



Jordan University of Science and Technology
Faculty of Agriculture
Natural Resources & Environment Department

NR241 Principles Of Irrigation And Drainage - JNQF Level: 6

Second Semester 2023-2024

Course Catalog

3 Credit Hours. This course will cover the irrigation importance, agricultural drainage, sources of water, pumps, hydraulics flow, and water flow measurements in pipes and canals. It will conclude the soil water relations, soil water content and salt problems in soil and water. And it will deal with calculations of crop water consumptive, and water use efficiency, irrigation methods (surface, sprinkler, and drip irrigation).

Teaching Method: On Campus

Text Book

Title	Irrigation principles and practices
Author(s)	Israelsen, O. W. and V. E. Hansen
Edition	3rd Edition
Short Name	Ref#1
Other Information	

Instructor

Name	Prof. Naji Almfleh
Office Location	M1L1
Office Hours	
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Class Schedule & Room

Section 1:
Lecture Time: Sun, Tue : 11:30 - 12:30
Room: C5020

Tentative List of Topics Covered		
Weeks	Topic	References
Week 1	Water for irrigation and drainage	Chapter 1 From Ref#1
Week 2	Irrigation, drainage, tube wells, pumps	Chapter 1 From Ref#1
Week 3	Water flow measurements in canals and pipes	Chapter 2 From Ref#1
Week 4	Water flow measurements in canals and pipes	Chapter 2 From Ref#1
Week 5	Soil Water relations	Chapter 3 From Ref#1
Week 6	Soil water relations	Chapter 3 From Ref#1
Week 7	Soil water measurements	Chapter 3 From Ref#1
Week 8	Salt problems in soil and water	Chapter 4 From Ref#1
Week 9	Irrigation efficiencies	Chapter 5 From Ref#1
Week 10	Consumptive use	Chapter 6 From Ref#1
Week 11	Consumptive use	Chapter 6 From Ref#1
Week 12	Furrow and border irrigation methods	Chapter 7 From Ref#1
Week 13	Sprinkler irrigation	Chapter 8 From Ref#1
Week 14	Sprinkler irrigation	Chapter 8 From Ref#1
Week 15	Drip irrigation	Chapter 9 From Ref#1
	Drip irrigation	Chapter 9 From Ref#1

Mapping of Course Outcomes to Program Outcomes and NQF Outcomes	Course Outcome Weight (Out of 100%)	Assessment method
To introduce the students to the principles of tube wells, pumps, and water flow measurements methods [10PLO1, 10PLO2, 5PLO4] [1L6K1, 1L6K2]	25%	
To understand the different aspects of soil-water relations [5PLO1, 5PLO2, 5PLO7] [1L6K1, 1L6K2]	15%	
3- To introduce the students to the methods of measuring soil water content [5PLO1, 5PLO2] [1L6K1, 1L6S1]	10%	
To understand the salt problems in soil and water [10PLO1, 5PLO2] [1L6K1, 1L6K2, 1L6S1]	10%	
5- To introduce the students to irrigation efficiencies and consumptive use of water. [7PLO1, 8PLO2] [1L6K1, 1L6K2, 1L6S1]	10%	
6- To understand the principles of Surface irrigation methods (border and furrow irrigation, sprinkler and drip irrigation methods) [10PLO1, 10PLO2] [1L6K1, 1L6K2, 1L6S1]	20%	
participation [1L6K1, 1L6K2, 1L6S1]	10%	

Relationship to Program Student Outcomes (Out of 100%)								
PLO1	PLO2	PLO3	PLO4	PLO5	PLO6	PLO7	PLO8	PLO9
41.33	38.67		5			5		

Relationship to NQF Outcomes (Out of 100%)		
L6K1	L6K2	L6S1
41.67	36.67	21.67

Evaluation	
Assessment Tool	Weight
1st exam	25%
2nd exam	25%
participation	10%
final exam	40%

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