



University of Baghdad

جامعة بغداد

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

بكالوريوس هندسة - هندسة البيئة



جدول المحتويات | Table of Contents

1. Mission & Vision Statement | بيان المهمة والرؤية

2. Program Specification	مواصفات البرنامج
3. Program (Objectives) Goals	أهداف البرنامج
4. Program Student learning outcomes	مخرجات تعلم الطالب
5. Academic Staff	الهيئة التدريسية
6. Credits, Grading and GPA	الاعتمادات والدرجات والمعدل التراكمي
7. Modules	المواد الدراسية
8. Contact	اتصال

1. Mission & Vision Statement

Vision Statement

Environmental Engineering Department looks forward to a leading role to promote education and scientific research and community service in the field of environmental engineering.

Mission Statement

The mission of the Environmental Engineering Department is to provide a premium and contemporary education to prepare graduates as professionals capable of identifying, evaluating, and solving complex and multi-layered problems in the field of environmental science and engineering, to conduct and encourage fundamental and applied research with a focus of designing and implementing sound, feasible, and sustainable engineering solutions to the environmental real-world issues, to build-up the proficient expertise with a global, interdisciplinary, and innovative perspective, to be a competent actor coordinating with the public administration, the industry, and the other local, national and, international bodies for implementation of the generated sustainable solutions.

2. Program Specification

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

Comprehensive curricula were prepared for the undergraduate studies to ensure that basic theoretical and applied aspects of environmental engineering are covered. The B.Sc. degree awarded by the department well-prepares its holder for his/her professional or academic career. Graduates are cautioned though that there is no substitute for experience. Their degrees are being gate-passes for the long arduous road engineering capability. Success in achieving this goal will depend not only on hard work but also on proper utilization of acquired engineering principles and knowledge as well as the systematic methodology to problem tackling. This approach results in proactive graduates willing to serve both state and society in various environmental engineering fields.

Level 1 exposes students to the fundamentals of Engineering, suitable for progression to all programmes within the Engineering program group. Programme-specific core topics are covered at Level 2 preparing for research-led subject specialist modules at Levels 3 and 4. Environmental Engineering graduate is therefore trained to appreciate how research informs teaching, according to the University and College Mission statements.

At Levels 2, 3 and 4 students are free to choose more than half of their module credits with the proviso a range of modules are selected that reflect the complexity of life forms from molecules, through organisms, both plants and animals, to populations to ensure the breadth of knowledge expected of a graduate with a biology degree. This allows students to develop their own wide-ranging interests in organismal biology. Decisions on what to study are made with input from personal tutors.

The research ethos is developed and fostered from the start via practicals, which are either embedded in lecture modules or taught in dedicated practical modules, research seminars, and tutorials.

3. Program Goals

Within the first several years following graduation, graduates should:

- Be successfully employed or employable in environmental engineering practice in areas such as solid waste, air pollution, water and wastewater treatment, water resources, or related fields and/or be continuing their studies at the graduate level.

- Show a commitment to ethical practice and professional development by extending their knowledge through continuing education and self-directed life-long learning, professional licensure, and service to the profession and society.

4. Student Learning Outcomes

Outcome 1. An ability to identify, formulate, and solve complex engineering problems by applying principles of engineering, science, and mathematics

Outcome 2. An ability to apply engineering design to produce solutions that meet specified needs with consideration of public health, safety, and welfare, as well as global, cultural, social, environmental, and economic factors

Outcome 3. An ability to communicate effectively with a range of audiences

Outcome 4. An ability to recognize ethical and professional responsibilities in engineering situations and make informed judgments, which must consider the impact of engineering solutions in global, economic, environmental, and societal contexts

Outcome 5. An ability to function effectively on a team whose members together provide leadership, create a collaborative and inclusive environment, establish goals, plan tasks, and meet objectives

Outcome 6. An ability to develop and conduct appropriate experimentation, analyze and interpret data, and use engineering judgment to draw conclusions

Outcome 7. An ability to acquire and apply new knowledge as needed, using appropriate learning strategies.

5. Academic Staff

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6. Credits, Grading and GPA

Credits

University of Baghdad 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)

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:

$$\text{CGPA} = \frac{[(1^{\text{st}} \text{ module score} \times \text{ECTS}) + (2^{\text{nd}} \text{ module score} \times \text{ECTS}) + (3^{\text{rd}} \text{ module score} \times \text{ECTS}) + (4^{\text{th}} \text{ module score} \times \text{ECTS})]}{240}$$

7. Curriculum/Modules

Semester 1 | 30 ECTS | 1 ECTS = 25 hrs

Code	Module	SSWL	USSWL	ECTS	Type	Pre-request
EnE111	Analytical Chemistry	139	61	8	C	
EnE112	Mathematics I	93	57	6	B	
EnE113	Engineering Drawing	78	72	6	B	
EnE114	Environmental Microbiology	64	61	5	C	
UOB101	Arabic Language I	33	17	2	B	
EnE115	Engineering Workshop	48	27	3	B	

Semester 2 | 30 ECTS | 1 ECTS = 25 hrs

Code	Module	SSWL	USSWL	ECTS	Type	Pre-request
EnE121	Organic Chemistry	139	61	8	C	
EnE122	AutoCAD Drawing	78	72	6	B	EnE113
EnE123	Physics for Environmental Engineering.	79	71	6	C	
UOB103	Computer I	48	27	3	B	
UOB102	Technical English I	33	17	2	B	
UOB104	Human Rights and Democracy	33	17	2	B	
EnE125	Geology	64	11	3	B	

Semester 3 | 30 ECTS | 1 ECTS = 25 hrs

Code	Module	SSWL	USSWL	ECTS	Type	Pre-request
EnE231	Mathematics II	93	57	6	B	EnE112

EnE232	Hydrology	78	72	6	C	
EnE233	Thermodynamic	93	57	6	B	
EnE234	Static	93	82	7	B	
UOB202	Technical English II	33	17	2	B	UOB102
EnE244	Computer II	48	27	3	B	UOB103

Semester 4 | 30 ECTS | 1 ECTS = 25 hrs

Code	Module	SSWL	USSWL	ECTS	Type	Pre-request
EnE241	Engineering Statistics	78	47	5	B	
EnE242	Ecology	78	47	5	C	EnE114
EnE243	Strength of Materials	93	57	6	B	EnE234
EnE235	Engineering Economics	63	37	4	B	
EnE245	Fluid Mechanics	79	71	6	C	
	Baath Party Crimes	33	17	2	B	
UOB201	Arabic Language II	33	17	2	B	

Semester 5 | 30 ECTS | 1 ECTS = 25 hrs

Code	Module	SSWL	USSWL	ECTS	Type	Pre-request
EnE351	Soil Science	79	71	6	C	EnE125
EnE352	Engineering Analysis	93	57	6	B	EnE231
EnE353	Open Channels Flow	94	56	6	C	EnE245
EnE354	Hazardous Wastes	63	62	5	C	
EnE355	Fundamentals of Solid Waste Management	78	47	5	C	
UOB302	Technical English III	33	17	2	B	UOB202

Semester 6 | 30 ECTS | 1 ECTS = 25 hrs

Code	Module	SSWL	USSWL	ECTS	Type	Pre-request
EnE361	Soil Pollution	48	52	4	C	EnE351

EnE362	Numerical Analysis	93	57	6	B	EnE352
EnE363	Mass Transfer	93	57	6	B	
EnE364	Industrial Safety	63	37	4	C	
EnE365	Design of Sanitary Landfill	78	47	5	C	EnE355
EnE366	Water Supply	79	46	5	C	

Semester 7 | 30 ECTS | 1 ECTS = 25 hrs

Code	Module	SSWL	USSWL	ECTS	Type	Pre-request
EnE471	Physical Techniques for Industrial Wastewater Treatment	63	37	4	C	
EnE472	Geographic Information Systems (GIS)	49	51	4	C	
EnE473	Air Pollution I	48	77	5	C	EnE363
EnE474	Control Systems for Environmental Engineering	93	57	6	C	
EnE475	Sewage Treatment	79	46	5	C	EnE366
EnE476	Environmental Engineering Project design I	33	117	6	C	

Semester 8 | 30 ECTS | 1 ECTS = 25 hrs

Code	Module	SSWL	USSWL	ECTS	Type	Pre-request
EnE481	Biological & Chemical Techniques for Industrial Wastewater Treatment	63	37	4	C	EnE471
EnE482	Ground Water Pollution	63	87	6	C	
EnE483	Air Pollution II	48	77	5	C	EnE473
EnE484	Environmental Management	93	82	7	C	
UOB402	Technical English IV	33	17	2	B	UOB302
EnE485	Environmental Engineering Project design II	33	117	6	C	EnE476

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