Las Positas College
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Course Outline for HORT 54

PLANTING MEDIA & NUTRITION

Effective: Fall 2004

I. CATALOG DESCRIPTION:
HORT 54 — PLANTING MEDIA & NUTRITION — 2.00 units

Soil classification, formation, and natural characteristics. Physical and chemical properties of soil and effect on plant growth and development. Propagating and planting media, soil substitutes and amendments to improve and promote plant growth. Methods and materials related to plant, soil, water, and nutrient relationships to enhance plant growth and development. Plant nutrition, essential nutrients required for plant growth and healthy development. Fertilizer materials, origin, use, and application.

2.00 Units Lecture

Strongly Recommended
HORT 50 - Introduction to Horticulture

Grading Methods:
Letter or P/NP

Discipline:

	MIN
Lecture Hours:	36.00
Total Hours:	36.00

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

III. PREREQUISITE AND/OR ADVISORY SKILLS:

Before entering this course, it is strongly recommended that the student should be able to:

A. HORT50

IV. MEASURABLE OBJECTIVES:

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

A. identify basic soil texture types;
B. determine quality, use and suitability of soils for garden and landscape use;
C. perform basic soil texture, structure and pH tests;
D. demonstrate knowledge of soil amendments, soil substitutes, their use and application;
E. apply principles of good soil, water, and fertilizer management related to gardens, landscapes and horticulture plants and crops;
F. identify plant nutrient deficiencies and soil related problems;
G. select fertilizers and/or plant nutrient materials for specific plant species growing in specified cultivated and non-cultivated environmental conditions.

V. CONTENT:

A. Soil formation processes and soil classification
B. Soil horizon development and soil profile
C. Soil texture classification, structure, and physical properties
D. Modification of the soils physical properties to improve plant growth
E. Organic matter types and soil amendments, uses and application
F. Composition of organic matter
G. Organic matter decomposition and composting
H. Carbon: Nitrogen ratio and its relation to plant growth
I. Inorganic soil amendments, uses and application
J. Soilless materials, mixtures for potted plants and container growing, use and application
K. Chemical properties of soil
L. Cation exchange and its effect on plant nutrition
M. Soil pH, its importance and effect on plant growth and nutrition
N. Correction of soil acidity and alkalinity problems
O. Plant nutrition, soil fertility, and fertilizers
P. Essential plant nutrients for plant growth and development
Q. Plant nutrient classification, function in plants and deficiency symptoms
R. Plant nutrient sources, fertilizer materials, uses and application to garden, landscape, and horticulture plants and crops

S. Soil salinity, soil contamination, and correcting problems

VI. METHODS OF INSTRUCTION:
A. **Lecture** -
B. **Guest Lecturers** -
C. Media presentations and examples
D. **Field Trips** -
E. **Discussion** -

VII. TYPICAL ASSIGNMENTS:
A. Weekly reading assignments in texts B. Field trips to specified locations C. Laboratory and field projects

VIII. EVALUATION:
A. **Methods**

B. **Frequency**

1. Three written exams equally spaced during the semester
2. Quizzes at instructor's discretion
3. One report and term paper

IX. TYPICAL TEXTS:
1. Nyle Brady & Ray Weil *Elements of the Nature and Properties of Soils.* 12th ed., Prentice Hall, 2000.
2. Edward Plaster *Soil Science and Management.* 4th ed., Thompson, Delmar, 2003.
3. Soil Improvement Committee, California Fertilizer Assoc. *Western Fertilizer Handbook.* 9th ed., The Interstate Printers & Publishers, Inc. , 1995.

X. OTHER MATERIALS REQUIRED OF STUDENTS: