ATMOSPHERIC SCIENCES 3000- Professional Development in the Atmospheric Sciences

Fall 2017. 1.5 Semester Units. Second Half of Semester
703 WBB. MW 1:25-2:45 PM

Instructor: Professor John Horel. INSCC 483. Office (801) 581-7091 . Cell (801) 870-9450 . john.horel@utah.edu. Office hours: by appointment

Teaching Assistant: Nola Lucke. INSCC 484. nola.lucke@utah.edu. Office hours: by appointment

Advising questions for majors/minors: michelle.brooks@utah.edu. 817 WBB. (801) 581-6136. Office hours: by appointment

Online resources: Access via the Canvas CIS system

Text Book: There is no text book for this course, but there are plenty of reading assignments

Course Description:
This course provides an introduction to the atmospheric sciences profession and related environmental fields. An overview of career opportunities in government, industry, and education are discussed with opportunities to meet professionals employed in selected areas such as: broadcasting; air quality; operational (federal and military), road and fire weather forecasting; data science; and climate science.

Employment needs and technologies within environmental fields are undergoing rapid changes and students are likely to transition through diverse employment opportunities during their careers. Discussions of what is expected of scientists in the work place will be a focus for the course: ethics and misconduct; field safety; communicating effectively with your peers and the public; and basic concepts of what is required to complete work-related reports and research responsibly. The roles of scientists to communicate information related to topics such as climate change, air quality, and land use policies affecting water availability and wildfires in the urban-wildland interface will also be discussed.

A special opportunity this year is to be involved in the Outreach and Radar Education in Orography” (OREO) field project during November with the deployment of a Doppler on Wheels polarimetric radar. Undergraduate students may also enroll in a 1-credit Special Topics course to participate more fully than the limited opportunities afforded by this class.

Atmospheric science majors will have opportunities to hear about research activities within the department that may be of interest to them for required capstone projects.
At the end of the course, you will be able to:

- Discuss career paths of interest to you in the atmospheric sciences and related fields
- Recognize how the atmospheric state in the past, present, and future affects society widely in terms of air quality, climate change, public safety, wildfires, and road weather
- Demonstrate awareness of actions (plagiarism, misconduct, etc.) that adversely affect the credibility of the scientific profession

Course Format: Teaching and Learning Methods

- This is an active course that requires you to begin and complete assignments as they are assigned - you must complete and turn in electronically assignments prior to each class period. There is no credit for late work. These assignments will then be discussed by everyone during class. Failure to complete assignments by the beginning of class may cause you to not be able to participate in class web-based or instrumentation-based assignments
- Assignments required to be completed include: quick summaries of info "in the news", reading assignments and on-line quizzes; on-line COMET modules; and instrumentation laboratory.
- We will be visiting several off-campus facilities during the semester typically on Wednesday afternoon that will require transportation. We will carpool leaving at 1:00 PM and returning by 3:30 PM. If you have conflicts with classes or work on these dates/times then it is your responsibility to complete a makeup assignment in advance of the off-site visits.
- You are also strongly encouraged to attend weather discussions, which are held in 711 WBB on Tuesdays and Thursdays from 12:25-1:45 PM. You are required to attend at least one weather discussion during the semester and write a short report as a graded class assignment. If you have a class or work conflict for these class periods, then you must complete an on-line makeup assignment by week 3 of the semester.
- You will also participate in one OREO field campaign activity (on campus or off site) and write a short report as a graded class assignment.

Class Policies and Grading

Grades will be determined from class attendance, in-class assignments, and tours (30%) and assignments (70%). Plagiarizing, copying, or otherwise misrepresenting ones' work will not be tolerated and will be dealt with as harshly as permitted under University Policy. Do not break the scientific code of honor. Final grades are based on the following scale:
> 90% guarantees an A or A-; > 80% guarantees a B+, B, or B-
> 70% guarantees a C+, C, or C-; > 60% guarantees a D+, D, or D-
< 60% may result in an E. Cutoff points for the specific grades are identified to define reasonable distribution of grades.
## Course Outline

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<tr>
<th>Week 1</th>
<th>October 16. Introduction to the Department and atmospheric sciences</th>
<th>October 18. <strong>On-campus Instrumentation lab tour.</strong> Current and evolving technologies for observing the atmosphere</th>
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<td>Week 2.</td>
<td>October 23. The current and evolving landscape of weather forecasting in the public and private sectors</td>
<td>October 25. <strong>On-campus Ute Weather Center tour.</strong> Current and evolving methods for communicating environmental information via social media</td>
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<td>Week 3.</td>
<td>October 30. Emerging career opportunities in the private sector: solar and wind forecasting, hazard, crop, and event insurance, data analytics</td>
<td>Nov. 1. <strong>Off-campus tour (TV station, National Weather Service Forecast Office, Utah Department of Transportation, or local consulting firm)</strong></td>
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<td>Week 4.</td>
<td>Nov. 6. <strong>TBD. OREO field campaign activity.</strong></td>
<td>Nov. 8. <strong>Off-campus tour (TV station, National Weather Service Forecast Office, Utah Department of Transportation, or local consulting firm)</strong></td>
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<td>Week 5</td>
<td>Nov. 13. Air quality. <strong>On-campus Air quality lab and Nerdmobile tour</strong></td>
<td>Nov. 15. <strong>Off-campus tour (TV station, National Weather Service Forecast Office, Utah Department of Transportation, or local consulting firm)</strong></td>
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<td>Week 6</td>
<td>Nov. 20. Air force careers</td>
<td>Nov. 22. No class</td>
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<td>Week 7</td>
<td>October 30. Ethical and misconduct issues in environmental fields</td>
<td>Nov. 29. <strong>Off-campus tour (TV station, National Weather Service Forecast Office, Utah Department of Transportation, or local consulting firm)</strong></td>
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<td>Week 8</td>
<td>Dec. 4. Communicating with the public, policy makers, and legislators on complex science topics (climate change, water and air quality, etc.)</td>
<td>Dec. 6. Class wrap up</td>
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ADA Accommodations

The University of Utah seeks to provide equal access to its programs, services and activities for people with disabilities. If you will need accommodations in the class, reasonable prior notice needs to be given to the Center for Disability Services, 162 Union Building, 581-5020 (V/TDD). CDS will work with you and the instructor to make arrangements for accommodations.

Additional Information Regarding Faculty and Student Responsibilities.

All students are expected to maintain professional behavior in the classroom setting, according to the Student Code, spelled out in the Student Handbook. Students have specific rights in the classroom as detailed in Article III of the Code. The Code also specifies proscribed conduct (Article XI) that involves cheating on tests, plagiarism, and/or collusion, as well as fraud, theft, etc. Students should read the Code carefully and know they are responsible for the content. According to Faculty Rules and Regulations, it is the faculty responsibility to enforce responsible classroom behaviors, beginning with verbal warnings and progressing to dismissal from class and a failing grade. Students have the right to appeal such action to the Student Behavior Committee.