

ATS621, Fall 2021

Atmospheric Chemistry

Tuesday, Thursday: 11 – 11:50, ATS 101

Instructor: Prof. Emily Fischer

Atmospheric Science Bldg., Room 203

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Teaching Assistants: Madison Shogrin

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Julieta Juncosa Calahorrano

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Student learning goals: **1)** Understand quantitatively how emissions, transport, chemistry and deposition impact atmospheric chemical composition; **2)** Explain the chemical and physical mechanisms behind ozone depletion, air pollution and acid rain from the molecular to global scales; **3)** Develop skills needed for further specialized study on atmospheric composition.

Emily's Office Hours: Friday 10 - 10:50 PM

Madison's Office Hours: Monday 2 - 2:50 PM and Wednesday 10 - 10:50 AM

Julieta's Office Hours: Tuesday / Thursday 10 - 10:50 AM

Required / Primary Texts:

Introduction to Atmospheric Chemistry, D.J. Jacob Princeton University Press, 1999

PDF versions of the chapters can be obtained here: [http://acmg.seas.harvard.edu/people/faculty/djj/book/Atmospheric Chemistry and Physics](http://acmg.seas.harvard.edu/people/faculty/djj/book/Atmospheric_Chemistry_and_Physics), Seinfeld and Pandis, Wiley-Interscience, 2006.

Corresponding readings are listed on the syllabus, and an online version can be obtained through the CSU library: <https://lib.colostate.edu/>

Course Materials: There is a CSU Canvas site for this class. All course materials will be posted there.

Other Helpful Atmospheric Chemistry Texts:

1. Chemistry of the Upper and Lower Atmosphere, Finlayson-Pitts and Pitts, Academic
2. Introduction to Atmospheric Chemistry, P.V. Hobbs Cambridge University Press
3. Physical Chemistry for the Atmospheric Sciences P.V. Hobbs Ibid.

Course Structure and Grading:

Periodic homework is assigned and is due at the start of the class indicated. No late homework assignments will be accepted without prior approval. Incorrect answers on homework assignments can be resubmitted for the opportunity to earn back 50% of the points subtracted during the first grading, but the corrected homework assignments must be returned to the TA by the start of the following class. There will be two exams. Exams are closed book and closed notes.

Grades are weighted as follows:

Homework: 40%

Exam 1: 20%

Exam 2: 20%

Project: 20%

This year the project will be done in groups. Student groups will be provided with a dataset and relevant papers. You will work collectively to analyze the data, relate it to the class, and present a summary of your findings to the class.

Statement on Academic Integrity

This course will adhere to the CSU Academic Integrity Policy as found in the General Catalog

(<http://www.catalog.colostate.edu/FrontPDF/1.6POLICIES1112f.pdf>) and the Student Conduct Code

(<http://www.conflictresolution.colostate.edu/conduct-code>). At a minimum, violations will result in a grading penalty in this course and a report to the Office of Conflict Resolution and Student Conduct Services.

Contact Hours: 2 (At least 2 hours of effort are expected to complete homework assignments outside of class for each hour of class time.)

