وصف البرنامج الاكاديمي

اسم الجامعة: جامعة العلوم العراقية

الكلية: كلية العلوم

القسم العلمي :علوم الحياة

اسم البرنامج الاكاديمي او المهني : بكالوريوس علوم في علوم الحياة

النظام الدراسي : نظام بولونيا

تاريخ اعداد الوصف : 2025/12/1

تاريخ ملء الملف : 2025/12/1

اللجنة المركزية لضمان الجودة لمسار بولونيا

التوقيع: التوقيع: التوقيع:

اسم رئيس اللجنة : أ.د.كوثرعبود اسم العضو :أ.م.د.رنا عبد الرحمن اسم العضو:أد.باسمة محسن

التوقيع: التوقيع:

اسم العضو :أ.م.هدى نجم الدين اسم العضو:أ.د.صباح ناصر حسين

اللجنة الفرعية لضمان الجودة لمسار بولونيا

التوقيع: التوقيع: التوقيع:

اسم رئيس اللجنة: اسم العضو: م.م. زينب صادق اسم العضو: م.م. هداية يعقوب

دقق الملف من قبل:

شعبة ضمان الجودة والاداء الجامعي

اسم مدير شعبة ضمان الجودة والاداء الجامعي:

التاريخ :

التوقيع

كلية بغداد للعلوم الاقتصادية
الجامعة

Iraqi University of Science / College of Science

جامعة العلوم العراقية/ كلية العلوم

First Cycle – Bachelor's Degree (B.Sc.) Department of **Biology** College of Sciences

Table of Contents | جدول المحتويات

1. Mission & Vision Statement

Vision Statement

The Department of Biology seeks to we seek to prepare highly qualified graduates who are qualified to work in the fields of life sciences in its various branches.

Mission Statement

It aims to provide students spread with awareness and knowledge in the fields of life sciences by providing the country with researchers and professors capable of dealing with the recent changes and developments taking place in the world and contributing to the development of our scientific, health, industrial and environmental institutions in solving the problems that hinder their progress.

2. Program Specification

Program code:	BcS.BIO	**ECTS**	240
Duration:	4 levels, 8 Semesters	**Method of Attendance:**	Full Time

The **Biology program** is designed to provide students with comprehensive scientific knowledge and practical laboratory skills required for professional and academic careers in diverse fields of life sciences. The program aligns with national and international accreditation standards, ensuring that graduates acquire the scientific competencies expected by academic institutions, research centers, healthcare facilities, and industry sectors related to biological sciences.

The program follows a structured and progressive curriculum that integrates theoretical foundations with practical application. **Level 1** establishes essential scientific competencies in general biology, chemistry, biophysics, mathematics, and biostatistics, alongside introductory computer skills and scientific research methods. This level provides students with a strong foundation for advanced study. **Level 2** focuses on core disciplinary subjects, including cell biology, genetics, microbiology, and biochemistry, with an emphasis on conceptual understanding and laboratory-based learning.

At **Levels 3 and 4**, students develop advanced knowledge and practical skills in specialized areas such as molecular biology, immunology, biotechnology, histology, medical microbiology, ecology, and biodiversity. The program emphasizes the development of scientific analysis, data interpretation, and the application of modern laboratory techniques, while reinforcing principles of biosafety, laboratory management, and quality assurance. Graduates are trained to operate in accordance with national regulations and internationally recognized standards governing biological laboratories and research environments.

Practical training and research activities are emphasized throughout the program. Laboratory sessions are integrated into theoretical courses or offered as dedicated practical modules, supported by research seminars, workshops, and tutorials. A compulsory field training course at **Level 1** introduces students to professional laboratory environments, while optional field training courses at **Levels 2, 3, and 4** provide extended experiential learning opportunities. The program culminates at **Level 4** with an independent graduation research project, enabling students to apply theoretical knowledge and practical skills to real-world problems in life sciences.

Graduates of the Life Sciences program will possess industry-relevant and research-oriented competencies, enabling them to contribute effectively to

scientific research, healthcare services, environmental management, and educational sectors in both public and private institutions, while adhering to professional ethics and legal frameworks.

Program Goal

Biology of Sciences is a field that applies biological, chemical, and physical principles to the study of living organisms and biological systems at the molecular, cellular, organismal, and ecological levels. Professionals in this field require a broad range of scientific, analytical, and laboratory competencies to effectively understand, analyze, and apply biological knowledge in research, healthcare, environmental, and industrial contexts. Accordingly, the essential competencies for graduates of the **Department of Biology of Sciences** include:

1. **Foundational Biological Knowledge**: Ability to apply core concepts in biology, including cell biology, genetics, microbiology, biochemistry, and physiology, across diverse life science applications.

2. **Laboratory and Experimental Skills**: Proficiency in performing standard and advanced laboratory techniques, including sample preparation, microscopy, biochemical assays, molecular techniques, and data recording, in accordance with laboratory safety standards.

3. **Scientific Research and Methodology**: Capability to apply the scientific method, design experiments, formulate hypotheses, collect and analyze biological data, and interpret experimental results.

4. **Molecular and Cellular Analysis**: Skills in understanding and analyzing molecular and cellular processes, including gene expression, protein function, cellular signaling, and metabolic pathways.

5. **Microbiology and Immunology Competence**: Ability to identify, culture, and analyze microorganisms, understand host–pathogen interactions, and apply basic immunological principles in laboratory and applied settings.

6. **Biotechnology and Applied Life Sciences**: Understanding and application of biotechnology principles, including recombinant DNA techniques, bioprocessing, and biological product development.

7. **Environmental and Ecological Awareness**: Competence in analyzing biological systems within environmental and ecological contexts, including

biodiversity, ecosystems, conservation, and environmental sustainability.

8. **Data Analysis and Biostatistics**: Ability to analyze biological data using statistical methods and basic computational tools, and to present scientific findings accurately and effectively.

9. **Biosafety, Ethics, and Regulatory Compliance**: Understanding of biosafety practices, ethical principles, and legal frameworks governing biological research, laboratory work, and the use of living organisms.

10. **Critical Thinking and Problem-Solving**: Capability to evaluate scientific literature, assess biological problems, and propose evidence-based solutions.

11. **Communication and Teamwork Skills**: Ability to communicate scientific information clearly in written and oral forms and to work effectively within multidisciplinary scientific teams.

Summary:

A **Life Sciences specialist** is equipped with comprehensive knowledge and practical skills in biological systems, laboratory techniques, experimental design, data analysis, biosafety, and scientific research. These competencies collectively prepare graduates to investigate biological phenomena, conduct laboratory and field-based studies, analyze and interpret scientific data, and contribute effectively to research, healthcare, environmental management, and biotechnological applications, while adhering to ethical standards and regulatory requirements.

3. Program Student Learning Outcomes

The **Department Biology of Sciences** emphasizes that professionals must possess not only strong scientific and technical knowledge but also a set of generic competencies that enable them to perform effectively in diverse, dynamic, and multidisciplinary scientific environments. The essential generic competencies include:

1. **Analytical Thinking**: The ability to observe, analyze, and evaluate complex biological phenomena, experimental results, and scientific problems, and to develop evidence-based conclusions and solutions.

2. **Continuous Learning**: Commitment to staying up to date with advances in biological sciences, laboratory techniques, scientific technologies, and emerging research findings is essential for professional competence.

3. **Adaptability**: Ability to respond effectively to scientific developments, technological innovations, changing research priorities, and diverse working environments.

4. **Creativity and Innovation**: Creative thinking supports the development of innovative research approaches, experimental designs, and practical applications in biological and life science fields.

5. **Teamwork**: Effective collaboration with researchers, laboratory staff, healthcare professionals, and interdisciplinary teams is vital for successful scientific and applied projects.

6. **Communication Skills**: Clear and accurate communication of scientific concepts, experimental data, and research findings to both scientific and non-scientific audiences in written and oral formats.

7. **Project Management**: Competence in planning, organizing, and managing research activities, laboratory work, and scientific projects to ensure efficient use of time, resources, and materials.

8. **Time Management**: Ability to prioritize tasks, manage laboratory schedules, and meet research and project deadlines while maintaining quality and safety standards.

9. **Leadership**: Capability to guide, supervise, and motivate research teams or laboratory groups, and to contribute effectively to decision-making processes in scientific environments.

10. **Applied Scientific Solutions Design**: The ability to design, develop, and implement scientific and laboratory-based solutions that address specific research, healthcare, environmental, or industrial challenges.

Conclusion:

Sciences of Biology professionals require a balanced combination of scientific, technical, and generic competencies to perform effectively in their roles. Analytical thinking, continuous learning, adaptability, creativity, teamwork, effective communication, project management, time management, leadership, and the ability to design applied scientific solutions are essential attributes. These competencies enhance professional performance, support scientific innovation, and ensure the effective advancement of research, healthcare, environmental management, and applied biological sciences within the field of biology.

4. Academic Staff

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5. Credits, Grading and GPA

Credits

University of Technology is following the Bologna Process with the European Credit Transfer System (ECTS) credit system. The total degree program number of ECTS is 240, 30 ECTS per semester. 1 ECTS is equivalent to 30 hrs student workload, including structured and unstructured workload.

Grading

Before the evaluation, the results are divided into two subgroups: pass and fail. Therefore, the results are independent of the students who failed a course. The grading system is defined as follows:

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:				
Number 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.				

Calculation of the Cumulative Grade Point Average (CGPA)

1. The CGPA is calculated by the summation of each module score multiplied by its ECTS, all are divided by the program total ECTS.

   CGPA of a 4-year B.Sc. degree:

   CGPA = [(1st ^{m}odule score x ECTS) + (2nd ^{m}odule score x ECTS) + ……] / 240

6. Curriculum/Modules

Semester 1 | 30 ECTS credits | 1 ECTS = 25 hrs

No.	Code	Module	SSWL	USSWL	ECTS	Type	Pre-request
	BIO11001	General Zoology	63	137	8.00	C	
1	BIO11002	General Chemistry	63	87	6.00	S	
2	BIO11003	General Mathematics and Biostatistics	48	77	5.00	S	
3	UOB103	Computer Skills I	48	27	3.00	B	
4	UOB104	Democracy and Human rights	33	17	2.00	S	
5	UOB101	Arabic Language I	33	17	2.00	B	

Semester 2 | 30 ECTS | 1 ECTS = 25 hrs

No.	Code	Module	SSWL	USSWL	ECTS	Type	Pre-request
1	BIO12007	General Botany	63	137	8.00	C	
2	BIO12108	Biochemistry	63	87	6.00	S	
3	BIO12009	Biosafety and Biosecurity	18	57	3.00	C	
4	BIO12010	Bacteriology	63	87	6.00	C	
5	BIO12011	General Physics	63	62	5.00	S	
6	UOB102	English language I	33	17	2.00	B	

Semester 3 | 30 ECTS | 1 ECTS = 25 hrs

No.	Code	Module	SSWL	USSWL	ECTS	Type	Pre-request
1	BIO23013	Invertebrates	63	62	5	C	
2	BIO23014	Entomology	63	62	5	C	
3	BIO23115	Cytology	63	62	5	C	
4	BIO23016	Ecology	63	62	5	C	
5	BIO23117	Plant Anatomy	63	37	4	C	

6	BIO23018	Mycology	63	37	4	C	
7	UOB208	The Crimes of the Baath Regime in Iraq	33	17	2.00	S	

Semester 4 | 30 ECTS | 1 ECTS = 25 hrs

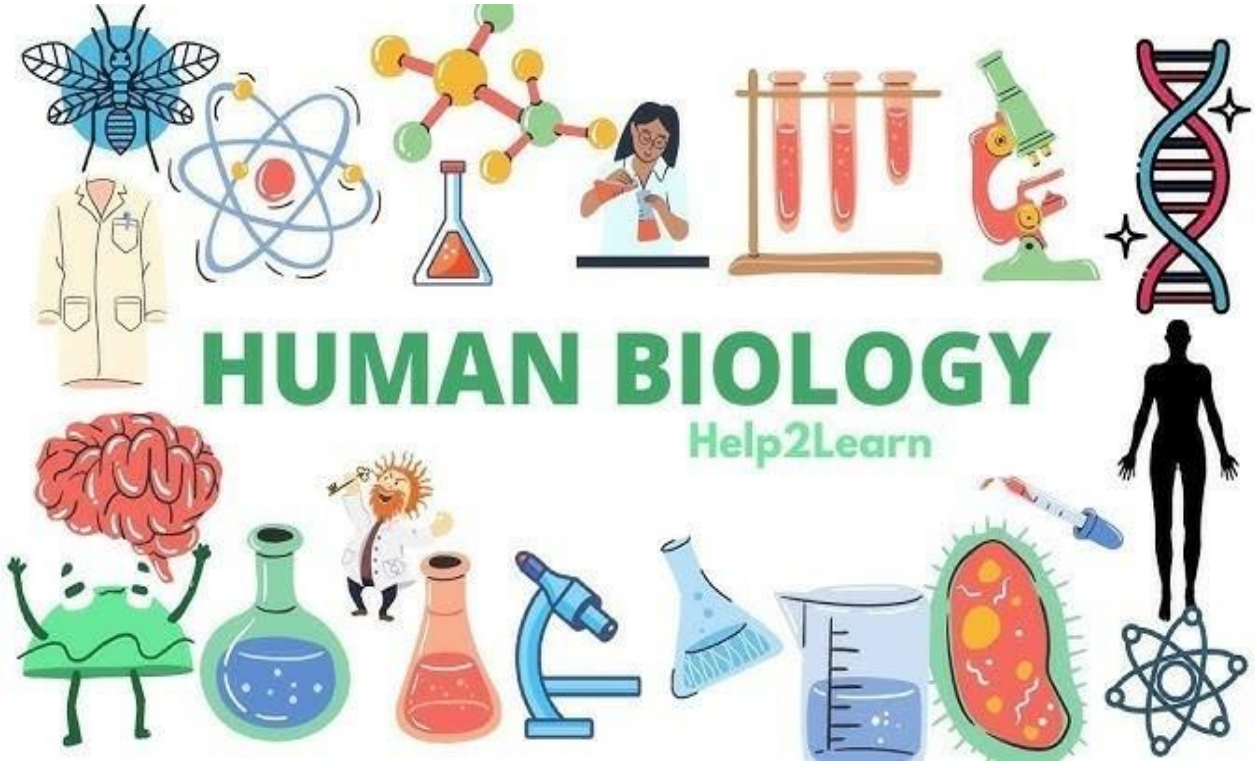
No.	Code	Module	SSWL	USSWL	ECTS	Type	Pre-request
	BIO24120	Protozoan Parasitology	63	87	6.00	C	
1	BIO24021	Plant Taxonomy	63	62	5.00	C	
2	UOB207	Computer Skills II	48	27	3.00	B	
3	BIO24023	Pollution	63	87	6.00	C	
4	BIO24024	Phycology and Archegoniate	63	87	6.00	C	
5	UOB206	English language II	33	17	2.00	B	
6	UOB205	Arabic Language II	33	17	2	B	

Al-Iraqia Science University -College of Science

Department of Biology

First Cycle – Bachelor's degree (B.Sc.) – Biology

بكالوريوس علوم - علوم الحياة



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1. Mission & Vision Statement

Vision Statement

The Department of Biology vision is to be a leading center of excellence in biological sciences, dedicated to advancing knowledge and understanding of the natural world. We strive to inspire curiosity and critical thinking, and to foster a deep appreciation for the complexity and diversity of life. Our department is committed to innovative research, education, and outreach, and to preparing the next generation of scientists, educators, and leaders in the field. We seek to promote interdisciplinary collaboration and to make meaningful contributions to society through our work in areas such as Botany, Zoology, Ecology, and Microbiology.

