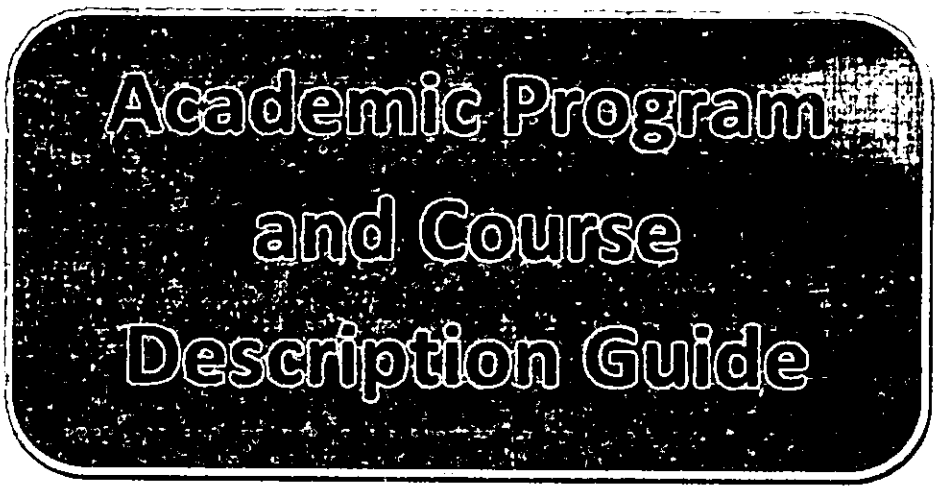
Ministry of Higher Education and Scientific Research

Scientific Supervision and Scientific Evaluation Apparatus

Directorate of Quality Assurance and Academic Accreditation

Accreditation Department

Academic Program and Course Description Guide Academic Program and Course Description Guide



Introduction:

The educational program is a well-planned set of courses that include procedures and experiences arranged in the form of an academic syllabus. Its main goal is to improve and build graduates' skills so they are ready for the job market. The program is reviewed and evaluated every year through internal or external audit procedures and programs like the External Examiner Program.

The academic program description is a short summary of the main features of the program and its courses. It shows what skills students are working to develop based on the program's goals. This description is very important because it is the main part of getting the program accredited, and it is written by the teaching staff together under the supervision of scientific committees in the scientific departments.

This guide, in its second version, includes a description of the academic program after updating the subjects and paragraphs of the previous guide in light of the updates and developments of the educational system in Iraq, which included the description of the academic program in its traditional form (annual, quarterly), as well as the adoption of the academic program description circulated according to the letter of the Department of Studies T 3/2906 on 3/5/2023 regarding the programs that adopt the Bologna Process as the basis for their work.

In this regard, we can only emphasize the importance of writing an academic programs and course description to ensure the proper functioning of the educational process.

Concepts and terminology:

Academic Program Description: The academic program description provides a brief summary of its vision, mission and objectives, including an accurate description of the targeted learning outcomes according to specific learning strategies.

Course Description: Provides a brief summary of the most important characteristics of the course and the learning outcomes expected of the students to achieve, proving whether they have made the most of the available learning opportunities. It is derived from the program description.

Program Vision: An ambitious picture for the future of the academic program to be sophisticated, inspiring, stimulating, realistic and applicable.

Program Mission: Briefly outlines the objectives and activities necessary to achieve them and defines the program's development paths and directions.

Program Objectives: They are statements that describe what the academic program intends to achieve within a specific period of time and are measurable and observable.

Curriculum Structure: All courses / subjects included in the academic program according to the approved learning system (quarterly, annual, Bologna Process) whether it is a requirement (ministry, university, college and scientific department) with the number of credit hours.

Learning Outcomes: A compatible set of knowledge, skills and values acquired by students after the successful completion of the academic program and must determine the learning outcomes of each course in a way that achieves the objectives of the program.

Teaching and learning strategies: They are the strategies used by the faculty members to develop students' teaching and learning, and they are plans that are followed to reach the learning goals. They describe all classroom and extra-curricular activities to achieve the learning outcomes of the program.

Academic Program Description Form

University Name: Al-Muthanna University

Faculty/Institute: Applied Medical Sciences

Scientific Department: Department of Environmental Health

Academic or Professional Program Name: Bachelor in Environmental Health

Final Certificate Name: Bachelor in Environmental Health

Academic System: Bolonga System

Description Preparation Date: 23/12/2025

File Completion Date: 23/12/2025

Signature:

Head of Department Name:

Haider S. Almnehlawi

Date: 15/2/2026

Signature:

Scientific Associate Name:

Nawar Jasim Alsalih

Date: 15/2/2026

The file is checked by:

Department of Quality Assurance and University Performance

Director of the Quality Assurance and University Performance Department: Ilsa Karim Abdulhussein

Date: 15/2/2026

Signature:

Approval

Approval of the Dean

2026/2/22

1. Program Vision

The Department of Environmental Health is dedicated to disease prevention, improving quality of life, and generating and disseminating knowledge for the sustainable use of the natural and managed environment through theoretical and practical educational fields. The college seeks to attract students interested in environmental health to contribute effectively to serving the community by protecting and improving the environment in Iraq. The Department of Environmental Health aims to prepare trained and qualified personnel capable of transferring the department's scientific expertise to community health and environmental institutions, and to all matters related to human health and its sustainable environment.

2. Program Mission

Contributing to scientific and practical knowledge in both the health and environmental sectors and the interrelationship between them, as well as the practical application necessary to keep pace with the accelerating challenges in Iraqi environmental health through the preparation of specialized personnel in the field of environmental health technologies.

3. Program Objectives

1. To provide education for students at all levels and engage them in the scientific research process to enhance their learning and prepare them to diagnose environmental health problems and work towards finding appropriate solutions.

2. To conduct theoretical and practical research, reports, and surveys that contribute to describing and identifying environmental health problems.

3. To establish cultural and academic relationships with similar environmental health organizations and centers locally and globally.

4. To offer a range of training courses to develop analytical skills, focusing on a deep understanding of environmental health problems that arise in the community.

5. To offer training courses aimed at increasing environmental health awareness in both the private and public sectors.

6. To provide comprehensive education in the field of environmental health, encompassing a wide range of disciplines, with an emphasis on scientific thinking and problem-solving skills through a process that ensures the graduation of qualified, responsible, and responsive students, thus building a foundation for a safe environment. 7. To prepare students for diverse postgraduate studies, including graduate programs in environmental health, professional training, or important positions in environmental health

organizations or regulatory bodies, after providing them with a high-quality curriculum encompassing biology, chemistry, nutrition, physiology, environmental impact assessment, environmental pollutant management, infectious diseases, medical microbiology, and toxicology.

8. To apply the latest high-quality standards in environmental work by identifying appropriate approaches for different environments and providing intensive practical training in electronic technology, statistical analysis, laboratory techniques, and environmental health field methodologies.

9. To develop an action plan that enhances education with the ultimate goal of reducing the production of hazardous and unknown laboratory chemical waste and contributing to environmental problem-solving for the benefit of the community.

10. To foster strong oral and written communication skills among students, enabling them to effectively communicate scientific information and research findings related to environmental health.

4. Program Accreditation

Does the program have program accreditation? And from which agency?

No

5. Other external influences

Is there a sponsor for the program?

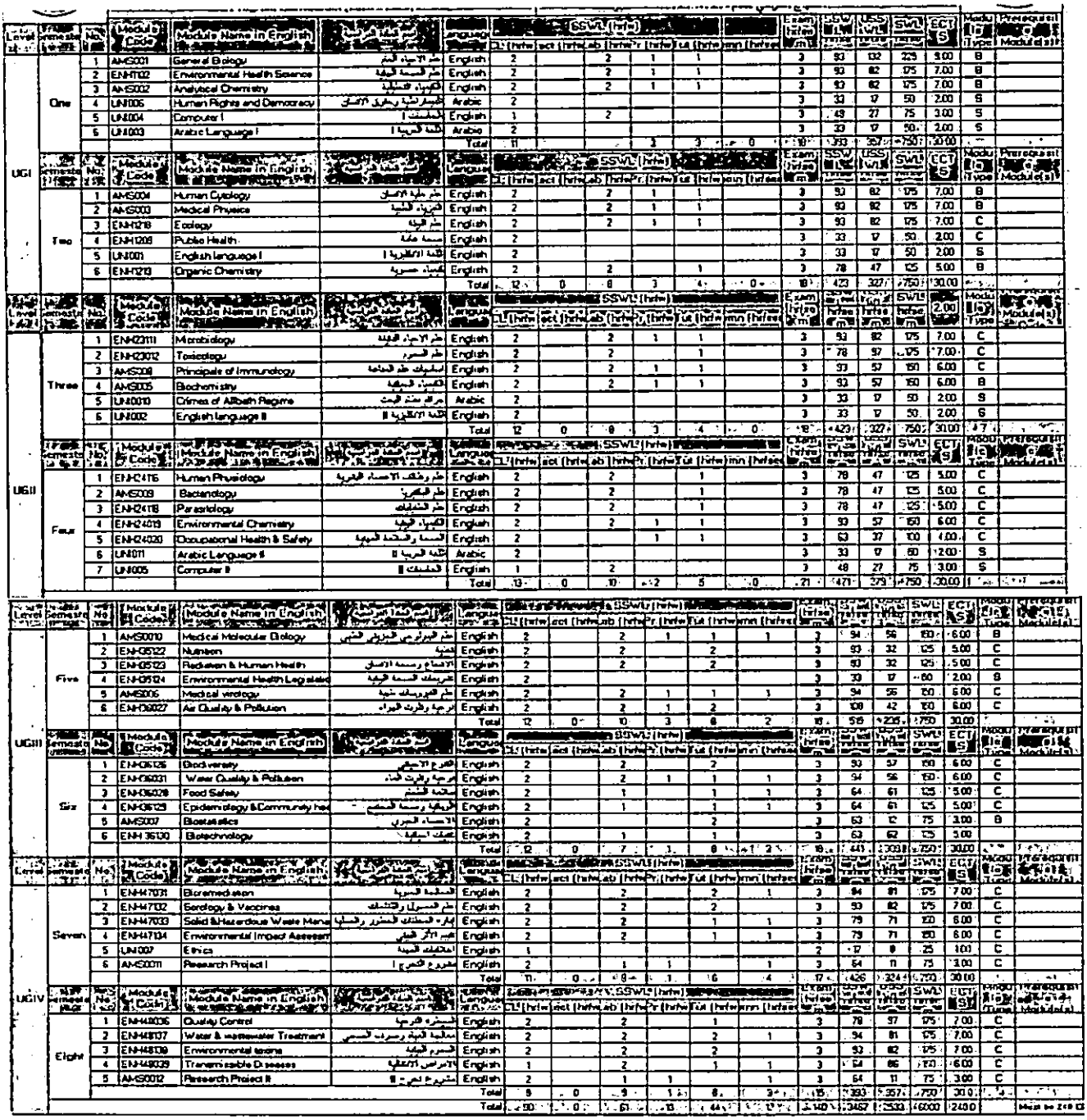
No

6. Program Structure

Program Structure	Number of Courses	Credit hours	Percentage	Reviews*
Institution Requirements	8	17	7%	Essential
College Requirements	12	69	28.8%	Essential
Department Requirements	27	154	64.2%	Essential
Summer Training	Yes			
Other	None			

