



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

CE453 Environmental Engineering Lab - JNQF Level: 7

First Semester 2024-2025

**Course Catalog**

1 Credit Hours. This laboratory course is designed to provide insight and experience into the fundamental principles taught in the environmental engineering course. These principles include solid determination, the spectrophotometer, and Beer's law. Acid-Base Titration Curves and Acid-Base Indicators, Alkalinity-Acidity and Determination of Alkalinity in Water, Determination of Water Hardness, Biochemical Oxygen Demand, Turbidity Determination, Jar Testing, Noise and Salinity Measurement

**Teaching Method:** On Campus

**Text Book**

<b>Title</b>	Introduction to Experimental Water Quality Engineering
<b>Author(s)</b>	Abul Basher Shahalam.
<b>Edition</b>	1st Edition
<b>Short Name</b>	1
<b>Other Information</b>	

**Instructor**

<b>Name</b>	<b>Mrs. Nesreen Amari</b>
<b>Office Location</b>	-
<b>Office Hours</b>	Sun : 12:30 - 14:00 Mon : 12:30 - 14:00 Tue : 10:30 - 12:30 Wed : 13:00 - 14:00
<b>Email</b>	nkamari@just.edu.jo

**Class Schedule & Room**

Section 1:  
Lecture Time: Sun : 14:00 - 17:00  
Room: LAB

Section 2:  
Lecture Time: Wed : 14:00 - 17:00  
Room: LAB

Section 3:  
Lecture Time: Mon : 14:30 - 17:00  
Room: LAB

### Prerequisites

Line Number	Course Name	Prerequisite Type
234520	CE452 Environmental Engineering	Pre./Con.

### Tentative List of Topics Covered

Weeks	Topic	References
Week 1	Introduction and Report Writing	
Week 2	Solid determination	
Week 3	Spectrophotometer and Beers law	
Week 4	Acid-Base titration curves and Acid-Base indicators	
Week 5	Alkalinity-Acidity and determination of Alkalinity in water	
Week 6	Determination of water Hardness	
Week 7	Biochemical Oxygen Demand (BOD)	
Week 8	Turbidity determination using Jar test	
Week 9	Salinity measurement	
Week 10	Noise measurement	

Mapping of Course Outcomes to Program Outcomes and NQF Outcomes	Course Outcome Weight (Out of 100%)	Assessment method
Learn experimental and theoretical procedures for measurement the concentration of the different types of solids using the gravimetric method. [1PI-6a] [1L7K1]	12%	
Learn experimental and theoretical procedures for measurement the concentration of a dissolved and suspended substance in solution using the optical methods of analysis. [1PI-6a] [1L7K1]	12%	
Learn experimental and theoretical procedures for acid base interactions and measure solution?s capacity to neutralize acids. [1PI-6a] [1L7S2]	12%	

Learn experimental and theoretical procedures for the complex formation and stability. [1PI-6a] [1L7S2]	12%	
Learn experimental and theoretical procedures for the aerobic degradation of organic matter. [1PI-6a] [1L7S2]	15%	
Learn experimental and theoretical procedures for coagulation-flocculation processes. [1PI-6a] [1L7S2]	13%	
Learn experimental and theoretical procedures for measure the salinity of water by electrical conductivity measurements. [1PI-6a] [1L7S2]	12%	
Learn experimental and theoretical procedures for measure the sound pressure. [1PI-6a] [1L7S2]	12%	

**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
									100		

**Relationship to NQF Outcomes (Out of 100%)**

L7K1	L7S2
24	76

**Evaluation**

Assessment Tool	Weight
Final Exam	100%

**Policy**

Policy 1	purpose of a report: A key thing to keep in mind right through your report writing process is that a report is written to be read, by someone else.
Policy 2	Reports are to be submitted at the beginning of class typically one week after experiments are conducted.
Policy 3	Late report will not be accepted and the student will get zero grades for that report.
Policy 4	Copying the report from another student is not acceptable and will not be tolerated.  "Copying another person's laboratory report and presenting it, either wholly or with only minor changes, as if it were the student's own work".
Policy 5	In accordance with the University Regulations, it is the student's responsibility to be punctual and to attend all classes. Failure to attend classes without prior approval for whatever reason is considered as part of the percentage missed. Students bear full responsibility for checking their own attendance record.  Attendance records are kept, and if a student is absent for more than 20% of the total contact hours without an excuse accepted by the faculty dean, he will fail

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