Mission Statement

The Department of Biology mission is to provide a rigorous and comprehensive education in biological sciences, grounded in scientific inquiry and critical thinking. The academic staff are committed to advancing knowledge and solving real-world problems through innovative research that spans from molecules to ecosystems. The department seeks to inspire and engage students at all levels, and to prepare them for a wide range of careers in academia, industry, government, and beyond. Our department values diversity, inclusivity, and equity, and we are dedicated to creating an environment that fosters intellectual curiosity, creativity, and collaboration. The Department of biology aims to be a

resource for our community, and to promote scientific literacy and informed decision-making on issues related to biology.

2. Program Specification

Programme code:	BSc-BIO	**ECTS**	240
Duration:	4 levels, 8 Semesters	**Method of Attendance:**	Full Time

Biology is a very broad topic, and the College of Science at the University of Baghdad, as the hub of Iraq's most diversified biology teaching organization, is well positioned to fulfill its mission. The focus of the Biology program is on the entire organism, and how everything is connected, whether it's macromolecules that make organism's bodies or communities distributed in a particular environment.

All students will have a broad knowledge in basic sciences such as General Biology, Chemistry, Biophysics, Mathematics, and Computer skills at the end of the first level. At Levels 2, 3 and 4 students will span over a variety of specialized modules enable them to gain a comprehensive; yet, detailed knowledge located in four different disciplines; Microbiology, Botany, Ecology, and Zoology. This empowers our students with breadth of interests and skill offering an opportunity to enter labour market. Moreover, at Level 4 all students conduct a research project, which might be field- or laboratory-based project.

3. Program Goals

a. Develop a deep understanding of fundamental biological concepts and principles, including the structure and function of cells, genetics and inheritance, evolution and biodiversity, ecology and environmental interactions, and physiology and behavior.
b. Develop critical thinking and problem-solving skills, including the ability to analyze scientific data, design and conduct experiments, evaluate scientific arguments, and apply knowledge to solve real-world problems.
c. Develop laboratory and research skills, including the ability to use scientific instruments and techniques, collect and analyze data, and communicate scientific findings.
d. Develop effective communication skills, including the ability to write clear, concise, and accurate scientific reports, present scientific findings to diverse audiences, and collaborate effectively with others.

e. Develop an understanding of the interdisciplinary nature of biology and its connections to other fields, such as chemistry, physics, mathematics, and computer science.

4. Student Learning Outcomes

a. Identify and classify living organisms and their internal structures.
b. Recognise the evolutionary and genetic relationships of living organisms.
c. Knowledge of the physiology of living organisms and the most important metabolic pathways through which they gain or consume energy.
d. Comprehend the relationships that govern living organisms in their living environments.
e. Develop thinking skills and scientific research in the various fields of life sciences: microbiology, zoology, botany, and ecology.

5. Academic Staff

1- Dr. Sabah Nasir Hussain Alwachi| Ph.D. in physiology

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Mobile: 07780101799

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	B - Very Good	جيد جدا	80 - 89	Above average with some errors
	C - Good	جيد	70 - 79	Sound work with notable errors
	D - Satisfactory	متوسط	60 - 69	Fair but with major shortcomings
	E - Sufficient	مقبول	50 - 59	Work meets minimum criteria
Fail Group (0 – 49)	FX – Fail	راسب - قيد المعالجة	(45-49)	More work required but credit awarded
	F – Fail	راسب	(0-44)	Considerable amount of work required
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   CGPA of a 4-year B.Sc. degree:

   CGPA = [(1st module score x ECTS) + (2nd module score x ECTS) + ……] / 240

7. Curriculum/Modules

Semester 1 | 30 ECTS | 1 ECTS = 25 hrs

Code	Module	SSWL	USSWL	ECTS	Type	Pre-request
BIO11001	General Zoology	63	137	8.00	C	
BIO11002	General Chemistry	63	87	6.00	S	
BIO11003	General Mathematics and Biostatistics	48	77	5.00	S	
UOB103	Computer Skills I	48	27	3.00	B	
UOB104	Democracy and Human rights	33	17	2.00	S	
UOB101	Arabic Language I	33	17	2.00	B	

Semester 2 | 30 ECTS | 1 ECTS = 25 hrs

Code	Module	SSWL	USSWL	ECTS	Type	Pre-request
BIO12007	General Botany	63	137	8.00	C	
BIO12108	Biochemistry	63	87	6.00	S	
BIO12009	Biosafety and Biosecurity	18	57	3.00	C	
BIO12010	Bacteriology	63	87	6.00	C	
BIO12011	General Physics	63	62	5.00	S	
UOB102	English language I	33	17	2.00	B	

Semester 3 | 30 ECTS | 1 ECTS = 25 hrs

Code	Module	SSWL	USSWL	ECTS	Type	Pre-request
BIO23013	Invertebrates	63	62	5	C	
BIO23014	Entomology	63	62	5	C	
BIO23115	Cytology	63	62	5	C	
BIO23016	Ecology	63	62	5	C	
BIO23117	Plant Anatomy	63	37	4	C	
BIO23018	Mycology	63	37	4	C	
UOB208	The Crimes of the Baath Regime in Iraq	33	17	2.00	S	

Semester 4 | 30 ECTS | 1 ECTS = 25 hrs

Code	Module	SSWL	USSWL	ECTS	Type	Pre-request
BIO24120	Protozoan Parasitology	63	87	6.00	C	
BIO24021	Plant Taxonomy	63	62	5.00	C	
UOB207	Computer Skills II	48	27	3.00	B	
BIO24023	Pollution	63	87	6.00	C	
BIO24024	Phycology and Archegoniate	63	87	6.00	C	
UOB206	English language II	33	17	2.00	B	
UOB205	Arabic Language II	33	17	2	B	

Semester 5 | 30 ECTS | 1 ECTS = 25 hrs

Code	Module	SSWL	USSWL	ECTS	Type	Pre-request
BIO35127	Plant Physiology	63	62	5.00	C	
BIO35128	Microbial Physiology	63	62	5.00	E	
BIO35029	Animal Histology	63	62	5.00	C	
BIO35130	Pathogenic Bacteria	63	62	5.00	C	
BIO35031	Medical Helminthology	63	62	5.00	E	
BIO35132	Genetics	63	62	5.00	C	

Semester 6 | 30 ECTS | 1 ECTS = 25 hrs

Code	Module	SSWL	USSWL	ECTS	Type	Pre-request
BIO36133	Medicinal Plants	63	87	6.00	E	BIO35127
BIO36134	Aquatic and Soil Microbiology	63	87	6.00	E	BIO12010, BIO23016
BIO36135	Animal Physiology	63	87	6.00	C	BIO35029
BIO36136	Antibiotics	63	87	6.00	E	BIO35128
BIO36137	Development and Biodiversity	63	62	5.00	C	BIO23016
UOB309	Scientific Research Methodology	18	7	1.00	B	

Semester 7 | 30 ECTS | 1 ECTS = 25 hrs

Code	Module	SSWL	USSWL	ECTS	Type	Pre-request
BIO47039	Molecular Biology	63	112	7.00	C	
BIO47140	Food Microbiology	63	87	6.00	E	
BIO47141	Embryology	63	87	6.00	E	
BIO47142	Clinical Analyses	63	112	7.00	C	
BIO47044	Research Project	33	67	4.00	C	

Semester 8 | 30 ECTS | 1 ECTS = 25 hrs

Code	Module	SSWL	USSWL	ECTS	Type	Pre-request
BIO48145	Genetic Engineering	63	87	6.00	E	
BIO48146	Virology	63	62	5.00	C	
BIO48147	Comparative Anatomy	63	62	5.00	E	
BIO48148	Biotechnology	63	62	5.00	C	
BIO48149	Immunology	63	62	5.00	C	
BIO48150	Research Project	33	67	4.00	C	BIO36038

8. Contact

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Email: dr.sabahalwachi@baghdadcollege.edu.iq

	Ministry of Higher Education and Scientific Research Al- Iraqia Science University	

MODULE DESCRIPTION FORM

نموذج وصف المادة الدراسية (اللغة العربية)

Module Information معلومات المادة الدراسية				
Module Title	اللغة العربية		**Module Delivery** يجب تحديد متطلبات المادة	
Module Type	Support		☒ **Theory** ☐ **Lecture** ☐ **Lab** ☒ **Tutorial** ☐ **Practical** ☐ **Seminar**	
Module Code	UOB101			
ECTS Credits	2			
SWL (hr/sem)	50			
Module Level	UG 1	**Semester of Delivery**	1	
Administering Department	Biology	**College**	Science	
Module Leader	عاتكة عبد الكريم عبد الحميد	**e-mail**	atikaabdulkareem@baghdadcollege.edu.iq	
Module Leader's Acad. Title	مدرس مساعد	**Module Leader's Qualification**	الماجستير	

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

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

Module Aims أهداف المادة الدراسية	1) تهدف إلى تنمية روح الاعتزاز باللغة العربية للمحافظة على الهوية العربية. 2) تهدف إلى تأهيل الطلبة بالمعارف والمخرجات الخاصة علم النحو والصرف، والإملاء؛ لتمكنه من الكتابة الصحيحة والتعبير السليم وتقويم لسانه. 3) تهدف إلى تنمية ذوق الطالب الأدبي وإثراء تحصيله وإغناء زاده من الفكر العربي والإسلام. 4) تهدف إلى تطوير مهارات الطلاب اللغوية التي تؤهلهم للإبداع المتميز. 5) تهدف إلى تنمية مهارات التحدث بـ (اللغة العربية). 6) تهدف إلى الارتقاء بمستوى الطلبة من الجانب المهني والبحثي.
Module Learning Outcomes مخرجات التعلم للمادة الدراسية	1. التعرف على أهم خصائص اللغة العربية وأهميتها في مجال العلم كونها أداة نقل العلم والمعرفة 2. التعرف على أقسام الكلمة وعلامات كل منها كونها المحور الرئيسي الذي يتألف منها الكلام 3. التمييز بين المبني والمغرب وعلامات كل منها وتوضيحها بالأمثلة 4. التعرف على المبتدأ والخبر من حيث تعريفهما وحكمهما وبيان ذلك بالأمثلة التوضيحية 5. التعرف على النواسخ لغة واصطلاحاً وأقسامها وعملها وبيان ذلك بالأمثلة التوضيحية 6. التعرف على الأعداد وبيان العلاقة بين العدد والمعدود من حيث المطابقة والمخالفة أو الاستعمال بلفظ واحد، ومعرفة التقديم والتأخير بين العدد والمعدود، فضلا عن معرفة أحكام العدد والمعدود في كل منها 7. التعرف على المشتقات والذي تعد من أبرز خصائص اللغة العربية التي تميزت بها عن اللغات الأخرى، وبيان حيويتها وقدرتها على استيعاب العلوم والتعبير عنها، وذلك بدراسة أنواع المشتقات واشتقاقاتها واستعمالاتها كـ (اسم الفاعل، اسم المفعول، صيغة المبالغة....) 8. التعرف على جمع التكسير ، وأنواعها جمع القلة وجمع الكثرة وأوزانها 9. التعرف على قواعد كتابة التاء المربوطة والمفتوحة في آخر الألفاظ، وذلك بذكر مواضع كل منها، والتمييز بين الهاء والتاء المربوطة، مع ضبط كتابة التاء المربوطة وفق القاعدة 11. التمييز بين الضاد والظاء كون مشكلة الفرق بين الضاد والظاء تكمن في النطق والكتابة وذلك بدراسة محاور الفرق بين الضاد والظاء من حيث الاسم والرسم والنطق والمعنى وغير ذلك 11. التعرف على الهمزة كونها أحد حروف اللغة العربية والتمييز بين همزة الوصل والقطع، وذلك بذكر مواضع كل منها، فضلًا عن قواعد كتابة همزة القطع وصورها المختلفة 12. تمكن الطالب من استعمال علامات الترقيم في كتابة البحوث والتقارير أو أي نص آخر واستعمالها استعمالًا صحيحاً، لما لها من أثر في توضيح النص بين المتكلم والمتلقي 13. التعرف على أهم الأغلاط اللغوية الشائعة النحوية والصرفية، والإملائية 14. التعرف على الشاعر العراقي محمد مهدي الجواهري كونه رمز من رموز الشعر العمودي في العراق والشاعر بدر شاكر السياب كونه أحد رواد الشعر الحر في العراق
Indicative Contents المحتويات الإرشادية	1. للغة العربية: خصائصها، مميزاتها، أهميتها. 2. أقسام الكلمة: الاسم والفعل والحرف. 3. المبني والمعرب علامات البناء وعلامات الإعراب. 4. المبتدأ، الخبر. 5. النواسخ : كان وأخواتها، إن وأخواتها، لا النافية للجنس، المشبهات بـ (ليس) ظن وأخواتها. 6. العدد: أحكام العدد. 7. المشتقات: اسم الفاعل، اسم المفعول، صيغة المبالغة.... 8. جمع التكسير : جمع القلة، جمع الكثرة. 9. التاء المربوطة والتاء المفتوحة في أخر الألفاظ : التاء المربوطة القصيرة) في آخر الألفاظ ،التاء المفتوحة الطويلة، المبسوطة في آخر الألفاظ.

	11. الفرق بين الضاد والظاء: صوت الضاد - حرف الضاد، صوت الظاء - حرف الظاء. - الهمزة وقواعد كتابتها همزة الوصل وهمزة القطع. 11. علامات الترقيم: مواضع علامات الترقيم ، علامات التنقيط. 12. الأغلاط اللغوية الشائعة: الأغلاط اللغوية النحوية، الصرفية الإملائية. 13. الشاعر محمد مهدي الجواهري : حياته مؤلفاته. 14. الشاعر بدر شاكر السياب حياته، مؤلفاته.

Learning and Teaching Strategies
استراتيجيات التعلم والتعليم

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

Student Workload (SWL)
الحمل الدراسي للطالب موزع على (15) اسبوع

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	1.13
Total SWL (h/sem) الحمل الدراسي الكلي للطالب خلال الفصل			

Module Evaluation
تقييم المادة الدراسية

		Time/Number (عدد مرات الامتحان)	Weight (Marks)	Week Due (تحديد اسابيع الامتحان)	Relevant Learning Outcome (تحديد مواد التعليم اللي سيتم الامتحان فيها
Formative assessment التقييم التكويني	**Quizzes** (امتحان شهري)	2	10%(10)	3,9	Lo # 1,2 and 8
	Assignments (واجبات)	2	10%(10)	5,8	Lo # 4 and 8
	Projects / Lab. (مشاريع او مختبرات)	1	10%(10)	continuous	All
	Report (تقارير)	1	10%(10)	10	Lo # 1,2

					,3,4,5,6,7,8,9,10,11,12 and 14
Summative assessment التقييم التلخيصـــي	**Midterm Exam** (امتحان النصف)	2hr	10%(10)	7	Lo # 1,6
	Final Exam (الامتحان النهائي)	3hr	50%(10)	16	All
Total assessment			100% (100 Marks)		

Delivery Plan (Weekly Syllabus)
المنهاج الاسبوعي النظري

	Material Covered
Week 1	اللغة العربية: خصائصها وأهميتها.
Week 2	اقسام الكلمة والمبني والمعرب منها.
Week 3	العدد وأحكامه.
Week 4	المشتقات ومنها (اسم الفاعل، اسم المفعول، صيغ المبالغة...) .
Week 5	قواعد كتابة التاء المربوطة والمفتوحة في آخر الألفاظ.
Week 6	الهمزة وقواعد كتابتها.
Week 7	امتحان نصف الفصل.
Week 8	المبتدأ والخبر.
Week 9	النواسخ.
Week 10	جمع التكسير وانواعه.
Week 11	علامات الترقيم: تعريفها وأنواعها ومواضع كل منها.
Week 12	الفرق بين الضاد والظاء.
Week 13	الاغلاط اللغوية الشائعة.
Week 14	الادب: الشعراء العراقيون : الشاعر محمد مهدي الجواهري الشاعر العراقي بدر شاكر السياب
Week 15	مراجعة للمنهج قبل الامتحان النهائي.
Week 16	امتحان ختامي.