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

7. المنهاج الدراسي لقسم الصحة البيئية



Level	Semester	No.	Module Code	Module Name in English	Language	SSWL (hrs/w)							Exam (hrs)	SSW (hrs)	USS (hrs)	SWL (hrs)	ECTS	Module Type	Prerequisite Module(s)
						CL	act	lab	Pr	Tut	sim	oth							
UGI	One	1	AMS001	General Biology	English	2		2	1	1			3	50	100	225	5.00	B	
		2	ENH102	Environmental Health Science	English	2		2	1	1			3	50	100	175	7.00	B	
		3	AMS002	Analytical Chemistry	English	2		2	1	1			3	50	100	175	7.00	B	
		4	UN006	Human Rights and Democracy	Arabic	2							3	33	17	50	2.00	S	
		5	UN004	Computer I	English	1		2					3	48	27	75	3.00	S	
		6	UN003	Arabic Language I	Arabic	2							3	33	17	50	2.00	S	
					Total	11		8	3	3	0		18	293	307	750	30.00		
	Two	1	AMS004	Human Cytology	English	2		2	1	1			3	50	100	175	7.00	B	
		2	AMS003	Medical Physics	English	2		2	1	1			3	50	100	175	7.00	B	
		3	ENH1218	Ecology	English	2		2	1	1			3	50	100	175	7.00	C	
		4	ENH1208	Public Health	English	2							3	33	17	50	2.00	C	
		5	UN001	English language I	English	2							3	33	17	50	2.00	S	
		6	ENH1219	Organic Chemistry	English	2		2		1			3	78	47	125	5.00	B	
					Total	12	0	8	3	4	0		18	423	327	750	30.00		
UGII	Three	1	ENH23111	Microbiology	English	2		2	1	1			3	50	100	175	7.00	C	
		2	ENH23012	Toxicology	English	2		2		1			3	78	97	175	7.00	C	
		3	AMS008	Principals of Immunology	English	2		2	1	1			3	50	57	150	6.00	C	
		4	AMS005	Biochemistry	English	2		2	1	1			3	50	57	150	6.00	B	
		5	UN0010	Crimes of Allbath Regime	Arabic	2							3	33	17	50	2.00	S	
		6	UN002	English language II	English	2							3	33	17	50	2.00	S	
					Total	12	0	8	3	4	0		18	423	327	750	30.00		
	Four	1	ENH2416	Human Physiology	English	2		2		1			3	78	47	125	5.00	C	
		2	AMS009	Bacteriology	English	2		2		1			3	78	47	125	5.00	C	
		3	ENH2418	Parasitology	English	2		2		1			3	78	47	125	5.00	C	
		4	ENH2409	Environmental Chemistry	English	2		2	1	1			3	50	57	150	6.00	C	
		5	ENH24026	Occupational Health & Safety	English	2			1	1			3	53	37	100	4.00	C	
		6	UN011	Arabic Language II	Arabic	2							3	33	17	50	2.00	S	
		7	UN005	Computer II	English	1		2					3	48	27	75	3.00	S	
					Total	13	0	10	2	5	0		21	471	279	750	30.00		
UGIII	Five	1	AMS0010	Medical Molecular Biology	English	2		2	1	1	1		3	94	56	150	6.00	B	
		2	ENH3522	Nutrition	English	2		2		2			3	50	32	125	5.00	C	
		3	ENH3523	Radiation & Human Health	English	2		2		2			3	50	32	125	5.00	C	
		4	ENH3524	Environmental Health Legislation	English	2							3	20	17	80	2.00	B	
		5	AMS006	Medical virology	English	2		2	1	1	1		3	94	56	150	6.00	C	
		6	ENH3527	Air Quality & Pollution	English	2		2	1	2			3	108	42	150	6.00	C	
					Total	12	0	10	3	8	2		18	516	235	750	30.00		
UGIII	Six	1	ENH3628	Biodiversity	English	2		2		2			3	50	57	150	6.00	C	
		2	ENH3631	Water Quality & Pollution	English	2		2	1	1	1		3	94	56	150	6.00	C	
		3	ENH3629	Food Safety	English	2		1		1	1		3	64	61	125	5.00	C	
		4	ENH3625	Epidemiology & Community he	English	2		1		1	1		3	64	61	125	5.00	C	
		5	AMS007	Biostatistics	English	2				2			3	63	12	75	3.00	B	
		6	ENH 3630	Biotechnology	English	2		1		1			3	63	62	125	5.00		
					Total	12	0	7	1	8	2		18	443	307	750	30.00		
UGIV	Seven	1	ENH47031	Bioremediation	English	2		2		2	1		3	94	81	175	7.00	C	
		2	ENH47032	Serology & Vaccines	English	2		2		2			3	50	82	175	7.00	C	
		3	ENH47033	Solid & Hazardous Waste Mana	English	2		2		1	1		3	79	71	150	6.00	C	
		4	ENH47034	Environmental Impact Assessm	English	2		2		1	1		3	79	71	150	6.00	C	
		5	UN007	Ethics	English	1							2	12	8	25	1.00	C	
		6	AMS0011	Research Project I	English	2		1	1		1		3	64	11	75	3.00	C	
					Total	11	0	9	1	6	4		17	426	324	750	30.00		
UGIV	Eight	1	ENH48036	Quality Control	English	2		2		1			3	78	97	175	7.00	C	
		2	ENH48107	Water & wastewater Treatment	English	2		2		2	1		3	94	81	175	7.00	C	
		3	ENH48038	Environmental toxins	English	2		2		2			3	93	82	175	7.00	C	
		4	ENH48039	Transmissible Diseases	English	1		2		1	1		3	64	86	150	6.00	C	
		5	AMS0012	Research Project II	English	2		1	1		1		3	64	11	75	3.00	C	
					Total	9	0	9	1	6	3		15	393	357	750	30.0		
					Total	90	0	61	15	44	12		140	3487	2530	6000	240.0		

Knowledge
1. Basic scientific knowledge 2. Resource and pollutant management 3. Health and food safety regulations 4. Environmental legislation and policies
Skills
1. Sampling: Proficiency in scientific methods for collecting water, air, and soil samples, as well as food samples, to ensure their representativeness. 2. Operation of Measuring Instruments: Ability to operate noise meters, radiation detectors, and air quality monitoring devices (such as gas sensors). 3. Inspection and Control: Skill in conducting inspections of restaurants, factories, and hospitals to ensure compliance with health standards. 4. Risk Assessment: Ability to identify potential hazards in a given environment and estimate their impact on public health. 5. Laboratory Analysis: Performing microbiological and chemical tests on samples and interpreting the results according to standard criteria. 6. Geographic Information Systems (GIS): Advanced skills in mapping disease distribution or pollution sources to link geographic location to health factors.
Ethics
1. Protecting lives: Believing that the goal is to prevent disease before it occurs and to protect the human right to live in a clean environment. 2. Scientific integrity: Reporting the results of analyses and field observations accurately and objectively, without falsification, even if the results conflict with the interests of certain parties. 3. Environmental justice: Striving to ensure the protection of all segments of society from pollution, regardless of their economic status or geographical location.

9. **Teaching and Learning Strategies**
1. Problem-Based Learning (PBL)

1.This strategy is considered the most important in environmental health. A realistic scenario is presented (such as a disease outbreak in a village or a chemical spill in a factory), and students are asked to:

• Identify the source of the pollution.

• Analyze the health risks.

• Develop an emergency plan and sustainable solutions.

2. Field-Based Learning

Since the environment is the real laboratory, this strategy includes:

• Field visits to water treatment plants, landfills, and food processing facilities.

• Applied laboratories: Learning how to analyze samples chemically and biologically using modern techniques.

10. Evaluation methods

Test assessment grade / Lab assessment grade / Reports and projects grade / Homework assessment grade / Project assessment grade / Midterm exam assessment grade

Academic Rank	Specialization		Number of the teaching staff	
	General	Special	Staff	Lecturer
Professor	Biology	Environment and pollution	1	-
Assistant professor	Biology	Environment and pollution	1	-
Assistant professor	Chemistry	Non-organic Chemistry	1	-
Lecturer	Agricultural Sciences	Gardening	1	-
Lecturer	Agricultural Sciences	Soil and water resources	1	-
Lecturer	Biology	Ecology	2	-

Assistant lecturer	Agricultural	Plant production	1	-
Assistant lecturer	Environment pollution	Environment pollution	1	-
Assistant lecturer	Environment and pollution	Microbiology	1	-
Assistant lecturer	Biology	Microbiology	1	-
Assistant lecturer	Biology	Plant biology	1	-
Assistant lecturer	Law	Special Law	1	-
Assistant lecturer	Geography	Geography	2	-
Assistant lecturer	Oil and Gas Technologies	Oil and Gas Technologies	1	-

Professional Development

Mentoring new faculty members

The journey of a new university professor begins with the transition from the role of "researcher" to that of "leader," where their professional development extends beyond simply deepening their academic specialization. It encompasses mastering modern teaching techniques that transform students from passive recipients to active participants.

This path demands a smart engagement with educational technology and the development of balanced strategies that ensure the continued production of rigorous research alongside teaching responsibilities. Over time, the professor hones their soft skills in communication and academic mentoring, evolving from a mere "transmitter of information" to an "inspiration for the next generation," firmly believing that true development is a lifelong learning process that doesn't end with obtaining an academic degree.

Professional development of faculty members

The professional development of faculty members is an ongoing transformation journey that begins by bridging the gap between specialized academic knowledge and the art of communicating it effectively. It starts by equipping professors with modern teaching tools, enabling them to move beyond the role of lecturer to that of facilitator. This journey then extends to honing research capabilities to meet global standards in publication and innovation.

This development doesn't stop at the cognitive level; it encompasses digital transformation through the integration of smart technologies in classrooms and the development of academic leadership skills that empower them to guide students and manage the educational institution with a contemporary vision. In short, it is a process of "self-renewal" that ensures academics remain relevant to the changing times and

the needs of future generations.

11. Acceptance Criterion
Central by the Ministry of Higher Education and Scientific Research in Iraq

12. The most important sources of information about the program
1- **Ministry of Higher Education and Scientific Research in Iraq** 2- Kerbella University 3- Harvard University 4- Internet

13. Program Development Plan
The Environmental Health Department's development plan centers on forging an academic identity that combines modern curriculum with practical application. This begins with updating courses to include climate change and sustainability issues, with a focus on shifting education from classrooms to smart laboratories and fieldwork. The plan aims to deepen integration with the college by building research partnerships that address local environmental problems and leveraging digital technologies, such as Geographic Information Systems (GIS), to track health risks. This path culminates in achieving academic accreditation standards and graduating qualified professionals for the job market, thus strengthening the department's role as a leading and consultative body serving community health and the environment. It also involves establishing partnerships with employers to align graduates with the job market's needs for these scientific specializations. The department also plans to offer postgraduate (Master's) studies upon the graduation of its first cohort.

Program Skills Outline	Learning outcomes required from the program
1. Hard Skills: The program produces graduates proficient in monitoring and measurement, from operating advanced laboratory equipment for pollutant analysis to using environmental modeling systems and artificial intelligence to predict health risks before they occur. 2. Strategic Skills: The program's outcomes are embodied in the graduate's ability to design sustainability policies. They go beyond simply identifying problems; they possess the skills to develop environmental remediation plans, manage hazardous waste, and ensure food and water safety according to international standards. 3. Soft Skills: The program aims to cultivate successful environmental negotiators with effective communication skills to persuade decision-makers of the merits of environmental solutions. They are also capable of working within integrated medical and engineering teams, while adhering fully to professional ethics and legal regulations. 4. Creative Skills: The final product is a researcher capable of self-learning and innovation. They possess rigorous scientific research tools to devise unconventional solutions to local environmental problems, making them a flexible individual capable of keeping pace with the rapid advancements in public health sciences.	First: Educational and training outcomes, aimed at preparing graduates with advanced analytical skills, capable of using modern technologies to monitor pollutants and manage environmental crises, making them the top choice in the job market (health, industrial, and regulatory sectors). Second: Research and community outcomes, represented by the production of applied research that offers innovative solutions to pollution problems and resource sustainability, and transforming the department into a consulting center that supports decision-makers on pressing environmental issues. Third: Institutional outcomes, ensuring the department obtains academic accreditation and develops a smart work environment based on advanced laboratories, thus raising the college's ranking and enhancing its academic reputation both locally and internationally.

Program Skills Outline													
				Required program Learning outcomes									
Year/Level	Course Code	Course Name	Basic or optional	Knowledge				Skills			Ethics	
				A1	A2	A3	A4	B1	B2	B3	C1	C2
Year 1/ Level 1	AMS001	General Biology	B	√					√	√	√	√
	ENH1102	Environmental Health Science	B	√	√				√	√	√	√
	AMS002	Analytical Chemistry	B	√				√	√	√	√	√
	UNI006	Human Rights and Democracy	S				√				√	√
	UNI004	Computer I	S			√			√	√	√	
	UNI003	Arabic Language I	S				√			√		√
Year 1/ Level 2	AMS004	Human Cytology	B	√				√	√	√	√	√
	AMS003	Medical Physics	B	√	√			√	√	√	√	√
	ENH1218	Ecology	C	√	√				√	√	√	√
	ENH1209	Public Health	C	√				√	√	√	√	√
	UNI001	English language I	S			√				√	√	

	ENH1219	Organic Chemistry	B			√				√	√	
Year 2/ Level 1	ENH23111	Microbiology	C	√	√			√		√	√	√
	ENH23012	Toxicology	C	√				√	√	√	√	√
	AMS008	Principals of Immunology	C	√	√			√	√	√	√	√
	AMS005	Biochemistry	B		√				√	√	√	√
	UNI0010	Crimes of Allbath Regime	S			√				√	√	
	UNI002	English language II	S				√					
Year 2/ Level 2	ENH24116	Human Physiology	C	√				√	√	√	√	√
	AMS009	Bacteriology	C	√	√			√		√	√	√
	ENH24118	Parasitology	C	√	√			√	√		√	√
	ENH24019	Environmental Chemistry	C	√				√	√		√	√
	ENH24020	Occupational Health & Safety	S	√	√			√	√		√	√
	UNI011	Arabic Language II	S			√			√	√	√	
	UNI005	Computer II	S			√			√	√	√	

Year 3/ Level 1	AMS0010	Medical Molecular Biology	B	√				√	√		√	√
	ENH35122	Nutrition	C	√				√	√	√	√	√
	ENH35123	Radiation & Human Health	C	√	√			√	√		√	√
	ENH35124	Environmental Health Legislations	S	√	√			√	√	√	√	√
	AMS006	Medical virology	C							√	√	√
	ENH36027	Air Quality & Pollution	C	√	√			√	√	√	√	√
Year 3/ Level 2	ENH36126	Biodiversity	C	√					√	√	√	√
	ENH36031	Water Quality & Pollution	C	√				√	√	√	√	√
	ENH36028	Food Safety	C	√	√			√	√	√	√	√
	ENH36129	Epidemiology &Community health	C	√	√			√	√		√	√
	AMS007	Biostatistics	B	√					√		√	
	ENH 36130	Biotechnology	B	√	√			√	√		√	√
Year 4/ Level 1	ENH47031	Bioremediation	C	√	√			√	√		√	√

	ENH47132	Serology & Vaccines	C	√	√			√	√	√	√	√
	ENH47033	Solid &Hazardous Waste Management	C	√				√	√		√	√
	ENH47134	Environmental Impact Assessment	C	√				√	√	√	√	√
	UNI007	Ethics	C							√		√
	AMS0011	Research Project I	C	√	√			√	√	√	√	√
Year 4/ Level 2	ENH48036	Quality Control	C	√	√			√	√		√	√
	ENH48137	Water & wastewater Treatment	C	√	√			√	√		√	√
	ENH48138	Environmental toxins	C	√	√			√	√		√	√
	ENH48039	Transmissible Diseases	C	√	√			√	√	√	√	√
	AMS0012	Research Project II	C	√	√			√	√	√	√	√

Ministry of Higher Education and Scientific Research - Iraq
University of Al-Muthanna
College of Applied Medical Sciences
Department of Environmental Health

