

Alkarkh university of sciences



First Cycle – Bachelor's degree (B.Sc.) – environmental Health science

بكالوريوس علوم - علوم الصحة البيئية



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1. **Mission & Vision Statement**

Vision Statement

To lead in pioneering research, education, and practices that reduce environmental health disparities, improve public health outcomes, and enhance the resilience of communities worldwide. Strengthening national plans and efforts to provide a healthy environment in Iraq

Mission Statement

The Environmental Science academic staff pursues a multifaceted charge at Al-Karkh University of Science. The Department of Environmental Health science (EHS) believes that the essence of public health is the primary prevention of disease. EHS's mission is to contribute to the maintenance and improvement of the health of all people through global leadership in research and training in environmental. The graduate student can work in different sectors and institutions, such as:

- 1- Ministry of Health.
- 2- Ministry of Environment.
- 3- Ministry of Water Resources.
- 4- Ministry of Oil.
- 5- The Ministry of construction and Housing and Public Municipalities.
- 6- Ministry of Electricity.
- 8- Ministry of Education.
- 9- Ministry of Agriculture.

10- Ministry of Commerce.

11- The Governorate Council.

12- Research centers in all ministries.

13- Iraqi universities and research centers in the Ministry of Higher Education and Scientific Research.

14- Ministry of Industry and Minerals

2. Program Specification

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

Program Overview

The Environmental Health Science program is designed to equip students with the knowledge and skills necessary to identify, evaluate, and mitigate environmental health risks. The program combines interdisciplinary approaches from biology, chemistry, public health, and environmental science to address complex environmental health issues and develop sustainable solutions.

Program Structure

The program is structured to include basic learning activities (B) support or related learning activities(S), core learning activities (C) and electives learning activities(E) module type. The typical duration of the program is four years for undergraduate students.

Assessment and Evaluation

1-Examinations and Quizzes: Regular assessments to test students' knowledge and understanding of course material.

2-Projects and Presentations: Students will complete research projects and present their findings to develop communication and analytical skills.

3-Internship Evaluation: Performance during internships will be evaluated based on predefined criteria.

Program Accreditation

The program is accredited by [Environmental Health Research Associate], ensuring high standards of education and training in the field of environmental health science.

3. **Program Objectives**

1. **Provide Foundational Knowledge:**
 - Equip students with a comprehensive understanding of the core principles and concepts in environmental health science, including the biological, chemical, and physical factors that affect human health and the environment.
2. **Develop Analytical and Critical Thinking Skills:**
 - Foster students' abilities to critically analyze environmental health data, assess risks, and make informed decisions using evidence-based approaches.
3. **Promote Research and Innovation:**
 - Encourage students to engage in research projects that contribute to the advancement of environmental health science, focusing on innovative solutions to current and emerging environmental health challenges.
4. **Enhance Practical and Technical Skills:**
 - Provide hands-on learning experiences through laboratory work, field studies, and internships, enabling students to apply theoretical knowledge to real-world environmental health issues.
5. **Cultivate Ethical and Professional Standards:**
 - Instill a strong sense of ethics, professionalism, and responsibility in students, preparing them to uphold high standards in their professional practices and contribute positively to society.
6. **Foster Communication and Leadership Skills:**
 - Develop students' abilities to effectively communicate complex environmental health information to diverse audiences and to lead initiatives that promote environmental health and safety.
7. **Encourage Interdisciplinary Collaboration:**
 - Promote collaboration with other disciplines and stakeholders to address environmental health issues from a holistic perspective, recognizing the interconnectedness of health, environment, and society.
8. **Prepare for Diverse Career Paths:**
 - Equip students with the knowledge and skills necessary for careers in various sectors, including government agencies, non-governmental organizations, public health departments, environmental consulting, and academia.
9. **Address Global and Local Environmental Health Issues:**
 - Educate students on both global and local environmental health challenges, encouraging them to develop solutions that are culturally sensitive and sustainable.
10. **Support Lifelong Learning and Professional Development:**
 - Foster a commitment to continuous learning and professional development, ensuring that graduates remain current with advances in the field of environmental health science.

4. **Student Learning Outcomes**

Basic core concepts and methods from environmental health science and their application in environmental health problem solving. Graduates will be able to understand how interactions between organisms and their environments drive the dynamics of individuals populations, communitie.

Outcome 1*Identification of Complex Relationships*

Graduates will be able to illustrate the structure and function of environmental health science.

Outcome 2*Oral and Written Communication*

Graduates will be able to formally communicate the results of ecological investigations using both oral and written communication skills.

Outcome 3*Laboratory and Field Studies*

Graduates will be able to perform laboratory experiments and field studies, by using scientific equipment and computer technology while observing appropriate safety protocols.

Outcome 4*Scientific Knowledge*

Graduates will be able to demonstrate a balanced concept of how scientific knowledge develops, including the historical development of foundational theories and laws and the nature of science.

Outcome 5*Data Analyses*

Graduates will be able to demonstrate scientific quantitative skills, such as the ability to conduct simple data analyses.

Outcome 6*Critical Thinking*

Graduates will be able to use critical-thinking and problem-solving skills to develop a research project and/or paper.

5. Academic Staff

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6. Credits, Grading and GPA

Credits

Alkarkh University of sciences is following the Bologna Process with the European Credit Transfer System (ECTS) credit system. The total degree program number of ECTS is 240, 30 ECTS per semester. 1 ECTS is equivalent to 25 hrs student workload, including structured and unstructured workload.

