WEST VALLEY COLLEGE
Course Outline

Department: Architecture

Course Number and Title: ARCH 076 - Landscape Construction Technology

Length of course in weeks: 16
Units: 3
Total Class Hours/Week: 5
Lecture Hours/Week: 2
Lab Hours/Week: 3

Grade Type: Grade/Credit/No Credit

Catalog Description: This course is a study of the landscape architecture technical implementation with an emphasis on basic principles of site layout, grading and drainage, earthwork computations, irrigation systems, landscape construction materials, and details.

Schedule Description: This course is a study of the landscape architecture technical implementation with an emphasis on basic principles of site layout, grading and drainage, earthwork computations, irrigation systems, landscape construction materials, and details.

Prerequisite:
MATH 104, Plane Geometry

Recommended Preparation:
MATH 103, Elementary Algebra or
MATH 103R, Elementary Algebra

Course Outcomes: Student Learning Outcomes

> **Outcome:** Students will demonstrate basic landscape architectural implementation techniques and details that represent industry graphic standards.
> **Assessment:** Final project.

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

1. Prepare and present basic implementation plans and supporting documentation for site layout.
2. Prepare and present basic grading and drainage plans.
3. Prepare and present plans for a simple irrigation system.
4. Prepare and present common construction details related to landscape implementation.

Assessment: Students in this course will be graded base on the following four categories:

1. **Writing Assignments:** research reports
2. **Problem Solving Demonstrations:** exams, quizzes, and homework problems
3. **Skill Demonstrations:** class and exam performances
4. **Examinations:** multiple choice, true/false, essay, matching items, and completion of final Project

Repeatability: 1 time

Methods of Instruction: Lecture & Lab

Lecture Content:

1. Site Engineering is Design.	6.00 %
2. Grading Constraints.	7.00 %
3. Contours and Form.	6.00 %
4. Interpolation and Slope.	6.00 %
5. Grading of Simple Design Elements.	6.00 %
6. Grading Process.	6.00 %
7. Soils in Construction.	7.00 %
8. Earthwork.	6.00 %
9. Storm Water Management.	6.00 %
10. Soil Erosion and Sediment Control.	6.00 %
11. Determining Rates and Volumes of Storm Runoff: The Rational and Modified Rational Methods.	6.00 %
12. Natural Resources Conservation Service Methods of Estimating Runoff Rates, Volumes, and Required Detention Storage:	7.00 %
13. Designing and Sizing Storm Water Management Systems.	6.00 %
14. Site Layout and Dimensioning.	7.00 %
15. Horizontal Road Alignment.	6.00 %
16. Vertical Road Alignment.	6.00 %

Lab Content:

1. Basic principles of site surveying and layout	15.00 %
2. Interpretation of topographic contours	12.00 %
3. Basic site grading and drainage	12.00 %
4. Basic earthwork computations	12.00 %
5. Introduction to irrigation systems	12.00 %
6. Introduction to common construction materials	12.00 %
7. Basic preparation and presentation of implementation plans, details and specifications	25.00 %

Critical Thinking: Create a series of site sections from a topographic map of a sloped site and a programmatic requirement to add a road or drive from the top to the bottom of the slope.

College Level Required Reading, Writing, and other Outside-of-Class Assignments: Over a 16 week presentation of the course, three hours per week are required for each unit of credit. Two hours of independent work done out of class are required for each hour of lecture. Outside of the regular class time the students in this class will be doing the following outside of class:

- **Study:** 1.00 additional hour
- **Problem solving activity or exercise:** 2.00 additional hours
- **Practice Skills:** 1.00 additional hour

Textbooks:

Strom, Steven & Nathan, Kurt & Woland, Jake. Site Engineering for Landscape Architects. 5th ed. John Wiley & Sons, Inc., 2009.ISBN: 9780470138144