MODULE DESCRIPTION FORM

نموذج وصف المادة الدراسية

Module Information معلومات المادة الدراسية					
Module Title	Analytical chemistry			Module Delivery	
Module Type	core			☒ Theory ☒ Lecture ☒ Lab ☒ Tutorial ☐ Practical ☐ Seminar	
Module Code	ENH-1101				
ECTS Credits	7				
SWL (hr/sem)	175				
Module Level	1		Semester of Delivery	1	
Administering Department	Type Dept. Code		College	Type College Code	
Module Leader	Haider Shanshool Mohammed		e-mail	Haider.shanshool@mu.edu.iq	
Module Leader's Acad. Title	Lecturer		Module Leader's Qualification	Ph.D.	
Module Tutor	Haider Shanshool Mohammed		e-mail	Haider.shanshool@mu.edu.iq	
Peer Reviewer Name	Name		e-mail	E-mail	
Scientific Committee Approval Date	020/10/2024		Version Number	1.0	

Relation with other Modules العلاقة مع المواد الدراسية الأخرى

Prerequisite module	The module is designed to teach some of the fundamental laboratory skills required for a practicing chemist.	**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- Providing students with general information about analytical chemistry. 2- Introducing students to solutions, their types, and their formula. 3- Introduce students to ways of expressing concentrations and their types. 4- Introducing students to strong and weak acids and bases. 5- Explain to students what buffer solutions are and their types, with examples. 6- Introduce students to the definition of salts and their types, with
Module Learning Outcomes مخرجات التعلم للمادة الدراسية	A - Cognitive objectives – 1- Introducing students to techniques in chemistry 2- Introducing students to methods of laboratory chemicals 3- Introduce the student to methods for calculating the pH of salts and Buffer solutions 4- Introducing the student to laboratory hazards. b- The soft skills objectives of the course. 1- Training in solving special mathematical subordination, preparing solutions 2-Training students to apply for registration, please contact us regarding salts, their types, and types of buffer solutions 3- Training the student on different types of corrections
Indicative Contents المحتويات الإرشادية	Indicative content includes the following: 1- Learn about analytical chemistry, its divisions, types and applications. 2- A brief summary of the quantitative analysis and its types, which serve as an introduction to the preparation of solutions. 3- Explanation of solutions and types of solutions 3- Explanation of solutions and types of solutions 4- Learn about the methods of preparing solutions. 5- Solve problems on ways of expressing concentrations. 6 - Solve problems on ways of expressing concentrations. 7- Identify the preparation of solids and liquids and solve 8- Calibration analysis and mathematical problem solving. problems. 9- Calibration analysis and mathematical problem solving. 10- Clarification of strong and weak acids and bases. 11- Clarification of salts, types of salts and their equations 12- Identifying buffer solutions. 13- Derivation of the equations for the buffer solution 14-Identify solubility, solubility product constant, and solve mathematical problems.

Learning and Teaching Strategies استراتيجيات التعلم والتعليم	
Strategies	**A- Methods of teaching and learning** 1- Using a Bower point to clarify the theoretical aspect. 2- Use of visual aids. 3- Use of practical tools. 4- Adopting daily exams and posts inside the hall. **B- Evaluation methods** 1- Practical tests 2- Theoretical tests 3-Reports and studies 4- Quizzes with self-solving questions 5- Grades determined by homework

Student Workload (SWL) الحمل الدراسي للطالب			
Structured SWL (h/sem) الحمل الدراسي المنتظم للطالب خلال الفصل	76	**Structured SWL (h/w)** الحمل الدراسي المنتظم للطالب أسبوعيا	5
Unstructured SWL (h/sem) الحمل الدراسي غير المنتظم للطالب خلال الفصل	99	**Unstructured SWL (h/w)** الحمل الدراسي غير المنتظم للطالب أسبوعيا	6.5
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	7% (10)	3,5,8,10,13	LO #1, 2, 4 ,5 and 6
	Assignments	5	6% (10)	15	LO # 3, 4, 5, 6,7,and 9
	Projects / Lab.	6	6% (10)	15	
	Report	1	6% (10)	12	LO # 5, 8 and 9
Summative assessment	Midterm Exam	8	15% (10)	8	LO # 1-8
	Final Exam	14	50% (50)	16	All
Total assessment			100% (100 Marks)		

Delivery Plan (Weekly Syllabus)

المنهاج الاسبوعي النظري

	Material Covered
Week 1	Introduction
Week 2	Quantitative analysis
Week 3	Solutions and Classification of solutions
Week 4	Express concentrations of solutions
Week 5	Express concentrations of solutions
Week 6	Preparation of solutions
Week 7	Stoichiometric Calculations
Week 8	Exam
Week 9	Titration analysis
Week 10	Chemical equilibrium
Week 11	Chemical equilibrium
Week 12	Acid-Base Equilibria
Week 13	Salts and salts hydrolysis
Week 14	Solubility of precipitates
Week 15	Buffer solution
Week 16	Preparatory week before the final Exam

Delivery Plan (Weekly Lab. Syllabus) المنهاج الاسبوعي للمختبر	
	Material Covered
Week 1	Introduction
Week 2	Laboratory devices and tools
Week 3	Preparing stock solutions
Week 4	Preparing solutions by dilution
Week 5	Preparing solutions by dilution
Week 6	Preparation and Standardization of HCl solution
Week 7	Determination of NaOH concentration by titration with HCl
Week 8	**Exam Week 9**
Week 10	Determination of acetic acid percentage in vinegar
Week 11	Determination of acetic acid percentage in vinegar
Week 12	Evaluating Commercial Antacid By Titration
Week 13	Evaluating Commercial Antacid By Titration
Week14	Determination of a mixture of sodium carbonate and sodium hydroxide by using double indicator method
Week 15	Determination of a mixture of sodium carbonate and sodium hydroxide by using double indicator method

Learning and Teaching Resources مصادر التعلم والتدريس		
	Text	**Available in the Library?**
Required Texts	(1) "Fundamental of Analytical Chemistry" by Douglas A. Skoog, Donald M. West, F. James Holler, Stanley R. Edition, 2013. thCrouch, 9 (2) "Quantitative Chemical Analysis" - Daniel C. Harris, 8th Ed. 2010	Yes
Recommended Texts	Gary D.Chritian,Analytical Chemistry,fifth editionjohn Willy & sons,inc, 1986. 2) Modern of Analytical Chemistry, Daived 2000	No

Websites	

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

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

MODULE DESCRIPTION FORM

نموذج وصف المادة الدراسية

Module Information معلومات المادة الدراسية					
Module Title	اللغة العربية العامة			**Module Delivery**	
Module Type	S			☒ **Theory** ☐ **Lecture** **Lab** ☐ **Tutorial** ☐ **Practical** ☐ **Seminar**	
Module Code	UOM-١١٠٦				
ECTS Credits	٣,٠٠				
SWL (hr/sem)	٧٥				
Module Level		UGI	**Semester of Delivery**		1
Administering Department		Type Dept. Code	**College**	Type College Code	
Module Leader	Zahraa Ibrahim raof		**e-mail**	Zahraa.ibrahim@mu.edu.iq	
Module Leader's Acad. Title			**Module Leader's Qualification**		msa
Module Tutor	Name (if available)		**e-mail**	E-mail	
Peer Reviewer Name		Name	**e-mail**	E-mail	
Scientific Committee Approval Date		21/10/2024	**Version Number**	1.0	

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

Module Aims, Learning Outcomes and Indicative Contents أهداف المادة الدراسية ونتائج التعلم والمحتويات الإرشادية	
Module Aims أهداف المادة الدراسية	١. إعانة الطلاب على التعبير الصحيح، وضبط الأساليب وتفهم القرآن الكريم والوقوف على أسراره . ٢. تعويد الطلاب على دقة الملاحظة والتمييز بين الخطأ والصواب فيما يسمعون ويقرؤون مما يساعدهم على فهم معاني الجمل والأساليب . ٣. تمرين الطلاب على دقة التفكير والبحث العقلي الدقيق . ٤. إكساب الطلاب قدرات نحوية تمكنهم من تقويم ألسنتهم عند القراءة . ٥. تنمية الثروة اللغوية للطلاب وتزويدهم بكثير من الألفاظ والتراكيب بفضل ما يعرض عليهم من أمثلة وأساليب . ٦. مساعدة الطلاب على فهم التراكيب المعقدة والأساليب الغامضة والتعرف على أسباب تعقيدها أو غموضها .
Module Learning Outcomes مخرجات التعلم للمادة الدراسية	مخرجات تعلم اللغة العربية العامة: ١. التعرف إلى مستويات نظام اللغة العربية. ٢. معرفة القواعد النحوية والصرفية. ٣. وصف المناهج النقدية والظواهر الأدبية. ٤. التعريف بأبرز المصنفات اللغوية والأدبية.
Indicative Contents المحتويات الإرشادية	(ملاحظة) تملئ من قبل تدريسي المادة يجب توزيع الساعات الغير مجدولة والتي تمثل الحمل الدراسي الغير منظم لطالب والتي تمثل 27 ساعة

Learning and Teaching Strategies استراتيجيات التعلم والتعليم	
Strategies	• استراتيجية الحوار... • إستراتيجية السرد القصصي... • التدريس باستخدام التكنولوجيا... • إستراتيجية إعداد المشاريع... • استراتيجية تبادل الأدوار

Student Workload (SWL) الحمل الدراسي للطالب			
Structured SWL (h/sem) الحمل الدراسي المنتظم للطالب خلال الفصل	48	**Structured SWL (h/w)** الحمل الدراسي المنتظم للطالب أسبوعيا	3.2
Unstructured SWL (h/sem) الحمل الدراسي غير المنتظم للطالب خلال الفصل	27	**Unstructured SWL (h/w)** الحمل الدراسي غير المنتظم للطالب أسبوعيا	1.2
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**	2	10% (10)	5, 10	LO #1, 2, 10 and 11
	Assignments	2	10% (10)	2, 12	LO # 3, 4, 6 and 7
	Projects / Lab.	1	10% (10)	Continuous	
	Report	1	10% (10)	13	LO # 5, 8 and 10
Summative assessment	**Midterm Exam**	2 hr	10% (10)	7	LO # 1-7
	Final Exam	2hr	50% (50)	16	All
Total assessment			100% (100 Marks)		

Delivery Plan (Weekly Syllabus) المنهاج الاسبوعي النظري	
	Material Covered
Week 1	نشأة اللغة
Week 2	قضايا قرآنية
Week 3	الاخطاء الشائعة
Week 4	عصور الأدب العربي
Week 5	الخط والإملاء
Week 6	امتحان شهر اول
Week 7	همزة الوصل والقطع
Week 8	الظاء والضاد
Week 9	تحليل نص شعري حديث

Week 10	قواعد كتابة الهمزة وسط الكلمة
Week 11	الألف المقصورة والممدودة
Week 12	امتحان شهر ثاني
Week 13	البلاغة العربية وعلومها
Week 14	علامات الترقيم
Week 15	مناقشة تقارير الطلبة
Week 16	الامتحان النهائي

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

Learning and Teaching Resources مصادر التعلم والتدريس		
	Text	Available in the Library?
Required Texts	الوجيز في قواعد الاملاء والانشاء /د.عبد الله أنس الطباع	Yes
Recommended Texts	جامع الدروس العربية/ مصطفى الغلاييني	No
Websites	الموسوعة الحرة ويكيبيديا	

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

Ministry of Higher Education and Scientific Research - Iraq
University of Al-Muthanna
College of Applied Medical Sciences
Department of Environmental Health

MODULE DESCRIPTION FORM

نموذج وصف المادة الدراسية

Module Information معلومات المادة الدراسية					
Module Title	Human rights and democracy			Module Delivery	
Module Type	Supplement			☒ Theory ☒ Lecture ☒ Lab ☒ Tutorial ☐ Practical ☐ Seminar	
Module Code	UNI006				
ECTS Credits	2				
SWL (hr/sem)	50				
Module Level	1		Semester of Delivery	1	
Administering Department			College	كلية العلوم الطبية التطبيقية	
Module Leader	م.م هدى رياض عبد الحمزة		e-mail	huda.riyadh @mu.edu.iq	
Module Leader's Acad. Title	Lecturer		Module Leader's Qualification	Master	
Module Tutor			e-mail	huda.riyadh @mu.edu.iq	
Peer Reviewer Name			e-mail	E-mail	
Scientific Committee Approval Date			Version Number	1	

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

Module Aims, Learning Outcomes and Indicative Contents أهداف المادة الدراسية ونتائج التعلم والمحتويات الإرشادية	
Module Aims أهداف المادة الدراسية	التعرف على موضوع حقوق الانسان واهميتها في الحضارات القديمة والمعاصرة ، التعرف على المضامين الدولية والإقليمية المعاصرة لحقوق الانسان والتعرف على ابرز أجيال حقوق الانسان ودراسة الضمانات الدستورية والقضائية والسياسية لحقوق الانسان ودور الأمم المتحدة في حماية حقوق الانسان .
Module Learning Outcomes مخرجات التعلم للمادة الدراسية	1-العلاقة بين الديمقراطية وحقوق الانسان 2-بناء اطار شامل للحكم الديمقراطي على أساس حقوق الانسان 3-العمل على تحقيق اعلى معايير الجودة في مجال تدرس مادة حقوق الانسان والديمقراطية 4-تعزيز قدرة الطلبة المعرفية 5- التعرف على حقوقهم وواجباتهم وحرياتهم الأساسية والضمانات القانونية 6-تسليط الضوء على الاليات القانونية والدولية والإقليمية والوطنية لحماية حقوق الانسان 7-نطاق الرؤية العلمية للتعرف على مبادئ الديمقراطية وعلاقتها بحقوق الانسان والحكم الرشيد 8-اثر مؤسسات الدولة ومنظمات المجتمع المدني على تطبيق الديمقراطية والحكم الرشيد 9-التعرف على اليات الأمم المتحدة 10-تعرف على القيود الواردة على مؤسسة حقوق الانسان 11-ممارسة قانون انضباط الطلبة في مؤسسة التعليم 12-مفهوم وتاريخ الديمقراطية 13-التعرف على سمات النظام الديمقراطي ومكوناته 14-التعرف على ضمانات والحريات العامة
Indicative Contents المحتويات الإرشادية	1-المقدمة العامة :مفهوم حقوق الانسان (3 ساعات) 2-تطور فكرة جذور حقوق الانسان (2 ساعة) 3-واجبات الاسان والقيود (2 ساعة) 4-اخلاقيات المهنة(2ساعة) 5-قانون انضباط الطلبة في مؤسسة التعليم العالي والبحث العلمي (3ساعة) 6-مفهوم وتاريخ الديمقراطية(2 ساعة) 7-مكونات النظام الديمقراطي(2 ساعة) 8-الانتخابات (2 ساعة) 9-العلاقة بين الديمقراطية وحقوق الانسان (2 ساعة) 10-جرائم الإبادة الجماعية(2 ساعة) 11-ضمانات الحريات والحقوق العامة(2 ساعة) 12-حكم الرشيد(2 ساعة) 13-الديمقراطية المعاصرة (2 ساعة) 14-مفاهيم الديمقراطية (2ساعة)

Learning and Teaching Strategies استراتيجيات التعلم والتعليم	
Strategies	1-شرح المحاضرة من خلال مناقشة الطلاب والمشاركة لأراهم 2-اعطاهم المحاضرة بطريقة الكويزات 3-قراءة المحاضرة داخل القاعة

Student Workload (SWL) الحمل الدراسي للطالب			
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	52	**Unstructured SWL (h/w)** الحمل الدراسي غير المنتظم للطالب أسبوعيا	3.5
Total SWL (h/sem) الحمل الدراسي الكلي للطالب خلال الفصل	100		

Module Evaluation تقييم المادة الدراسية					
		Time/Number	Weight (Marks)	Week Due	Relevant Learning Outcome
Formative assessment	Quizzes	2	10% (10)	5 and 10	
	Assignments	2	10% (10)	2and12	
	Projects / Lab.	X	x	x	
	Report	1	10% (10)	13	
	Midterm Exam	1	10% (10)	7	

Summative assessment	Final Exam	1	50% (50)	16	
Total assessment			100% (100 Marks)		

Delivery Plan (Weekly Syllabus) المنهاج الاسبوعي النظري	
	Material Covered
Week 1	المقدمة : مدخل عام الى مفهوم حقوق الانسان
Week 2	جذور حقوق الانسان وتطورها في تاريخ البشرية/تطور فكرة حماية حقوق الانسان
Week 3	المجتمع الدولي وحقوق الانسان / اليات الأمم المتحدة لحماية حقوق الانسان
Week 4	واجبات الانسان والقيود الواردة على ممارسة حقوق الانسان
Week 5	المنظمات والهيئات الدولية المعنية بالدفاع عن حقوق الانسان / اخلاقيات المهنة
Week 6	قانون انضباط الطلبة في مؤسسات وزارة التعليم العالي والبحث العلمي
Week 7	امتحان نصف الكورس
Week 8	مفهوم وتاريخ الديمقراطية
Week 9	سمات النظام الديمقراطي ومكوناته
Week 10	مؤسسات المجتمع المدني والديمقراطي
Week 11	العلاقة بين حقوق الانسان والديمقراطية
Week 12	جرائم الإبادة الجماعية
Week 13	ضمانات الحريات والحقوق العامة
Week 14	الحكم الرشيد
Week 15	الامتحان النهائي

Learning and Teaching Resources مصادر التعلم والتدريس		
	Text	Available in the Library?
Required Texts	حقوق الانسان ،تطورها ومضامينها وحمايتها ، د. رياض عزيز هادي	نعم
Recommended Texts	حقوق الانسان والديمقراطية والحريات ، د. ماهر صبري	لا
Websites	لايوجد	

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	مقبول بقرار	(45-49)	More work required but credit awarded
	F – Fail	راسب	(0-44)	Considerable amount of work required
[redacted]				

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 and Scientific Research - Iraq
University of Al-Muthanna
College of Applied Medical Sciences
Department of Environmental Health

MODULE DESCRIPTOR FORM
نموذج وصف المادة الدراسية

Module Information معلومات المادة الدراسية					
Module Title	PUBLIC HEALTH			**Module Delivery**	
Module Type	CORE			**Theory** **Lecture** **Lab** **Tutorial** **Practical** **Seminar**	
Module Code	ENH1209				
ECTS Credits	5				
SWL (hr/sem)	125				
Module Level	1		**Semester of Delivery**	2	
Administering Department	Department of Environmental Health		**College**	College of Applied Medical Science	
Module Leader	Ansam Saad Alkhafaji		**e-mail**	ansam.saad@mu.edu.iq	
Module Leader's Acad. Title	lecturer		**Module Leader's Qualification**	MSc	
Module Tutor	Ansam Saad Alkhafaji		**e-mail**	ansam.saad@mu.edu.iq	
Peer Reviewer Name			**e-mail**		
Review Committee Approval			**Version Number**		

Relation With Other Modules العلاقة مع المواد الدراسية الأخرى			
Prerequisite module	None	**Semester**	
Co-requisites module	None	**Semester**	

Module Aims, Learning Outcomes and Indicative Contents أهداف المادة الدراسية ونتائج التعلم والمحتويات الإرشادية	
Module Aims أهداف المادة الدراسية	The Introduction to Public Health module provides an overview of important definitions and concepts, as well as an introduction to the changing panorama of public health problems. The sub-module aims to provide you with the foundation of public health and a series of themes that underpin public health. It lays the foundation of ethics in public health; takes a look back at the history of public health, followed by the health transitions; It ranges from the foundations of Public Health, ethics in public health to principles of screening.
Module Learning Outcomes مخرجات التعلم للمادة الدراسية	On completion of this module a student should be able to: 1. Critically discuss, in written form, basic scientific concepts, methodological perspectives, and factors that govern public health research; 2. Describe the evaluation of global trends affecting health, including epidemics, injuries, chronic health problems, and mental illnesses; 3. Apply knowledge of basic public health concepts by critically comparing different approaches to tackling public health problems, health promotion, health policy, and to interpret opposing viewpoints in these fields; 4. Critically assess monitoring systems and trend data analysis, and important concepts and evidence gained from the module; 5. Critically evaluate a range of data to describe the health of the population, including familiarity with methods of measuring morbidity and mortality, the burden of disease and health status; 6. Identify the strengths, uses, interpretation and limitations of various types of data relating to health, and scientifically quantify public health problems with existing epidemiological data; 7. Review the scientific literature and present findings of major public health problems. 8. Evaluate and assessing program of measures to control of communicable diseases 9. Identify and develop a critical awareness of the political nature of major public health issues that affect low-, middle, and high-income countries. 10. Evaluate and assessing of measures to control non communicable diseases.

Module Aims, Learning Outcomes and Indicative Contents أهداف المادة الدراسية ونتائج التعلم والمحتويات الإرشادية	
	11. Assessment of services in primary health care and influence it to protecting epidemic diseases. 12. Identify and determined the services submitted to mother and child local health services 13. Identify and develop a critical awareness of ethical aspects of research and development work, and critically assess the role and importance of research in public health. 14. Assessment and identify pandemic disease and influence on the public health function.
Indicative Contents المحتويات الإرشادية	Definition of public health, Function of public health, Services of public health, Benefit of public health research, Infectious disease, Risk factors, measurement of control. (15 hrs.), Historical perspectives of Publi health, Strategies of health, public health practice, Communicable diseases, The Right Approach of data analysis, noncommunicable disease, Diabetes, Heart disease and risk factors, Control measures. (15 hrs.) Health services in primary health care, Maternal health care, Child health care, Vaccination, Promoting of health care, Comparison of public health and primary health care, Prenatal and antenatal care . (15 hrs.) Risk factors and effect on public health function, Epidemic diseases, Measles, Mumps, Rubella, Tuberculosis, Measures of control transmission diseases. (15 hrs.) Revision problem classes (8 hrs.)
Learning and Teaching Strategies استراتيجيات التعلم والتعليم	
Strategies	The main strategy that will be adopted in delivering this module is to encourage students' participation in the exercises, while at the same time refining and expanding their critical thinking skills. Also depends on Problem-Based Learning that students are presented with real-world problems or scenarios that require them to apply their knowledge and skills to find solutions. It promotes critical thinking, decision-making, and solving problem abilities. Furthermore, according

Module Aims, Learning Outcomes and Indicative Contents أهداف المادة الدراسية ونتائج التعلم والمحتويات الإرشادية	
	to Flipped Classroom: which involves reversing the traditional instructional model that help students to learn the content outside of class through videos or readings, while class time is used for discussions, activities, and individualized support. This will be achieved through classes, and by considering types of simple experiments involving some sampling activities that are interesting to the students.

Student Workload (SWL) الحمل الدراسي للطالب			
Structured SWL (h/sem) الحمل الدراسي المنتظم للطالب خلال الفصل	79	**Structured SWL (h/w)** الحمل الدراسي المنتظم للطالب أسبوعيا	2
Unstructured SWL (h/sem) الحمل الدراسي غير المنتظم للطالب خلال الفصل	46	**Unstructured SWL (h/w)** الحمل الدراسي غير المنتظم للطالب أسبوعيا	2
Total SWL (h/sem) الحمل الدراسي الكلي للطالب خلال الفصل	125		

Module Evaluation تقيم المادة الدراسية					
		Time/Number	**Weight (Marks)**	**Week Due**	**Relevant Learning Outcome**
Formative assessment	**Quizzes**	2	10% (10)	(2, 3, and 11, 10)	LO #1,2, 10 and 11
	Assignments	2	10% (10)	1 and 14	LO #3, #6 and #8, #12
	Projects / Lab.	0	10% (10)	Continuous	All
	Report	0	10% (10)	4	LO #3, #6,#9 and #12
Summative assessment	**Midterm Exam**	1hr	10% (10)	7	LO #1 - #7
	Final Exam	3hr	50% (50)	14	All
Total assessment			100% (100 Marks)		

Delivery Plan (Weekly Syllabus) المنهاج الاسبوعي النظري	
	Material Covered
Week 1	Introduction to Public Health (inc. history and ethics)
Week 2	Measures of disease occurrence (inc. data sources on populations)
Week 3	Burden of disease and summary measures of population health
Week 4	Health Transitions
Week 5	Prevention and Screening
Week 6	Major Determinants of Health (e.g., food, tobacco and infectious diseases)
Week 7	Population level health promotion
Week 8	Midterm Examination
Week 9	Maternal and child heath care
Week 10	Measures and control of communicable disease
Week 11	Public health problems
Week 12	Epidemic diseases and influence on public health
Week 13	Non communicable diseases
Week 14	Communicable diseases
Week 15	Primary health care services

Delivery Plan (Weekly Lab. Syllabus) المنهاج الاسبوعي للمختبر	
	Material Covered
Week 1	Definition and objective of Public Health
Week 2	Health education
Week 3	Measuring the rate of diseases spread
Week 4	The effect of physical activity on vital factors
Week 5	Measuring drinking water pollution
Week 6	Hand contamination and microbial spread test
Week 7	Determinants of health
Week 8	Midterm Examination
Week 9	Public Health problems
Week 10	Field visit to public health laboratory
Week 11	Infectious diseases and methods of prevention
Week 12	Non communicable diseases and ways to control them
Week 13	Primary health care services
Week 14	Preparatory week before the final Exam
Week 15	Final Exam

Learning and Teaching Resources مصادر التعلم والتدريس		
	Text	**Available in the Library?**
Required Texts	**Essential Public Health** **Theory and Practice** By Stephen Gillam, Jan Yates and Padmanabhan Badrinath **Introduction to Public Health** Raymond L. Goldsteen, Karen Goldsteen, David G. Graham, MD, MPH	
Recommended Texts	**Global Public Health/** SIXTH EDITION By Roger Detels, Martin Gulliford and Chorh Chuan Tan	
Websites		

APPENDIX:

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	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.

