



## MASTER COURSE OUTLINE

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## COURSE TITLE

Water Management in Agriculture

## GENERAL COURSE INFORMATION

Dept.: AGR

Course Num: 110

(Formerly: )

CIP Code: 01.0301

Intent Code: 21

Program Code: 105

Credits: 3

Total Contact Hrs Per Qtr.: 44

Lecture Hrs: 22

Lab Hrs: 22

Other Hrs:

Distribution Designation:

## COURSE DESCRIPTION (as it will appear in the catalog)

This course will provide students the opportunity to study water and its management for agronomic purposes. A broad range of topics will be covered including the Columbia Basin Irrigation project, hydrology, basic irrigation principles, water relationships, efficiency, and water quality & supply. Course topics and concepts will be reinforced with hands-on labs and activities.

## PREREQUISITES

AGR 263 Soils recommended

## TEXTBOOK GUIDELINES

Agricultural Water Management textbook determined by agricultural faculty (Example Principles of Irrigation, 3<sup>rd</sup> Edition, Irrigation Association)

## COURSE LEARNING OUTCOMES

*Upon successful completion of the course, students should be able to demonstrate the following knowledge or skills:*

1. Discuss the scope, structure, and economic impact of the Columbia Basin Irrigation Project.
2. Describe basic hydrological concepts.
3. Apply basic principles of irrigation.
4. Explain the relationship of soil, water, plants, and atmosphere.
5. Interpret water quality testing results/data.
6. Calculate precipitation rates.
7. Discuss irrigation water sustainability, efficiency, and uniformity concepts.

## INSTITUTIONAL OUTCOMES

IO2 **Quantitative Reasoning:** Students will be able to reason mathematically using methods appropriate to the profession

## COURSE CONTENT OUTLINE

1. Columbia Basin Irrigation Project
2. Hydrology
3. Basic Principles of Irrigation

4. Soil-Water-Plant-Atmosphere Relationship
  - a. Water Storage and Drainage
  - b. Soil Moisture Extraction
  - c. Salts in Water and Soil Solutions
  - d. Readily Available Water
  - e. Water Available to Plants Plant Water Relations
  - f. Soil Moisture Monitoring Devices for Irrigation Scheduling
5. Precipitation Rates
6. Efficiency and Uniformity Concepts
  - a. Water Sustainability and Conservation
  - b. Irrigation Efficiency/Technology
7. Irrigation Scheduling
8. Water Quality and Supply
  - a. Water Permits and Regulation
  - b. Water Quality Testing

**DEPARTMENTAL GUIDELINES** (*optional*)

Utilize the BBCC irrigation site when possible.

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**DIVISION CHAIR APPROVAL**

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**DATE**