Las Positas College
3000 Campus Hill Drive
Livermore, CA 94551-7650
(925) 424-1000
(925) 443-0742 (Fax)

Course Outline for HORT 60

LANDSCAPE IRRIGATION SYSTEMS

Effective: Fall 2017

I. CATALOG DESCRIPTION:
HORT 60 — LANDSCAPE IRRIGATION SYSTEMS — 3.00 units

Planning, design, engineering, construction, and maintenance of sprinkler and drip irrigation systems for landscape, garden, and turfgrass use. Principles of hydraulics, layout, and equipment application. Irrigation system equipment, components, methods of installation and repair. Principles and techniques of water conservation and plant-water-soil relations.

2.50 Units Lecture 0.50 Units Lab

Grading Methods:
Letter or P/NP

Discipline:

	MIN
Lecture Hours:	45.00
Lab Hours:	27.00
Total Hours:	72.00

II. NUMBER OF TIMES COURSE MAY BE TAKEN FOR CREDIT: 1

III. PREREQUISITE AND/OR ADVISORY SKILLS:

IV. MEASURABLE OBJECTIVES:

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

A. Apply principles and application of water conservation, management, wise use of water resources;
B. Prepare successful, efficient, and sound sprinkler and drip irrigation system designs;
C. Install irrigation systems correctly and to current industry standards;
D. Implement irrigation system layout, installation, and construction from professionally prepared plans;
E. Trouble-shoot irrigation system problems and make necessary repairs;
F. Make accurate cost estimates for irrigation system design, installation, and repairs.

V. CONTENT:
A. Principles of basic hydraulics, water management, and water conservation
B. Concepts of site evaluation and matching plant needs to system design
C. Familiarization with various irrigation components, both plumbing and electrical
D. Techniques and details of implementing plans and drawings to actual landscape installations for conventional and drip irrigation systems
E. Techniques of testing for system malfunctions, trouble-shooting, and repair of malfunctioning irrigation components
F. Principles of cost estimation for design, installation, and repair of sprinkler systems

VI. METHODS OF INSTRUCTION:
A. **Lecture** -
B. **Lab** - demonstrations by the instructor plus hands on work in design, installation, and repair
C. Material presented by the instructor, including handouts and video presentations

VII. TYPICAL ASSIGNMENTS:
A. Weekly reading assignments
B. Homework assignments: including site assesments, drawings, and preparing cost estimates
C. Group projects involving irrigation installation and renovations

VIII. EVALUATION:
A. **Methods**

1. Exams/Tests
2. Quizzes
3. Projects
4. Class Work
5. Home Work
6. Lab Activities

B. **Frequency**

1. Two exams, mid-term and final
2. Frequent short quizzes
3. Weekly evaluation of classroom and lab paraticipation
4. Homework
5. Group project participation

IX. TYPICAL TEXTS:

1. Goyal, Megh. *Micro Irrigation Management.* 1st ed., Apple Academic Press, 2016.
2. Irrigation Association. *Landscape Irrigation Contractor Workbook.* 3rd ed., The Irrigation Association, 2014.
3. Keesen, Larry. The Complete Irrigation Workbook. Self-Published , 2013.

X. OTHER MATERIALS REQUIRED OF STUDENTS:

A. In order to participate in lab activities students are required to wear appropriate clothing, study shoes, and personal protective equipment suitable to the tasks being performed.