ملاحظة: هذا النموذج تم وضعه وتقنينه من قبل مديرية ضمان الجودة في وزارة التعليم العالي والبحث العلمي

	Ministry of Higher Education and Scientific Research - Iraq Al-Muthanna University College of Applied of Medical Sciences Department of Environmental Health	

MODULE DESCRIPTOR FORM

نموذج وصف المادة الدراسية

Module Information

معلومات المادة الدراسية

Module Title	MEDICAL PHYSICS	**Module Delivery**	
Module Type	BASIC	**Theory** ✔ **Lecture**✔ **Lab**✔ **Tutorial**✔ **Practical** **Seminar**✔	
Module Code	ENH1207		
ECTS Credits	7		
SWL (hr/sem)	175		

Module Level	1	**Semester of Delivery**	1
Administering Department	Type Dept. Code	**College**	Type College Code
Module Leader	Dr. Ammar Mohammed Alhasan	**e-mail**	ammar.physicist@mu.edu.iq
Module Leader's Acad. Title	Lecturer	**Module Leader's Qualification**	PH.D in Medical physics
Module Tutor		**e-mail**	
Peer Reviewer ame		**e-mail**	
Review Committee Approval		**Version Number**	1

Relation With Other Modules

العلاقة مع المواد الدراسية الأخرى

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

Module Aims, Learning Outcomes and Indicative Contents أهداف المادة الدراسية ونتائج التعلم والمحتويات الإرشادية	
Module Aims أهداف المادة الدراسية	Provide the student with practical and theoretical information on how to study medical physics and follow modern methods in linking physics and medicine.
Module Learning Outcomes مخرجات التعلم للمادة الدراسية	1. Enable the student to know and understand the science of medical physics. 2. Enable the student to know and understand how the pressure rises on each part of the body. 3. Enabling the student to know and understand the types of radiation and their risks to humans and the environment and the diseases that affect humans as a result of exposure to large amounts of radiation. 4. Enabling the student to know and understand how a rise or fall in human body temperature occurs. 5. Providing the student with skills in how to detect the electrical brain. 6. Providing students with skills in the process of measuring human body pressure and its types. 7. Providing the student with skills in how to link physics and medicine.
Indicative Contents المحتويات الإرشادية	1. A general introduction to everything related to physics and its connection to mathematics and medicine and its impact on the human body 2. Pressure , Negative Pressure , Boyle s Law, Pressure inside the Skull , Pressure in Eye , Pressure in Skeleton, Pressure in the Urinary Bladder, , Pressure in the Lung , Hyperbaric Oxygen Therapy (HOT) 3. Energy, Work and Power of the Body, Kinetic Energy and PPotential Energy, The Basal Metabolic Rate,The main heat loss Mechanisms in the Body. 4. Laser, How laser works , Properties of Laser, Types of Laser, General Safety Practices while Working , Laser dangers , Laser uses in Medicine , Laser Applications in the Medical Field . 5. Electricity within the body and the nervous system Neurons and their components, 6. Physics of Nuclear Medicine and Medical and Biological of Radiation, Physics of Radioisotopes in Medicine and type of Ray and effects, Radiation Protection. 7. Physics of Diagnostic X-Ray, X-Ray Production, X-ray Properties, Types of X-Ray, Medical Application, Dental Radiography, Chest X-Ray, Mammography, Mammography, Fluoroscopy, Computed Tomography, Radiotherapy, X-Ray Exposure of Pregnant Woman, Prevention, X-Ray Risks. 8. CT-Scan , MRI , ECG , EEG The working principle of each device, its characteristics, uses, benefits and harms 9. Sound in Medicine , Types of Sound Waves Properties of Sound Waves , The use of Sound Waves in Medicine Sound Wave Applications Stethoscope. 10. Heat and Cold in Medicine, Heat and Temperature, Thermometry and Temperature Scales , Types of Thermometers, Heat therapy, Heat production for therapy, Cryogenics Cryosurgery is used in several types of eye surgery.

	11. light in medicine , The electromagnetic spectrum , Phototherapy Diseases treated with light , Advantages of phototherapy, Phototherapy side effects The benefits of light therapy 12. General concepts: Method of physics and standards; thermodynamics system and system properties; conservation of energy principle, application of thermodynamics, The Zeroth law. 13. The 2nd law of thermodynamics; reversible and irreversible process , Entropy and Enthalpy; Enternal energy; heat capacity and Adiabatic process; the relation between pressure, volume, and temperature in adiabatic process.

Learning and Teaching Strategies
استراتيجيات التعلم والتعليم

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

Student Workload (SWL)
الحمل الدراسي للطالب

Structured SWL (h/sem) الحمل الدراسي المنتظم للطالب خلال الفصل	78	**Structured SWL (h/w)** الحمل الدراسي المنتظم للطالب أسبوعيا	5
Unstructured SWL (h/sem) الحمل الدراسي غير المنتظم للطالب خلال الفصل	97	**Unstructured SWL (h/w)** الحمل الدراسي غير المنتظم للطالب أسبوعيا	7
Total SWL (h/sem) الحمل الدراسي الكلي للطالب خلال الفصل	175		

Module Evaluation
تقييم المادة الدراسية

		Time/Number	Weight (Marks)	Week Due	Relevant Learning Outcome
Formative assessment	Quizzes	1	5	3,5,7,9,10,11 ,13	1
	H.W	1.30	10	2,4,8,12,13	2

	seminar	6	6	2,4,8,12,13	3
	Discussion /experiments	10	5	6,7,12,13,14	3,4,5
	Projects / Lab.	15	5	6,13,14	1,2,3,4,5
	Report/lab	9	9	1,2,3,4,5,8,9, 10,11	4,5,6
Summative assessment	Midterm Exam	1	10	6	1,2,3,4
	Final Exam	3	50	15	all
Total assessment			100		

Delivery Plan (Weekly Syllabus) المنهاج الاسبوعي النظري	
Week	**Material Covered**
Week 1	Introduction of Medical Physics
Week 2	Forces on and in body
Week 3	Pressure
Week 4	Physics in cardio system
Week 5	Physics in breathing system
Week 6	Med- term exam
Week 7	Sound in Medicine
Week 8	Radiation
Week 9	Electricity and magnetism within the body
Week 10	Heat and Cold in Medicine
Week 11	Light in medicine
Week 12	Medical examination devices (CT & MRI)
Week 13	Medical examination devices (PET Scan & Gamma Knife)
Week 14	Thermodynamics
Week 15	Final exam

Delivery Plan (Weekly Lab. Syllabus) المنهاج الأسبوعي للمختبر	
weeks	**Material Covered**
Week 1	EXP1: Hooke's Law.
Week 2	EXP2: Boyle's Law.
Week 3	EXP3: Viscosity in Liquid.
Week 4	EXP4: Electricity by using Cathode Ray Oscilloscope

Week 5	Med- term exam
Week 6	EXP5: Determination of the refractive index of water (or any liquid).
Week 7	EXP6: Blood Pressure Measurement by Using Sphygmomanometer.
Week 8	EXP7: Finding the focal length of a convex lens.
Week 9	EXP8: Speed of sound.
Week 10	EXP9: Laser application for measurement of single slit.
Week 11	EXP10: Measurement of the wavelength separation of sodium using diffraction grating.
Week 12	EXP11: Surface Tension.
Week 13	EXP12: Determination of the Acceleration of Gravity by Means of Simple Pendulum.
Week14	EXP13: Determine the coefficient of static friction between two surfaces
Week 15	Final Exam

Learning and Teaching Resources

مصادر التعلم والتدريس

	Text	Available in the Library?
Required Texts	-Physics by Bern& Medical physics by camerom **-Physics for Biology and Medical Students, 2nd**	
Recommended Texts	Medical and clinical physics and internet	
Websites	/https://www.medphys.org	

APPENDIX:

GRADING SCHEME مخطط الدرجات				
Group	**Grade**	التقدير	**Marks (%)**	**Definition**
Success Group (50 - 100)	**A** - Excellent	امتياز	90 - 100	Outstanding Performance
	B - Very Good	جيد جدا	80 - 89	Above average with some errors
	C - Good	جيد	70 - 79	Sound work with notable errors
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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:				

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Ministry of Higher Education and
Scientific Research - Iraq
University of Al Muthanna
College of Applied of Medical Sciences
Department of Environmental Health

MODULE DESCRIPTOR FORM
نموذج وصف المادة الدراسية

Module Information معلومات المادة الدراسية			
Module Title	HUMAN CYTOLOGY	**Module Delivery**	
Module Type	BASIC	**Theory** **Lecture** **Lab** **Tutorial** **Practical** **Seminar**	
Module Code	ENH1216		
ECTS Credits	7		
SWL (hr/sem)	175		

Module Level	1	**Semester of Delivery**	2
Administering Department	Type Dept. Code	**College**	Type College Code
Module Leader	Dr. Sarah Zghair Hussein	**e-mail**	sarah.zghair@mu.edu.iq
Module Leader's Acad. Title	Lecturer	**Module Leader's Qualification**	Ph.D
Module Tutor	Dhoha Abdalhadi Naji	**e-mail**	dhoha.abdalhadi@mu.edu.iq
Peer Reviewer Name	Dhoha Abdalhadi Naji	**e-mail**	dhoha.abdalhadi@mu.edu.iq
Review Committee Approval		**Version Number**	

Relation With Other Modules العلاقة مع المواد الدراسية الأخرى			
Prerequisite module	General Biology	**Semester**	1
Co-requisites module	None	**Semester**	

Module Aims, Learning Outcomes and Indicative Contents أهداف المادة الدراسية ونتائج التعلم والمحتويات الإرشادية	
Module Aims أهداف المادة الدراسية	1- This course introduces the general concepts of cytology and other related fields. 2- Increase our knowledge and understanding original of human life 3- diagnose and management of human disease . 4- used to screen for fetal abnormalities.
Module Learning Outcomes مخرجات التعلم للمادة الدراسية	1- discuss the study of cell biology/cytology briefly 2- discuss in detail at least 3 constituents of the cell structure 3- describe the different phases of cell cycle 4- state the role of cell division in reproduction 5- discuss briefly on cellular growth and differentiation 6- study of cell types
Indicative Contents المحتويات الإرشادية	Learn about the history and method of discovering the living cell and its basic components, and the role of electron and optical microscopy in shedding light on the smallest cellular details and their different shapes and types.(15 hr.) Identifying the importance of the living cell in transmitting hereditary traits between generations, the role of the nucleus in preserving hereditary traits and the chromosomes and hereditary genes it contains, and how to preserve these traits through the process of cell division and controlling them.(15 hr.) Differentiation of living cells and how the formation and growth of the embryo(10 hr.) Studying the metabolic and chemical processes that occur inside the living cell and their role in the continuation of human life(10 hr.) Learn about the mechanism of communication between cells and how they work as tissues specialized in a specific work(15 hr.)
Learning and Teaching Strategies استراتيجيات التعلم والتعليم	
Strategies	The learning strategy for this subject includes defining the student what is the living cell in the human body and its importance in the continuation of life through what he receives of theoretical information, studying the different forms and types of cells, knowing their basic components and the way to deal with them through doing some laboratory experiments on the practical side, and training students to deal with a lot of Laboratory tools necessary to carry out these experiments.

Student Workload (SWL) الحمل الدراسي للطالب			
Structured SWL (h/sem) الحمل الدراسي المنتظم للطالب خلال الفصل	78	**Structured SWL (h/w)** الحمل الدراسي المنتظم للطالب أسبوعيا	5
Unstructured SWL (h/sem) الحمل الدراسي غير المنتظم للطالب خلال الفصل	97	**Unstructured SWL (h/w)** الحمل الدراسي غير المنتظم للطالب أسبوعيا	7
Total SWL (h/sem) الحمل الدراسي الكلي للطالب خلال الفصل	175		

Module Evaluation
تقيم المادة الدراسية

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

Delivery Plan (Weekly Syllabus)
المنهاج الاسبوعي النظري

	Material Covered
Week 1	History of Cell Biology (Cytology)
Week 2	Molecular Basis of Cell Structure
Week 3	Cell components (cell membrane)
Week 4	Cell processes transport of the substances through the cell membrane
Week 5	Cell organelles
Week 6	Human cell types and functions
Week 7	Cytogenetic
Week 8	Cell division (mitosis)
Week 9	Cell Division (meiosis)
Week 10	Cell division problems
Week 11	Cell Growth and Differentiation
Week 12	Developmental cell biology
Week 13	Metabolic inclusions in the cell
Week 14	Synthesis and secretion in the cell.
Week 15	Movement and communications in human cells

Delivery Plan (Weekly Lab. Syllabus) المنهاج الاسبوعي للمختبر	
	Material Covered
Week 1	Laboratory safety
Week 2	Microscope
Week 3	Bucal smear
Week 4	Cell membrane functions (fragility test)
Week 5	Cell membrane function (egg cell osmosis test)
Week 6	Cell membrane function (blood groups)
Week 7	Cell organelles
Week 8	Differential leukocyte count (study nucleus shape)
Week 9	DNA extraction
Week 10	Cell division (mitosis)
Week 11	Human Cell types (tissue)
Week 12	human cell types (blood smear)
Week 13	Study of human cells numbers (WBC count)
Week 14	RBC count
Week 15	Human tissue culture

Learning and Teaching Resources مصادر التعلم والتدريس		
	Text	**Available in the Library?**
Required Texts	1- Human cytology :A Text book of cellular structure and function 2- Text book of human histology with color Atlas	No
Recommended Texts	1- human histology by Alan Stevens and James S. Lowe third edition 2- human biology by madder,12th edition	yes
Websites	https://www.biologyonline.com/ http://WWW.ibiology.org	

APPENDIX:

GRADING SCHEME مخطط الدرجات				
Group	**Grade**	**التقدير**	**Marks (%)**	**Definition**
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Ministry of Higher Education and
Scientific Research - Iraq
University of Al Muthanna
College of Applied of Medical Sciences
Department of Environmental Health

MODULE DESCRIPTION FORM

نموذج وصف المادة الدراسية

Module Information معلومات المادة الدراسية					
Module Title	General Biology			**Module Delivery**	
Module Type	BASIC			☒ Theory ☒ Lecture ☒ Lab ☐ Tutorial ☐ Practical ☐ Seminar	
Module Code	ENH1101				
ECTS Credits	9				
SWL (hr/sem)	225				
Module Level		I	**Semester of Delivery**		I
Administering Department		Type Dept. Code	**College**	Type College Code	
Module Leader	Sarah Zghair Hussein		**e-mail**	sarah.zghair@mu.edu.iq	
Module Leader's Acad. Title		Assist. Lecturer	**Module Leader's Qualification**		
Module Tutor	Dr. Sarah Zghair Hussein		**e-mail**	sarah.zghair@mu.edu.iq	
Peer Reviewer Name			**e-mail**	E-mail	
Scientific Committee Approval Date			**Version Number**		

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

Module Aims, Learning Outcomes and Indicative Contents أهداف المادة الدراسية ونتائج التعلم والمحتويات الإرشادية	
Module Objectives أهداف المادة الدراسية	1. This course describes the nature of biology science and the knowledge of the chemical basis of living organisms and how chemistry defines a large part of the biology study. 2. The students will Be known about the nature of organic bio-compounds (carbohydrates, proteins etc…) and their importance as building blocks of living systems. 3. To understand the characteristics of living organisms and the structure of cells (prokaryotic and eukaryotic). 4. Describe the composition and function of biological membranes, define passive transport- diffusion, osmosis, and facilitated diffusion and relate the changing conditions inside and outside of cells to these definitions. describe active transport and relate the changing conditions inside and outside of cells to the need for AT. 5. Description of cellular reproduction and the different types carried out by selected organisms and the nature of informational molecules (DNA and RNA) and the expression of this information through the process of gene expression. 6. Description of the different types of microorganisms (bacteria, fungi, Protista, and viruses) and their relationship with environmental
Module Learning Outcomes مخرجات التعلم للمادة الدراسية	1. Understand the role of biology and the relevance of different biological processes to our daily life 2. Learn how to work in a safe and efficient environment inside the laboratory. 3. Use the microscope and learn the basic skills of light microscopy. 4. Describe the structure of the cell and learn the function of its different components 5. Compare a prokaryotic and a eukaryotic cell and highlight their differences. 6. Learn the basic concepts in mechanism to moving of materials across the cell membrane. 7. Study the processes of cell division and sexual reproduction. 8. Learn the principles of genetics and solve genetic problems. 9. Study the molecular characteristics of nucleic acids (DNA and RNA) and how nucleic acids and protein synthesis are interrelated. 10. Acquire an overview of the theory of evolution, the origin and the biodiversity of life. 11. Acquire an overview of the classification of microorganisms and their major characteristics. 12. Test hypotheses, run simple experiments and interpret the data inside the laboratory.
Indicative Contents المحتويات الإرشادية	Indicative content includes the following. <u>Part A – Introduction to biology</u> Biology: definition of biology science, branched of biology, characterized of living things, the kingdom of living things, characterized of each kingdom, The Chemical Building Blocks of Life, Carbon Provides the Framework of Biological Molecules, Carbohydrates Form both Structural and Energy-Storing Molecules, Proteins are the Tools of the Cell, Hydrophobic Lipids Form Fats and Membranes [4 hrs] <u>Part B- Structure of Cell</u> Cell: definition of cell, types of cells, different between types of cells, shape of cell, define of prokaryotic cell, characteristic of prokaryotic cell, structure of prokaryotic of cell, example of prokaryotic of cell (6 hrs)

	Eukaryotic cell: define of eukaryotic cell, characteristic of eukaryotic cell, structure of this cell, example of this cell, different between the animal and plant cell, structure of membranes in plant and animal cells, cell wall structure in plant cell, plasma membrane structure, function of plasm membrane, properties of plasm membrane, movement of material across the plasma membrane, passive transport (simple diffusion, facilitated diffusion, osmosis) , active transport , vesicle transport (endocytosis and exocytosis). (8hrs) Organelles of cell: nucleus, endoplasmic reticulum, ribosome, golgi apparatus, mitochondria lysosome, cytoskeleton. (4 hrs) Cell cycle: introduction to cell cycle, types of cell cycle, mitosis, stage of mitosis, meiosis, stage of meiosis. (4hrs) Nucleic acid: The nitrogenous bases are classified into two types, Deoxyribonucleic acid (DNA) structure, RNA (Ribonucleic acid) structure, the different between RNA and DNA, Genes structure, Replication process. Protein synthesis, Transcription process, Translation process (6 hrs). <u>Part C - Microorganisms</u> Bacteria: Define, General properties of bacterial, the classification of bacteria, based on cell wall contents, based on presence of flagella, based on requirement of oxygen, based on method of obtaining nutrition, Reproduction of Bacteria, Vegetative Reproduction of Bacteria, Binary Fission, Asexual reproduction of Bacteria (4hrs) Fungi: introduction to fungi, classification of fungi, reproduction of fungi (4 hrs) Protista: define of parasite, Classification of the of parasitology, Different Kinds of Parasites, Different kinds of Hosts, Life cycle of parasites, Direct life cycle, indirect life cycle, Host-parasite relationship, Effect of parasite on the Host. (4 hrs) Helminthes: introduction of helminths, Groups of Helminths, Phylum: Platyhelminths. (4 hrs) Viruses: Properties of viruses, Structure of virus, General Steps in Viral Multiplication, Classification of virus, Bacteriophages, Two life cycle of the bacteriophage. (4 hrs)

Learning and Teaching Strategies استراتيجيات التعلم والتعليم	
Strategies	The main strategy that will be adopted in delivering this module is to encourage students to participate in class discussions, explain lectures by using modern technologies, improving and expanding their critical thinking skills. Also use brainstorming questions for students.

Student Workload (SWL) الحمل الدراسي للطالب محسوب لـ ١٥ اسبوعا			
Structured SWL (h/sem) الحمل الدراسي المنتظم للطالب خلال الفصل	93	**Structured SWL (h/w)** الحمل الدراسي المنتظم للطالب أسبوعيا	6
Unstructured SWL (h/sem) الحمل الدراسي غير المنتظم للطالب خلال الفصل	132	**Unstructured SWL (h/w)** الحمل الدراسي غير المنتظم للطالب أسبوعيا	9
Total SWL (h/sem) الحمل الدراسي الكلي للطالب خلال الفصل	**225**		

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

Delivery Plan (Weekly Syllabus) المنهاج الاسبوعي النظري	
	Material Covered
Week 1	Introduction of general biology
Week 2	Chemistry of Life
Week 3	Cell Structure and prokaryotic cell
Week 4	Eukaryotic cell structure
Week 5	Structure of Membranes
Week 6	Organelles of Cell
Week 7	Cell Cycle
Week 8	Nucleic Acid (DNA, RNA)
Week 9	Protein synthesis

Week 10	Midterm Exam
Week 11	Bacteria
Week 12	Fungi
Week 13	Protists
Week 14	Helminthes
Week 15	Viruses
Week 16	Preparatory week before the final Exam

Delivery Plan (Weekly Lab. Syllabus) المنهاج الاسبوعي للمختبر	
	Material Covered
Week 1	Lab 1: Biosafety
Week 2	Lab 2: Microscope
Week 3	Lab 3: Cell Structure, Prokaryotic
Week 4	Lab 4: Eukaryotic
Week 5	Lab 5: Diffusion in cell membrane
Week 6	Lab 6: Movement across the cell membrane in plant cell
Week 7	Exam
Week 8	Lab 7: cell division in yeast
Week 9	Lab 8: Blood component
Week 10	Lab 9: bacteria part 1
Week 11	Lab 10: Bacteria part 2
Week 12	Lab 11: Viruses
Week 13	Lab 12: Fungi
Week 14	Lab 13: protists
Week 15	Lab 14: Helminthes

Learning and Teaching Resources مصادر التعلم والتدريس		
	Text	**Available in the Library?**
Required Texts	Mason, K. A., T. Duncan, G. Johnson, J. B. Losos, and S. R. Singer. 2018. Understanding Biology, 2 nd Ed. New York, NY: McGraw-Hill Education, Inc. (M)	No

Recommended Texts	Raven 2019, Biology, 12th edition, McGraw Hill	No

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	مقبول بقرار	(45-49)	More work required but credit awarded
	F – Fail	راسب	(0-44)	Considerable amount of work required

Note:

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Ministry of Higher Education and
Scientific Research - Iraq
Al-Muthanna University
College of Applied Medical Sciences
Department of Environmental Health

MODULE DESCRIPTOR FORM
نموذج وصف المادة الدراسية

Module Information معلومات المادة الدراسية					
Module Title	Environmental Health Science			**Module Delivery**	
Module Type	BASIC			**Theory** **Lecture** **Lab** **Tutorial** **Practical** **Seminar**	
Module Code	ENH1103				
ECTS Credits	7				
SWL (hr/sem)	125				
Module Level	1		**Semester of Delivery**	1	
Administering Department	ENH		**College**	Type College Code	
Module Leader	Haider S. Almnehlawi		**e-mail**	haider.almnehlawi@mu.edu.iq	
Module Leader's Acad. Title	Dr.		**Module Leader's Qualification**		
Module Tutor	Haider S. Almnehlawi		**e-mail**	haider.almnehlawi@mu.edu.iq	
Peer Reviewer Name	Haider S. Almnehlawi		**e-mail**	haider.almnehlawi@mu.edu.iq	
Review Committee Approval			**Version Number**		

Relation With Other Modules العلاقة مع المواد الدراسية الأخرى			
Prerequisite module	None	**Semester**	
Co-requisites module	None	**Semester**	

Module Aims, Learning Outcomes and Indicative Contents أهداف المادة الدراسية ونتائج التعلم والمحتويات الإرشادي	
Module Objectives أهداف المادة الدراسية	1. Understand the history and definition of environmental health. 2. Describe the major sources of environmental health risks from diverse environmental media (water, air, soil/sediments) 3. Discuss the association between population growth and dissemination of environmental pollutants. 4. Describe methods used in epidemiology and toxicology to assess environmental exposures and hazards. 5. Describe policies that have been developed to manage health risks associated with exposures to environmental hazards. 6. Identify chemical, physical, and microbial agents that originate in the environment and can impact human health. 7. Describe specific applications of environmental health concepts to fields such as water quality control, food safety, and occupational health. 8. Understand the major sources and types of environmental agents and how they affect health. 9. Describe how these agents interact with biological systems, and the mechanisms by which they exert adverse health effects.
Module Learning Outcomes مخرجات التعلم للمادة الدراسية	1. Recognize environmental factors including biological physical and chemical factors that affect the health of a community. 2. Understand the patterns of disease and injury in human populations and apply to the control of health problems. 3. Apply constructs of behavioral, social and cultural theories related to individual and population health and health disparities over the life course. 4. Gather, process, and present information to different audiences in-person, through information technologies, or through media channels. 5. Demonstrate the ability to interact with both diverse individuals and communities to produce or impact an intended public health outcome. 6. Incorporate public health biology – the biological and molecular context of public health – into public health practice. 7. Demonstrate ethical choices, values and professional practices implicit in public health decisions while considering the effect of choices on community stewardship, equity, social justice and accountability 8. Demonstrate ability to plan for the design, development, implementation, and evaluation of strategies to improve individual and community health. 9. Recognize system level properties that result from dynamic interactions among human and social systems and how they affect the relationships among

	individuals, groups, organizations, communities, and environments. 10. To understand the principles and practice of environmental health. 11. To understand environmental health and its' history as a crucial aspect of the history of public health. 12. To understand the U.S. and world health status and issues as background framework to environmental health. 13. To get a brief introduction to the public health research methodologies including epidemiology and toxicology 14. To understand crucial infectious and non-infectious disease principles as necessary to understand issues in environmental health. To understand the crucial environmental health topics (air, water, pesticide
Indicative Contents المحتويات الإرشادية	The module focuses on understanding of the epidemiological methods by which evidence has been obtained on environmental risks to health: how we know what we think we know about such risks. Its focus is therefore on principles, methods, interpretation and critical thinking. It concentrates on methods common in environmental epidemiology, including time series studies and risk assessment methods, and considers the evidence for the main areas of current interest in environmental epidemiology. These include air pollution, wastewater reuse, congenital anomalies, ionizing and nonionizing radiation, climate change/planetary health, as well as disease cluster investigations. The intention is to equip students with a good understanding of how to design an epidemiological study, to investigate an environmental hazard to health and how to interpret evidence from published literature. Introduction to environmental health and major source of health Risks, assessment, management and communication(10h) Ecology application in environmental health (5h) The concep to microbilogy and contact with Environmental Health (8h) Toxicology substances and Risk (8h) Diffusion of biodiversity issues (8h) Air and Water pollution health and management(10h) Food safety danger in environmental health (8h) Hazards wastes Risk and mangement(7h)

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

Student Workload (SWL) الحمل الدراسي للطالب			
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	77	**Unstructured SWL (h/w)** الحمل الدراسي غير المنتظم للطالب أسبوعيا	5
Total SWL (h/sem) الحمل الدراسي الكلي للطالب خلال الفصل	175		

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

Delivery Plan (Weekly Syllabus) المنهاج الاسبوعي النظري	
	Material Covered
Week 1	Introduction to Environmental Health
Week 2	Major Sources of Environmental Health Risks
Week 3	Risk Assessment, Management and Communication
Week 4	Ecology concept and application
Week 5	Microbiology Environment
Week 6	Toxicology (Toxic substances and risk assessment)
Week 7	Midterm Exam
Week 8	Biodiversity issues
Week 9	Air pollution and Health
Week 10	Water pollution and management
Week 11	Food safety
Week 12	Hazardous substance and wastes management
Week 13	Radiation and Risk management
Week 14	Preparatory week before the final Exam
Week 15	Final Exam

Delivery Plan (Weekly Lab. Syllabus) المنهاج الاسبوعي للمختبر	
	Material Covered
Week 1	General rules must be followed in the lab
Week 2	Introduction to the Environmental Health Science
Week 3	Laboratory safety procedures
Week 4	Types of environmental risks and their management
Week 5	Biodiversity Conservation
Week 6	Air pollution and the most important methods used to measure it
Week 7	Water pollution and methods of measuring it
Week 8	Exam 1
Week 9	Environmental and growth microbial population

Week 10	Waste, its environmental effects, and methods of treating it
Week 11	The most important methods of reclamation damaged ecosystems
Week 12	Preserving food with plastic materials
Week 13	Radiation protection principles and applications
Week 14	General Review
Week 15	Final Exam

Learning and Teaching Resources مصادر التعلم والتدريس		
	Text	**Available in the Library?**
Required Texts	Daniel vallero / 4 Edition Environmental health /13 Edition Environmental microbiology /second edition Short textbook of public health medicine for the tropics /4 Edition Ecology coccepts and application / 6 Edition Food safety theory and practice	
Recommended Texts		
Websites	Epidemiology of occupational health, WHO, 1986 http://www.euro.who.int/_data/assets/pdf_file/0020/156071/WA400.pd http://www.who.int/water _sanitation health/en/ Publication: Liu et al., 2015 http://www.toxicolo gyschools.com/Free_Toxicology_Course1/a21.htm Vandenberg et al., 2009; Cerrillo et al., 2017	

APPENDIX:

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

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Ministry of Higher Education and
Scientific Research - Iraq
Al-Muthanna University
College of Applied of Medical Sciences
Department of Clinical Laboratories

