METR 4233 – Physical Meteorology III: Radiation and Climate
Syllabus - Fall 2008

Instructor: Dr. Susan Postawko
Room 5329 NWC
Phone: 325-1142
Email: spostawk@ou.edu

Teaching Assistant: Andrew Mercer

Class time and place: MWF 12:00-12:50 pm, Room 5600 NWC
Office Hours: Monday and Wednesday 1:00-2:00 pm, or by appointment
Web site: Course information and lecture notes will be available through http://learn.ou.edu

Grading: 4 exams - 20% each; Proposed exam dates: Sept. 19; Oct. 17; Nov. 14; Dec. 12
Homework – 20%

General Information
This course introduces students to the physical processes associated with radiative transfer in the atmosphere, and energy balance at Earth’s surface. Fundamental concepts of radiative transfer are further applied, in conjunction with basic ideas of atmospheric dynamics and thermodynamics, to explain the general circulation of the atmosphere, surface energy budget, the mean climate of Earth, climate variations in space and time, and climate change.

Course Outline
II. Radiation and radiative transfer in the earth-atmosphere system: Radiation characteristics; quantities and units; electromagnetic spectrum; emission, absorption, scattering of radiation
III. Energy balance: Radiative fluxes; surface energy balance; diurnal cycle and seasonal cycle of surface temperature; global radiation balance and energy balance
IV. Atmospheric general circulation; Meridional gradient of net radiative heating; global heat and momentum balance
V. Climate variability and climate change: A brief history of climate; nature and causes of climate change; climate feedbacks; El Niño-Southern Oscillation; greenhouse climate change; ozone

Important policies:
Reasonable Accommodation: The University of Oklahoma is committed to providing reasonable accommodation for all students with disabilities. Students with disabilities who require accommodation in this course are requested to speak with me as early in the semester as possible. Students with disabilities must be registered with the Office of Disability Services prior to receiving accommodations in this course. The Office of Disability Services is located in Goddard Health Center, Suite 166, phone 325-3852 or TDD only 325-4173.

Academic Misconduct: All provisions of the Norman Campus Academic Misconduct Code shall apply in cases of academic dishonesty. Any violation of the Academic Misconduct Code will result in your removal from this course, and a grade of F will be recorded for the course. Academic misconduct is defined as “any act that improperly affects the evaluation of a student’s academic performance or achievement.” At the University of Oklahoma, academic integrity is expected from each student. Misconduct such as plagiarism, fabrication, and fraud, as well as attempting to commit such acts or assisting others in doing so, will not be tolerated. Students are responsible for knowing the OU Academic Conduct Code, which can be found at http://www.ou.edu/studentcode and http://www.ou.edu/provost/integrity