Learning and Teaching Resources
مصادر التعلم والتدريس

	Text	**Available in the Library?**
Required Texts	القرآن الكريم. اللغة: التطبيق الصرفي د. عبده الراجحي.	Yes

	جامع الدروس العربية: الشيخ مصطفى الغلاييني. السلامة اللغوية د. علاء حسن مشكور. شرح ابن عقيل ابن عقيل، تحقيق: محمد محي الدين عبد الحميد. فقه اللغة العربية وخصائصها: د. إميل بديع يعقوب. كيف تكتب بحثاً أو رسالة: د. أحمد شلبي. الوجيز في اللغة العربية: أ.د. محيي هلال السرحان.	
Recommended Texts	ديوان بدر شاكر السياب. ديوان الجواهري.	
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.

	Ministry of Higher Education & Scientific Research AL-Iraqia Science University College of Science Biology Department	

MODULE DESCRIPTION FORM

Module Information

Module Title	**DEMOCRACY & HUMAN RIGHTS**	**Module Delivery**	
Module Type	**Support**	☒ **Theory** ☒ **Tutorial.**	
Module Code	**UOB104**		
ECTS Credits	2		
SWL (hr/sem)	50		

Module Level	1	**Semester of Delivery**	1
Administering Department	Biology	**College**	Science
Module Leader	Marwa jasim	**e-mail**	Marwajoj994@gmail.com
Module Leader's Acad. Title	Asst.lecturer	**Module Leader's Qualification**	MSc
Module Tutor	Marwa jasim	**e-mail**	
Peer Reviewer Name	Dr.Sabah Alwachi	**e-mail**	sabahalwachi@yahoo.com
Scientific Committee Approval Date	9/11/2023	**Version Number**	1.0

Relation with other Modules

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

Module Aims, Learning Outcomes and Indicative Contents أهذاف انمادة انذراسيت ونتائج انتعهم وانمحتياث الإرشاديت	
Module Aims أهذاف انمادة انذراسيت	1. This course deals with the basic concept of human rights& democracy 2. Clarifying and training students on the most important principles of human rights and democracy. 3. Organizing discussions and presentations on the most vital and basic topics affecting community building, related to human rights and democracy. 4. Adopting teamwork with students to develop their cognitive abilities and create a spirit of cooperation, initiative, creativity and exchange of views in an effort to build the foundations of peaceful community coexistence. 5. Providing society with conscious youth aware of the importance of its role in building society, its unity and cohesion through spreading the culture of human rights and establishing the rules of correct democracy. 6. Human rights guarantee the protection and respect of an individual's interests, even when he or she is not a majority. In a democratic climate, sustainable democratic power cannot be conceived without respecting, protecting and fulfilling human rights. Through their combined influence, they allow the individual a life based on the freedom of self-determination and collective. That is why the protection and realization of human rights truly form the basis of the democratic project.
Module Learning Outcomes مخرجاث انتعهم نهمادة انذراسيت	Cognitive goals. 1. Educate students and inform them about the importance of human rights and democracy. 2. Recognize and understand the methods of teamwork for the exchange of ideas and creative discussions 3. Developing students' performance through guidance in preparing mini-research on modern vocabulary on vital topics related to human rights and democracy. 4. Providing students with creative development abilities in modern proposals and creative developmental ideas by discussing awareness videos presented on electronic classes. 5. Developing the skills of sharing opinions and ideas and respecting other's opinion. 6. Objective Skills : 7. Basic knowledge in the principles of human rights and democracy. 8. Building the innovative personality of knowledge through online research and the transfer and exchange of information. 9. Discuss the various properties about everything related to human rights and their importance in our daily lives. 10. Identify everything related to democracy and the foundations of the

	performance of the electoral process and its importance in building the nation. **11.** Identify the capacitor and inductor phasor relationship with respect to voltage and current.
Indicative Contents المحتويات الإرشادية	- Developing the student's analytical and critical skills regarding the reality and future of human rights and democracy - Training the student on the importance of active participation in aspects of public life, such as promoting respect for the principles of public human rights and active participation in political and cultural life. - Enable students to understand the importance of education and its role in spreading the culture of human rights and democracy in building a civilized society based on good governance, the most important component of which is belief in human rights, education and active participation in governance through free and fair elections.
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 discussions, dialogues and group work lectures & exercises, while at the same time refining and expanding their critical thinking skills. There are many teaching and learning methods used, and the most important of these methods are: Theoretical lecture, discussion and dialogue, panel discussions on certain topics, theoretical student research Library and electronic activities (which helps students to reach the following results: 1- The scientific ability to distinguish between correct information and wrong information. 2- Ease of scientific drafting and ease of correction. 3. Ability to memorize and guess. 4- The ability to link concepts and principles with reality. 5. Ability to invoke, link, interpret.

Student Workload (SWL) انحمم انذراسي نهطالب			
Structured SWL (h/sem) انحمم انذراسي انمنتظم نهطالب خلال انفصم	33	**Structured SWL (h/w)** انحمم انذراسي انمنتظم نهطالب أسبوعيا	2
Unstructured SWL (h/sem) انحمم انذراسي غير انمنتظم نهطالب خلال انفصم	17	**Unstructured SWL (h/w)** انحمم انذراسي غير انمنتظم نهطالب أسبوعيا	1.25
Total SWL (h/sem) انحمم انذراسي انكهي نهطالب خلال انفصم	50		

Module Evaluation
تقييم المادة الدراسية

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

Delivery Plan (Weekly Syllabus)
المنهاج الاسبوعي النظري مادة الديمقراطية و حقوق الانسان

	Material Covered
Week 1	Familiarity with the concept of human rights and the definitions approaching it, discussing, dismantling and criticizing them in a scientific way in order to reach the most accurate and objective. - Definition of right , of human, of the concept of human rights. Human rights qualities, Types of human rights Human Rights Categories
Week 2	The historical development of human rights: Orcagina Reforms 1- Urnamo Law.2- The law of Ishtar Bit. 3- The law of the Kingdom of Eshnuna.4- Code of Hammurabi.
Week 3	Human rights in other ancient civilizations: 1- Indian and Chinese civilization 2- Pharaonic civilization of Egypt 3- Greek civilization 4- Roman civilization
Week 4	Human rights in heavenly laws Human Rights in Judaism, Human rights in Christianity, Human Rights in Islam.
Week 5	Human rights in Renaissance - modern and contemporary societies Introducing the student to the most important UN document in the field of human rights, which was approved and approved by the Assembly on January 10, 1948 Universal Declaration of Human Rights 1948.
Week 6	Non-governmental organizations defending human rights: Amnesty International, b.

	International Committee of the Red Cross. Arab Organization for Human Rights.
Week 7	Definition of the phenomenon of administrative corruption, Types of administrative corruption, Causes of administrative corruption. The repercussions of the phenomenon of administrative corruption on human rights and society. Successful treatments to combat corruption and protect society from it.
Week 8	Introduction - Historical development of the concept of democracy, definition of democracy, freedom. The difference between freedom and democracy, The relationship between the rights and public freedoms of individuals and democracy, Islamic views in a democratic system of government , Shura and Democratic System
Week 9	Specifications and duties of the Islamic ruler reading, The era of Imam Ali "peace be upon him" to his governor over Egypt: Specifications of the Islamic ruler: First: The moral and doctrinal components of the ruler Second: The general culture of the Islamic ruler, Third: Acumen and good choice: -Fourth: Direct relationship with people: Fourth: Direct relationship with people. Duties of the Islamic ruler: First: Social Reform: Second: Achieving security and defense Third: The architecture of the country "economic development"
Week 10	Forms of democracy: (1): Direct democracy ,(2): Semi-direct democracy , (3): Parliamentary democracy (parliamentary representation)4): Liberal Democracy (5): consociation Democracy, (6): Delegated Democracy.
Week 11	Conditions for the success of the elements and pillars of the democratic system General conditions for the success of the democratic system: 1. Respect for human rights, 2. Political pluralism 3. Peaceful transfer of power 4. Political equality 5. Respect the principle of the majority 6. Existence of the rule of law.
Week 12	Components or elements of democracy: 1 – Citizenship 2- Political participation 3. Elections 4. MPs and Responsibility 5. Opposition 6- Separation of government and parliament 7- Constitutional legitimacy
Week 13	The concept of elections and their legal adaptation: First: The concept of election Second: Legal adaptation of the Election, Third: Conditions of Election, Fourth: Concepts of Elections, Fifth: Types of Electoral Systems. Assessing the Democratic System, Pros and advantages of the democratic system, Disadvantages and disadvantages of the democratic system, Implementing the democratic system in Iraq.
Week 14	Lobbyists: First: the concept and definition. Second: Types of pressure groups. Third: The methods of pressure groups that they use to achieve their goals. Fourth: Lobbying and Democracy.
Week 15	Preparatory Week
Week 16	Final Exam

Learning and Teaching Resources مصادر التعلم والتدريس		
	Text	**Available in the Library?**
Required Texts	Martyrdom verses from the Holy Quran Mohammed Al-Tarawneh et al., International Humanitarian Law, ICRC, Amman, 2005 Diamond Larry, Democracy: Its Development and Ways to Enhance It, translated by Fawzia Naji, Dar Al-Mamoun for Translation, Iraq, 2005.	Yes
Recommended Texts	journal.un.org Hadi, Riad Azabz. (2005). Human rights (evolving contents and protection) (Baghdad).	Yes
Websites	Universal Declaration of Human Rights | United Nations https://sc.uobaghdad.edu.iq/?page_id=8415 https://www.youtube.com/@ansamalobidimanagerofhuman2891	

APPENDIX:

GRADING SCHEME مخطط انذرجاث				
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	مقبول بقرار	(45-49)	More work required but credit awarded
	F – Fail	راسب	(0-44)	Considerable amount of work required
Note:				

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

	Ministry of Higher Education & Scientific Research **AL-Iraqia Science University** **College of Science** **Biology Department**	

MODULE DESCRIPTION FORM

Module Information

Module Title	**Mathematics and Biostatistics**	**Module Delivery**	
Module Type	**Support**	☒ **Theory** ☒ **Tutorial.**	
Module Code	BIO11003		
ECTS Credits	**7**		
SWL (hr/sem)	571		
Module Level	1	**Semester of Delivery**	1
Administering Department	Biology	**College**	Science
Module Leader	Dr.Selma Thabet	**e-mail**	Selma@baghdadcollege.edu.iq
Module Leader's Acad. Title	professor	**Module Leader's Qualification**	Ph.D
Module Tutor	Dr.Selma Thabet	**e-mail**	
Peer Reviewer Name	Dr.Sabah Alwachi	**e-mail**	sabahalwachi@yahoo.com
Scientific Committee Approval Date	9/11/2023	**Version Number**	1.0

Relation with other Modules

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

Module Aims, Learning Outcomes and Indicative Contents

Module Aims, Learning Outcomes and Indicative Contents أهداف المادة الدراسية ونتائج التعلم والمحتويات الإرشادية	
Module Aims أهداف المادة الدراسية	The objectives of the academic program of teaching mathematics for the first stage in universities typically include the following: 1. **Developing fundamental mathematical skills**: The first stage of university mathematics education aims to develop students' fundamental mathematical skills, including algebra, geometry, trigonometry, and calculus. Students are expected to master these skills to build a strong foundation for more advanced mathematical concepts. 2. **Promoting critical thinking**: Mathematics education in universities aims to promote critical thinking skills by teaching students to solve problems using logical reasoning, deduction, and analysis. Students learn how to approach complex problems and break them down into simpler, more manageable parts. 3. **Fostering creativity**: Mathematics education can also foster creativity by encouraging students to explore new ideas and develop their own approaches to problem-solving. By encouraging creativity, students can develop a deeper appreciation for the beauty and elegance of mathematics. 4. **Preparing students for advanced study**: The first stage of university mathematics education is often a prerequisite for advanced study in mathematics and related fields. Therefore, one of the primary objectives is to prepare students for more advanced coursework by building a strong foundation in fundamental mathematical skills. 5. **Enhancing career prospects**: Mathematics education can also enhance students' career prospects by providing them with the analytical and problem-solving skills that are highly valued in a wide range of industries, including finance, engineering, and computer science. Thus, the academic program of teaching mathematics at the first stage in universities aims to equip students with the necessary skills and knowledge to succeed in their future careers.
Module Learning Outcomes مخرجات التعلم للمادة الدراسية	***Module learning outcomes in math typically include the following***: 1. ***Knowledge***: Students should be able to demonstrate a comprehensive understanding of mathematical concepts, theories, and principles relevant to the module. 2. ***Problem-solving***: Students should be able to apply mathematical knowledge and skills to solve problems and analyze real-world situations. 3. ***Mathematical reasoning***: Students should be able to use mathematical reasoning to derive conclusions and make predictions based on available data. 4. ***Communication***: Students should be able to communicate mathematical ideas and concepts clearly and effectively, both in writing and orally. 5. ***Use of technology***: Students should be able to use technology, such as calculators, computer software, and online resources, to enhance their understanding of mathematical concepts and solve problems. 6. ***Independent learning***: Students should be able to engage in independent learning, such as reading relevant literature, conducting research, and applying mathematical concepts to novel problems. 7. ***Critical thinking***: Students should be able to critically evaluate mathematical arguments and solutions, identify potential errors or weaknesses, and propose alternative solutions. 8. ***Numeracy:*** Students should be able to demonstrate proficiency in numerical skills, including arithmetic, algebra, geometry, and statistics, as appropriate to the module. 9. ***Mathematical modeling:*** Students should be able to create and interpret mathematical models of real-world phenomena, using appropriate mathematical tools and techniques.

	10. ***Ethics and professionalism***: Students should be able to apply mathematical knowledge and skills in an ethical and professional manner, respecting the rights and dignity of others and adhering to relevant codes of conduct and professional standards.
Indicative Contents المحتويات الإرشادية	The mathematics course for the first stage typically covers a range of fundamental mathematical topics, including calculus, The Rate of change of function, limit, Derivatives of algebraic function and Applications. The course aims to develop students' mathematical skills, including problem-solving, critical thinking, and analytical reasoning, and to prepare them for advanced study in mathematics and related fields.

Learning and Teaching Strategies استراتيجيات التعلم والتعليم	
Strategies	This module's contact teaching will be conducted through lecturing (15 lectures) and compulsory 15 practical sessions, which include learning videos and scientific animations. Students will be invited to participate in interactive discussion throughout this program.

