protein structure and function, Architecture of protein molecules, Protein denaturation and folding [15 hrs]. **Enzymes** - Definition, Nomenclature, Classification, [8 hrs]. Mechanisms of action (two model of enzyme action & activation energy), Factors affected the enzyme activities, Cofactors and Coenzymes [10 hrs]. Enzyme specificity and regulation [10 hrs]. Enzymes in clinical diagnosis [10 hrs]. Inhibition of enzyme activity [10 hrs].

Learning and Teaching Strategies اس رتاتيجيات التعلم والتعليم	
Strategies	The main goal and strategy that was relied upon in this model is to work on motivating students to exert effort and active and scientific participation in lectures and laboratory work. Taking into account the improvement of constructive scientific thinking skills and positive posts. This goal will be reached through interactive and competitive programs during the semester, by conducting scientific experiments that concern all student samples

Student Workload (SWL) الحمل الدرا يس للطالب محسوب لـ ١٥ اسبوعا			
Structured SWL (h/sem) الحمل الدرا يس المنتظم للطالب خلال الفصل	64	**Structured SWL (h/w)** الحمل الدرا يس المنتظم للطالب أسبوعيا	4
Unstructured SWL (h/sem) الحمل الدرا يس غ رت المنتظم للطالب خلال الفصل	86	**Unstructured SWL (h/w)** الحمل الدرا يس غ رت المنتظم للطالب أسبوعيا	6
Total SWL (h/sem) الحمل الدرا يس الك يل للطالب خلال الفصل	**150**		

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

	Report				
Summative assessment	**Midterm Exam**	2hr	10% (10)	16	6
	Final Exam	4hr	50% (50)		All
Total assessment			100% (100 Marks)		

Delivery Plan (Weekly Syllabus) المنهاج الاسبو يع النظري	
	Material Covered
Week 1	Life is made of molecules: The basics concept of chemistry in cells
Week 2	Carbohydrates chemical nature and classification
Week 3	Biomedical importance of carbohydrates
Week 4	Lipids, lipoproteins and other cardiovascular risk factors
Week 5	The structure of biological membranes
Week 6	Amino acids and their polymers: peptides and proteins/ Protein structure and biological function
Week 7	Architecture of protein molecules
Week 8	**Midterm Exam**
Week 9	Protein denaturation and folding
Week 10	Enzymes classification, nomenclature and mechanism of action
Week 11	The effects of surrounding conditions on enzyme activity
Week 12	Enzyme specificity and regulation
Week 13	Inhibition of enzyme activity
Week 14	Enzymes in clinical diagnosis
Week 15	**Preparatory week before the final Exam**

Delivery Plan (Weekly Lab. Syllabus) المنهاج الاسبو يع للمخت .ت	
	Material Covered
Week 1	Lab 1: Basic concept of clinical biochemistry- types of blood cells
Week 2	Lab 2: Blood collection and handling – the clotting process
Week 3	Lab 3: Determination of hemoglobin Hb
Week 4	Lab 4: Determination of ESR (Erythrocyte Sedimentation Rate)
Week 5	Lab 5: Colorimetric analysis – spectrophotometer
Week 6	Lab 6: Determination of blood glucose

Week 7	Lab 7: Determination of cholesterol
Week 8	**Lab 8: Midterm Exam**
Week 9	Lab 9: Determination of bilirubin
Week 10	Lab 10: Determination of urea
Week 11	Lab 11: Determination of serum creatinine
Week 12	Lab 12: Determination of GOT (glutamate oxaloacetate transaminase)
Week 13	Lab 13: Determination of GPT (glutamate pyruvate transaminase)
Week 14	Lab 14: Determination of alkaline phosphatase
Week 15	Lab 15 : Preparatory week before the final Exam

Learning and Teaching Resources

مصادر التعلم والتدريس

	Text	Available in the Library?
Required Texts	*Principles of Biochemistry*, David L. Nelson , Michael M. Cox, Fifth Edition, 2008	Online Free download
Recommended Texts	Garrett and Grisham **''*Biochemistry*''** 2th ed, Prentice Hall, P. 1205 (1992). *Jung*, K., 2006. Tietz Textbook of Clinical Chemistry and Molecular Diagnostics, Carl A. Burtis, Edward R. Ashwood, and David E. Bruns, editors. St. Louis, MO: Elsevier Saunders, 2006, 2448 pp., hardcover. ISBN 0-7216-0189-8. Clinical Chemistry, 52(6), pp.1214-1214.	Online Free download
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.