EAS/CHEM 4740 Atmospheric Chemistry

Instructor:

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Teaching Assistants:

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Textbook:

Introduction to Atmospheric Chemistry by D.J. Jacob, Princeton University Press, 1999, ISBN 0-691-00185-5. http://www-as.harvard.edu/people/faculty/djj/book/

Grading:

30% Participation/in-class assignments
20% Homework/0ut of class assignments
30% Exams (*Tuesday, Feb 19; Tuesday, April 9*)
20% Final (*Thursday, May 2, 11:30-2:20*)

My Policies:

- Anything turned in late will be marked down 10% per day.
- I will get graded materials will be returned to you within one week.
- Eating and drinking are only allowed in class if you bring some for everyone.
- Homework is due on the specified day *before* lecture begins. It is your responsibility to give it to me at the front of class as you walk in.
- I will not be late for class. Nor will you. That would be rude.
- In class worksheets are due at the end of each lecture. Make sure the names of all your group members are on the paper(s). Turn them in to me as you leave class.
- Collaboration is an important part of learning. You may work together on homework, but I expect each of you to have your own answers. Copying directly will not help you learn.
- You are expected to abide by the Georgia Tech Honor Code – www.honor.gatech.edu, the United States Tax Code and all Federal Regulations.

Course Topics:

I. Atmospheric Structure and Composition
II. Stratospheric Chemistry
    a. Ozone layer – creation and destruction
III. Tropospheric Chemistry
    a. "Clean Air"
    b. Smog
    c. Ozone
    d. Aerosols
IV. Research in Atmospheric Chemistry
V. Our changing atmosphere
    a. Greenhouse effect
    b. Breathable and asthma producing air
    c. Feedbacks
VI. Crazy ideas for solving these problems

Book Chapters:

1. Measures of Atmospheric Composition
2. Atmospheric Pressure
3. Simple Models
4. Atmospheric Transport
5. The Continuity Equation
6. Geochemical Cycles
7. The Greenhouse Effect
8. Aerosols
9. Chemical Kinetics
10. Stratospheric Ozone
11. Oxidizing Power of the Troposphere
12. Ozone Air Pollution
13. Acid Rain