Student Workload (SWL) الحمل الدراسي للطالب محسوب لـ ١٥ اسبوعا			
Structured SWL (h/sem) الحمل الدراسي المنتظم للطالب خلال الفصل	48	**Structured SWL (h/w)** الحمل الدراسي المنتظم للطالب أسبوعيا	3
Unstructured SWL (h/sem) الحمل الدراسي غير المنتظم للطالب خلال الفصل	127	**Unstructured SWL (h/w)** الحمل الدراسي غير المنتظم للطالب أسبوعيا	8.5
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**	5	10% (10)	3,6,10,12,13	LO #1, #2 and #10
	Assignments	5	10% (10)	,2,5,7,9,11	LO #3, #4 and #6, #7
	Projects / Lab.	1	10% (10)	Continuous	All
	Report	1	10% (10)	13	LO #5, #8 and #10
Summative assessment	**Midterm Exam**	2hr	10% (10)	7	LO #1 - #7
	Final Exam	3hr	50% (50)	16	All
Total assessment			100% (100 Marks)		

Delivery Plan (Weekly Syllabus) المنهاج الاسبوعي النظري	
	Material Covered
Week 1	1. Slope, and equation of line. 2. Functions and their graphs. 3. Shifts, circle, and parabolas
Week 2	1. Limits. 2. Limits involving infinity. 3. Continuous functions. 4. Slopes, tangent lines, and derivatives. 5. Differentiation rules. 6. Velocity, speed, and other rates of change. 7. Derivatives of trigonometric functions. 8. Chain rule. 9. Maxima, minima.
Week 3	1. Definite integrals. 2. The fundamental theorem of integral calculus. 3. Indefinite integrals. 4. Integration by substitution. 5. A brief introduction to logarithms and exponentials. 6. Areas between carves, volumes of solids of revolution. 7. Areas of surfaces of revolution.
Week 4	1. Inverse function and their derivatives. 2. $\ln x$, e^x , and logarithmic differentiation. 3. Hospital rule. 4. The inverse trigonometric function. 5. Derivatives of inverse trigonometric functions.
Week 5	1. Basic integration formula. 2. Integrations by parts. 3. Trigonometric integrals. 4. Rational functions and partial fractions. 5. Improper integrals.
Week 6	1. Sequences. 2. Series and absolute convergence. 3. Power series. 4. Taylor's series and Maclaurin series.
Week 7	Mid-Term exam
Week 8	1. polar coordinates. 2. Graphing in polar coordinates.
Week 9	Some Basic concepts Statistics, Data, Biostatistics, Variables: Types of Variables, Population, Sample
Week 10	Descriptive Statistics Frequency Distribution Measures of Central Tendency: Mean, Median, Mode, Percentiles and Quartiles Measures of Central Tendency: Grouped Data Measures of Variation: The Range, The Variance and the Standard Deviation, Moments, Skewness and Kurtosis Measures of Variation: Grouped Data
Week 11	Basic Probability Concepts Properties of Probability, Probability of an Event, Marginal Probability, Conditional Probability, Baye's Theorem
Week 12	Discrete Probability Distributions Probability Distributions for Discrete Random Variables, Expected Value and Variance of a Discrete Random Variable, Bernoulli Distribution, Binomial Distribution, Poisson Distribution

Week 13	Continuous Probability Distributions Continuous Probability Distribution, Expected Value and Variance of a Continuous Random Variable, The Normal Distribution, The Standard Normal Distribution
Week 14	Sampling Distribution Sampling Distribution(definition), Sampling Distribution of the Sample Mean, Sampling from Normal Population
Week 15	Central Limit Theorem: Sampling from Non-normal Population, The T-Distribution, Chi-Square Distribution, F- Distribution
Week 16	**Preparatory week before the final Exam**

Learning and Teaching Resources
مصادر التعلم والتدريس

	Text	Available in the Library?
Required Texts	1. . Stewart. J. "Calculas", 7th Edition, 2012. 2. Wayne W. Daniel (1995) "Biostatistics: Basic Concepts and Methodology for the Health Sciences", Sixth Edition, John Wiley and Sons M.	
Recommended Texts	1. Ataharul Islam, Abdullah Al-Shiha (2018) "Foundations of Biostatistics", Springer	
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.

	Ministry of Higher Education & Scientific Research **AL-Iraqia Science University** **College of Science** **Biology Department**	

MODULE DESCRIPTION FORM

Module Information

Module Title	**Computer skill1**	**Module Delivery**	
Module Type	**Support**	☒ **Theory** ☒ **Tutorial.**	
Module Code	UOB103		
ECTS Credits	**3**		
SWL (hr/sem)	57		
Module Level	1	**Semester of Delivery**	1
Administering Department	Biology	**College**	Science
Module Leader	Asmaa f.sultan	**e-mail**	Asmaafaraj979@gmail.com
Module Leader's Acad. Title	Asst.lecturer	**Module Leader's Qualification**	MSc
Module Tutor	Dr.Selma Thabet	**e-mail**	
Peer Reviewer Name	Dr.Sabah Alwachi	**e-mail**	sabahalwachi@yahoo.com
Scientific Committee Approval Date	9/11/2023	**Version Number**	1.0

Relation with other Modules

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

Module Aims, Learning Outcomes and Indicative Contents

Module Aims, Learning Outcomes and Indicative Contents أهداف المادة الدراسية ونتائج التعلم والمحتويات الإرشادية	
Module Objectives أهداف المادة الدراسية	This module provides an introduction to essential computer skills. In this module, students will learn, • computer literacy, including hardware and software fundamentals in theory as well as practical. • various office applications (Microsoft Word, Excel, and PowerPoint), where students will use these software applications to create a current resume, and slide presentation. • basic computer knowledge and skills required to obtain an understanding of computer hardware, software, Internet, and web search.
Module Learning Outcomes مخرجات التعلم للمادة الدراسية	By the end of this module, students should be able to: 1. Understand computer hardware, software components, and peripheral devices, enabling them to use computers confidently. 2. Manage and organize files and folders on a computer effectively, including creating, renaming, moving, and deleting files and folders. 3. Efficiently employ Microsoft Office to execute fundamental tasks with ease. 4. Navigate the internet and communicate via email, while understanding internet safety. 5. Upon finishing the course, students will be aware of the ethical and security considerations when using computers, promoting safe and responsible digital behavior.
Indicative Contents المحتويات الإرشادية	Part A: Understanding Computer Components Starting with an introduction to computers, the first part introduces learners to identify computer peripherals, internal components, and the operation of the Windows operating system. Part B: Exploring Microsoft Office In this part, the student will learn how to work with Microsoft Office package to create Word documents and Excel spreadsheets and get ideas to create a PowerPoint presentation. Part C: Navigating the Internet In this part, the student will learn the knowledge of harnessing the power of the internet to search for information through web browsers. Part D: Computer Ethics In this part, the student will learn to address issues related to the misuse of computers and how they can be prevented.

Learning and Teaching Strategies استراتيجيات التعلم والتعليم	
Strategies	1. Providing lectures to explain essential principles related to computer skills. 2. Projects and activities shared among students. 3. Examinations to gauge students' understanding and identify areas where additional support may be needed. 4. Providing guidance on textbooks, online resources, and supplementary references that can aid students in their studies more efficiently.

Student Workload (SWL) الحمل الدراسي للطالب محسوب لـ ١٥ اسبوعا			
Structured SWL (h/sem) الحمل الدراسي المنتظم للطالب خلال الفصل	48	**Structured SWL (h/w)** الحمل الدراسي المنتظم للطالب أسبوعيا	3
Unstructured SWL (h/sem) الحمل الدراسي غير المنتظم للطالب خلال الفصل	27	**Unstructured SWL (h/w)** الحمل الدراسي غير المنتظم للطالب أسبوعيا	2
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**	5	(10%) 10	4,7,9,11,13	1,2,3, and 4
	Assignments	2	(10%) 10	12 ,8	1,2,3, and 4
	Projects/ Lab	1	(10%) 10	Continuous	All
	Report	1	(10%) 10	Continuous	All
Summative assessment	**Midterm exam**	2 hr	10% (10)	7	All
	Final Exam	3 hr	50% (50)	16	All
Total assessment			100% (100 Marks)		

Delivery Plan (Weekly Syllabus) المنهاج الاسبوعي النظري	
	Material Covered
Week 1	Computer Fundamentals. Characteristics of Computers, Block Diagram of Computer: Input Unit, Storage Unit, Memory size, Output Unit, Arithmetic Logical Unit, Control Unit, Central Processing Unit, Data Representation: Binary Number System.
Week 2	Memory: Types, Units of memory, RAM, ROM, Secondary storage devices – HDD, Flash Drives, Optical Disks: DVD I/O Devices – Keyboard, Mouse, LCDs, Scanner, Plotter, Printer and Latest I/O devices in market
Week 3	MS Windows: Desktop, My Computer, Files and folders using windows explorer; Control Panel, Searching Files and folders
Week 4	MS Word: Introduction, Environment, Help, Creating and Editing Word Document. Saving Document, Working with Text: Selecting, Formatting, Aligning and Indenting
Week 5	MS Word: Finding Replacing Text, Bullets and Numbering, Header and Footer, Working with Tables, Properties Using spell checker, Grammar, AutoCorrect Feature, Synonyms and Thesaurus
Week 6	MS Word: Graphics: Inserting Pictures, Clipart, Drawing Objects, Using Word Art. Setting page size and margins; Printing documents. Mail Merge Practical
Week 7	**Mid Exam**
Week 8	MS-Excel: Environment, Creating, Opening, and Saving Workbook. Range of Cells. Formatting Cells, Functions: Mathematical, Logical, Date, Time, Auto Sum
Week 9	MS-Excel: Formulas. Graphs: Charts. Types and Chart Tool Bar. Printing: Page Layout, Header and Footer Tab
Week 10	MS PowerPoint: Environment, Creating and Editing presentation, Auto content wizard, using built-in templates
Week 11	MS PowerPoint: Types of Views: Normal, Outline, Slide, Slide Sorter, Slide Show, Creating customized templates; formatting presentations Graphics: AutoShapes, adding multimedia contents, printing slides
Week 12	Internet: Basic Internet terms: Web Page, Website, Home page, Browser, URL, Hypertext, ISP,
Week 13	Web Server Applications: WWW, e-mail, Instant Messaging, Internet Telephony, Videoconferencing, Web Browser and its environment
Week 14	Computer Ethics and Societal Impact: Computer ethics encompass a collection of moral principles that regulate the utilization of computers. It reflects society's perspectives regarding the use of computer hardware and software. These ethical considerations address a range of critical issues, including privacy concerns, intellectual property rights, and the broader societal impact of computer technology.
Week 15	**Preparatory week**

Delivery Plan (Weekly Lab. Syllabus) المنهاج الاسبوعي للمختبر	
	Material Covered
Week 1	Identifying hardware components (CPU, RAM, storage, etc.); Assemble and disassemble computer hardware components.
Week 2	Installing an operating system (e.g., Windows or Linux); Installing and uninstalling software applications.
Week 3	Understand the principles of data backup and recovery; the Importance of data backup, backup methods, and recovery procedures; Organize, manipulate, and maintain files and folders on a computer or other digital storage devices. It involves tasks such as creating, moving, copying, renaming, deleting, and searching for files.
Week 4	Word Processing. Understanding the Word interface and essential functions; Creating, saving, and opening documents; Formatting documents (headers, footers, styles).
Week 5	Word Processing (continued). Formatting text (font, size, style, and color); Formatting paragraph (alignment, spacing, and indentation); Setting up page layout (margins, orientation, and size).
Week 6	Word Processing (continued). Creating and formatting tables; Inserting images, shapes, and text boxes; Adding hyperlinks and bookmarks; Mail merge for personalized documents; Saving a PDF and setting options.
Week 7	**Mid Exam**
Week 8	MS-Excel. Overview of Excel and its interface; Basic spreadsheet concepts, including rows, columns, and cells; Entering data and formatting; Using basic functions like SUM, AVERAGE, and COUNT; Error handling in formulas; Absolute and relative references.
Week 9	MS-Excel (continued). More advanced functions, including IF, VLOOKUP, and HLOOKUP; Creating and formatting charts and graphs; Types of charts: bar, line, pie, and more; Adding titles, labels, and data labels to charts; Creating and working with Excel tables; Saving a PDF and setting options.
Week 10	MS-PowerPoint Overview of PowerPoint and its interface; Creating a presentation (Choosing a Template/Theme, Changing the Template/Theme, Adding Slides, and Typing in Content); Formating slide layouts (Choosing a Slide Layout, Changing the Slide Layout); Adding and editing text with outline view.
Week 11	MS-Power Point (continued). Adding/Adjusting pictures and graphics (placing pictures into placeholders, cropping photos, sizing graphics, fixing stretched/squished photos, where to get photos, picture border, and effects); Running a presentation (starting and stopping a slide show, ways to navigate slide shows); Saving a PDF and setting options.
Week 12	Using Email: Understanding how to send and receive email is essential for communication in the modern workplace. Basic skills include composing, sending messages, and attaching files
Week 13	Using Web Browsers: Web browsers such as Google Chrome or Mozilla Firefox are used for browsing the internet. Basic skills include navigating websites, using bookmarks, and completing online forms.
Week 14	Understanding computer ethics issues: 1) Divide the students into small groups. 2) Provide each group with (a real-world privacy scenario. For example, a social media company's data collection practices **or** Present a case study involving intellectual property issues, such as software copyright infringement). 3) In their groups, students should discuss the ethical issues raised by the scenario, potential consequences, and possible solutions. 4) Each group presents their findings to the class.
Week 15	**Preparatory week**

Learning and Teaching Resources مصادر التعلم والتدريس		
	Text	**Available in the Library?**
Required Texts	-	
Recommended Texts	Wallace Wang, Absolute Beginners Guide to Computing, Apress, 2016. Michael Miller, Absolute Beginner's Guide to Computer Basics, Que, 2022. Chris Ewin, Carrie Ewin, Cheryl Ewin, Computers for Seniors: Email, Internet, Photos, and More in 14 Easy Lessons, William Pollock, 2017.	**Available online**
Websites	https://ebooks.lpude.in/library_and_info_sciences/DLIS/Year_1/DCAP101_BASIC_COMPUTER_SKILLS.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 is required but credit awarded
	F – Fail	راسب	(0-44)	Considerable amount of work required

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

	Ministry of Higher Education & Scientific Research **AL-Iraqia Science University** **College of Science** **Biology Department**	

MODULE DESCRIPTION FORM

Module Information

Module Title	**General Chemistry**	**Module Delivery**	
Module Type	**Support**	☒ **Theory** ☒ **Tutorial.**	
Module Code	BIO11002		
ECTS Credits	**8**		
SWL (hr/sem)	**200**		
Module Level	1	**Semester of Delivery**	1
Administering Department	Type Dept.Code	**College**	Science
Module Leader	Porf.Basima Mohsin Sarhan	**e-mail**	Basima.m.s@baghdadcollege.edu.iq
Module Leader's Acad. Title	professor	**Module Leader's Qualification**	Ph.D.
Module Tutor	Porf.Basima Mohsin Sarhan	**e-mail**	
Peer Reviewer Name	Dr.Sabah Alwachi	**e-mail**	sabahalwachi@yahoo.com
Scientific Committee Approval Date	9/11/2023	**Version Number**	1.0

Relation with other Modules

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

Module Aims, Learning Outcomes and Indicative Contents

Module Aims, Learning Outcomes and Indicative Contents أهداف المادة الدراسية ونتائج التعلم والمحتويات الارشادية	
Module Objectives أهداف المادة الدراسية	1. Provide students with a thorough understanding of the guiding concepts that volumetric analysis, quantitative analysis approaches, and organic chemistry are based on. 2. Develop experts in general chemistry and its practical applications to equip them to meet the country's industrial and developmental needs. 3. Foster a scientifically literate generation that recognizes the value of science as a catalyst for transformative change. This includes cultivating critical thinking skills, promoting analytical thinking, and facilitating adaptability to evolving technologies and societal demands. 4. Strengthen the connection between the university and society by offering advisory counseling, training programs, and professional development opportunities for faculty and staff, ensuring that academic knowledge is effectively applied to real-world contexts. 5. Contribute to the country's overall progress by producing chemistry graduates who possess the skills and knowledge to actively contribute to its development. 6. Address the increasing demand for highly qualified professionals in various sectors that require specialized expertise in chemistry. 7. Encourage exceptional students to serve as teaching assistants within the department, nurturing their potential to become future members of the academic teaching staff and fostering the growth of a knowledgeable and skilled workforce.

