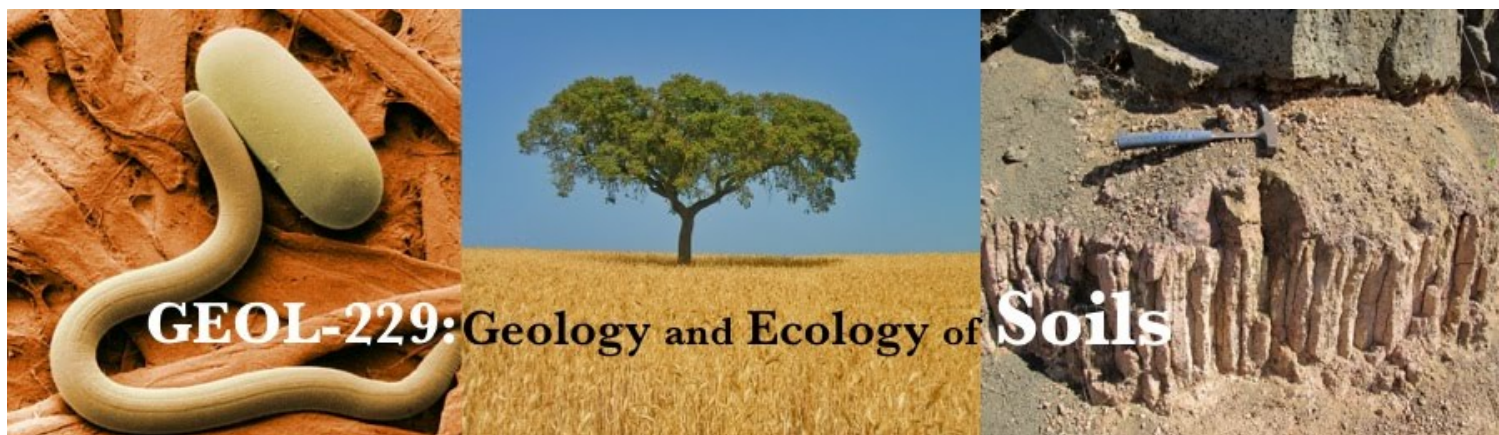


# Geology and Ecology of Soils - Nick Bader

- Read Later



Left: Colorized SEM image of a soybean cyst nematode and an egg (photo: WSU Extension)

Center: Oak tree on a wheat field in the Alentejo region, Portugal (photo: Faísca; Creative Commons)

Right: paleosol near Elgin, Oregon

## Welcome to the Geology and Ecology of Soils!

**Nick Bader, Spring 2012**

[Log into CLEo](#) for more course resources

*Nick's office:* Hall of Science 150

*Office hours:* Wednesdays 10 am - noon,

Fridays 2 - 4 pm

*Lectures:* Olin 315;

Mon/Tues/Thurs 11 - 11:50 am

## Course description

Soils provide nutrients, water and support for growing plants, host an amazing variety of organisms, and even influence global climate. This class will focus on the dynamic systems in soil and on the interactions between soils and larger ecosystem properties. Course topics will include pedogenic processes, agricultural ecosystems, the interpreta-

tion of paleosols, and the role of soils in the global biogeochemical cycling of organic carbon and nutrients.

## What will this class do for you?

After this class, I hope you will:

- Understand soils as dynamic, living systems, not simply as inert media supporting plant growth
- Be familiar with the under-appreciated cast of characters in the soil biota
- Understand the way soils interact with water and nutrients moving through them
- Be able to intelligently converse about soil carbon sequestration, soil conservation, and other pertinent environmental issues
- And finally, I hope those of you who are interested in farming or gardening will leave this class with practical insight about the invisible processes occurring in your own backyards.

## Course structure

Each week, there will be three one-hour lecture periods designed to introduce fundamental concepts of soil science and ecology. Four exams will test your mastery of the materials we discuss. We will have one field trip and a research project to provide hands-on experience.

## Course materials

- Required textbook: N.C. Brady and R.R. Weil, *Elements of the Nature and Properties of Soils* 3e. Prentice Hall, 2009.

## Field Trip

There will be one optional (but recommended) field trip held on a Saturday. See the schedule for the date. Wear appropriate clothing (e.g. not bare feet or 6-inch stiletto heels), and bring a notebook and pencil.

## Finding me

I have official office hours (see the table at the top of this page) when you are most likely to find me in my office in Hall of Science 150. However, you are welcome to bring questions to my office whenever the door is open. You may want to [check my schedule](#) for the best times to find me.

## Grading

I use a standard system for grading based on your percentage of total possible points:

### Percentage Grade

97 - 100%	A+
93 - 96%	A
90 - 92%	A-
87 - 89%	B+
83 - 86%	B
80 - 82%	B-
77 - 79%	C+
73 - 76%	C
70 - 72%	C-
67 - 69%	D+
63 - 66%	D
60 - 62%	D-
< 60%	F

## Exams (60% of the class grade)

There will be four exams, each worth 15% of the course grade. Exams will primarily cover material from lecture, although material from the readings in the text can also appear on exams. The exams are not cumulative, except insofar as understanding material from earlier in the class may be necessary to understand later material. The first three exams will be held during the lecture periods indicated on the course schedule; the fourth exam will be held during the final exam slot (also on the course schedule). This time is set by the registrar and is not negotiable. If circumstances beyond your control force you to miss an exam, **please contact me ahead of time** by phone, email, or in person to discuss it.

## Project (40% of the class grade)

This class will work in groups on several related soil research projects. I will provide details later.

## **Attendance**

I do not enforce your attendance in lecture, and if you are already an expert you may be able to ace this course without coming to any lectures. However, there is no doubt that your attendance habits will affect your grade! The simplest way to excel is to attend all the lectures, since the exams will cover materials discussed in lecture.