Tikrit UNIVERSITY
جامعة تكريت

Bachelor of Science in Environmental Engineering
بكالوريوس علوم - هندسة بيئة

Table of Contents | جدول المحتويات

1. Mission & Vision Statement

Vision Statement

The department's goal is to provide a nationally renowned undergraduate program in environmental engineering with research air, soil, and water pollution, the impact of biological pollution, wastewater treatment, and solid waste managements.

Mission Statement

1. Educate future leaders and innovators in environmental engineering and related disciplines to become successful career environmental engineers.
2. By engaging in academic research, environmental engineering knowledge is expanded.
3. To meet social demands, develop technology.
4. Through involvement in environmental engineering and related fields, we will advance the welfare of the Iraqi population.

2. Program Specifications

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

The Environmental Engineering program offered by Tikrit University are designed to assist you in acquiring the academic foundation required for a career as a professional engineer in the industrial, consultancy, and academic fields. You will develop the knowledge and abilities necessary to meet the challenges of industry and research in the twenty-first century, including those relating to the design, air pollution, water and soil pollution, wastewater treatment systems etc., you will also gain the understanding necessary to work at the intersection of engineering and the environmental sciences. The variety of units and alternatives available emphasize the flexibility of the subject of environmental engineering and your capacity to gradually narrow the scope of your study.

3. Program Goals

After graduating, our students will succeed in their career by:

1. Prepare men and women to be successful as Environmental Engineers.
2. Participate in service projects, find innovative and effective solutions to environmental problems faced by institutions, and provide environmental consulting that emphasizes societal advantages of engineering concepts.
3. Be able to pursue graduate studies and dedicate to continuing professional growth and long-life learning through bridging engineering and non-engineering professions.

4. Student Learning Outcomes

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

Tikrit University follows Bologna Learning 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 student workloads, 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	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.

Calculation of the Grade Point Average (GPA)

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

   GPA of a 4-year B.Sc. degrees:

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

7. Curriculum/Modules

Semester 1 | 30 ECTS

Code	Module	SSWL	USSWL	ECTS	Type	Pre-request
MATH-101	**Calculus I**	**78**	**72**	**6**	**B**	
ENG-102	**Engineering Mechanics**	**63**	**62**	**5**	**B**	
UOT-003	**Computer I**	**63**	**12**	**3**	**S**	
ENG-101	**Engineering Drawing**	**93**	**57**	**6**	**S**	
ENVR-ENG-101	**Environmental Chemistry**	**78**	**72**	**6**	**B**	
UOT-004	**Human Rights and Democracy**	**33**	**17**	**2**	**S**	
UOT-001	**Arabic Language I**	**33**	**17**	**2**	**S**	

Semester 2 | 30 ECTS

Code	Module	SSWL	USSWL	ECTS	Type	Pre-request
MATH-102	**Calculus II**	**78**	**72**	**6**	**B**	**MATH-101**
ENVR-ENG-102	**Strength of Materials**	**78**	**72**	**6**	**B**	**ENG-102**
ENVR-ENG -103	**Environmental physics**	**63**	**37**	**4**	**B**	
ENVR-ENG -104	**Analytical Chemistry**	**78**	**72**	**6**	**B**	
ENG-106	**Engineering Workshops**	**78**	**72**	**6**	**S**	
UOT-002	**English Language I**	**33**	**17**	**2**	**S**	

Semester 3 | 30 ECTS

Code	Module	SSWL	USSWL	ECTS	Type	Pre-request
MATH-201	**Engineering Analysis**	**78**	**72**	**6**	**B**	**MATH-102**
ENVR-ENG-201	**Thermodynamics**	**48**	**52**	**4**	**S**	
ENVR-ENG -202	**Fundamentals of Fluid Mechanics**	**93**	**57**	**6**	**C**	
UOT-031	**Computer II**	**63**	**12**	**3**	**S**	**UOT-003**
ENVR-ENG -203	**Engineering Surveying**	**78**	**72**	**6**	**S**	
ENVR-ENG -204	**Engineering Ethics**	**33**	**42**	**3**	**S**	
UOT-005	**The Crimes of the Baath Regime in Iraq**	**33**	**17**	**2**	**S**	

