



Course Syllabus: Soil Ecology

The University of Toledo

Department of Environmental Sciences, College of Natural Sciences and Mathematics

Course Number: EEES 4250/5250

Instructor:	Dr. Mike Weintraub	Term:	Fall 2015
Email:	michael.weintraub@utoledo.edu	Class Location:	Bowman-Oddy 1014
Office Hours:	Tuesdays & Wednesdays 1:30-4:00PM	Class Day/Time:	Mondays & Wednesdays 5:00-6:15PM
Office Location:	BO 3001-B	Credit Hours:	3
Office Phone:	419.530.2585		

COURSE/CATALOG DESCRIPTION

Soil biological processes are fundamental to life on land. This course will introduce basic ecological concepts about soil biodiversity, decomposition, nutrient cycling, and plant-soil interactions to upper level undergraduate and graduate students.

STUDENT LEARNING OUTCOMES

At the end of this course students should be able to describe and explain:

- 1) what soils are and how they form
- 2) the nature and importance of soil organic matter
- 3) the extent and importance of soil biodiversity
- 4) the carbon, nitrogen, and phosphorus cycles
- 5) the influences of plants on soil processes
- 6) plant-soil competition for nutrients
- 7) the effects of herbivores on soil nutrient availability and plant community composition
- 8) the potential effects of global environmental changes on soils

PREREQUISITES AND COREQUISITES

EEES 3050 or EEES 4240

REQUIRED TEXT

Richard Bardgett, The Biology of Soil: A Community and Ecosystem Approach, Oxford University Press; ISBN 0-19-852503-6

UNIVERSITY POLICIES

The University is an equal opportunity educational institution. Please read [The University's Policy Statement on Nondiscrimination on the Basis of Disability Americans with Disability Act Compliance](#).

Academic Accommodations

The University of Toledo is committed to providing equal access to education for all students. If you have a documented disability or you believe you have a disability and would like information regarding academic accommodations/adjustments in this course please contact the [Student Disability Services Office](#).

ACADEMIC POLICIES

Academic dishonesty: Academic dishonesty of any kind is prohibited. Students who violate the University's policy should expect disciplinary action. University of Toledo's academic dishonesty policy statement can be viewed at <http://www.utoledo.edu/dl/students/dishonesty.html>



COURSE EXPECTATIONS

- Ask questions when you encounter something unfamiliar – chances are someone else has the same question
- Participate in discussions – this will count toward your grade
- You are expected to do the assigned reading on time so that you are prepared for class
- The lectures will generally follow the text, and we spend roughly 2 weeks on each topic

Attendance: Although attendance is not a requirement, your presence or absence at each class will impact your grade. Success in this course is strongly correlated with attendance. If you miss a class, it is your responsibility to obtain any class notes or pertinent information from a fellow student.

Courtesy: Please remember that all others in this classroom have paid for this time. Any distractions (conversations, cell phones, mp3 players, social media, shopping, etc.) deplete the value of the course to others, regardless of the distraction you cause for yourself. If you attend a class session, I ask you to stay for the entire time period. If you must arrive late or leave early, please be considerate of the others who have paid for this course and find a seat near the exit.

All email correspondence will be sent to your UT account.

GRADING

Course grades will be based on a series of take home assignments (75%), and a final research paper (25%). There are no exams in this course.

Late homework will be docked 10% / day (you can submit electronically). A grade of incomplete (IN) is only given to students with medical reasons and with approval of the course instructor. Grades of PR (progress) are not issued under any circumstances.

If you're going to miss some class time, BE PROACTIVE about getting your assignments in –make arrangements for turning in your work in advance.

Grading Scale:

You will be assigned a letter grade for the course. All numerical percentage marks are converted to letter grades using the following scale:

A	94% +	A-	90-93	B+	87-90
B	84-86	B-	80-83	C+	77-80
C	74-76	C-	70-73	D+	67-70
D	64-66	D-	60-63	F	Less than 60



Schedule of Topics and Assignment Due Dates

Note that this schedule is tentative and subject to change

#	DATE	TOPIC	CHAPTER	ASSIGNMENT DUE
1	August 24	Introduction to soils	1	
2	August 26	Soil texture and structure, pH	1	
3	August 31	Soil organic matter	1	
4	September 2	Soil biodiversity	2	
	September 7	No Class! Labor Day		
5	September 9	Soil biodiversity	2	Assignment 1 Due
6	September 14	Soil biodiversity	2	
7	September 16	Soil food webs	2	
8	September 21	Soil trophic dynamics	2	
9	September 23	Soil organism interactions	3	
10	September 28	Decomposition	3	
11	September 30	C cycling	3	Assignment 2 Due
	October 5	No Class! Fall Break		
12	October 7	N cycling	3	Final Project Research Topic Due
13	October 12	N cycling	3	
14	October 14	P cycling	3	
15	October 19	Ecological stoichiometry	3	
16	October 21	Plant effects on soils	4	Assignment 3 Due
17	October 26	Mycorrhizae	4	
18	October 28	N fixation	4	Final Project Revised Research Topic + Summaries of 3 papers due
19	November 2	Plant pests; Plant-microbe competition	4	
20	November 4	Herbivory effects	5	
21	November 9	Peer review of outlines	5	Final Project Abstract, Outline, & References Due
	November 11	No Class! Veteran's Day		Assignment 4 Due
22	November 16	Herbivory effects	6	
23	November 18	Climate change	6	
24	November 23	Climate change & soil C sequestration	6	
	November 25	No Class! Thanksgiving Holiday	6	Final Project Draft Due
25	November 30	Effects of N deposition	6	
26	December 2	Effects of N deposition	6	Assignment 5 Due
27	December 7	Acid deposition, invasive species	6	
28	December 9	Conclusions & wrap up	7	Final Projects Due