Course Syllabus
FW (CH, ENVE) 5517 – Soil Biogeochemistry
School of Forest Resources and Environmental Science
Spring 2012

Instructor Information
Instructor: Paul V. Doskey, PhD, Professor
Office Location: 805 Dow
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Office Hours: MWF 11:00 AM – 12:00 PM or by appointment

Course Identification
Course Number: FW (CH, ENVE) 5517
Course Name: Soil Biogeochemistry
Course Location: 143 U.J. Noblet Forestry Building
Class Times: T/Th 9:35 AM – 10:50 AM

Course Description/Overview
The course studies the relationship between soil composition and biogeochemical cycles of the elements. Responses of biogeochemical processes in agricultural, forest, and wetland soils to changes in landuse, biodiversity, nutrient supply, plant stressors, and climate change will be discussed. Specific topics include chemical and biological roles in the cycling of carbon, nitrogen, inorganic nutrients, and metals in soils and generation of climate-forcing gases by microbial transformations of carbon and nitrogen substrates.

Course Learning Objectives
The objectives of the course are (1) to develop ‘big-picture’ and cross-disciplinary thinking, (2) to learn how to write a peer-reviewable, state-of-the-science journal article on a global-change aspect of your research or interests related to soil biogeochemistry and to make a keynote-style presentation, and (3) to learn how to formulate a testable hypothesis for a scientific issue in soil biogeochemistry, to develop a collaborative research proposal to test the hypothesis, and to make a group presentation of the project.
Course Resources

Course Website(s)
- Blackboard <http://www.courses.mtu.edu>

Required Textbook

Reference Textbooks

Grading Policy
Grades will be based on completion of a peer-reviewable journal article and a collaborative research proposal that includes every student in the class as investigators. Attendance and participation in class will be taken into consideration if your final grade is between letter grades.

University Policies
Academic regulations and procedures are governed by University policy. Academic dishonesty cases will be handled in accordance the University's policies.

If you have a disability that could affect your performance in this class or that requires an accommodation under the Americans with Disabilities Act, please see me as soon as possible so that we can make appropriate arrangements. The Affirmative Action Office has asked that you be made aware of the following:

*Mitchigan Tech complies with all federal and state laws and regulations regarding discrimination, including the Americans with Disabilities Act of 1990. If you have a*
disability and need a reasonable accommodation for equal access to education or services at Michigan Tech, please call the Dean of Students Office, at 487-2212. For other concerns about discrimination, you may contact your advisor, department head or the Affirmative Action Office, at 487-3310

**Academic Integrity:**
http://www.studentaffairs.mtu.edu/dean/judicial/policies/academic_integrity.html

**Affirmative Action:**
http://www.admin.mtu.edu/aae/

**Disability Services:**
http://www.admin.mtu.edu/urel/studenthandbook/student_services.html#disability

**Equal Opportunity Statement:**

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**Course Lecture Topics**

Soil Biogeochemistry, Atmospheric Composition, and the Climate System  
Soil Carbon Cycle  
Microbial Biochemistry  
Organic Matter Decomposition in Soils  
Humification  
Soil Organic Matter Chemistry  
Nitrogen Cycle  
Macronutrient Cycles – Phosphorus and Sulfur  
Micronutrient and Trace Metal Cycles

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**Course Schedule and Assignment Due Dates**

February 9 – no class, Winter Carnival  
March 2-12 – no class, Spring Break