

Tuesday - 6:00 to 8:05 P.M. - Rm. PHY 112
Thursday - 6:00 to 9:10 P.M. - Rm. PHY 112

My Office Phone No.: (310) 532-3670 x5359

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My E-mail at Home: ronlafond@verizon.net

Office Hours:

3:00 to 4:00 PM Tuesdays and Thursdays; 5:00 to 6:00 PM Wednesdays

1:30 to 2:00 PM on Saturdays

Or by appointment

Course Description: This course examines the origin, formation, structure, and composition of soils and the elements of plant nutrition. Soil analysis and methods of determining proper amounts of fertilizer and amendments will be explored. The effects of different fertilizers and their application will also be discussed. Two hour lecture and three hour lab per week.

Student Learning Outcome: The successful student of Soils and Fertilizers should be able to demonstrate an understanding, in writing as well as performing the appropriate calculations to determine soil texture, bulk density, soil reaction (pH), soil structure and soil horizons. The successful Soils and Fertilizers students should also be able to express an understanding, in writing, of soil fertility, the essential plant macro-nutrients, secondary nutrients and micro-nutrients and how they affect plant growth, health and vigor.

Course Objectives:

Compare and contrast different soils and their compositions

Employ the techniques of soil sampling

Analyze the effect of pH, salinity, toxicity, and water movement on a plant

Discuss the roles of fertilizers in plant growth

Construct a comprehensive soil fertilizer and plant management plan

Select the appropriate nutrients and amendments required for quality plant growth and calculate required amounts

Diagnose signs of nutrient deficiencies and propose a remedy

Compare and contrast methods of fertilizer application

Evaluate and interpret nutrients listed on fertilizer labels

Perform a soil analysis, interpret the data, and make specific recommendations

Text Books:

Soils and Our Environment, 11th edition; Raymond Miller and Duane T. Gardiner, Prentice Hall

Western Fertilizer Handbook, Western Fertilizer Handbook (9th edition), California Plant Health Association; Publisher: Prentice Hall

Quiz and Examinations:

There will be 3 quizzes and 2 midterms roughly evenly spaced through the semester. Quizzes and tests will commence at the beginning of Lecture. These quizzes and tests can cover any material that we have covered since the beginning of the semester. I do this because the final is comprehensive.

There are two mid-term exams about 6 weeks and 12 weeks into the semester.

The final will be held during the last class session.

Grading:

3 Quizzes - 50 points each	150 points
2 Mid Terms - 150 points each	300 points
6 Lab Assignments	150 points
Homework Assignments	150 points
Final Examination	250 points
	1000 points possible

Drop Policy: The last day to drop the class without a "W" is September 25th. The last day to drop the class with a "W" is November 20th. Students can be dropped due to excessive absences. Excessive absences are defined as missing three classes without notification to the instructors. The College drop dates can be found on inside cover of the Fall 2009 Class Schedule.

Cell Phone/Pager Policy: All cell phones and pagers must be turned off or put on a vibration setting. If you have to take a call, take it away from the rest of the class. If you are on the phone excessively instead of lecture/walkabout you may be dropped from class. Texting during class will not be tolerated.

College Services: There are several services available to the students of El Camino College. These services include: Tutoring, Basic Skills Lab, Math Lab, Health Center, Disabled Students Center, and more.

Special Resource Center: Students with disabilities who believe they may need accommodations in this class are encouraged to contact the Special Resource Center on campus as soon as possible to better ensure such accommodations are implemented in a timely fashion. You may also contact me privately to discuss your specific needs.

Basic Course Outline coincides with the necessary reading from the text book: *Soils in Our Environment* and the *Western Fertilizer Handbook*.

Soils in Our Environment

Chapter 1 - Soil Composition and Importance

- Definition of soil
- Origin of soils
- History of soil science
- Soil use and misuse

Chapter 6 - Soil Formation and Morphology

- Weathering and forces of soil formation
- Parent materials and landforms
- Soil horizons
- Soil mapping, GIS and GPS

Chapter 2 - Soil Physical Properties

- Soil texture
- Soil structure
- Particle density and bulk density
- Soil porosity, permeability and infiltration rates
- Compaction and other physical properties

Chapter 3 - Soil Water Properties

- Water retentive forces
- Soil water descriptions and categories
- Soil water reservoirs
- Soil water content - measurements and calculations
- Water movement in soils
- Water use by plants
- Water conservation and soil management practices

Chapter 4 - Soil Chemical Properties

- Soil clay particles
- Colloids and their properties
- Cation and anion exchange and adsorption
- Soil reaction (pH)
- Soil buffers

Chapter 8 Acidic Soils & Salt-Affected Soils

- Sodic soils
- Saline soils
- Alkaline soils
- Compacted soils
- Heavy clay soils

Western Fertilizer Handbook

To be announced . . .