MODULE DESCRIPTOR FORM
نموذج وصف المادة الدراسية

Module Information معلومات المادة الدراسية					
Module Title	ENGLISH LANGUAGE			**Module Delivery**	
Module Type	SUPPLEMENT			✓ Theory Tutorial Tutorial Practical Seminar	
Module Code	UNI001				
ECTS Credits	2				
SWL (hr/sem)	50				
Module Level	1		**Semester of Delivery**	2	
Administering Department	Type Dept. Code		**College**	Type College Code	
Module Leader	Mohenned Alsaadawi		**e-mail**	mohenned.hemza@mu.edu.iq	
Module Leader's Acad. Title	Professor		**Module Leader's Qualification**	Graduated from University of Leicester/ United Kingdom	
Module Tutor			**e-mail**		
Peer Reviewer Name			**e-mail**		
Review Committee Approval			**Version Number**	1	

Relation With Other Modules العلاقة مع المواد الدراسية الأخرى			
Prerequisite module	none	**Semester**	-
Co-requisites module	none	**Semester**	-

Module Aims, Learning Outcomes and Indicative Contents أهداف المادة الدراسية ونتائج التعلم والمحتويات الإرشادية	
Module Aims أهداف المادة الدراسية	This course aims at: 1- Enhancing a mastery over the basic structure of a standard English Sentence. and the type of language used in scientific fields of study. 2- Knowing a good bit of information about the basic phrases in English Language regarding their formation, position in sentence word order, uses in real life situation as related to their field of work. 3- Focusing on the difference between simple and continuous present and past tenses as related to their study and career. 4- Enabling students to write certain types of expressions and texts useful for their field of study and future career. 5- Stimulating and directing students to speak and practice English language correctly, asserting the type of language used in real life situations and scientific field of study. 6- Specifying points of weakness in students' performance, trying to amend them. 7- Building a type of scheme in students' minds about what writing and speaking standard English language is supposed to be. 8- Forcing students to think critically while doing the assignments, quizzes and other similar activities.
Module Learning Outcomes مخرجات التعلم للمادة الدراسية	The student would be able to: 1- Speak and write a good standard sentence or type of English Language. 2- Differentiate between types of basic tenses. 3- Have a fluency while speaking the English Language. 4- Write acceptable formal and informal texts. 5- Comprehend the idea behind string of words in a sentence. 6- Work collectively within a teamwork.
Indicative Contents المحتويات الإرشادية	Indicative content includes the following: - Word order: Statements, questions imperatives (command, request, instructions). - Phrases: Nouns, Adjectives, Adverbs, Verbs, Prepositions. - Verbs: Tenses (Form and basic uses), Passive. - Knowing how to say and write some useful texts. - Some text for reading comprehension and videos or recordings for listening. - Basic guide lines in writing a summary, letters, paragraphs, CV. - Topics for discussion.

Learning and Teaching Strategies
استراتيجيات التعلم والتعليم

Strategies	The program is designed to have two theoretical hours in points related to grammar and other three hours for the sake of practicing including doing the exercises. Before an exam, the student will have the chance to review the previous given materials. The practical hours includes some basic information in pronunciation, reading, speaking, listening and writing skills. The program instructor will follow a mixture of traditional and communicative approaches to achieve the above mentioned aims. The students will be asked to do some exercises and quizzes in relation to grammar. They could be divided into groups having certain duties related to different practical activities to be done by them. Each student will have his own evaluation which will raise the grade of each group work as a whole. The best group work will be rewarded at the end of the semester with some additional marks for their good performance during the course. Doing quizzes and assignments inside the classroom are very important to adjust some important grammatical points. To ensure self-learning, some websites and parts of texts related to the given lectures are going to be given to them. Certain activities such as speaking and listening are going to be given forward so as to be ready for the duties while practicing them inside the classroom..

Student Workload (SWL)
الحمل الدراسي للطالب

Structured SWL (h/sem) الحمل الدراسي المنتظم للطالب خلال الفصل	33	**Structured SWL (h/w)** الحمل الدراسي المنتظم للطالب أسبوعيا	2
Unstructured SWL (h/sem) الحمل الدراسي غير المنتظم للطالب خلال الفصل	17	**Unstructured SWL (h/w)** الحمل الدراسي غير المنتظم للطالب أسبوعيا	
Total SWL (h/sem) الحمل الدراسي الكلي للطالب خلال الفصل	125		

Module Evaluation
تقيم المادة الدراسية

		Time/Number	Weight (Marks)	Week Due	Relevant Learning Outcome
Formative Assessment	Quizzes	3	5	2,6,13	1, 2, 4
	Assignments	4	5	3,6,11,13	1,2,4, 5,6
	Reading	2	10	3,6,9,11,13	1, 2, 7
	Writing	4	10	1,2,4,5,6,7,9 ,13, 14	1, 2, 4,, 7
	Speaking	4	10	Continuous	1, 2, 3, 4,7
Summative Assessment	Midterm Exam	1	10	7	1, 2, 4,
	Final Exam	1	50	15	1,2,4,5,
Total Assessment			100		

Delivery Plan (Weekly Syllabus) المنهاج الاسبوعي النظري	
	Material Covered
Week 1	Word Order in Standard English – Statement: Positive vs. Negative, Questions.
Week 2	Word Order in Standard English – Imperative Sentence: Instructions, Request, Command.
Week 3	Nouns: singular nouns vs. plural nouns, Gender, Pure nouns-Derived nouns, Articles.
Week 4	Nouns: Pronouns, Expressions of Quantity, Position in Word Order.
Week 5	Adjectives: Pure adjectives -Derived adjectives, Comparison Degrees, Position in Word Order.
Week 6	Adverbs: Pure adverbs-derived adverbs, Position in Word Order, Adverbs of Degree.
Week 7	Mid-Term Exam
Week 8	Expressing: Time, conditional, result, reason, purpose, contrast.
Week 9	Prepositions: Uses, position in Word Order.
Week 10	Verbs: Tenses-Present (Simple vs. Continuous).
Week 11	Verbs: Tenses-Past (Simple vs. Continuous).
Week 12	Verbs: Futurity, Modals (can, may, should, etc.).
Week 13	Verbs: Passive Voice.
Week 14	General Review and some Additional Notes.
Week 15	Final Exam

Delivery Plan (Weekly Practice Syllabus)	
Week	**Material Covered**
Week 1	Alphabetical Order, Word Order: Reforming Sentences, Introducing Oneself, Writing Simple Sentences.
Week 2	Jobs and Specialties in a Hospital. Listening 1, Writing Different Types of Sentences, Describing something around.
Week 3	Assignment 1, Reading and Writing Numbers in different Situations. Reading passage 1
Week 4	Different Types of Derived Nouns and How to Use them in a Sentence. Listening 2. Writing a Summary.
Week 5	Countries, Nationalities, Languages, Parts of Human Body, Listening 3, Writing a Short Report of an Experiment .
Week 6	Assignment 2, Days, Months, Colors, Reading Passage 2, Writing a Letter.
Week 7	Clothes, Continents, Pronouncing the suffix (s), Listening 4 Writing a Good Paragraph.
Week 8	Expressing: Time, conditional, result, reason, purpose, contrast.
Week 9	Things in the Lab\Hospital, Reading Passage 3, Pronouncing the suffix (-ed), Writing a Good paragraph.
Week 10	Verbs: Tell-Say, Reply-Answer-respond, Fill-Full, Listening 5, Punctuation Marks.
Week 11	Assignment 3, Some Silent Letters in English Words, Reading passage 4

Week 12	Like-love, Listening 6, Performing Certain Situation 1, a Topic for Discussion.
Week 13	Performing Certain Situation 2, Reading Passage 5, Writing a Good CV.
Week 14	Performing Certain Situation 3, Writing about Future Dreams or Plans.
Week15	Final Exam

Learning and Teaching Resources مصادر التعلم والتدريس		
	Text	**Available in the Library?**
Required Texts	John and Liz Soars, New Headway Plus, United Kingdom: Oxford University Press.	Yes
Recommended Texts	Baily, Stephen. 2011. *Academic writing*. London: Rutledge.	Yes
	Hewings, Martin. 2012. *Advanced grammar in Use*. United Kingdom: Cambridge university Press.	Yes
Websites	- https://www.oxfordonlineenglish.com/ - https://www.grammarly.com/ - https://www.softschools.com/language_arts/reading_comprehension/science/8/magnetism/ - https://eslflow.com/	

APPENDIX:

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	Ministry of Higher Education and Scientific Research - Iraq Al-Muthanna University College of Applied Medical Sciences Department of Environmental Health	

MODULE DESCRIPTION FORM

نموذج وصف المادة الدراسية

Module Information معلومات المادة الدراسية			
Module Title	Ecology	**Module Delivery**	
Module Type	Core	☒ Theory ☒ Lecture ☒ Lab ☒ Tutorial ☒ Practical ☒ Seminar	
Module Code	ENH1218		
ECTS Credits	7		
SWL (hr/sem)	175		

Module Level	1	**Semester of Delivery**	1
Administering Department	Department of Environmental Health	**College**	College of Applied Medical Sciences
Module Leader	Haider S. Almnehlawi	**e-mail**	haider.almnehlawi@mu.edu.iq
Module Leader's Acad. Title	Assistant professor	**Module Leader's Qualification**	Ph.D.
Module Tutor	Ansam Saad Alkhafaji	**e-mail**	ansam.saad@mu.edu.iq
Peer Reviewer Name	Ansam Saad Alkhafaji	**e-mail**	ansam.saad@mu.edu.iq
Scientific Committee Approval Date		**Version Number**	1.0

Relation with other Modules العلاقة مع المواد الدراسية الأخرى			
Prerequisite module	None	**Semester**	1
Co-requisites module	None	**Semester**	

Module Aims, Learning Outcomes and Indicative Contents أهداف المادة الدراسية ونتائج التعلم والمحتويات الإرشادي	
Module Objectives أهداف المادة الدراسية	1. Introduce students to the fundamental concepts and principles of ecology: The module aims to provide students with a solid foundation in the basic principles of ecology, including the levels of ecological organization, population dynamics, community interactions, and ecosystem functioning. 2. Develop an understanding of the interconnectedness of organisms and their environment: The module aims to help students understand the intricate relationships between organisms and their environment, including the exchange of energy, nutrients, and information, and the influence of abiotic and biotic factors on ecological processes. 3. Explore the diversity of life and ecosystems: The module aims to familiarize students with the incredible diversity of life on Earth, from individual species to entire ecosystems. It emphasizes the study of different types of ecosystems, including terrestrial, freshwater, and marine environments, and the adaptations of organisms to their specific habitats. 4. Foster critical thinking and analytical skills in ecological studies: The module aims to develop students' ability to think critically and analyze ecological problems and scenarios. This includes evaluating research studies, interpreting ecological data, and applying ecological principles to solve complex problems. 5. Provide practical skills for ecological research: The module aims to equip students with practical skills in ecological research, including fieldwork techniques, data collection and analysis, experimental design, and the use of ecological tools and technology. 6. Understand the impacts of human activities on ecosystems: The module aims to raise awareness about the detrimental effects of human activities on ecosystems and the importance of sustainable practices. It covers topics such as habitat destruction, pollution, climate change, and the introduction of invasive species. 7. Promote scientific inquiry and research in ecology: The module aims to instill a sense of curiosity and enthusiasm for ecological research. It encourages students to engage in independent research projects, develop research questions, design experiments, and communicate their findings effectively. 8. Foster an appreciation for conservation and environmental stewardship: The module aims to cultivate an understanding of the importance of conservation and environmental stewardship. It highlights the need for preserving biodiversity, protecting ecosystems, and promoting sustainable practices for the benefit of current and future generations. 9. Enhance communication and presentation skills: The module aims to improve students' ability to effectively communicate ecological concepts and research findings. This includes written reports, oral presentations, scientific posters, and engaging in scientific discussions.
Module Learning Outcomes مخرجات التعلم للمادة الدراسية	1. Describe the basic principles of ecology: Students should be able to explain the fundamental concepts and principles of ecology, including the levels of ecological organization, population dynamics, community interactions, and ecosystem functioning. 2. Analyze and interpret ecological data: Students should develop skills in collecting, analyzing, and interpreting ecological data using appropriate statistical methods. 3. Identify and describe different ecosystems: Students should be able to identify and describe various terrestrial and aquatic ecosystems, including their physical

	characteristics, dominant organisms, and key ecological processes. 4. Evaluate the impacts of human activities on ecosystems: Students should be able to identify and assess the impacts of human activities on ecosystems, including habitat destruction, pollution, climate change, and the introduction of invasive species. 5. Understand species interactions and community dynamics: Students should gain an understanding of the different types of species interactions (such as predation, competition, and mutualism) and how these interactions influence community structure and dynamics. 6. Comprehend the principles of biodiversity and conservation: Students should understand the concept of biodiversity, including species diversity, genetic diversity, and ecosystem diversity. They should also be aware of the threats to biodiversity and the principles and strategies of conservation biology. 7. Apply ecological principles to real-world issues: Students should be able to apply ecological knowledge and principles to address real-world environmental problems and make informed decisions related to ecosystem management and conservation. 8. Demonstrate fieldwork and laboratory skills: Students should gain practical experience in conducting fieldwork and laboratory experiments, including data collection, species identification, and the use of equipment and techniques commonly used in ecological research. 9. Communicate ecological concepts effectively: Students should develop effective communication skills to convey ecological concepts and findings through oral presentations, written reports, and scientific posters. 10. Develop critical thinking and problem-solving skills: Students should develop the ability to analyze and critically evaluate ecological problems, generate hypotheses, design experiments, and propose appropriate solutions based on ecological principles and evidence.
Indicative Contents المحتويات الإرشادية	Indicative content includes the following: <u>1. Introduction of ecology</u> Definition of ecology, environmental, types of environments and living organisms in each environment and how these organisms interact with different environments <u>2. Ecosystem</u> Ecosystem Structure and function, Energy flow, environmental pyramids, Biodiversity within an ecosystem, Progression of changes in the ecosystem. <u>3. Ecological balance</u> Meaning of ecological balance and its important in health and stability of an ecosystem, Negative feedback that consider an important role in ecological balance. <u>4. Food Chains and Food Webs</u> Define food chains and food webs, types of food chain. And Interaction between feed web and chain, describe the Ecological Pyramids, <u>5. Biogeochemical cycles</u> Identify the biogeochemical cycles, describe basic types of biogeochemical cycles in an ecosystem: Gaseous and sedimentary cycles. <u>6. Population ecology</u> Define population ecology, identify types of population growth, identify and explain Population characteristics, understand factors that limit and regulate population growth. <u>7.Community ecology</u>

	Explain ecological communities, species interaction, know composition and diversity of the community identify habitat and ecological niche for animals in a community, identify and define population interaction and forms of interaction. 8. Environmental factors Compared between biotic and a biotic factor, Endurance laws, the biotic component refers to the community, all interacting groups of organisms living in an area, while the abiotic part, on the other hand, embraces the non-living or the physical environment 9. Biodiversity Introduction to biodiversity, levels of biodiversity, benefits of biodiversity, threats of biodiversity 10. pollution Define the pollution, kinds of pollution, how can pollution effect on environmental and human health, what the ways to reduce the pollution, and pollution control. 11. Environmental monitoring Definition the environmental monitoring and its types.

Learning and Teaching Strategies استراتيجيات التعلم والتعليم	
Strategies	• Active Learning: Engages students in the learning process through activities that require them to think, discuss, and apply knowledge actively. • Mnemonics: Memory aids or techniques, such as acronyms or visualization, to help students remember and recall information. • Visual Aids: Utilizing visual tools like charts, graphs, diagrams, and illustrations to enhance understanding and retention of information. • Problem-Solving: Presenting students with real-world problems or scenarios that require critical thinking, analysis, and the application of knowledge to find solutions. • At the end of each lecture, we touch on the most important main points mentioned during the lecture. The benefit of this thing is for the student to have a stock of several questions from each lecture, and thus this process facilitates the exam material for the student

Student Workload (SWL) الحمل الدراسي للطالب محسوب لـ ١٥ أسبوعا			
Structured SWL (h/sem) الحمل الدراسي المنتظم للطالب خلال الفصل	78	**Structured SWL (h/w)** الحمل الدراسي المنتظم للطالب أسبوعيا	5
Unstructured SWL (h/sem) الحمل الدراسي غير المنتظم للطالب خلال الفصل	97	**Unstructured SWL (h/w)** الحمل الدراسي غير المنتظم للطالب أسبوعيا	7
Total SWL (h/sem) الحمل الدراسي الكلي للطالب خلال الفصل	175		

Module Evaluation

تقييم المادة الدراسية

		Time/Number	Weight (Marks)	Week Due	Relevant Learning Outcome
Formative assessment	Attendance	1	10% (10)	Continuous	
	Quizzes	5	5% (10)	2,5, 10, 13,14	LO # 1, #2 , # 3 and #6, and #7
	Assignments	5	5% (10)		LO #1,#3, #5 and #6
	Lab. Report	15	10% (10)	Continuous	All
	Projects	2	10% (10)		LO #2, #4, #7, #8, #9 and #10
Summative assessment	Midterm Exam	1hr	10% (10)	7	LO #1, #2, #3 and #4
	Final Exam	3hr	50% (50)	16	All
Total assessment			100% (100 Marks)		

Delivery Plan (Weekly Syllabus)

المنهاج الاسبوعي النظري

	Material Covered
Week 1	Introduction of ecology
Week 2	Ecosystem -Structure
Week 3	Ecosystem function -Energy flow
Week 4	Ecological balance -Food Chains and Food Webs
Week 5	Types of ecosystems
Week 6	Biogeochemical cycles
Week 7	Mid-term Exam
Week 8	Environmental factors
Week 9	Tolerance laws
Week 10	Population ecology
Week 11	Community ecology
Week 12	Ecological succession
Week 13	Biodiversity
Week 14	Pollution
Week 15	Environmental monitoring
Week 16	Final Exam

Delivery Plan (Weekly Lab. Syllabus) المنهاج الاسبوعي للمختبر	
	Material Covered
Week 1	Safety Rules in Laboratory and Field Work
Week 2	Data Collection and Handling
Week 3	Binomial Nomenclature
Week 4	Kingdoms of Life
Week 5	Population Growth Exercise
Week 6	Life Tables and Survivorship Curves
Week 7	Species Diversity
Week 8	Monitoring the Environment: Measuring Abiotic Factor • Measure light intensity. •Measuring wind Speed •Measuring Temperature • Atmospheric pressure
Week 9	
Week 10	Soil Analysis •Soil sample collection •Prepare soil samples for laboratory study •Soil Profile •Determination of Soil Reaction (pH, EC, Salinity) •Determination of Soil Organic matter
Week 11	
Week 12	
Week 13	Analysis of an Aquatic Environment • Aqueous sample collection • Aquatic collection • Measurement of some factors affecting the aquatic environment
Week 14	

Learning and Teaching Resources مصادر التعلم والتدريس		
	Text	**Available in the Library?**
Required Texts	• Thomas M. Smith & Robert Leo Smith (2016). Elements of Ecology, Global Edition, 9/E, University of Virginia, (Emeritus) West Virginia University. Pearson Pub	No
Recommended Texts	• Manuel C.; Molles Jr. U. (2008), Ecology: Concepts & Applications. Fourth Edition - McGraw Hill Publishing. New Mexico. ISBN 978 • Vodopich D.S. 2010. Ecology Laboratory Manual, McGraw Hill.	No
Websites	1- Scientific American: www.sciam.com 2- The World Wildlife Fund: http://panda.org/ 3- The Ecologist: http://www.theecologist.org/ 4- European Environment Agency on Biodiversity: http://www.eea.europa.eu/themes/biodiversit	

Grading Scheme مخطط الدرجات				
Group	Grade	تقدير	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.

ملاحظة: هذا النموذج تم وضعه وتقديمه من قبل مديرية ضمان الجودة في وزارة التعليم العالي والبحث العلمي

Ministry of Higher Education and
Scientific Research - Iraq
University of Kerbala
College of Applied of Medical Sciences
Department of Clinical Laboratories

MODULE DESCRIPTOR FORM
نموذج وصف المادة الدراسية

Module Information معلومات المادة الدراسية			
Module Title	COMPUTER SCIENCE	**Module Delivery**	
Module Type	SUPLEMENT	✓ Theory ✓ Lecture ✓ Lab	
Module Code	UOK105		
ECTS Credits	3		
SWL (hr/sem)	125		

Module Level	1	**Semester of Delivery**	1
Administering Department	Type Dept. Code	**College**	Type College Code
Module Leader	Dr. Layth Naeem AL-Hasani	**e-mail**	layth.naeem@mu.edu.iq
Module Leader's Acad. Title	Lecturer	**Module Leader's Qualification**	Ph.D
Module Tutor		**e-mail**	
Peer Reviewer Name		**e-mail**	
Review Committee Approval		**Version Number**	1

Relation With Other Modules العلاقة مع المواد الدراسية الأخرى			
Prerequisite module	none	**Semester**	-
Co-requisites module	none	**Semester**	-

Module Aims, Learning Outcomes and Indicative Contents أهداف المادة الدراسية ونتائج التعلم والمحتويات الإرشادية	
Module Aims أهداف المادة الدراسية	• The purpose of this course is to teach students to identify computer system, its component, Storage and Software, Networks, Internet and virus. • Learn how to navigate the Windows environment and how to deal with its features. • Provides students with the skills needed to execute many personal and professional activities in Microsoft Excel. It also prepares them to go on to more advanced skills using the Excel software. • Introducing the students to word processing terminology and concepts, create technical documents, format and edit documents, use simple tools and utilities, and print documents.
Module Learning Outcomes مخرجات التعلم للمادة الدراسية	The student would be able to: 1. Recognize how computer system. 2. Distinguish between the terminologies used in connection with computer systems. 3. The basic computer types. 4. Understand the computer storages and its type as well as its units. 5. Understand the internet and viruses and clarify the impacts. 6. Work with App and files in Windows 10 environment. 7. Explore files and folders of OS. 8. Safely and efficiently browse the internet. 9. Introducing the user application (MS Excel) 10. Entering, Editing, Managing Data, and Formatting data 11. Introducing Formulas, Introductory Statistical Functions, and Preparing to Print. 12. Discus more on formulas and functions, logical and lookup functions. 13. Introducing excel conditional formatting. 14. Presenting data with charts. 15. Introducing the user application (MS Word) 16. Launch Word and navigate the editing screen. 17. Use the proofing tools. 18. Apply character formatting and themes. 19. Format paragraphs and Preview and print a document. 20. Work with columns, pictures, diagrams, and charts. 21. Create basic tables, Work with drawing objects and graphics. 22. Introducing Reference content and content sources;
Indicative Contents المحتويات الإرشادية	Indicative content includes the following:

Learning and Teaching Strategies استراتيجيات التعلم والتعليم	
Strategies	**A- Methods of teaching and learning** 1- Using a Power point to clarify the theoretical aspect. 2- Use of visual aids. 3- Use of practical tools. 4- Adopting daily Quizzes and posts inside the hall. **B- Evaluation methods** 1- Practical tests 2- Theoretical tests 3- Assignments and Projects 4- Daily Quizzes with self-solving questions 5- Grades determined by homework

Student Workload (SWL) الحمل الدراسي للطالب			
Structured SWL (h/sem) الحمل الدراسي المنتظم للطالب خلال الفصل	61	**Structured SWL (h/w)** الحمل الدراسي المنتظم للطالب أسبوعيا	5
Unstructured SWL (h/sem) الحمل الدراسي غير-المنتظم للطالب خلال الفصل	64	**Unstructured SWL (h/w)** الحمل الدراسي غير المنتظم للطالب أسبوعيا	4
Total SWL (h/sem) الحمل الدراسي الكلي للطالب خلال الفصل	125		

Module Evaluation
تقيم المادة الدراسية

		Time/Number	Weight (Marks)	Week Due	Relevant Learning Outcome
Formative assessment	Quizzes	3	5	1, 2, 3, 4	1, 2, 3, 4
	Assignments	4	5	1,2,3,4, 5	1,2,3,4, 5
	Projects / Lab.	2	10	9, 10, 11, 12,13, 14	14 ,12,13 ,11 ,10 ,9
	Report	4	10	15, 16, 17, 18,19,20,21, 22	15, 16, 17, 18,19,20,21,22
	Tutorial	4	10	Continuous	9, 10, 11, 12,13, 14
Summative assessment	Midterm Exam	1	10	7	1-7
	Final Exam	1	50	15	1-15
Total assessment			100%(100 Marks)		

Delivery Plan (Weekly Syllabus) المنهاج الاسبوعي النظري	
	Material Covered
Week 1	Introduction to computer system
Week 2	Types of Computer and characteristics
Week 3	Main Parts of Computer and Input/output devices
Week 4	Computer Storage and Software
Week 5	Networks, Internet and virus
Week 6	MS Excel: Introduction to Excel and Identify the Elements of the Excel Interface
Week 7	Manage Workbook Options and Settings, Formatting and Proofing
Week 8	Mathematical Computations and Operations
Week 9	Formulas, Functions, Logical and Lookup Functions
Week 10	Conditional Formatting
Week 11	Create Charts and Objects
Week 12	Introduction to Microsoft Word basics; Create and manage documents; Enter and edit text
Week 13	Modify the structure and appearance of text; Organize information in columns and tables; Add simple graphic elements
Week 14	Insert and modify diagrams and 3D models; Insert and modify charts; Format document elements; Organize and arrange content
Week 15	Reference content and content sources;

Delivery Plan (Weekly Lab. Syllabus) المنهاج الأسبوعي للمختبر	
	Material Covered
Week 1	The Windows 10 environment and Personalize your working environment
Week 2	Apps, files, folders , Manage folders and files and Work with apps and notifications
Week 3	Devices and resources, Manage network and storage resources
Week 4	Manage user accounts and settings, Manage power and access options
Week 5	Safely and efficiently browse the internet, Protect your computer and data
Week 6	MS Excel: Introduction to Excel and Identify the Elements of the Excel Interface
Week 7	Manage Workbook Options and Settings, Formatting and Proofing
Week 8	Mathematical Computations and Operations
Week 9	Formulas, Functions, Logical and Lookup Functions
Week 10	Conditional Formatting

Week 11	Create Charts and Objects
Week 12	Introduction to Microsoft Word basics; Create and manage documents; Enter and edit text
Week 13	Modify the structure and appearance of text; Organize information in columns and tables; Add simple graphic elements
Week14	Insert and modify diagrams and 3D models; Insert and modify charts; Format document elements; Organize and arrange content
Week 15	Reference content and content sources;

Learning and Teaching Resources

مصادر التعلم والتدريس

	Text	Available in the Library?
Required Texts	1. Lambert, Joan. Windows 10 Step by Step. Microsoft Press, 2017. 2. Lambert, Joan. Microsoft Word 2019 Step by Step. Microsoft Press, 2019. 3. Microsoft Word 2016: Comprehensive, Vermaat, Cengage Learning, 2017, ISBN: 9781305871014. 4. Your Step-By-Step Beginners Guide To Master Excel By Discovering The Best Formulas And Functions, Pivot Tables, Business Modeling, Data Analysis and Macros, by Joseph Thompson, 2022	Not Available
Recommended Texts	None	
Websites		

APPENDIX:

GRADING SCHEME مخطط الدرجات				
Group	**Grade**	تقدير	**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.

ملاحظة: هذا النموذج تم وضعه وتنفيذه من قبل مديرية ضمان الجودة في وزارة التعليم العالي والبحث العلمي