Grading

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

GRADING SCHEME مخطط الدرجات				
Group	Grade	التقدير	Marks (%)	Definition
Success Group (50 - 100)	A - Excellent	امتياز	90 - 100	Outstanding Performance
	B - Very Good	جيد جدا	80 - 89	Above average with some errors
	C - Good	جيد	70 - 79	Sound work with notable errors
	D - Satisfactory	متوسط	60 - 69	Fair but with major shortcomings
	E - Sufficient	مقبول	50 - 59	Work meets minimum criteria
Fail Group (0 - 49)	FX – Fail	راسب - قيد المعالجة	(45-49)	More work required but credit awarded
	F – Fail	راسب	(0-44)	Considerable amount of work required
Note:				
Number Decimal places above or below 0.5 will be rounded to the higher or lower full mark (for example a mark of 54.5 will be rounded to 55, whereas a mark of 54.4 will be rounded to 54. The University has a policy NOT to condone "near-pass fails" so the only adjustment to marks awarded by the original marker(s) will be the automatic rounding outlined above.				

Calculation of the Cumulative Grade Point Average (CGPA)

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

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

$$\text{CGPA} = [(1^{\text{st}} \text{ module score} \times \text{ECTS}) + (2^{\text{nd}} \text{ module score} \times \text{ECTS}) + \dots] / 240$$

7. Curriculum/Modules

Semester 1 | 30 ECTS | 1 ECTS = 25 hrs

Code	Module	SSWL	USSWL	ECTS	Type	Pre-request
KUS1101	Mathematics	48	77	5.00	B	
KUS1102	Fundamental of Computer Science	64	11	3.00	B	
KUS1103	Democracy and Human Rights	33	17	2.00	B	
CRE1104	analytic chemistry	79	71	6.00	S	
CRE1105	Physics	94	81	7.00	S	
EHS1106	Ecology	94	81	7.00	C	

Semester 2 | 30 ECTS | 1 ECTS = 25 hrs

Code	Module	SSWL	USSWL	ECTS	Type	Pre-request
EHS1207	human cytology	79	96	7.00	C	
CRE1208	organic chemistry	64	86	6.00	S	
CRE1209	Geology	64	86	6.00	S	
KUS12010	Arabic Language	33	17	2.00	B	
KUS12011	English language	33	17	2.00	B	
EHS12012	environmental health principle	79	96	7.00	C	

Semester 3 | 30 ECTS | 1 ECTS = 25 hrs

Code	Module	SSWL	USSWL	ECTS	Type	Pre-request
EHS23013	Biostatistics	48	52	4.00	S	
EHS23014	Microbiology	64	86	6.00	C	
EHS23015	environmental toxicology	64	86	6.00	C	
KUS23016	Baath crimes in Iraq	33	17	2.00	B	
EHS23017	Biochemistry	64	86	6.00	C	
EHS23018	community health	63	87	6.00	C	

Semester 4 | 30 ECTS | 1 ECTS = 25 hrs

Code	Module	SSWL	USSWL	ECTS	Type	Pre-request
CRE24019	climate change	48	77	5.00	S	
EHS24020	management of disaster	33	42	3.00	C	
EHS24121	human physiology	64	61	5.00	C	EHS1207
EHS24022	Environmental chemistry	64	61	5.00	C	
EHS24023	environmental pollution	63	87	6.00	C	
EHS24024	Immunology	64	86	6.00	C	

Semester 5 | 30 ECTS | 1 ECTS = 25 hrs

Code	Module	SSWL	USSWL	ECTS	Type	Pre-request
EHS35025	radiation and human health	48	52	4.00	C	
EHS35026	Occupational Health and Safety	48	52	4.00	C	
EHS35027	molecular biology	64	111	7.00	C	
EHS35028	environmental health legislations	48	52	4.00	C	
EHS35029	Pathology	48	77	5.00	C	
EHS35030	environmental analysis	64	86	6.00	C	

Semester 6 | 30 ECTS | 1 ECTS = 25 hrs

Code	Module	SSWL	USSWL	ECTS	Type	Pre-request
EHS36031	Biodiversity	48	77	5.00	C	
EHS36032	Air Quality and Purification	64	86	6.00	C	
EHS36033	Food Safety	64	86	6.00	C	
EHS36034	Environmental Health Genetics	64	86	6.00	C	
EHS36035	Epidemiology	48	52	4.00	C	
EHS36036	elective1	33	42	3.00	E	

Semester 7 | 30 ECTS | 1 ECTS = 25 hrs

Code	Module	SSWL	USSWL	ECTS	Type	Pre-request
EHS47037	scientific research methods	33	17	2.00	C	
EHS47038	environmental impact assessment	63	87	6.00	C	
EHS47039	Virology	64	86	6.00	C	
EHS47040	solid and hazardous waste management	63	87	6.00	C	
EHS47041	elective 2	63	87	6.00	E	
EHS47042	bioremediation	33	67	4.00	C	

Semester 8 | 30 ECTS | 1 ECTS = 25 hrs

Code	Module	SSWL	USSWL	ECTS	Type	Pre-request
EHS48043	graduation project	92	58	6.00	C	
EHS48044	water and waste water treatment	64	86	6.00	C	
EHS48045	transmission diseases	48	77	5.00	C	
EHS48046	Quality control	48	77	5.00	C	
EHS48047	Serology and vaccines	48	52	4.00	C	
EHS48048	elective 3	48	52	4.00	E	

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