ASTR/ATOC 3720: Planets and Their Atmospheres – Spring 2012
Tues-Thurs 2:00-3:15 pm, Duane G131
Instructor: Dave Brain
(david.brain@colorado.edu; 303-735-5606; Duane D133)
http://learn.colorado.edu

Help sessions: Wednesdays 2:30-4:00 pm, Duane D-142

Content:
This course is an introduction to the physics of planets, emphasizing their atmospheres. Topics will include atmospheric structure from tropospheres up to magnetospheres, atmospheric circulation and weather, the origin and evolution of atmospheres, and atmospheres and life. We’ll supplement our discussions with lectures summarizing current research topics in planetary atmospheres.

Goals:
• Develop a solid conceptual understanding of how atmospheres work
• Foster good problem-solving abilities
• Give a sense of the current unanswered questions about atmospheres of planets

Prerequisites:
• PHYS 1110 and 1120, or instructor consent
• Either MATH 1300 and 2300, or APPM 1350 and 1360, or instructor consent.

Course Materials:
Main Texts:
• Atmospheres by Goody & Walker, posted in PDF format on the course website – though the text is now out of print, it still provides some of the best explanations
• Planetary Atmospheres by F.W. Taylor, published by Oxford University Press and available in the campus bookstore – a recent textbook by a well-respected scientist

Optional References:
• Principles of Atmospheric Science by J.E. Frederick – good discussion, but little on planets!
• An introductory planetary science book, such as
  o The Cosmic Perspective, by Bennett, Donahue, Schneider, and Voit
  o New Solar System, by Betty, Peterson, and Chaikin
  o Planetary Sciences, by de Pater and Lissauer

Course Evaluation:
30% Final exam (Saturday, May 05, 1:30-4:00 pm)
15% Mid-term Exam #1 (tentative: February 28)
15% Mid-term Exam #2 (tentative: April 10)
25% Homework (due every 2nd Thursday)
10% Project (due May 01 in class)
5% Class Participation (no iClickers this semester, but I expect robust discussion)

Course Website:
Most of the important information for this course will be distributed electronically on the course website, at Desire2Learn (http://learn.colorado.edu). This includes HW assignments, Exam review sheets and solutions, and Project descriptions. Your grades on assignments will also be posted there.
What follows is “Grumpy Professor” and University legalese. It is important to read and be familiar with these statements, and I will abide by them. But it is also worth noting that it can all be boiled down to the following statement: **I will treat you with respect and as a unique human being, and hope that you do the same to each other and to me.**

**Honor Code:** All students of the University of Colorado at Boulder are responsible for knowing and adhering to the academic integrity policy of this institution. Violations of this policy may include: cheating, plagiarism, aid of academic dishonesty, fabrication, lying, bribery, and threatening behavior. All incidents of academic misconduct shall be reported to the Honor Code Council (honor@colorado.edu; 303-735-2273). Students who are found to be in violation of the academic integrity policy will be subject to both academic sanctions from the faculty member and non-academic sanctions (including but not limited to university probation, suspension, or expulsion). Other information on the Honor Code can be found at [http://www.colorado.edu/policies/honor.html](http://www.colorado.edu/policies/honor.html) and at [http://www.colorado.edu/academics/honorcode/](http://www.colorado.edu/academics/honorcode/)

**Learning Environment:** Students and faculty each have responsibility for maintaining an appropriate learning environment. Those who fail to adhere to such behavioral standards may be subject to discipline. Professional courtesy and sensitivity are especially important with respect to individuals and topics dealing with differences of race, color, culture, religion, creed, politics, veteran's status, sexual orientation, gender, gender identity and gender expression, age, disability, and nationalities. Class rosters are provided to the instructor with the student's legal name. I will gladly honor your request to address you by an alternate name or gender pronoun. Please advise me of this preference early in the semester so that I may make appropriate changes to my records. See policies at [http://www.colorado.edu/policies/classbehavior.html](http://www.colorado.edu/policies/classbehavior.html) and at [http://www.colorado.edu/studentaffairs/judicialaffairs/code.html#student_code](http://www.colorado.edu/studentaffairs/judicialaffairs/code.html#student_code)

**Discrimination and Harassment:** The University of Colorado at Boulder Discrimination and Harassment Policy and Procedures, the University of Colorado Sexual Harassment Policy and Procedures, and the University of Colorado Conflict of Interest in Cases of Amorous Relationships policy apply to all students, staff, and faculty. Any student, staff, or faculty member who believes s/he has been the subject of sexual harassment or discrimination or harassment based upon race, color, national origin, sex, age, disability, creed, religion, sexual orientation, or veteran status should contact the Office of Discrimination and Harassment (ODH) at 303-492-2127 or the Office of Student Conduct (OSC) at 303-492-5550. Information about the ODH, the above referenced policies, and the campus resources available to assist individuals regarding discrimination or harassment can be obtained at [http://www.colorado.edu/odh](http://www.colorado.edu/odh)

**Disability Accommodations:** If you qualify for accommodations because of a disability, please submit to me a letter from Disability Services in a timely manner so that your needs can be addressed. Disability Services determines accommodations based on documented disabilities. Contact: 303-492-8671, Center for Community N200, and [http://www.colorado.edu/disabilityservices](http://www.colorado.edu/disabilityservices).

If you have a temporary medical condition or injury, see guidelines at [http://www.colorado.edu/disabilityservices/go.cgi?select=temporary.html](http://www.colorado.edu/disabilityservices/go.cgi?select=temporary.html)

Disability Services' letters for students with disabilities indicate legally mandated reasonable accommodations. The syllabus statements and answers to Frequently Asked Questions can be found at [http://www.colorado.edu/disabilityservices](http://www.colorado.edu/disabilityservices)

**Religious Observances:** Campus policy regarding religious observances requires that faculty make every effort to deal reasonably and fairly with all students who, because of religious obligations, have conflicts with scheduled exams, assignments or required attendance. In this class, you must contact me within the first two weeks of the semester to make alternate arrangements. See full details at [http://www.colorado.edu/policies/fac_relig.html](http://www.colorado.edu/policies/fac_relig.html)

Have a great semester!