Module Learning Outcomes مخرجات التعلم للمادة الدراسية	1- Create an excellent foundation for this specialty by introducing students to the basic concepts of volumetric analysis, and their practical applications in medicine, pathological analyzes and the environment. 2- Encouraging students to understand the theoretical foundations of titration and practical applications in diagnosing basic compounds of importance in the field of industry, energy, oil and mining. 3- Provide students with a comprehensive knowledge of different analytical technique, in addition to using various tools can be used in different laboratories in different branches such as the medicine and agriculture and oil field 4- Equip students with the necessary knowledge and skills to proficiently apply classical quantitative analytical methods in diverse laboratory working in different application of agricultural, medicine and industry 5- Enhance students' research skills by encouraging them to engage in scientific exploration and facilitating constructive discussions can be applied in different application of medical and environmental analysis. 6- Develop proficiency in the use and development of laboratory techniques and equipment, enabling students to conduct experiments effectively and obtain accurate results that applied in different biological application of different specialties of genetic, biotechnology, pollution, environmental analysis 7- Cultivate critical thinking skills that allow students to analyze and solve scientific problems related to the laws of chemistry, promoting a deeper understanding of the subject that help them in their application of medical and industrial fields 8- 4-Foster the development of practical skills and the ability to apply theoretical and empirical scientific knowledge gained through their studies in real-life situations, taking into account industrial and commercial constraints of various application in different parts of working in medical, environmental investigation.
Indicative Contents المحتويات الارشادية	The purpose of the course is to give students a thorough understanding of conventional titration techniques in analytical chemistry. It covers the fundamental principles of acid/base titration, complexometric titration, redox titration, and precipitation titration. Students will delve into the theory behind these methods and explore their wide-ranging applications. In addition to theoretical knowledge, the course emphasizes practical skills. Students will learn how to calculate pH values for various acids, bases, salts, and buffers, enabling them to make accurate determinations in real-world scenarios. They will also develop the ability to evaluate and interpret the results obtained from titration experiments, enhancing their analytical capabilities. Throughout the course, selected classical quantitative analytical methods will be highlighted, giving students a deeper understanding of their importance and practical use. By the end of the course, students will have gained the necessary knowledge and skills to apply classical titration methods effectively in analytical chemistry, both in theory and practice. Indicative content includes the following. 1. Structural isomers and structures of alkanes; physical and chemical properties of alkanes, alkenes, and alkynes. 2. Terminology, essential ideas, and some basics of organic chemistry. 3. Basic reactions of alkanes, alkenes, alkynes, and cyclic compounds. 4. Naming and classification of organic compounds.

Learning and Teaching Strategies
إستراتيجيات التعلم والتعليم

Strategies	The module will be conducted in a student-centered manner with a focus on developing critical thinking abilities and active involvement. Through a combination of classes, interactive tutorials, and purposeful experiments, students will be actively engaged in the learning process, fostering the development of their critical thinking abilities. The aim is to create an interactive and dynamic learning environment that encourages students to actively participate, think critically, and attain a profound comprehension of the subject matter. By adopting this strategy, students will have the opportunity to apply their knowledge, engage in analytical discussions, and enhance their overall learning experience.

Student Workload (SWL)
الحمل الدراسي للطالب المحسوب ١٥ أسبوعا

Structured SWL (h/sem) الحمل الدراسي المنتظم للطالب خلال الفصل	63	**Structured SWL (h/w)** الحمل الدرا ي المنتظم للطالب أسبوعنا	4
Unstructured SWL (h/sem) الحمل الدراسي غير المنتظم للطالب خلال الفصل	137	**Unstructured SWL (h/w)** الحمل الدرا ي غي المنتظم للطالب أسبوعنا	9
Total SWL (h/sem) الحمل الدراسي الكلي للطالب خلال الفصل	200		

Module Evaluation
تقييم المادة الدراسية

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

Delivery Plan (Weekly Syllabus)
المنهاج الاسبوعي النظري

Week no.	Material Covered
Week 1	Introduction to analytical chemistry, preparing solutions, and methods for the expression of concentration
Week 2	Volumetric analysis, volumetric analysis reaction types, volumetric calculations
Week 3	Ionic equilibria, the hydrogen-ion exponent (pH), hydrolysis

Week 4	Titration curves, titration of a solution of strong acid with a strong base, titration of solutions of weak acid or bases, acid-base indicators, titration with strong acid for one base, or a mixture of two bases
Week 5	Gravimetric methods of analysis, types of gravimetric methods, and calculation of results from gravimetric data
Week 6	Instrumental methods, instrumental methods of analysis, spectroscopic Instruments, filter photometer
Week 7	Mid-term exam
Week 8	Introduction to organic chemistry - structure and properties
Week 9	Alkanes - Structure and nomenclature
Week 10	Alkanes - Preparation and reactions
Week 11	Alkenes - Structure, geometric isomers and nomenclature
Week 12	Alkenes - Preparation and reactions
Week 13	Alkynes - Structure and nomenclature
Week 14	Alkynes - Preparation and reactions
Week 15	Final exam

Delivery Plan (Weekly Lab. Syllabus)

المنهاج الاسبوعي للمختبر

Week no.	Material Covered
Week 1	Learn about laboratory tools and equipment and how to use them
Week 2	Learn the principles of descriptive analysis and the descriptive interactions of the first group of ions
Week 3	A test on the analysis of information samples for the first group, based on the descriptive analysis
Week 4	A test on the analysis of the anonymous samples of the first group, based on the descriptive analysis
Week 5	Characteristic descriptive interactions of the second group of ions
Week 6	A test on the analysis of the known samples from the second group
Week 7	A test on the analysis of anonymous samples of the second group
Week 8	Safety guidelines in the organic chemistry laboratory
Week 9	Determination of the melting point
Week 10	Determination of the boiling point
Week 11	Purification of the solid organic compounds (recrystallization process)
Week 12	Purification of the liquid organic compounds (simple distillation)
Week 13	Purification of the liquid organic compounds (fractional distillation)
Week 14	Qualitative analysis of the functional groups

Week 15	Final Exam

Learning and Teaching Resources
مصادر التعلم والتدريس

	Text	Available in the Library?
Required Texts	Fundamental of analytical chemistry by Skoog, West, Holler & Crouch, 8th, 2004. Organic Chemistry, Morrison and Boyd book, 6th edition	Yes Yes
Recommended Texts	1- Fundamental of analytical chemistry by Skoog, West, Holler, 6th , 1992. 2- Principles of instrumental analysis by Skoog, West, Holler & Crouch, 8th, 2004. 3-K. Burger D, Sc, "Organic regents in metal analysis", 1st, New York, 1973. 4-J.N.Miller & J.C. Miller" Statistical for anal. Chem.", 2nd, New York, 1988.	
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 with decimal places above or below 0.5 will be rounded to the higher or lower full mark accordingly. For instance, a mark of 54.5 will be rounded up to 55, while a mark of 54.4 will be rounded down to 54. The University strictly adheres to a policy that does not allow for "near-pass fails," and therefore, the only adjustment made to the marks awarded by the original marker(s) will be the automatic rounding as described above.**

MODULE DESCRIPTION FORM

نمرج وصف انمادة انذراسيت

Module Information معهماث انمادة انذراسيت					
Module Title	**Zoology**			**Module Delivery**	
Module Type	**Core**			☒ **Theory** ☐ **Lecture** ☒ **Lab** ☐ **Tutorial** ☐ **Practical** ☐ **Seminar**	
Module Code	BIO-1101				
ECTS Credits	8				
SWL (hr/sem)	200				
Module Level	U	x11 1 **Semester of Delivery**		1	
Administering Department	**Biology**	**College**	**College of Science**		
Module Leader	**Dr.Sabah Alwachi**	**e-mail**	sabahalwahi@yahoo.com		
Module Leader's Acad. Title	professor	**Module Leader's Qualification**	phD		
Module Tutor	Dr.Sabah Alwachi	**e-mail**	sabahalwahi@yahoo.com		
Peer Reviewer Name	Dr.Sabah Alwachi	**e-mail**			
Scientific Committee Approval Date	**01/02/2024**	**Version Number**	**1.0**		

Relation with other Modules انعلاقت مع انمساد انذراسيت الأخري			
Prerequisite module	None	**Semester**	
Co-requisites module	None	**Semester**	

Module Aims, Learning Outcomes and Indicative Contents

أهداف انمادة انذراسيت ونتائج انتعهم وانمحتياث الإرشاديت

Module Objectives أهذاف انمادة انذراسيت	1. The module will provide you with an understanding of the diversity of invertebrate and vertebrate life from a functional perspective. 2. You will be exposed to a suite of lectures encompassing all the major invertebrate groups from protests to cephalopods that will range in conten from classification and defining characteristics and will touch on interesting aspects of reproduction, physiology, behavior and evolution. 3. In practical classes you will be exposed to animal diversity concentrating on function and adaptation to environments and ecosystems. 4. The module will provide you with a core knowledge of animal diversity and macro-evolutionary patterns that will form a platform for future modules. 5. The module complements other biological modules in Stage 1, Ecology and Conservation, Evolution, Physiology and Marine Biology, and provides a foundation for Stage 2 modules at the Penryn campus.
Module Learning Outcomes مخرجاث انتعهم نهمادة انذراسيت	Intended Learning Outcomes ILO: Module-specific skills On successfully completing the module you will be able to... 1. Outline the fundamentals of organismal biology and the key defining characteristics of all the major taxonomic vertebrate and invertebrate animal groups 2. Critically examine specimens for key adaptations to ecological niches 3. Evaluate different methods and techniques for generating biological information and data ILO: Discipline-specific skills On successfully completing the module you will be able to... 4. Describe essential facts and theory across a sub-discipline of biosciences 5. Identify critical questions from the literature and synthesis research-informed examples into written work 6. Identify and implement, with some guidance, appropriate methodologies and theories for addressing a specific research problem in biosciences 7. With guidance, deploy established techniques of analysis, practical investigation, and enquiry within biosciences 8. Describe and begin to evaluate approaches to our understanding of biosciences with reference to primary literature, reviews and research articles ILO: Personal and key skills On successfully completing the module you will be able to... 9. Develop, with guidance, a logical and reasoned argument with sound

	conclusions 10. Communicate ideas, principles and theories using a variety of formats in a manner appropriate to the intended audience 11. Collect and interpret appropriate data and undertake straightforward research tasks with guidance 12. Evaluate own strengths and weaknesses in relation to professional and practical skills identified by others
Indicative Contents المحتويات الإرشادية	**Zoology i**s the study of animals at every scale. We study everything from anatomy and physiology to behavior and evolution, whilst also studying the impacts of biodiversity, conservation and trade. Our courses in zoology span microbes, invertebrates, birds, fish, mammals and humans and allow you to focus on tropical, urban, terrestrial, marine and freshwater ecosystems. You'll learn how all kinds of animals evolved and why there are so manyspecies, how their physiology works, how they behave, and how they respond to global change. You'll discover how they transmit disease and how their biodiversity is maintained and lost. You'll use this knowledge to help us to address important issues such as global wildlife trade, the conservation of biodiversity, disease outbreaks and maintaining ecosystems that deliver freshwater, recreation and food to humans. You'll cover three main themes at Sheffield: 1- Comparative physiology - the functional characteristics of animals; Evolutionary biology - how animals adapt to their environment, and their genetics, 2- Behavior, ecology and conservation - how animals interact with their environment and each other to support biodiversity on the planet. 3- Alongside your specialist zoology modules, you'll have the flexibility to study topics across the breadth of biology to complement your knowledge. These modules are available from your first year. Topics range from ecology and molecular genetics that underpin conservation, to pharmacology, neuroscience and even human physiology. This flexibility allows you to study zoology in greater depth, broaden your interests or even switch to another biosciences degree programme. Whether you choose to focus solely on zoology, or study a range of topics across the biosciences, your personal tutor will support you to tailor your degree to your interests and career goals.

Learning and Teaching Strategies
استراتيجيات التعلم والتعليم

Strategies	1- Use Interactive Visuals. 2- Learn through Storylines. 3- Use Polls to Encourage Participation. 4- Relate Biology to Everyday Life. 5- Utilize Team-Based Learning. 6- Do Interesting Experiments. 7- Host a virtual field trip.

Student Workload (SWL)
انحمم انذراسي نهطانة محسب نـ ٥١ اسبعا

Structured SWL (h/sem) انحمم انذراسي انمنتظم نهطانة خلال انفصم	63	**Structured SWL (h/w)** ال حمم انذراسي انمنتظم نهطانة أسبعيا	5.3
Unstructured SWL (h/sem) انحمم انذراسي غير انمنتظم نهطانة خلال انفصم	137	**Unstructured SWL (h/w)** انحمم انذراسي غير انمنتظم نهطانة أسبعيا	4.7
Total SWL (h/sem) انحمم انذراسي انكهي نهطانة خلال انفصم	200		

Module Evaluation
تقييم انمادة انذراسية

		Time/Number^s	Weight (Marks)	Week Due	Relevant Learning Outcome
Formative assessment	**Quizzes**	2	)6% (6	5 and 10	LO #1, #2 and #10, #11
	Assignments	2	)4% (4	2 and 12	LO #3, #4 and #6, #7
	Projects / Lab.	1	)5% (5	Continuous	All
	Report	1	)5% (5	13	LO #5, #8 and #10
Summative assessment	**Midterm Exam**	2hr	0% (10)2	7	LO #1 - #7
	Final Exam	3hr	0)60% (6	16	All
		Total assessment	100% (100 Marks)		

Delivery Plan (Weekly Syllabus)

انمنهاج الاسبعي انتظري

	Week Material Covered
Week 1	Zoology, , History of Zoology
Week 2	Branches of Zoology
Week 3	Cell Structure and Function Prokaryotic Cell, Eukaryotic Cell
Week 4	Cell division, Mitosis and Meiosis
Week 5	The Characteristic of Life.
Week 6	Taxonomy
Week 7	Examination
Week 8	Animal cells
Week 9	Animal tissues
Week 10	he Trophic Levels and The Trophic Levels Organisms in Ecosystems,
Week 11	Invertebrates
Week 12	Vertebrates
Week 13	Embryogenesis
Week 14	Ecology and Ecosystem
Week 15	Examination

Delivery Plan (Weekly Lab. Syllabus)

	Week Material Covered
Week 1	Lab 1: The Microscope and its types
Week 2	Lab 2: The cell (structure & types)
Week 3	Lab 3: The cell cycle & Mitosis

Week 4	Lab 4: Meiosis
Week 5	Lab 5: Binomial System, The Five Kingdom System.
Week 6	Lab 6: Animal Tissues
Week 7	Lab 7: First Practical Exam
Week 8	Lab 8: Taxonomy
Week 9	Lab 9 Animal Classification
Week 10	Lab 10 : Phylum: Protozoa
Week 11	Lab 11 : Class Mastigophora
Week 12	Lab 12: Class Sarcodina
Week 13	Lab 13 : Class Ciliophora
Week 14	Lab 14 : Class Sporozoa
Week 15	Lab 15 : Second Exam

Learning and Teaching Resources

مصادر التعلم والتدريس

	Text	**Available in the Library?**
Required Texts	Biology Sylvia madder (Book).	
Recommended Texts	1- Integrated Principles of Zoology 18th Edition by Cleveland Hickman (Author), Susan Keen (Author), David Eisenhour (Author), Allan Larson (Author), Helen I'Anson (Author) 2019. 2- Ecology from Ecosystem to Biosphere 1st Edition by Christian Leveque (2019). CRC press 490 pages.	
Websites	Hörandl, Elvira (2013). "Meiosis and the Paradox of Sex in Nature". In Bernstein, Carol. Meiosis. InTech. doi:10.5772/56542. ISBN 978-953-51-1197-9 (on line).	

