

Course Name	Code\No.	Number of Credits			
		Theo.	Lab.	Train.	Credit
Irrigation Water Management	HWR 343	3	0	0	3
Pre-Requests	HWR 313 – HWR 351				

Course Objectives:

This course aims to provide knowledge to the students about principles of irrigation as of the soil-water-air-plant relationships. In addition, students will be familiar with the main irrigation systems that are common in this era and bound to sustainability goals of the modern societies especially in the arid regions. Irrigation efficiencies as well as the environmental factors that affects crop water consumption are among the topics to be covered in this course. Irrigation scheduling especially the ones that used up to date technologies for sustainability and water conservation in agriculture so students can be aware of the modern practices in water management in farms and field scale. Finally, students will learn how to evaluate field irrigation systems and how to improve their efficiencies as well as how to manage irrigation processes and water allocation and distribution in the field and the farm scale.

Course Contents:

1. Introduction irrigation water management and the goal of the course
2. Irrigation related soil water relationships
3. Crop water consumptive use
4. Modern irrigation systems
5. Irrigation efficiencies and their effects on water conservation
6. Irrigation scheduling and its techniques
7. Operation and evaluation of field irrigation systems

Course outcomes:

After completing this course, student should be able to:

1. Connects the relation between water management and its effects on water conservation
2. Calculate soil water storage and available water for plants
3. Calculate crop water consumptive use and factors that affects it and measuring it
4. Recognize the different irrigation systems and their characteristics.
5. Recognize the different irrigation efficiencies and how they affects the water consumption
6. Schedule irrigation and manage water within farm and field scale
7. Demonstrate ability to use GPS to collect spatial data.

Evaluation Method:

The evaluation is performed by periodic tests, presentation of term project and reports of term project and lab exercises.

Text Book

Class handouts and some chapters from different references

References:

إدارة مياه الري – المجموعة الزراعية السعودية

- نظم الري الحديثة بالأراضي الجديدة والصحراوية
 - **Irrigation Principles and Practices**
 - **Design and Operation of Farm Irrigation Systems**