

ATMOSPHERIC SCIENCES 3000-Professional Development in the Atmospheric Sciences

Fall 2014. 1.5 Semester Units. First 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.

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Teaching Assistant: TBD. Office hours: by appointment

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

Online resources: Access through your courses in 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. Career opportunities in government, industry, and education are discussed by professionals employed in areas such as weather forecasting, broadcasting, air quality, fire and road weather, hydrology, and snow safety. The course also introduces critical concepts and skills related to observing and forecasting the atmosphere that are applied in many of the upper-division courses.

Instrumentation used in environmental fields is introduced. Fundamental aspects of academic success that are also critical for success in your eventual post-academic career are stressed: reading and studying, written and oral communication skills, preparing and taking exams, time management, academic and professional ethics, and gaining experience through involvement in student internships, student employment, and field 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
- Access and interpret current weather conditions and forecasts from Internet sources
- Recognize how weather affects society in terms of air quality, climate change, flooding, hurricanes, public safety, wildfires, and road weather
- State the basic characteristics of academic success involving critical thinking, problem solving, reasoning, analytical, and communication skills that will provide you with the necessary versatility for long-term success as science professionals
- Develop an academic plan including a tentative class schedule for your academic career

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: reading assignments and on-line quizzes; on-line COMET modules; Internet discovery; and instrumentation laboratory.
- We will be visiting several off-campus facilities during the semester that will require transportation. We will carpool leaving at 1:00 PM and returning by 3:00 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.
- Students 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 expected 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.

Class Policies and Grading

Grades will be determined from class attendance, in-class assignments, and tours (15%), assignments (70%), and development of your academic plan (15%). 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

- **Week 1. Aug 25.** Introduction to the Department. **Aug 27.** Weather concepts
 - COMET module: Basic Weather processes <http://www.meted.ucar.edu/fire/s290/unit4/>
- **Week 2. Sept. 1. Labor Day. No class. Sept. 3.** Observing surface weather
- **Week 3. Sep 8.** Weather Forecasting. **Sept. 10. NWS Forecast Office tour.**
- **Week 4. Sept. 15.** Utah Weather and Climate. **Sept. 17.** Climate Change
 - COMET module: climate change: <http://www.meted.ucar.edu/broadcastmet/climate/>
- **Week 5. Sep 22.** Air quality. **Sep 24. KUTV station tour**
 - COMET module: Urban heat islands and air pollution
<http://www.meted.ucar.edu/broadcastmet/wxbuiltenv/>
- **Week 6. Sep 29.** Remote sensing. **Oct. 1. UDOT Traffic Operations tour**
 - COMET module: anticipating risk <http://www.meted.ucar.edu/emgmt/hazwx/>
- **Week 7. Oct 6.** Career goals. **Oct. 8.** Next steps: building a successful educational experience and educational plan

ADA Accomodations

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.

The syllabus is not a binding legal contract. It may be modified by the instructor when the student is given reasonable notice of the modification.