



Irrigation Management

Home Study Course



An Educational Program offered by University of Nebraska Cooperative Extension with support from Nebraska Fertilizer & Ag-Chemical Institute, Inc.

13.0 HOURS OF SOIL & WATER CEUs for CCAs

- Nebraska Course Approved As: NE30222

This Home Study Course Counts As A CCA Course, Not Self-Study CEUs!

(Tests must be successfully passed for CCA CEU Credits)

- X **The Irrigation Management Home Study Course will provide the information you need to:**
 - Better understand water capacity & water holding characteristics.
 - Measure soil water.
 - Set irrigation management goals.
 - Determine flow measurement & basic water calculations.
- X **Answers the questions of farmers, crop consultants, dealers, farm managers & other persons making irrigation management decisions.**
- X **This is a comprehensive course addressing irrigation management. It provides the tools for making sound irrigation management recommendations.**

Irrigation Management Home Study Course Order Form

_____ # of Irrigation Management Home Study Courses @ \$85.00 Each =	\$ _____
Add Appropriate Sales Tax for Nebraska Residents (5.5% - 7%)	\$ _____
Add \$3.95 Postage =	\$ _____
TOTAL AMOUNT ENCLOSED =	\$ _____

NAME: _____ SSN: _____

COMPANY: _____

MAILING ADDRESS: _____

CITY, STATE, ZIP: _____ COUNTY: _____

PHONE: _____ FAX: _____

Make your check payable to: **NEBRASKA AGRIBUSINESS ASSOCIATION, INC.**

1335 H St., Suite 100, Lincoln, NE 68508-3784

Phone: (402) 476-1528 • Fax: (402) 476-1259

E-mail: info@na-ba.com • Web: www.na-ba.com

PURPOSE OF THE COURSE

The Irrigation Management Home Study Course is a course designed to meet the needs of agricultural producers, crop consultants, dealers, and other agribusiness people in making water management decisions regarding irrigation.

Lessons in this course will address such areas as goals of irrigation management, crop water use, flow measurement and basic water calculations, irrigation efficiencies, sprinkler irrigation basics and energy costs for irrigation pumping. You will be able to participate in this educational program without a large commitment of time away from the office or home.



You must answer the questions on the thirteen lesson quizzes successfully to qualify for CCA CEU Credits.

ENROLLMENT PROCEDURES



There are no prerequisites for enrollment in this course. Just complete the attached registration form & return it with your payment. The \$85.00 fee will include the course booklet which includes thirteen lessons along with exercises for you to complete.

Just return the completed quizzes or exercises to the participating county extension office listed with the test. Each person completing the lessons & quizzes will receive a certificate of completion from the University of Nebraska.

LESSONS IN IRRIGATION MANAGEMENT HOME STUDY COURSE

1. **Why Manage Water For Irrigation:** Introduction to the goal of irrigation and consequences of improper management.
2. **Physical Properties of Soil:** This lesson discusses soil properties such as soil texture, soil structure, particle density, porosity and the soil profile and how they relate to irrigation management.
3. **Soil Water:** Learn about water capacity, water holding characteristics and movement of water in soils. Also learn how these characteristics are affected by different soil types.
4. **Measuring Soil Water:** Several tools and techniques will be discussed to determine how much water can be added to the soil and when the soil can hold the application amount.
5. **Nitrate Movement and Loss Under Irrigated Crop Production:** This lesson discusses the factors involved in the movement of nitrates into the groundwater. Calculations are presented that will estimate the amount of the loss.
6. **Crop Water Use:** Understanding and estimating crop water use is the basis for irrigation scheduling. Several factors that affect crop water use will be discussed as well as critical periods for water stress in crop development.
7. **Flow Measurement and Basic Water Calculations:** This lesson covers several methods of estimating water flow. In addition, formulas are presented and discussed to calculate application rates for a single irrigation event and for the entire season.
8. **Irrigation Efficiencies :** Calculating irrigation efficiency is the first step in reducing water which is lost before, during or after application. Typical efficiencies are presented for comparison purposes.
9. **Soil Water Balance:** Learn the importance of knowing the soil water balance, the inputs needed to calculate it and how the soil water balance is used for irrigation management.
10. **Scheduling Irrigations:** This lesson looks at the No Sooner Than Date, the No Later Than Date and scheduling the last irrigation to help individuals to properly time irrigation applications to make the best use of stored moisture and rainfall.
11. **Furrow Irrigation Management:** Uniform application is not possible with a conventional furrow irrigation system. Discussion of changing set-time, stream size, length of run, reuse pits and surge irrigation will help irrigators to achieve a more uniform application.
12. **Sprinkler Irrigation Basics:** Sprinkler design including system requirements, peak flow rates, application rates and depth of application will be discussed. In addition, sprinkler types and package selection will be covered.
13. **Energy Costs For Irrigation Pumping:** This lesson covers horsepower, efficiency of the pump and drive unit and the Nebraska Performance Criteria Calculations to help irrigators identify low efficiencies in their system. Addressing low efficiencies will lead to reduced pumping costs.