Grading Scheme
مخطط الدرجات

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

Note: Marks Decimal places above or below 0.5 will be rounded to the higher or lower full mark (fo 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

Module Information معهمات انمادة انذراسيت					
Module Title	General Physics			**Module Delivery**	
Module Type	**Support or related learning activity**			☒ **Theory** ☒ **Lab** ☐ **Tutorial** ☐ **Practical** ☐ **Seminar**	
Module Code	BIO12011				
ECTS Credits	5				
SWL (hr/sem)	**125**				
Module Level	1		**Semester of Delivery**	2	
Administering Department	Biology		**College**	Science	
Module Leader	Asmaa f.sultan		**e-mail**	Asmaafaraj979@gmail.com	
Module Leader's Acad. Title	Asst.lecturer		**Module Leader's Qualification**	MSc	
Module Tutor	Asmaa f.sultar		**e-mail**		
Peer Reviewer Name	Dr.Sabah Alwachi		**e-mail**	sabahalwachi@yahoo.com	
Scientific Committee Approval Date	9/11/2023		**Version Number**	1.0	

Relation with other Modules انعلاقت مع انماد انذراسيت الأخري			
Prerequisite module		**Semester**	
Co-requisites module		**Semester**	

Module Aims, Learning Outcomes and Indicative Contents أهداف المادة الدراسية ونتائج التعلم والمحتويات الإرشادية	
Module Objectives أهداف المادة الدراسية	1. Teaching students the basic principles of physics. 2. Preparing specialists in the field of general physics and its practical applications, which bears the responsibility of studying the country's need for development and progress and capable of meeting the needs of the job market in state institutions and industry sectors. 3. Preparing an educated generation armed with science and adopts it as a sound basis to bring about radical changes and assign scientific knowledge and scientific methods in thinking, analysis and adaptation with the development of technologies, to keep up with the expansion of human needs. 4. Effective contribution for deepening and documenting the connection of the university with the society through the implementation of advisory counseling, training and development of teaching and administrative staff. 5. The service of preparing graduates specialized in physics who contribute to development in the country. 6. Meeting the needs of various sectors with highly qualified personals in the field of physics. 7. Encouraging the distinguished in this field to work as teaching assistants in the department to be part of the academic teaching staff in the future.
Module Learning Outcomes مخرجات التعلم للمادة الدراسية	1- enable students to obtain knowledge and understanding of the concept of physics. 2- Enable students to obtain knowledge and understanding of the scientific laws of physics. 3- Enable students to keep pace with scientific development in all scientific fields of physics.
Indicative Contents المحتويات الإرشادية	This course contains a lot of vocabulary, which is a branch of physics concerne d wit and properties of matter and energy. It includes an introduction to understanding natural phenomena, the forces andmove affecting their course, and the formulation of knowledge into laws that do not o ly aforementioned processes, but also predict the course of natural processes with mode gradually approach reality. The topic of general physics includes an introduction to physics, vector analysi , Ne in linear motion, circular motion, and rotational motion. Also, gravitational forc , w torque, angular momentum, laws of motion with constant or uniform acceleratic n of rotational motion, dynamic fluids, static fluids, particle stability, electric charg , elec and electric potential in electrical circuits and ray optics.

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) انحمم انذراسي نهطانة محسب نـ ٥١ اسبعا			
Structured SWL (h/sem) انحمم انذراسي انمنتظم نهطانة خلال انفصم	63	**Structured SWL (h/w)** انحمم انذراسي انمنتظم نهطانة أسبعيا	4
Unstructured SWL (h/sem) انحمم انذراسي غير انمنتظم نهطانة خلال انفصم	62	**Unstructured SWL (h/w)** انحمم انذراسي غير انمنتظم نهطانة أسبعيا	4
Total SWL (h/sem) انحمم انذراسي انكهي نهطانة خلال انفصم	**125**		

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

Delivery Plan (Weekly Syllabus) انمنهاج الاسبعي انتظري	
	Material Covered
Week 1	A brief summary of the vectors, scalar and vector quantities, addition of vectors, unit vector, component of vectors, dot product and cross product. With examples for all these topics.
Week 2	Motion on a straight line: Displacement, Average velocity, Instantaneous velocity, Average acceleration, and Instantaneous acceleration. With examples for all these topics.

Week 3	Application of Motion with a constant acceleration: Freely falling bodies, and Projectile of motion. With examples for all these topics.
Week 4	Equilibrium of a particle: Understanding of forces, Newton's first law, Newton's second law, Newton's third law, and mass and weight. With examples for all these topics.
Week 5	Friction force, inclined plane, Torque of force, Center of gravity of the body, Center of mass, Motion of a system of particle, and Newton's law of universal gravitation. With examples for all these topics.
Week 6	Circular and Rotational motion: Motion in a circle, uniform circular motion, central or radial force, non-uniform circular motion, Central or radial acceleration, Central force, tangential acceleration, and tension in circular motion. With examples for all these topics.
Week 7	Mid term exam
Week 8	Rotational motion, angular displacement, angular velocity, and angular acceleration. With examples for all these topics.
Week 9	Rotational motion with a constant angular acceleration, relation between angular and linear velocity and acceleration, torque, angular acceleration, and moment of inertia. With examples for all these topics.
Week 10	Elasticity: The street and strain, elastic modulus, Hook's law, tensile and compressive stress and strain, Young's modulus, bulk stress and strain, bulk modulus, compressibility, shear stress and strain, Poisson's ratio, and force constant. With examples for all these topics.
Week 11	Static fluids: Density, specific gravity, pressure in a fluid, atmospheric pressure, pressure-depth-Pascal's law, buoyancy, Archimedes principle, and define the surface tension. With examples for all these topics.
Week 12	Dynamic fluids: Ideal fluid, the continuity equation, Bernoulli's equation, Venturi meter, and define the viscosity. With examples for all these topics.
Week 13	Electric charge and electric field: Conductor, insulator, and induced charges. Coulomb's law, electric field, intensity of electric field, electric potential energy, electric potential energy in a uniform field, electric potential energy of two point charges, potential difference, potential gradient, equipotential surfaces, and electric potential. With examples for all these topics.
Week 14	Geometric optics: Nature and propagation of light, wave front, properties of light, types of reflection, index of refraction, laws of reflection and refraction, total internal reflection, real and apparent depth, refraction by prism.
Week 15	mirrors & lenses: Spherical mirrors, image formations, spherical aberration, types of simple lenses, converging lens, diverging lens, properties of lenses, image formation by thin lenses,

Delivery Plan (Weekly Lab. Syllabus) المنهاج الاسبعي نهمختبر	
	Material Covered
Week 1	Moment of inertia for flywheel
Week 2	Simple pendulum
Week 3	Surface tension
Week 4	Speed of sound
Week 5	Glass refractive index

Week 6	diffraction grating
Week7	Mid. term exam.
Week 8	Equilibrium forces
Week 9	Ohm's law
Week 10	Viscosity
Week 11	Wheatstone bridge
Week 12	inclined plane
Week 13	Archimedes principle
Week 14	focal length of the lens
Week 15	standing waves

Learning and Teaching Resources

مصادر التعهم والتدريس

	Text	Available in the Library?
Required Texts	Fundamental of Physics (Halliady, Resnick, and Walker).	Yes
Recommended Texts		
Websites		

Grading Scheme

مخطط انذرجاث

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	متسط	60 - 69	Fair but with major shortcomings
	E - Sufficient	مقبل	50 - 59	Work meets minimum criteria
Fail Group (0 – 49)	**FX** – Fail	راسة (قيذ انمعانجت)	(45-49)	More work required but credit awarded
	F – Fail	راسة	(0-44)	Considerable amount of work required

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

	Ministry of Higher Education and Scientific Research - Iraq University of Baghdad College of Science Department of Biology	

MODULE DESCRIPTION FORM

نموذج وصف المادة الدراسية

Module Information معلومات المادة الدراسية					
Module Title	Biosafety and Biosecurity			**Module Delivery**	
Module Type	**Core**			☒ **Theory** ☐ **Lab**	
Module Code	**BIO12009**				
ECTS Credits	**3**				
SWL (hr/sem)	**75**				
Module Level	1		**Semester of Delivery**	2	
Administering Department	Biology		**College**	Science	
Module Leader	Ahmed Jasim Mohammed		**e-mail**	Ahmed.jasim@sc.uobaghdad.edu.iq	
Module Leader's Acad. Title	Assist.Professor		**Module Leader's Qualification**	Ph.D.	
Module Tutor	Faiza Kadhim Emran		**e-mail**	Faiza.kadhim@sc.uobaghdad.edu.iq	
Peer Reviewer Name	Dr. May T. Flayyih		**e-mail**	may.talib@scbaghdad.edu.iq	
Scientific Committee Approval Date	9/11/2023		**Version Number**	1.0	

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

Module Aims, Learning Outcomes and Indicative Contents أهداف المادة الدراسية ونتائج التعلم والمحتويات الإرشادية	
Module Aims أهداف المادة الدراسية	The student learns the basic concepts in safety and biosecurity, the student learns how to deal with laboratory materials, biological devices and equipment, the student learns how infection and pathogens are transmitted and how to deal with them with care, the student learns how to protect himself and his colleagues by following the international guidelines for safety and biosecurity, Teaching the student the ethics of scientific research and not disclosing important information
Module Learning Outcomes مخرجات التعلم للمادة الدراسية	1. The student learns what safety and biosecurity. 2. the student learns how to use instrument carefully and protect himself by following the guiding rules. 3. dealing with biological materials and wearing special laboratory clothes 4. Identifying the local and international guiding rules and how to apply them with caution through the use of the projector.
Indicative Contents المحتويات الإرشادية	Knowing the local and international guidelines and how to apply them with caution, guiding the student and developing his desire for specialization, expanding the student's ability to understand biosafety laws, dealing with biological materials professionally, safely and ethically, not dealing with any party outside the laboratory or scientific institution.

Learning and Teaching Strategies استراتيجيات التعلم والتعليم	
Strategies	The use of modern projectors and films, the use of drawings and charts on the board, the use of PowerPoint to present information, written tests, Ask intellectual questions during the lecture

Student Workload (SWL) الحمل الدراسي للطالب محسوب لـ ١٥ اسبوعا			
Structured SWL (h/sem) الحمل الدراسي المنتظم للطالب خلال الفصل	18	**Structured SWL (h/w)** الحمل الدراسي المنتظم للطالب أسبوعيا	1
Unstructured SWL (h/sem) الحمل الدراسي غير المنتظم للطالب خلال الفصل	57	**Unstructured SWL (h/w)** الحمل الدراسي غير المنتظم للطالب أسبوعيا	4
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**	5	10% (10)	3, 5, 8, 12, 13,	All
	Assignments	2	10% (10)	6, 9	LO #2 and #3
	Report	1	10% (10)	10	LO #3
	Seminar	1	10% (10)	11	LO #4
Summative assessment	**Midterm Exam**	2 hr.	10% (10)	7	LO #1, #2, #3
	Final Exam	3 hrs.	50% (50)	16	All
Total assessment			100% (100 Marks)		

Delivery Plan (Weekly Syllabus)

المنهاج الاسبوعي النظري

	Material Covered
Week 1	Occupational Safety and Health, Biosafety, Technical Definitions, Biological waste
Week 2	Treatment and drainage methods, Mitigation and drainage
Week 3	Procedures and methods of trading and dealing with laboratory waste
Week 4	The responsibility of management in achieving safety at work sites
Week 5	Why we need Biosafety? What is Biosecurity? Biosafety is related to several fields, Biosafety containment levels
Week 6	Biohazard Symbol, Biosafety Issues, What are biological hazards?
Week 7	Mid term exam
Week 8	Biohazards Materials, Types of pathogens, Biohazardous Materials
Week 9	Control of biological hazards, Methods of control biological hazards
Week 10	Biological Agent, Standard Microbiological Practices
Week 11	Biological Safety Cabinets (BSCs), Biohazardous Waste Containers, Transportation

Week 12	Some factors influencing biosecurity, What are the Biosecurity hazards?
Week 13	Biosecurity in laboratories, Laboratory Risks, A Biosecurity Risk Assessment and Management Process
Week 14	Biosecurity risks, Laboratory biosecurity program , The Virtual Biosecurity Center (VBC)
Week 15	Responsibility for VBM (Valuable Biological Material), Elements of a Strong Biosecurity Program
Week 16	**Preparatory week before the final Exam**

Learning and Teaching Resources
مصادر التعلم والتدريس

	Text	Available in the Library?
Required Texts	Salerno, R.M and Gaudioso, J. Laboratory Biosecurity Handbook , CRC Press. 2007	No
Recommended Texts	Harding, A.L., and Brandt Byers, K. Epidemiology of laboratory-associated infections . In: Fleming, D.O., and Hunt, D.L. Biological safety: principles and practices. Washington, DC: ASM Press, 2000;35-54	No
Websites	Salerno, R.M and Gaudioso, J. Laboratory Biosecurity Handbook , CRC Press. 2007	

Grading Scheme
مخطط الدرجات

Group	Grade	التقدير	Marks (%)	Definition
Success Group (50 - 100)	**A** - Excellent	امتياز	90 - 100	Outstanding Performance
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Ministry of Higher Education
& Scientific Research
AL-Iraqia Science University
College of Science
Biology Department

