ATS621, Fall 2024
Atmospheric Chemistry
Tuesday and Thursday: 11 – 11:50, ATSW Classroom

Instructor:
Prof. Emily Fischer
Atmospheric Science Bldg., Room 203
evf@rams.colostate.edu

Teaching Assistants:
Lena Low (lena.low@colostate.edu)
Daniela Guevara
(daniela.guevara@colostate.edu)
Emily Lill (emily.lill@colostate.edu)

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.

TA Office Hours: Mondays and Wednesdays 10-11 AM, Thursdays 12-1 PM; ATS 100

Required / Primary Texts:
Introduction to Atmospheric Chemistry, **D.J. Jacob** Princeton University Press, 1999
PDF versions of the chapters can be obtained here:
https://acmg.seas.harvard.edu/education/introduction-atmospheric-chemistry

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. Late homework assignments are not 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 following class. There will be quizzes and one final exam conducted using variable formats.

Grades are weighted as follows:
Homework: 40% Quizzes: 5% Midterm: 20% Exam: 20% Group Project: 15%

Student groups will be provided with a dataset and relevant papers pertaining to the project. Students will work collectively to analyze the data, relate it to the class, and present a summary of their findings.

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.

Inclusion Statement: CSU Atmospheric Science is a leading global institution, and as such, all members of our community regardless of race, ethnicity, culture, religion, sexual orientation, gender identity and expression, physical ability, age, socioeconomic status or nationality are welcome as equal contributors. We value and appreciate diversity, and we believe that diversity on our campus strengthens our entire scientific community. It is my intent that students from all backgrounds and perspectives be well-served by this course, that students' learning needs be addressed both in and out of class, and that the diversity that the students bring to this class be viewed as a resource, strength and benefit. Your suggestions are encouraged and appreciated. Please let me know ways to improve the effectiveness of the course for you personally, or for other students or student groups.