

University of Mosul

جامعة الموصل



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

بكالوريوس - هندسة البيئة



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1. Mission & Vision Statement

Vision Statement

Leadership and excellence in environmental engineering in education, research, and application

Mission Statement

Consolidating the role of environmental engineering in community, raising the level of the graduate and developing his ability to compete in the labor market with high professionalism and employing it in achieving comprehensive and sustainable development.

2. **Program Specification**

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

In order to meet the program graduate outcomes, the department has developed a well-structured curriculum. The department adopts Bologna process system of study.

A part from acquiring discipline specific knowledge, the curriculum requires that graduates have sufficient knowledge of calculus, statistics, chemistry, Microbiology as well as an ability to apply this knowledge to the understanding of the core Environmental Engineering concepts, including analysis, design and realization of such concepts. The students are also required to be sufficiently familiar with computer applications for Environmental Engineering in addition to developing professional, life-long learning, and ethical skills required by professional environmental engineers. Laboratory instructions and design components play important role in Environmental Engineering education. Therefore, it is important to ensure that the undergraduate courses are accompanied with extensive design experience and carry out laboratory works in order to provide the students with sufficient practical experience in various fields of Environmental Engineering.

An important component of the curriculum is a 1-month mandatory summer training requirement. During this summer training, the students gain valuable practical training in real competitive environment which not only provide them with an insight to the modern environmental engineering practices followed today but also give them an opportunity to interact, collaborate and work together with the highly experienced professionals, which help students in their future professional growth.

Another important component of the curriculum is a design project course. During the design project course, the students gain valuable exposure to various types of activities involved in Environmental Engineering. In such a practical activity, most of student outcomes are addressed and assessed through ‘project report and presentations’ for each of the students, thoroughly examined by 3–4 internal (within faculty) examiners.

3. **Program Objectives**

- Our graduates will perceive engineering knowledge and skills that help them to advance their career in the field of environmental engineering
- Our graduates will establish themselves as practicing engineers in the field of environmental engineering, civil engineering and other related domains
- Our graduate will be provided by creative knowledge to fulfill the need of society

4. **Student Learning Outcomes**

The Environmental Engineering Department adopt the ABET Engineering Accreditation Commission “i”–to–“vii” general criteria graduate Outcomes (GOs), which comply with Iraqi Engineering Graduate's Attributes in terms of knowledge, skills, abilities ,attitudes, societal and environmental aspects (ethics):

- I. An ability to distinguish, identify, define, formulate, and solve engineering problems by applying principles of engineering, science and mathematics.
- II. An ability to produce engineering designs that meet desired needs within certain constraints by applying both analysis and synthesis in the design process.
- III. An ability to create and carry out proper measurement and tests with quality assurance, analyze and interpret results, and utilize engineering judgment to make inferences.
- IV. An ability to skillfully communicate orally with a gathering of people and in writing with various managerial levels.
- V. An ability to perceive ethical and professional responsibilities in engineering cases and make brilliant judgments taking into account the consequences in worldwide financial, ecological and societal considerations.
- VI. An ability to perceive the continual necessity for professional knowledge growth and how to find, assess, assemble and apply it properly.
- VII. An ability to work adequately on teams and to set up objectives, plan activities, meet due dates, and manage risk and uncertainty

5. Academic Staff

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6. Credits, Grading and GPA

Credits

Mosul University 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:

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

7. Curriculum/Modules

Semester 1 | 30 ECTS | 1 ECTS = 25 hrs

Code	Module	SSWL	USSWL	ECTS	Type	Pre-request
ENV111	Mathematics	78	72	6.00	S	
ENV112	Statics	78	72	6.00	S	
ENV113	Engineering Drawing	93	82	7.00	S	
ENV114	Environmental Thermodynamics	48	52	4.00	S	
ENV115	Statistics	33	42	3.00	S	
UOM1011	Arabic1	33	17	2.00	B	
UOM1040	Democracy and Human Rights	33	17	2.00	B	

