

**FLORIDA INTERNATIONAL UNIVERSITY**  
**CHM5423 – ATMOSPHERIC CHEMISTRY**  
**SPRING 2021**

Instructor: Jeff Joens  
Office: CP 331; phone 348-3121 (voice mail)

Time: T, R 9:30am to 10:45am  
Room: remote/GL-139  
e-mail: joensj@fiu.edu

Webpage: [www.joenschem.com](http://www.joenschem.com)

Office hours: Tuesday and Thursday 11:00am to noon, Friday 2:00pm to 3:00pm

**MODIFICATION DUE TO CORONAVIRUS:** For now the class lectures will be done remotely via ZOOM. When (if) it becomes safe to do so we may have face-to-face classes later in the semester.

Prerequisites: Two semesters of undergraduate physical chemistry, or permission of the instructor.

Course objective: To provide an introduction to the important chemical and physical processes that take place in the Earth's atmosphere and their consequences.

Text: None. The class will be taught from handouts, review and research papers.

Grading:	2 hour exams (100 points each)	200 points
	Homework	100 points
	Final exam (comprehensive)	150 points
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	TOTAL	450 points

- Notes:
- 1) Final grades will be based on total accumulated points.
  - 2) The final exam will be comprehensive. You must take the final exam to pass the course.
  - 3) Exams will be take home exams. You will be allowed to use any resource BUT you are to work alone on the exam – no assistance from classmates or other students or problem solving sites such as Chegg.
  - 4) Excused absences from exams will be by permission of the instructor only. If you are forced to miss an exam, you are expected to notify me in a timely manner.
  - 5) Homework assignments will be given approximately once a week, and will be collected and graded. Late homework will not be accepted. All homework assignments will count, and the average grade on the homework assignments will count 100 poits towards your final grade. Homework solutions will be available on my web site.
  - 6) Cheating or assisting other students in cheating is a violation of University policy and will be punished.
  - 7) You are expected to retain old exams and other assignments for your records until after final course grades have been given.

## Tentative course outline

### Section 1

General properties of the atmosphere of the Earth and other planets  
Spectroscopy and photochemistry with applications to atmospheric chemistry  
Photochemistry and spectroscopy of important atmospheric species  
Kinetics with application to atmospheric chemistry  
Chemistry of carbon compounds in the troposphere

**First Exam**, Thursday, February 11<sup>th</sup>

### Section 2

Chemistry of nitrogen compounds in the troposphere  
Chemistry of sulfur compounds in the troposphere  
Acid deposition/precipitation  
Particulate matter in the atmosphere

**Second exam**, Thursday, March 18<sup>th</sup>

### Section 3

Stratospheric chemistry, ozone in the stratosphere  
Global climate change and global warming

**Final Exam** (comprehensive), Tuesday, April 20<sup>th</sup>, 9:45am to 11:45am (\*this will also be a takehome exam)

The above schedule is tentative. While I will likely not change the days for exams, there may be some changes in the material covered based on how quickly we proceed through the class material.