Soil Fertility
(3.0 credits)

Normally Offered: Fall every year. By Joseph Heckman.

Pre-requisites and other registration restrictions:
No pre-requisites, however, taking a general soils course before Soil Fertility is suggested.

Format: Two 80-minute lectures

Description:
Soil fertility is concerned with the productivity and health of plants and animals in relation to soil conditions.

Learning Goals:
• Know the function of each essential nutrient or element in plants and animals as derived from soils.
• Understand current issues in soil fertility and nutrient management in an ecological context.
• Know how each nutrient cycles through soils, plants, animals, and atmosphere.
• Know how to read a soil test report, develop soil fertility recommendations, and manage nutrients.

Measures of Assessment:
• Students will be quizzed seven times during the semester on material covered in lecture plus a final exam.
• Five short homework assignments.
• Class attendance required.

Topics:
• Essential and beneficial elements for plants and animals
• Toxic elements
• Soil testing
• Plant tissue analysis
• Soil organic matter and soil biology
• Soil fertility management for annual and perennial crops
• Soil fertility management in organic and conventional farming systems
• Field trip to Rutgers University Soil Test Lab

**Required and Recommended Course materials:**
Textbook:

**Policies for Exams, Assignments, Attendance, and Grading**

Quizzes (7 quizzes, 10 points each) = 70 points

Class attendance and participation = 10 points

Homework = 10 points

Final Exam (cumulative) = 10 points

Total = 100 points

Final grades:

A = 90-100 points
B = 80-89 points
C=70-79 points
D = 60-69 points

Notify instructor if you have any special learning needs. Participation in classroom discussion is welcome and encouraged. The course outline and syllabus may be modified if there are extenuating circumstances.

Academic Integrity: Any documented incident involving academic dishonesty on exams or papers will result in a failing grade for the course and possible dismissal from the university.

**Other Information:**
Rutgers University Soil Test Lab: [http://njaes.rutgers.edu/soiltestinglab/](http://njaes.rutgers.edu/soiltestinglab/)