Semester 2 | 30 ECTS | 1 ECTS = 25 hrs

Code	Module	SSWL	USSWL	ECTS	Type	Pre-request
ENV211	Engineering Mathematics	78	72	6.00	S	ENV121
ENV212	Fluids Mechanics	78	47	5.00	C	
ENV213	Environmental Chemistry	63	37	4.00	S	
ENV214	Engineering Surveying	78	22	4.00	S	
ENV215	Strength of Materials	48	52	4.00	S	ENV112
ENV216	Engineering Hydrology	33	42	3.00	S	
UOM2050	The Crimes of the Baath Party in Iraq	33	17	2.00	B	
UOM2022	English 2	33	17	2.00	B	

Semester 3 | 30 ECTS | 1 ECTS = 25 hrs

Code	Module	SSWL	USSWL	ECTS	Type	Pre-request
ENV211	Engineering Mathematics	78	72	6.00	S	ENV121
ENV212	Fluids Mechanics	78	47	5.00	C	
ENV213	Environmental Chemistry	63	37	4.00	S	
ENV214	Engineering Surveying	78	22	4.00	S	
ENV215	Strength of Materials	48	52	4.00	S	ENV112
ENV216	Engineering Hydrology	33	42	3.00	S	
UOM2050	The Crimes of the Baath Party in Iraq	33	17	2.00	B	
UOM2022	English 2	33	17	2.00	B	

Semester 4 | 30 ECTS | 1 ECTS = 25 hrs

Code	Module	SSWL	USSWL	ECTS	Type	Pre-request
ENV221	Water Quality Engineering	78	97	7.00	C	
ENV222	Concrete and Building Technology	78	72	6.00	S	
ENV223	Survey Applications and GIS	78	72	6.00	S	
ENV224	Microbiology	63	87	6.00	S	
UOM2012	Arabic2	33	17	2.00	B	
UOM2032	Computer2	63	12	3.00	B	

Semester 5 | 30 ECTS | 1 ECTS = 25 hrs

Code	Module	SSWL	USSWL	ECTS	Type	Pre-request
ENV311	Principles of Air pollution	45	105	6.00	C	
ENV312	Water Supply Networks	45	80	5.00	C	ENV212
ENV313	Solid Waste Engineering	60	65	5.00	C	
ENV314	Unit Operations & Processes	75	75	6.00	C	
ENV315	Soil Mechanics	90	35	5.00	C	
ENV316	Engineering Analysis	33.00	42	3.00	S	

Semester 6 | 30 ECTS | 1 ECTS = 25 hrs

Code	Module	SSWL	USSWL	ECTS	Type	Pre-request
ENV321	Soil and Ground Water Pollution	48	52	4.00	C	
ENV322	Sewers Networks	48	77	5.00	C	ENV212
ENV223	Noise Pollution	33	92	5.00	C	
ENV324	Hydraulics Applications	48	77	5.00	C	ENV212
ENV325	Hazardous Waste Management	63	37	4.00	C	
ENV326	Numerical Analysis	33	42	3.00	S	
ENV327	Reinforced Concrete	63	37	4.00	C	ENV215

Semester 7 | 30 ECTS | 1 ECTS = 25 hrs

Code	Module	SSWL	USSWL	ECTS	Type	Pre-request
ENV411	Design of Water Treatment Plants	63	87	6.00	C	ENV314
ENV412	Wastewater Treatment Plant Design	93	57	6.00	C	ENV314
ENV413	Structural Design	93	32	5.00	C	
ENV414	Sustainability Engineering	33	67	4.00	C	
ENV415	Engineering Project Management and Economy	63	62	5.00	C	
ENV416	Engineering Project and Technical Writing	33	67	4.00	C	

Semester 8 | 30 ECTS | 1 ECTS = 25 hrs

Code	Module	SSWL	USSWL	ECTS	Type	Pre- request
ENV421	Industrial and Petroleum Liquid Waste	63	87	6.00	C	
ENV422	Estimation and Specifications	63	62	5.00	C	
ENV423	Air Pollution Control	48	102	6.00	C	ENV311
ENV424	Civil Drawing	78	47	5.00	C	
ENV425	Environmental Impact Assessment and Regulations	33	67	4.00	C	
ENV426	Engineering Project	48	52	4.00	C	

8. Contact

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