MODULE DESCRIPTION FORM

Module Information معلومات المادة الدراسية					
Module Title	**English Language / First Year**			**Module Delivery**	
Module Type	**Basic**			☒ **Theory** ☒ **Lecture** ☐ **Tutorial** ☐ **Practical** ☐ **Seminar**	
Module Code	UOB102				
ECTS Credits	**2**				
SWL (hr/sem)	**50**				
Module Level		UG 1	**Semester of Delivery**		2
Administering Department		Biology	**College**		Science
Module Leader	Dr.Selma Thabet		**e-mail**		Selma@baghdadcollege.edu.iq
Module Leader's Acad. Title		Professor	**Module Leader's Qualification**		Ph.D.
Module Tutor	Dr.Selma Thabet		**e-mail**		
Peer Reviewer Name		Dr.Sabah Alwachi	**e-mail**		sabahalwachi@yahoo.com
Scientific Committee Approval Date		9/11/2023	**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 والمحتو��ات الإرشاد�ة	
Module Objectives أهداف المادة الدراسية	New Headway Beginner Plus is a Beginner course in English intended to provide students with the fundamentals of the language and a foundation at First Year students / college of science, moving towards a higher level of proficiency at this stage. 1. Listening Objectives: • Understand and respond to basic greetings, introductions, and simple instructions. • Comprehend and extract information from short, simple spoken passages related to everyday topics. • Identify and understand common vocabulary and expressions in spoken English. 2. Speaking Objectives: • Engage in basic conversations using simple greetings, introductions, and expressions related to personal information. • Ask and answer simple questions about personal details, daily routines, and familiar topics. • Participate in short dialogues and role-plays to practice communication skills. 3. Reading Objectives: • Read and comprehend simple texts, such as signs, labels, short passages, and dialogues. • Recognize and understand basic vocabulary words and phrases in context. • Extract information from texts related to everyday situations and topics. 4. Writing Objectives: • Write short sentences and paragraphs about personal information, experiences, and familiar topics. • Fill out basic forms with personal details, such as name, age, and nationality. • Write simple messages, notes, and emails related to everyday situations. 5. Vocabulary and Grammar Objectives: • Acquire a basic vocabulary related to common topics, such as greetings, numbers, time, family, food, and everyday objects. • Understand and use basic grammatical structures, including present simple, present continuous, simple past, and basic question forms. • Recognize and use common prepositions, articles, and basic sentence structures. 6. Cultural Awareness Objectives: • Develop an understanding of cultural customs and practices related to greetings, social norms, and everyday interactions in English-speaking countries. • Gain exposure to cultural elements through reading or listening to texts about customs, traditions, and holidays.
Module Learning Outcomes	By the end of the course, the students will be able to: 1. Listening and Speaking Skills:

مخرجات التعلم للمادة الدراسنة	• Understand and respond appropriately to basic questions and statements. • Engage in simple conversations related to personal information, daily routines, and immediate surroundings. • Follow simple instructions and directions. • Develop basic pronunciation and intonation skills. 2. Reading Skills: • Recognize and understand basic vocabulary words and phrases in simple texts. • Comprehend and extract information from short, simple texts such as signs, notices, and labels. • Understand basic sentence structures and common grammatical patterns. 3. Writing Skills: • Write simple sentences and short paragraphs about personal information, experiences, and familiar topics. • Fill out simple forms and write basic personal information. • Write simple messages, notes, and emails related to everyday situations. 4. Vocabulary and Grammar: • Acquire and use a basic range of vocabulary related to everyday topics, such as greetings, numbers, time, family, food, and common objects. • Understand and use basic grammatical structures, including present simple, present continuous, simple past, and basic question forms. • Recognize and use common prepositions, articles, and basic sentence structures. 5. Cultural Awareness: • Develop an understanding of cultural customs and practices related to greetings, social norms, and everyday interactions in English-speaking countries. • Gain exposure to cultural elements through reading or listening to texts about customs, traditions, and holidays.
Indicative Contents المحت��ات الإرشاد�ة	1. Use simple forms of polite expressions to establish basic social contact and to perform everyday functions including making requests and offers, conducting simple phone conversations, asking and telling time, giving simple directions, asking about price, ordering a meal, etc. 2. Use a narrow range of positive and negative adjectives to describe objects, people and places. 2.3. Exchange information by forming and responding to simple questions. 3. Produce simple sentences using the correct word order and punctuation marks. 4. Use capital and lower case letters accurately in writing. 5. Construct a short guided paragraph on a familiar topic concerning home, family, friends and holidays. 5. Use the basic tenses including the present and past simple, and present continuous correctly.

	6. Use the basic auxiliary verbs (am/is/are/was/were/can) and a range of regular and irregular verbs. 7. Demonstrate awareness of the essential grammatical features and functions including questions and negatives, plural nouns, frequency adverbs, possessives, pronouns and determiners.

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

	10. Individualization: Cater to the individual needs and learning styles of students. Offer differentiated tasks and activities to ensure all learners are appropriately challenged and supported. 11. Cooperative Learning: Promote collaboration and teamwork among students through pair work, group projects, and peer feedback. This encourages active participation and a supportive learning environment. 12. Review and Revision: Schedule regular review sessions to consolidate previously learned material. Encourage students to revise and practice independently, providing resources for self-study and additional practice.

Student Workload (SWL)

الحمل الدراي للطالب محسوب لـ ١٥ اسبوعا

Structured SWL (h/sem) الحمل الدراي المنتظم للطالب خلال الفصل	33	**Structured SWL (h/w)** الحمل الدراي المنتظم للطالب أسبوعنا	2
Unstructured SWL (h/sem) الحمل الدراي غي المنتظم للطالب خلال الفصل	17	**Unstructured SWL (h/w)** الحمل الدراي غي المنتظم للطالب أسبوعنا	1.3
Total SWL (h/sem) الحمل الدراي الي للطالب خلال الفصل	**50**		

Module Evaluation

تقيم المادة الدراسة

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

Delivery Plan (Weekly Syllabus) المنهاج الاسبو ي النظري	
	Material Covered
Week 1	Hello! p6 ***am/are/is, my/your*** *I'm Pablo.* *My name's Judy.* *What's your name?* p6 ***This is ...*** *This is Ben.* *Nice to meet you.* p7
Week 2	Your world p12***he/she/they, his/her*** *He's from the United States.* *Her name's Karima.* p13 *They're on holiday.* p16 Questions *What's his name?* *Where's she from?* p13
Week 3	All about you p18 ***am/are/is*** *We're all singers.* p20 Negatives *She isn't a nurse.* p18 *I'm not from Scotland.* p20 *They aren't builders.* p20 Questions *What's her address? How old is she?* *Is she married?* p19 Short answers *Yes, she is. / No, she isn't.* p20
Week 4	Family and friends p24 **Possessive adjectives** *my, your, our, their* p24 **Possessive *'s*** *Annie's husband Jim's office* p24 ***has/have*** *I have a small hotel. She has a job.* *We have three sons.* p27 **Adjective + noun** *a small hotel a big house a good job* p27*apples, beer, bread, cake* p36 **Shopping** *newsagent's, chemist's,* *off-licence* p36 **Can you come for dinner?** *Would you like some* *more rice?* *Could you pass the*

	salt, please? *How would you like* *your coffee?* *This is delicious!* p37
Week 5	# The way I live p32 **Present Simple *I/you/we/they*** *I like ice-cream. I don't like tennis.* *Do you like football?* p33 *Where do you work? Do you live in Dundee?* p34 *In Brazil they speak Portuguese.* p36 ***a* and *an*** *a waiter, an actor, an Italian restaurant* p34 **Adjective + noun** *an American car Spanish oranges* p37
Week 6	# Every day p40 **Present Simple *he/she*** *He gets up at 6.00.* *He has lunch in his office.* p42 *She lives in a small house.* p44 Questions and negatives *What time does he have breakfast?* *He doesn't live in London.* p43 **Adverbs of frequency** *He always works late.* *He never goes out.* p42
Week 7	Mid-term Exam
Week 8	# My favourites p48 **Question words** *who, where, why, how* p48 **Pronouns** Subject/Object/Possessive *I/me/my we/us/our they/them/ their* p49 ***this* and *that*** *I like this wine. Who's that?* p50
Week 9	# Where I live p56 ***There is/are …*** *There's an old sofa.* *Are there any armchairs?* *There are some books.* p57 **Prepositions** *in, on, under, next to* p58
Week 10	# Times past p64 ***was/were born*** *When were you born?*

	I was born in 1996. p65 **Past Simple – irregular verbs** *went, came, saw* *She went shopping.* p68
Week 11	# We had a great time! p72 **Past Simple – regular and irregular** *played, got, watched, did* p72 Questions *What did you do?* *Did you go out?* p73 Negatives *They didn't go to work.* p73 ***ago*** *I went to Rome ten years ago.* p78
Week 12	# I can do that! p80 ***can/can't*** *He can speak French. I can't draw.* *Can she run fast?* p80 **Adverbs** *I can cook a little bit. I can't cook at all.* *really well, fluently* p82 **Requests and offers** *Can you tell me the time? Can I help you?* p83
Week 13	# Please and thank you p88 ***I'd like ...*** *I'd like some ham.* *How much would you like?* p88 ***some* and *any*** *I'd like some cheese.* *Do you have any Emmental?* *I don't have any apple juice.* p89 ***like* and *would like*** *I like Coke.* *I like going to the cinema.* *I'd like to go out.* p91
Week 14	# Here and now p96 **Present Continuous** *She's wearing a T-shirt.* *What's he doing?* p97 **Present Simple and Present Continuous** *He lives in London.* *They're staying in a hotel.* p98
Week 15	# It's time to go! p104

	Future plans *They're going on holiday.* *Which countries are you going to visit?* *I'm leaving on Tuesday.* *What are you doing this evening?* p104 **Revision** Question words – *when, where, who, how* p106 Tenses – present, past, and future tenses p110
Week 16	**Preparatory week before the final Exam**

Learning and Teaching Resources
مصادر التعلم والتدر◆س

	Text	Available in the Library?
Required Texts	Soars, John and Liz, (2011), New Headway Plus, Special Edition, Beginner Level, Oxford University Press.	Yes
Recommended Texts	New Headway Plus provides an integrated skills course with each unit divided into grammar, vocabulary, skills work and everyday English segments	yes
Websites	Oxford University Press: The New Headway series is published by Oxford University Press. Visit their website at www.oup.com and search for "New Headway Plus, Special Edition, Beginner Level " or browse their English language teaching section for information on the course.	

Grading Scheme
مخطط الدرجات

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

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

	Ministry of Higher Education and Scientific Research - Iraq University of Baghdad College of Science Department of Biology	

MODULE DESCRIPTION FORM

نموذج وصف المادة الدراسية

Module Information معلومات المادة الدراسية				
Module Title	Bacteriology		**Module Delivery**	
Module Type	**Core**		☒ **Theory** ☒ **Lab.**	
Module Code	**BIO12010**			
ECTS Credits	**6**			
SWL (hr/sem)	**150**			
Module Level	1	**Semester of Delivery**	2	
Administering Department	Biology	**College**	Science	
Module Leader	Prof. Dr. Harith Jabbar Fahad Al-Mathkhury	**e-mail**	harith.fahad@sc.uobaghdad.edu.iq	
Module Leader's Acad. Title	Professor	**Module Leader's Qualification**	Ph.D.	
Module Tutor	Prof. Dr. Ayaid K. Zgair	**e-mail**	ayaid.zgair@sc.uobaghdad.edu.iq	
Peer Reviewer Name	May T. Flayyih	**e-mail**	may.talib@sc.uobaghdad.edu.iq	
Scientific Committee Approval Date	9/11/2023	**Version Number**	1.0	

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

Module Aims, Learning Outcomes and Indicative Contents أهداف المادة الدراسية ونتائج التعلم والمحتويات الإرشادية	
Module Aims أهداف المادة الدراسية	1. Getting general information about bacteria. 2. Understanding the technique of isolating and identification of bacteria 3. Understanding cellular structure and metabolic mechanisms of bacteria 4. Getting information about the genotype and phenotype of bacteria.
Module Learning Outcomes مخرجات التعلم للمادة الدراسية	1. Knowledge of the basics of bacteriology. 2. Understanding the replication and pathogenicity mechanisms and how the bacteria infect the host. 3. How to isolate and identify the bacteria. 4. Knowing the bacterial infectious diseases.
Indicative Contents المحتويات الإرشادية	In this course, the module will begin with a brief introduction outlining the module's goals, content, and evaluation criteria, as well as the learning outcomes. Following that, the module material is divided into separate themes, offering the key pathways that drive pathogenesis. In this context, we will also examine how such knowledge might help with bacterial isolation and identification, prevention, and prophylaxis ways. Laboratory sessions of a 2-hour duration will give active practice in a variety of bacterial methodologies in tandem with lecture topics.

Learning and Teaching Strategies استراتيجيات التعلم والتعليم	
Strategies	This module's contact teaching will be conducted through lecturing (15 lectures) and compulsory 15 practical sessions, which include learning videos and scientific animations. Students will be invited to participate in interactive discussions throughout this program.

Student Workload (SWL) الحمل الدراسي للطالب محسوب لـ ١٥ اسبوعا			
Structured SWL (h/sem) الحمل الدراسي المنتظم للطالب خلال الفصل	63	**Structured SWL (h/w)** الحمل الدراسي المنتظم للطالب أسبوعيا	4
Unstructured SWL (h/sem) الحمل الدراسي غير المنتظم للطالب خلال الفصل	87	**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**	5	10% (10)	2, 4, 6, 9, 12	LO #1, #2, #4
	Assignments	2	10% (10)	5, 11	LO #2 and #4
	Project/ lab	10	10% (10)	Continuous	All
	Report	2	10% (10)	8, 10	LO #3 and #4
Summative assessment	**Midterm Exam**	2 hr	10% (10)	7	LO #1, #2, #3
	Final Exam	4 hr	50% (50)	16	All
Total assessment			100% (100 Marks)		

Delivery Plan (Weekly Syllabus) المنهاج الاسبوعي النظري	
	Material Covered
Week 1	Introduction to bacteriology
Week 2	Structure of bacterial cells
Week 3	Cytoplasmic ultra-structures
Week 4	Microbial genetics, DNA replication
Week 5	RNA, Protein synthesis
Week 6	Microbial metabolism
Week 7	Mid-Term Exam
Week 8	Microbial Enzymes
Week 9	Microbial Growth and multiplication
Week 10	Types of bacterial culture, Growth curve
Week 11	Factors affecting growth: Temperature, Hydrostatic pressure
Week 12	Factors affecting growth: pH, Osmotic pressure, Radiation
Week 13	Nutrition of microorganisms
Week 14	Control of microbial growth by physical techniques
Week 15	Control of microbial growth by biological and chemical techniques
Week 16	Final exam

Delivery Plan (Weekly Lab. Syllabus) المنهاج الاسبوعي للمختبر	
	Material Covered
Week 1	**Introduction to microbiology, aseptic technique safety**
Week 2	**The microscope**
Week 3	**Tools and equipment**
Week 4	**Culture media**
Week 5	**Bacterial staining ,negative stain**
Week 6	**Bacterial staining, Simple stain**
Week 7	Mid-Term Exam
Week 8	**Differential stain, acid fast stain, Differential stain, Gram stain**
Week 9	**Selective stain, capsule stain**
Week 10	**Selective stain, Spore stain**
Week 11	**Selective stain, Flagella stain**
Week 12	**Bacterial count, total count(Breed,haemocytometer,optical density**
Week 13	**Bacterial count, viable plate count**
Week 14	**Methods of culturing**
Week 15	**Introduction to microbiology, aseptic technique safety, and The microscope**
Week 16	Final exam

Learning and Teaching Resources مصادر التعلم والتدريس		
	Text	**Available in the Library?**
Required Texts	1. Riedel, S., Morse, S., Mietzner, T., and Miller, S. (2019). Jawetz, Melnick, and Adelberg's Medical Microbiology, 28 ed. McGraw-Hill New York. 2. Trivedi, P. C., Pandey,S., Bhadauria, S. Text book of microbiology. Aavishkar Publishers, India	No
Recommended Texts	Shors, T. (2009). Understanding viruses. 1st ed. Jones and Bartlett Publishers, Sudbury, Massachusetts, 639 pp.	No
Websites	https://www.cdc.gov; www.who.int	

