Course Syllabus
ATM (CH, ENVE) 5519 – Atmospheric Biogeochemistry
College of Engineering
Spring 2013

Instructor Information
Instructor: Paul V. Doskey, PhD, Professor
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Office Hours: Open Door Policy

Course Identification
Course Number: ATM (CH, ENVE) 5519
Course Name: Atmospheric Biogeochemistry
Course Location: 320 Grover C. Dillman Hall
Class Times: TR 9:35 AM – 10:50 AM

Course Description/Overview
The course bridges the atmospheric, aquatic, and terrestrial sciences and examines the relationship between atmospheric composition, climate, and the major element cycles of the Earth. Responses of the atmosphere to changes in landuse, biodiversity, nutrient supply, plant stressors, and climate change will be discussed. Specific topics include the evolution of the atmosphere, gas and aerosol radiative forcing of climate, trace gas exchange and biogeochemical cycles, and the global cycles of water, carbon, nitrogen, sulfur, and halogen species.

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 journal article on the global cycle of a chemical species that is related to your research or interests, and (3) to learn how to work with scientists of different disciplines and skills to develop a collaborative research proposal on a global-change issue.
Course Resources

Course Website(s)
• Canvas <https://mtu.instructure.com/login>

Suggested Textbooks

Grading Policy

Grades will be based on completion of a peer-reviewable journal article and presentation and a collaborative research proposal and group presentation that includes every student in the class as investigators. Attendance, participation, and discussion outside of the classroom are taken into consideration when compiling final 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:

Michigan 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/aaop/

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

Equal Opportunity Statement:
**Course Outline**

Introduction and Course Overview  
Evolution of the Atmosphere  
Gas and Aerosol Radiative Forcing of Climate  
Trace Gas Exchange and Biogeochemical Cycles  
Water Cycle  
Carbon Cycle  
  - Carbon Dioxide  
  - Carbon Monoxide  
  - Methane  
  - Trace Organic Carbon Gases  
  - Carbonaceous Aerosol  
Nitrogen Cycle  
  - Reduced Nitrogen  
  - Oxidized Nitrogen  
Sulfur Cycle  
Halogen Cycle

**Course Schedule**

Paper Due Dates  
  - Title – February 5  
  - Rough Draft – March 29  
  - Presentations – April 23 and 25

Proposal Due Dates  
  - Rough Draft – March 29  
  - Presentations – Week of April 29

No Class – February 7, March 11-15.