Semester 4 | 30 ECTS

Code	Module	SSWL	USSWL	ECTS	Type	Pre-request
ENVR-ENG-205	**Environmental Geology**	**48**	**52**	**4**	**C**	
ENVR-ENG-206	**Water Supply Engineering**	**78**	**72**	**6**	**C**	
ENVR-ENG-207	**Fluid Flow**	**93**	**57**	**6**	**C**	**ENVR-ENG-202**
ENVR-ENG-208	**Environmental Microbiology**	**78**	**72**	**6**	**B**	
ENVR-ENG-209	**Air Quality Engineering**	**48**	**52**	**4**	**C**	
UOT-011	**Arabic Language II**	**33**	**17**	**2**	**S**	
UOT-021	**English Language II**	**33**	**17**	**2**	**S**	

Semester 5 | 30 ECTS

Code	Module	SSWL	USSWL	ECTS	Type	Pre-request
MATH-301	**Numerical Analysis**	**48**	**52**	**4**	**B**	
ENVR-ENG-301	**Fundamentals of Wastewater**	**78**	**72**	**6**	**C**	
ENVR-ENG-302	**Solid Waste Management**	**63**	**62**	**5**	**C**	
ENVR-ENG-303	**Treatment Plant Hydraulics**	**63**	**62**	**5**	**C**	
ENVR-ENG-304	**Water Quality Engineering**	**63**	**87**	**6**	**C**	
ENVR-ENG-305	**Heat Transfer**	**48**	**52**	**4**	**C**	

Semester 6 | 30 ECTS

Code	Module	SSWL	USSWL	ECTS	Type	Pre-request
ENVR-ENG-306	**Soil and Groundwater Pollution**	**93**	**32**	**5**	**C**	
ENVR-ENG-307	**Wastewater Treatment**	**63**	**87**	**6**	**C**	**ENVR-ENG-301**
ENVR-ENG-308	**Hazardous & Radioactive Waste Management**	**48**	**52**	**4**	**C**	
MATH-302	**Statistics and Probability**	**48**	**52**	**4**	**B**	
ENVR-ENG-309	**Mass Transfer**	**48**	**52**	**4**	**C**	
ENVR-ENG-310	**Engineering Hydrology**	**63**	**37**	**4**	**C**	
ENVR-ENG-311	**Noise Pollution**	**48**	**27**	**3**	**C**	

Semester 7 | 30 ECTS

Code	Module	SSWL	USSWL	ECTS	Type	Pre-request
ENVR-ENG-401	**Estimating and Engineering Specification**	**48**	**52**	**4**	**S**	
----------	**Elective Course I**	**63**	**62**	**5**	**E**	
ENVR-ENG-402	**Engineering Management**	**48**	**52**	**4**	**C**	
ENVR-ENG-403	**Simplified Wastewater Treatment Systems**	**63**	**87**	**6**	**C**	**ENVR-ENG-307**
ENVR-ENG-404	**Sludge Treatment**	**63**	**62**	**5**	**C**	**ENVR-ENG-307**
ENVR-ENG-405	**Graduation Project I**	**63**	**87**	**6**	**C**	

Semester 8 | 30 ECTS

Code	Module	SSWL	USSWL	ECTS	Type	Pre-request
ENVR-ENG-406	**Engineering Economic**	**48**	**52**	**4**	**C**	
ENVR-ENG-407	**Industrial Waste Management**	**63**	**62**	**5**	**C**	
ENVR-ENG-408	**Water and Sanitary Networks**	**63**	**87**	**6**	**C**	**ENVR-ENG-310**
ENVR-ENG-409	**Water Reuse**	**63**	**62**	**5**	**C**	
----------	**Elective Course II**	**48**	**52**	**4**	**E**	
ENVR-ENG-410	**Graduation Project II**	**63**	**87**	**6**	**C**	**ENVR-ENG-406**

Elective Courses

Code	Module	SSWL	USSWL	ECTS	Type	Pre-request
Elective Course I						
ENVR-ENG-411	**Environmental Sustainability**	**63**	**62**	**5**	**E**	
ENVR-ENG-412	**Environmental Risk Assessment**	**63**	**62**	**5**	**E**	**ENVR-ENG-310**
ENVR-ENG-413	**Urban and Regional Planning**	**63**	**62**	**5**	**E**	
ENVR-ENG-414	**Sustainable Energy**	**63**	**62**	**5**	**E**	
Elective Course II						
ENVR-ENG-415	**Geographical Information Systems**	**48**	**52**	**4**	**E**	
ENVR-ENG-416	**Remote Sensing**	**48**	**52**	**4**	**E**	
ENVR-ENG-417	**Environmental Legislation**	**48**	**52**	**4**	**E**	
ENVR-ENG-418	**Fundamental of Climatology**	**48**	**52**	**4**	**E**	

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