



Jordan University of Science and Technology
Faculty of Engineering
Civil Engineering Department

CE551 Environmental Engineering (2) - JNQF Level: 7

First Semester 2024-2025

Course Catalog

3 Credit Hours. Wastewater quality, standards and regulations, Wastewater treatment operations and units, Wastewater microbiology and Bio-kinetics, Wastewater collection system design, Design of wastewater treatment units (physical, chemical and biological: Activated Sludge, Trickling filters, RBCs, Stabilization ponds), Wastewater reuse, Sludge management, Solid waste management, Hazardous waste management & Environmental Systems Auditing.

Teaching Method: On Campus

Text Book

Title	Introduction to Environmental Engineering
Author(s)	M. L. Davis and D. A. Cornwell
Edition	6th Edition
Short Name	Ref # 1
Other Information	

Course References

Short name	Book name	Author(s)	Edition	Other Information
Ref # 2	Wastewater Engineering: Treatment, Disposal and Reuse	Metcalf & Eddy	5th Edition	
Ref # 3	Water and Wastewater Technology	Hammer and Hammer, Jr	7th Edition	

Instructor

Name	Prof. Jamal Abu-Ashour
Office Location	C2 L1

Office Hours	Sun : 10:00 - 12:00 Mon : 08:30 - 10:30 Tue : 08:00 - 09:00 Wed : 10:00 - 12:00
Email	jamals@just.edu.jo

Class Schedule & Room	
Section 1:	Lecture Time: Mon, Wed : 13:00 - 14:30 Room: C3016
Section 2:	Lecture Time: Mon, Wed : 08:30 - 10:00 Room: G2120

Prerequisites		
Line Number	Course Name	Prerequisite Type
234520	CE452 Environmental Engineering	Prerequisite / Pass

Tentative List of Topics Covered		
Weeks	Topic	References
Week 1	Characterization of Wastewater & wastewater standards	
Week 2	Wastewater collection system design	
Week 3	Wastewater microbiology and Bio-kinetics	
Week 4	Wastewater treatment operations and units	
Weeks 5, 6, 7, 8, 9	Design of wastewater treatment units physical, chemical and biological: Activated Sludge, Trickling filters, RBCs, Stabilization ponds	
Week 10	Wastewater reuse	
Week 11	Sludge management	
Weeks 12, 13	Solid waste management,	
Weeks 14, 15	Hazardous waste management	
Week 16	Environmental Systems Auditing	

Mapping of Course Outcomes to Program Outcomes and NQF Outcomes	Course Outcome Weight (Out of 100%)	Assessment method
Enable the students to design different units of wastewater treatment systems [1PI-1a, 1PI-2a] [1L7S1]	45%	

Enable the students to design a wastewater sewer conveyance system [1PI-1a, 1PI-2a, 1PI-2c] [1L7S3]	25%	
Enable the students to design solid waste landfill and solid waste management systems [1PI-1a, 1PI-2a] [1L7C1]	20%	
Enable the students to recognize hazardous waste and conduct environmental auditing [1PI-2a, 1PI-3a] [1L7C2]	10%	

Relationship to Program Student Outcomes (Out of 100%)											
PI-1a	PI-2a	PI-2b	PI-2c	PI-2d	PI-3a	PI-4a	PI-4b	PI-5a	PI-6a	PI-6b	PI-7a
40.83	45.83		8.33		5						

Relationship to NQF Outcomes (Out of 100%)			
L7S1	L7S3	L7C1	L7C2
45	25	20	10

Evaluation	
Assessment Tool	Weight
Final Exam	40%
First Exam	30%
Second Exam	30%

Policy	
Grading Policy	First Exam 30% Second Exam 30% Final Exam 40%

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