

ATS 716, Air Quality Characterization, Spring 2022
Tuesday/Thursday: 1 - 1:50 PM

Instructor: Dr. Emily Fischer, she/her, ATS 203, 970-491-8587, evf@atmos.colostate.edu

Office Hours: Tuesday/Thursday anytime when my office door is open

Course Description: Environmental justice requires adequate air quality monitoring. This course is centered on a service learning project where students partner with a community to design, plan, and execute a hypothesis-driven air pollution measurement campaign over the course of the semester. The students will conduct at least 6 weeks of measurements with a community, and they will analyze and synthesize data throughout the semester. At the end of the semester, students will present their findings to the community and make final data public. Students will be responsible for at least one educational activity in the community over the course of the semester. The STEM Center will serve as an independent evaluator with the goal of understanding the impact of the project activities on participating students and community members. Survey data will be collected among community organizers and members to assess whether participation in the campaign served identified needs, yielded applicable outcomes, and was a positive experience.

Course Learning Objectives: Upon completion of this class students will

1. Be able to identify examples of environmental injustice in an air pollution context, and possess an in-depth understanding of a particular environmental justice case in Colorado;
2. Be able to design, propose, and execute community-centered air pollution research;
3. Demonstrate competency with multiple new low-cost air pollution monitoring technologies;
4. Be able to communicate scientific findings centered on community concerns and insights.

Prerequisites: Interdisciplinary perspectives improve our understanding of environmental justice and our ability to act, and we welcome participation from graduate students from multiple departments. Students are expected to have some familiarity with the basics of air pollution (pre-requisite ATS 621 or equivalent), which will not be covered in this class. Students are also expected to have a basic familiarity with programming to facilitate data analysis. Students are free to use their language of choice (*e.g.*, Matlab, IGOR, R, Python). Please contact the instructor if you have questions.

Course Structure and Grading Criteria: Approximately 70% of the weeks will be structured as regular meetings during the scheduled times. Other periods during the semester will be scheduled based on project needs and student schedules. There will be several community meetings in the first few weeks of the class. These may occur outside regular working hours, and may be virtual or in-person. There will also be instrument testing, set-up, and tear-down periods. Instrument testing/familiarization will occur at the CSU ATS Campus. Instrument set-up and tear-down will occur in a local community within an hour drive of Fort Collins. Students must commit to participating in these aspects of the course in order to participate in the course. See schedule below. *Grades will be weighted as follows:*
Participation in Reading Discussions: 10%; Participation in Community Listening Sessions and Delivery of Findings: 20%; Design and Execution of Community Centered Field Campaign: 30%; Data Analysis and Within-Class Discussions: 35%; Delivery of Educational/Outreach Activity: 5%.

Behavioral Guidelines: The [Principles of Community](#) support the Colorado State University mission and vision of access, research, teaching, service and engagement. A collaborative, and vibrant community is a foundation for learning, critical inquiry, and discovery. Therefore, each member of the CSU community has a responsibility to uphold these principles when engaging with one another in this course. The course will adhere to the [CSU Academic Integrity Policy](#).

Important information for students:

Masks are required inside university buildings. You must also meet university vaccine or exemption requirements.

All students are expected and required to report to the COVID Reporter (<https://covid.colostate.edu/reporter/>) when:

- You suspect you have symptoms of COVID, regardless of whether or not you are vaccinated and even if your symptoms are mild
- You have tested positive for COVID through a non-CSU testing site, such as home test or test at a pharmacy
- You believe you may have been exposed to COVID go to the COVID Reporter and follow the guidance under “I believe I have been in close contact with someone who has COVID-19.” This guidance will depend upon your individual circumstances

You will not be penalized in any way for reporting symptoms or concerns.

Do not ask me as your instructor to report for you. It is your responsibility to report through the COVID Reporter promptly.

As your instructor I may not ask you about vaccination status or if you have COVID but you may freely volunteer to send me information from a public health official - if you have been asked to isolate or quarantine.

When you complete the COVID Reporter, the CSU Public Health office is notified. Once notified, that office will contact you and, depending upon each situation, will conduct contact tracing, initiate any necessary public health requirements and notify you if you need to take any steps.

If you do not have internet access to fill out the online COVID-19 Reporter, please call (970) 491-4600.

For the latest information about the University’s COVID resources and information, including FAQs about the spring semester, please visit the **CSU COVID-19 site:** <https://covid.colostate.edu/>.