

Lecture Contact Hours: 32-36; Outside-of-Class Hours: 64-72;
Laboratory Contact Hours: 24-27; Outside-of-Class Hours: 0;
Total Student Learning Hours: 120-135

CUYAMACA COLLEGE
COURSE OUTLINE OF RECORD

Ornamental Horticulture 221 – Landscape Construction: Irrigation

2 hours lecture, 2 units
1.5 hours laboratory, .5 unit
Total units: 2.5

Catalog Description

Study of landscape construction methods and materials. Topics include: irrigation and drainage plan reading, materials and components, installation and construction, installation and troubleshooting of control valves and control clocks; code and design requirements for irrigation and drainage.

Prerequisite

None

Course Content

- 1) Blueprint reading
- 2) Irrigation and drainage
 - a. Construction details
 - b. Typical materials
 - c. Installation methods
- 3) Troubleshoot irrigation problems
 - a. Electrical troubleshooting

Course Objectives

Students will be able to:

- 1) Interpret landscape irrigation and drainage plans
- 2) Evaluate proper installation methods for remote control valves and control clocks.
- 3) Install irrigation system components including: sprinklers, drip emitters, pipe, valves and controllers.
- 4) Analyze and solve problems related to remote control valves and control clocks.
- 5) Describe code and design requirements for installation of irrigation and drainage systems.

Method of Evaluation

A grading system will be established by the instructor and implemented uniformly. Grades will be based on demonstrated proficiency in subject matter determined by multiple measurements for evaluation, one of which must be essay exams, skills demonstration or, where appropriate, the symbol system.

- 1) Quizzes and exams that measure students' ability to interpret and utilize soft and hardscape landscape plans to develop materials lists and evaluate for code and design requirements.
- 2) Exercises which measure students' ability to safely operate tools and equipment common to construction of decks, overhead structures, fences and gates and to install components in a typical landscape irrigation system and troubleshoot irrigation control valves and control clocks and repair control valves.

Special Materials Required of Student

None

Minimum Instructional Facilities

- 1) Standard lecture classroom
- 2) Laboratory facility: water and power for common landscape construction equipment to include trenches, front-end loader

Method of Instruction

- 1) Lecture and demonstration
- 2) Laboratory

Out-of-Class Assignments

- 1) **Reading:** lecture notes; course materials; textbook chapters; articles; manuals; content on websites
- 2) **Written:** irrigation and construction plan preparation; assignment drafts; summaries; presentations; content for projects.
- 3) **Other:** exercises and projects using information from the class about irrigation design, installation, maintenance, and troubleshooting

Texts and References

- 1) Required (representative examples):
 - a. Hunter. *Product Catalog: Residential & Commercial Irrigation*. Hunter Industries Incorporated, 2024, https://www.hunterirrigation.com/sites/default/files/Hunter_Catalog_US.pdf
 - b. Netafim. "Protected Crops." Netafim.com, 2026, <https://www.netafim.com/en/products-and-solutions/protected-crops>
 - c. Rain Bird. *Landscape Irrigation Products Catalog*. Rain Bird Corporation, 2023, https://www.rainbird.com/sites/default/files/media/documents/2022-11/d42139_2023_dom_turf_catalog_v3_eng.pdf
- 2) Supplemental: *Irrigation Systems: Theory and Practices*, Davis Twomey, 2015 ISBN-13: 978-1632394378

Student Learning Outcomes

Upon successful completion of this course, students will be able to:

- 1) Interpret landscape construction plans to construct or install various irrigation components used in residential and commercial landscapes.
- 2) Install and analyze problems related to irrigation system components including: sprinklers, drip emitters, pipe, valves and controllers.
- 3) Describe code and design requirements for installation of irrigation and drainage systems.