HORT 181 Course Outline as of Fall 2015

CATALOG INFORMATION

Dept and Nbr: HORT 181 Title: WATER EFFIC LANDSCAPER
Full Title: Qualified Water Efficient Landscaper Training
Last Reviewed: 3/9/2015

Units		Course Hours per Week		Nbr of Weeks	Course Hours Total	
Maximum	1.00	Lecture Scheduled	1.00	17.5	Lecture Scheduled	17.50
Minimum	1.00	Lab Scheduled	0	7	Lab Scheduled	0
		Contact DHR	0		Contact DHR	0
		Contact Total	1.00		Contact Total	17.50
		Non-contact DHR	0		Non-contact DHR	0

Total Out of Class Hours: 35.00 Total Student Learning Hours: 52.50

Title 5 Category:	AA Degree Applicable
Grading:	Grade or P/NP
Repeatability:	00 - Two Repeats if Grade was D, F, NC, or NP
Also Listed As:	
Formerly:	

Catalog Description:
This course prepares irrigation auditors and other landscape professionals to audit irrigation systems with water efficiency being a fundamental component. Students who complete the course with a grade of "C" or better will be recognized as having completed an EPA (Environmental Protection Agency) approved WaterSense Training Program.

Prerequisites/Corequisites:

Recommended Preparation:
Eligibility for ENGL 100 or ESL 100

Limits on Enrollment:

Schedule of Classes Information:
Description: This course prepares irrigation auditors and other landscape professionals to audit irrigation systems with water efficiency being a fundamental component. Students who complete the course with a grade of "C" or better will be recognized as having completed an EPA (Environmental Protection Agency) approved WaterSense Training Program. (Grade or P/NP)
Prerequisites/Corequisites:

Recommended: Eligibility for ENGL 100 or ESL 100
Limits on Enrollment:
Transfer Credit:
Repeatability: Two Repeats if Grade was D, F, NC, or NP

ARTICULATION, MAJOR, and CERTIFICATION INFORMATION:

AS Degree:	**Area**	Effective:	Inactive:
CSU GE:	**Transfer Area**	Effective:	Inactive:
IGETC:	**Transfer Area**	Effective:	Inactive:

CSU Transfer:	Effective:	Inactive:
UC Transfer:	Effective:	Inactive:

CID:

Certificate/Major Applicable:
Both Certificate and Major Applicable

COURSE CONTENT

Outcomes and Objectives:
Upon successful completion of this course, the student will be able to:
1. Discuss issues related to the local water supply.
2. Apply basic principles of efficient irrigation to determine watering strategies.
3. Describe irrigation system components and their functions.
4. Inspect and maintain an irrigation system to promote efficiency.
5. Utilize formulas and calculations to determine irrigation rates, distribution and uniformity.
6. Troubleshoot irrigation components.
7. Determine soil characteristics.
8. Describe amendments and practices to improve physical soil properties and drainage.
9. Determine the water needs of plants.
10. Describe the steps to implement an IPM (Integrated Pest Management) program.
11. Discuss sources for and use of new irrigation technologies.
12. Efficiently manage irrigation water using irrigation controllers, water budgets, and scheduling.
13. Plan a water conserving landscape for a landscape site.

Topics and Scope:

1. Overview and water supply
   a. Public water supplies
   b. How water is collected for use
   c. Programs for water conservation
   d. Reading water meters
   e. Basic leak detection
2. Irrigation systems
   a. Pre-season inspection and maintenance checkup
   b. Winterizing an irrigation system

c. Elevation changes on an irrigation system
d. Irrigation system design
e. Irrigation system components and functions
f. Sensors, application devices, and application rates

3. Efficient irrigation
   a. Evapotranspiration
   b. CIMIS weather stations and their information
   c. Plant types and their evapotranspiration
   d. Plants and their water use classification
   e. Soils and their importane in efficient irrigaiton
   f. Distribution uniformity and precipitation rate
4. Soils
   a. Soil properties
   b. Water interaction with various soil types
   c. Monitoring soil moisture
   d. Using mulches and soil amendment in irrigation, drainage, and erosion
5. Plant maintenance
   a. Water needs of plants in the landscape
   b. Hydrozones
   c. Integrated pest management (IPM)
6. Water management
   a. Precipitation rates
   b. Distribution uniformity
   c. Interpreting a catch can test
   d. Irrigation runtime formula
7. Water budgets
8. Irrigation schedules
9. Irrigation controller programming
   a. Controller works and functions
   b. Porgramming a controller
10. Irrigation trouble shooting
   a. How an irrigation valve works
   b. Identifying and troubleshooting irrigation valve problems
   c. using a Volt/Ohm meter
11. New technology
   a. Emission devices and "smart" controllers
   b. How rain and flow sensors work
12. Putting it all together
   a. Importance of water budget and audit as water conservation tools
   b. Explaining to a customer the limited nature of water resources
   c. Using an efficient irrigaiton system to save the customer money
   d. Model contracts that reward people for saving water
   e. Knowing how to determine when to make improvements

Assignment:

1. Reading: 10 - 20 pages per week
2. Problem Solving:
   a. Homework problems: irrigation related calculations
   b. Soil and water in a jar test
   c. Hands-on programming of different controller types
   d. Irrigation schedule for an existing sample landscape site

3. Objective exams: 3-5 quizzes; midterm; final certification examination

Methods of Evaluation/Basis of Grade:

Writing: Assessment tools that demonstrate writing skills and/or require students to select, organize and explain ideas in writing.

None, This is a degree applicable course but assessment tools based on writing are not included because problem solving assessments are more appropriate for this course.	Writing 0 - 0%

Problem Solving: Assessment tools, other than exams, that demonstrate competence in computational or non-computational problem solving skills.

See problem solving assignments	Problem solving 20 - 30%

Skill Demonstrations: All skill-based and physical demonstrations used for assessment purposes including skill performance exams.

Programming controller soil jar test	Skill Demonstrations 5 - 10%

Exams: All forms of formal testing, other than skill performance exams.

Multiple choice, true/false, matching items, completion	Exams 60 - 70%

Other: Includes any assessment tools that do not logically fit into the above categories.

Attendance and participation	Other Category 0 - 10%

Representative Textbooks and Materials:
Instructor prepared materials