COURSE INFORMATION FORM

DISCIPLINE

Agribusiness

COURSE TITLE

Irrigation and Installation

CR.HR. 3 LECT HR. 3 LAB HR. CLIN/INTERN HR. CLOCK HR.

CATALOG DESCRIPTION

Study design, operations and maintenance of modern golf courses and landscape facilities, including water requirements, supply and distribution

PREREQUISITES

None

EXPECTED STUDENT OUTCOMES IN THE COURSE (ESO)

Upon completion of this course, the student will be able to:

1. Chart commercially available irrigation systems, parts and control components.
2. Demonstrate ability in designing and calculating sprinkler irrigation systems using basic principles of hydraulics and performance data of various sprinkler systems.
3. Describe a watering program based on soil type, plant materials to be grown, drainage, climatic conditions and type of irrigation used.
4. Produce a mock proposal of a complete irrigation system for an agribusiness client using all above criteria based on a scenario provided by the instructor.
GENERAL EDUCATION OUTCOMES (ESO)

Specify which general education outcomes, if any, are substantially addressed by the course. Numbers in parentheses identify the Expected Student Outcomes linked to the specific General Education Outcome.
PROGRAM-LEVEL OUTCOMES

CAREER AND TECHNICAL EDUCATION PROGRAM OUTCOMES

Specify which Career and Technical program outcomes, if any, are substantially addressed by the course by completing the “Career and Technical Education template” to show the relationship between course and program outcomes to assessment measures.

1. Students will develop and demonstrate the ability to communicate clearly and effectively with others.
2. Students will apply essential math skills and use formulas appropriate in landscape projects.
3. Students will increase familiarity with appropriate resources to advance knowledge and network within their field of employment or as entrepreneurs.

CLASS-LEVEL ASSESSMENT MEASURES

Student accomplishment of expected student outcomes will be assessed using the following measures. (Identify which measures are used to assess which outcomes.)

1. Written reports (1, 3)
2. Project designs (2, 4)
3. Exams (1-4)
Individual instructors may order this outline as fits the needs of their individual courses. In addition, they may place more emphasis on some areas than on others. What is assured is that this particular list is covered in the course. Other topics may be added to a course as the instructor sees fit, and as time and interest allow. An *asterisk can be used to mark an item as optional.

I. Introduction of irrigation and terminology
   A. Fundamental knowledge of design
   B. Basics of design
   C. Terminology and how it applies

II. Hydraulic principles
   A. Water pressure
   B. Friction loss
   C. Water velocities
   D. Available water, water meter size

III. Obtaining site information
   A. City, county and state codes
   B. Site information to create scale drawing
   C. Hydraulic site information

IV. Irrigation equipment
   A. Types of sprinklers
   B. Zone valves and use
   C. Timers/Controllers
   D. Pipe and sizing

V. Irrigation system design
   A. Section coverage areas
   B. Determining types of sprinklers from shape and square footage of site area
   C. Hydraulic design capacity from site information
   D. Layout of pipe and zone wires
   E. Timer/Controller

VI. Installation of irrigation system
   A. Water tap
   B. Main and lateral line installation
   C. Zone valve wiring
   D. Connection of sprinklers to piping
   E. Backflow devices and timer/controller

VII. Large scale design
A. Office park
B. Sports fields

VIII. Maintenance and water conservation
   A. Common problems and repairs
   B. Preventive maintenance
   C. Conserving water thru maintenance
   D. Water saving ideas
   E. Drip irrigation
   F. New technology

IX. Pricing and selling
   A. Cost estimating, material, labor and overhead
   B. Determine your profit margin, know your cost
   C. Presentation, visual and verbal skills
   D. Contracts to protect you and the consumer