Grading Scheme مخطط الدرجات				
Group	**Grade**	التقدير	**Marks (%)**	**Definition**
Success Group (50 - 100)	**A -** Excellent	امتياز	90 - 100	Outstanding Performance
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Ministry of Higher Education
& Scientific Research
AL-Iraqia Science University
College of Science
Biology Department

MODULE DESCRIPTION FORM

Module Information
معلومات المادة الدراسية

Module Title	General Botany	**Module Delivery**	
Module Type	**Core**	☒ **Theory**	
Module Code	**BIO12007**	☒**Lab**	
ECTS Credits	**8**		
SWL (hr/sem)	**200**		
Module Level	1	**Semester of Delivery**	2
Administering Department	Biology	**College**	Collage of science
Module Leader	Eman Qassim Jebur	**e-mail**	emj@baghdadcollege.edu.iq
Module Leader's Acad. Title	Assist.lecturer	**Module Leader's Qualification**	MSC
Module Tutor	Eman Qassim Jebur	**e-mail**	
Peer Reviewer Name	Dr.Sabah Alwachi	**e-mail**	sabahalwachi@yahoo.com
Scientific Committee Approval Date	9/11/2023	**Version Number**	1.0

Relation with other Modules
العلاقة مع المواد الدراسية الأخرى

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

Module Evaluation
تقييم المادة الدراسية

Module Aims, Learning Outcomes and Indicative Contents أهداف المادة الدراسية ونتائج التعلم والمحتويات الإرشادية	
Module Aims أهداف المادة الدراسية	1. recognize the plant cell and its properties. 2- recognize the properties of plant cell biochemistry and molecular biology 3- identifying the properties of each tissue in different plant body. 4- recognize the difference in basal physiological activity in plant cell. 5- undestanding the differences in plant body parts.
Module Learning Outcomes مخرجات التعلم للمادة الدراسية	1- experience in recognizing the properties of plant cell wall and its living and nonliving component. 2- experience in understanding the biochemical and molecular of plant cell. 3- experience in understanding the cell division, and identification of different plant tissues. 4- experience in understanding the basic physiological cell pathways. 5- experience in identification the differences in plant body parts.
Indicative Contents المحتويات الإرشادية	The general botany module is designed to recognize the plant cell and its wall as well as its organelles, the properties of living and nonliving cell component as well as the properties of each tissue in different plant body, in addition to understanding the biochemistry and molecular biology of the cell, and identify the difference between basic physiological pathways and activity, lately to understanding the differences in plant body parts.

Learning and Teaching Strategies استراتيجيات التعلم والتعليم	
Strategies	The general botany strategies is aimed to identified the internal structure, physiology and molecular of plant cell as well as its aimed to understanding the differences in plant body by using different theoretical and laboratory skills to create student knowledge can be used in different scientific specialties and researches.

Student Workload (SWL) الحمل الدراسي للطالب محسوب لـ ١٥ اسبوعا			
Structured SWL (h/sem) الحمل الدراسي المنتظم للطالب خلال الفصل	63	**Structured SWL (h/w)** الحمل الدراسي المنتظم للطالب أسبوعيا	4
Unstructured SWL (h/sem) الحمل الدراسي غير المنتظم للطالب خلال الفصل	137	**Unstructured SWL (h/w)** الحمل الدراسي غير المنتظم للطالب أسبوعيا	9
Total SWL (h/sem) الحمل الدراسي الكلي للطالب خلال الفصل	200		

		Time/Number	Weight (Marks)	Week Due	Relevant Learning Outcome
Formative assessment	**Quizzes**	5	10% (10)	2, 3, 5, 9, 11	All
	Assignment	2	10% (10)	6, 10	2,4
	Project/lab	5	10% (10)	Continuous	All
	Report	1	10% (10)	13	3
Summative assessment	**Midterm Exam**	2 hr	10% (10)	6,10	2,4
	Final Exam	3 hr	50% (50)	16	All
Total assessment			100% (100 Marks)		

Delivery Plan (Weekly Syllabus) المنهاج الاسبوعي النظري	
	Material Covered
Week 1	Plant cell structures (living organelles)
Week 2	Plant cell structures (non-living organelles)
Week 3	Biochemistry compounds, their types, classification and properties
Week 4	Secondary plant chemicals, their types, classification and properties
Week 5	molecular biology of plant cell (DNA structure)
Week 6	molecular biology of plant cell (RNA structures)
Week 7	Mid exam
Week 8	Cell division (mitosis and meiosis)
Week 9	Diversity in Plant Life
Week 10	Photosynthesis
Week 11	Respiration
Week 12	Plant growth regulators
Week 13	**Exchange through the cell membrane**
Week 14	Plant tissues
Week 15	**Plant body parts**
Week 16	**final Exam**

Delivery Plan (Weekly Lab. Syllabus)

المنهاج الاسبوعي للمختبر

	Material Covered
Week 1	Plant cell structures (living organelles)
Week 2	Plant cell structures living organelles (plastids)
Week 3	Plant cell structures (non-living organelles)
Week 4	(**report 1)**, cell division mitosis
Week 5	Cell division meiosis
Week 6	Plant internal structures
Week 7	Mid exam
Week 8	Scientific name and classification
Week 9	Respiration
Week 10	Photosynthesis
Week 11	Plant growth regulators
Week 12	Diversity in Plant Life
Week 13	(**report 2)** Exchange through the cell membrane
Week 14	Plant tissues
Week 15	**Plant body parts**
Week 16	**final Exam**

Learning and Teaching Resources مصادر التعلم والتدريس		
	Text	**Available in the Library?**
Required Texts	Plant anatomy 2ed - - Introduction to Botany, Alexey Shipunov, **2018** General Cytology , Plant Science , Essentials of Genetics	yes
Recommended Texts	1-D.G.Mackean,2004.*GCSE Biology*. Third edition 2-Bowsher, C.,M.Steer, and Tobin. 2008. *Plant Biochemistry*. London: garland science 3- William, S. Klug and Michael R. Cumming *Essential of Genetic., 1990. Fifth edition.* 4- Hopkins, W.G., AND N. A.P.Honer.2004.	Some of them

	Introduction to Plant Physiology. 3rd ed. Hoboken, NJ:John Wiley and Sons.	
Websites	1- Li M, Jiang H, Hao Y, Du K, Du H, Ma C, Tu H, He Y. A systematic review on botany, processing, application, phytochemistry and pharmacological action of Radix Rehmnniae. Journal of Ethnopharmacology. **2022** Mar 1; 285:114820. 2- Gray A. Manual: The Botany, the Northern United States. BoD–Books on Demand; 2021 Nov 4. 3- Van Duppen, J. (**2021**). Book review: The Botanical City. 4- Cunha AR, Soares AL, Vasconcelos T, Duarte MC. Advances in Botanical Research. Advances in Botanical Research. **2021**:224. 5- Hall M. The imagination of plants: A book of botanical	

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

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

Ministry of Higher Education
& Scientific Research
AL-Iraqia Science University
College of Science
Biology Department

MODULE DESCRIPTION FORM

Module Information معلومات المادة الدراسية					
Module Title	**Biochemistry**			**Module Delivery**	
Module Type	**Support**			☒**Theory** ☐ **Lecture** ☒ **Lab** ☐ **Tutorial** ☐ **Practical** ☐ **Seminar**	
Module Code	**COS12008**				
ECTS Credits	**6**				
SWL (hr/sem)	**150**				
Module Level	1		**Semester of Delivery**	2	
Administering Department	Department of Chemistry		**College**	Science	
Module Leader	Porf.Basima Mihsin Sarhan		**e-mail**	basima.m.s@baghdad.edu.iq	
Module Leader's Acad. Title	Lecturer		**Module Leader's Qualification**	Ph.D.	
Module Tutor	Porf.Basima Mihsin Sarhan		**e-mail**		
Peer Reviewer Name	Dr.Sabah Alwachi		**e-mail**	sabahalwachi@yahoo.com	
Scientific Committee ApprovalDate	9/11/2023		**Version Number**	1.0	

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

Module Aims, Learning Outcomes and Indicative Contents

أهداف المادة الدراسية ونتائج التعلم والمحتويات الارشادية

Module Objectives اهداف المادة الدراسية	Teaching the subject of biochemistry for the second stage (Department of Biological Technologies) aims : 1. To introduce the biochemical structure of living systems mainly dealing with biomolecules like carbohydrates, proteins, lipids, and nucleic acids. 2. To provide and display the most important foundations necessary to understand the relationship of chemistry to the functions of the body through multiple examples that depend on modern information. It also aims to clarify the chemical reactions and changes that occur within the body in normal and pathological conditions. 3. To give students basic concepts of biochemistry and its nature of interdisciplinary importance. 4. To expose students in basic biochemistry practical laboratory to see basic tools used in practical. To acquire confidence, interest, challenge and discipline laboratory be haviour in biochemistry practical. 5. The course gives an idea for the maintenance of laboratory and the practices that should be accomplished in a laboratory. The course explains how to prepare solutions and reagents, various methods of qualitative tests for proteins, carbohydrates and lipids. 6. Preparing specialists with a solid foundation in biochemical processes, to develop analytical, technical and critical thinking skills and to make them scientifically literate so as to contribute to the discipline after graduation.
Module Learning Outcomes مخرجات التعلم للمادة الدراسية	1. Recognize the basic life compounds such as carbohydrates, fats, amino acids, peptides, nucleotides, and nucleic acids, their classification and their importance. 2. Describe and explain their most important physical and chemical properties. 3. Be able to detect and distinguish between the basic life compounds. 4. Be able to read relevant scientific research and literature. 5. Be able to benefit from scientific references and the Internet to extract research and summary reports on the prescribed practical subject. 6. Conduct appropriate laboratory investigations safely and skillfully. 7. Be able to work in particular and individually on research projects in the government and private sectors. 8. Providing students with skills that meet local requirements that enable them to work in the academic, research, industry, or health fields.
Indicative Contents المحتويات الارشادية	**1. Carbohydrates: [12 hr]** • Principles, importance, and roles of carbohydrates in living organisms • Classification of carbohydrates: monosaccharides, disaccharides, oligosaccharides, and polysaccharides • Exploration of carbohydrate physical properties, including isomers, enantiomers, and projection formulas **2. Lipids: [12 hr]** • Overview of lipids, their principles, importance, and roles in living organisms • Examination of lipid properties and classification: simple, compound, and derived lipids • Understanding the significance of compound and complex lipids **3. Amino Acids, Peptides and Proteins: [12 hr]**

	• Principles, importance, and roles of amino acids in living organisms • Properties and classification of amino acids: polar, nonpolar, acidic, and basic • Study of peptides and protein (structure and importance: primary, secondary, tertiary, and quaternary structures). **4. Nucleic Acids: [12 hr]** • Principles, importance, and roles of nucleic acids in living organisms • Classification of nucleic acids: purines and pyrimidines

Learning and Teaching Strategies إستراتيجيات التعلم والتعليم	
Strategies	Clarifying the scientific material through approved biochemistry books, creating electronic lectures to clarify the mechanisms and some chemical structures. Motivate students to conduct reports and research regarding the subjects they study, use modern technologies in research, and develop their research skills. Preparing some electronic courses and seminars that have a great role in educating students and constructive discussion between the student and tutor.

Student Workload (SWL) الحمل الدراسي للطالب محسوب لـ ١٥ أسبوعا			
Structured SWL (h/sem) الحمل الدراسي المنتظم للطالب خلال الفصل	63	**Structured SWL (h/w)** الحمل الدراسي المنتظم للطالب اسبوعيا	6
Unstructured SWL (h/sem) الحمل الدراسي غير المنتظم للطالب خلال الفصل	87	**Unstructured SWL (h/w)** الحمل الدراسي غير المنتظم للطالب اسبوعيا	4
Total SWL (h/sem) الحمل الدراسي الكلي للطالب خلال الفصل	**150**		

Module Evaluation
تقييم المادة الدراسية

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

Delivery Plan (Weekly Syllabus)
المنهاج الاسبوعي النظري

	Material Covered
Week 1	Carbohydrates overview : principles of carbohydrates include their important and roles in the living organisms.
Week 2	Carbohydrates classification : monosaccharides, disaccharides, oligosaccharides and polysaccharides Carbohydrates physical properties : carbohydrate isomers, enantiomers, epimers, fisher and haworth projection formula etc.
Week 3	Disaccharides: disaccharides properties, conjugation and glycosidic bond formation.
Week 4	Polysaccharides : polysaccharides properties, important and their types.
Week 5	Lipids overview : principles of lipids include their important and roles in the living organisms.
Week 6	Lipids properties and classification: simple, compound and derived lipids.
Week 7	Mid Term Exam
Week 8	Amino acids overview and properties and classification: polar, nonpolar, acidic and basic amino acids.
Week 9	Physical and chemical properties of amino acids: (pI and titration curve).
Week 10	Peptides 1 overview: principles of peptides include their important and roles in the living organisms.
Week 11	Peptides 2: (pI and titration curve).
Week 12	Protein's structure and important: primary, secondary, tertiary, quaternary structures.
Week 13	Protein functions and roles.
Week 14	Nucleic acids overview: principles of nucleic acids include their important and roles in the living organisms.
Week 15	Nucleic acids classification: purines and pyrimidines.

Delivery Plan (Weekly Lab. Syllabus) المنهاج الاسبوعي للمختبر	
	Material Covered
Week 1	A comprehensive review of all calculations related to the preparation of chemical solutions, acids and bases
Week 2	Study the tests that distinguish the different types of monosaccharides
Week 3	Study the tests that distinguish the different types of disaccharides and sucrose hydrolysis
Week 4	Study the tests that distinguish the different types of polysaccharides and starch hydrolysis
Week 5	Detection the type of unknown sugar in solution (part I)
Week 6	Detection the type of unknown sugar in solution (part II)
Week 7	Mid Term Exam
Week 8	Study the tests that distinguish the different types of fats and fatty acids
Week 9	Study of rancidity and acid value
Week 10	Study of saponification value and iodine number
Week 11	Detection the type of fat in an unknown solution using of qualitative tests
Week 12	Study the tests that distinguish the different types of amino acids
Week 13	Detection of the type of amino acid in an unknown solution using qualitative tests (part I)
Week 14	Detection of the type of amino acid in an unknown solution using qualitative tests (part II)
Week 15	Detection of vitamin C in an unknown solution using volumetric test (titration)

Learning and Teaching Resources مصادر التعلم والتدريس		
	Text	**Available in the Library?**
Required Texts	- Nelson D. & Cox M., "Lehninger Principles of Biochemistry", W.H. Freeman and Company, New York, 8th ed. 2021. -Abali EA, *et al*. "Lippincott's illustrated reviews: Biochemistry". 8th, Wolters Kluwer Health; 2022. -Naik P. "Essentials of Biochemistry", 1st ed. 2012. - Campbell NA and Reece JB. Biology, 9th edition 2009.	Yes
Recommended Texts	Kennelly PJ, Botham KM, McGuinness O, Rodwell VW, Weil PA. Harper's illustrated biochemistry. McGraw Hill Professional; 32th, 2022.	No
Websites		

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