

Course:

Atm 320 Atmospheric Thermodynamics Spring 2012
Class Number: 6012; Credits: 3

Schedule:

TuTh 2:45 p.m.–4:05 p.m., ES 232

Professor:

Daniel Keyser, ES 224, 442–4559, keyser@atmos.albany.edu
Office hours: MW 1:00 p.m.–2:00 p.m. and by appointment

Teaching Assistant:

Kyle MacRitchie, ES 337, kmacritchie@albany.edu
Office hours: MW 11:00 a.m.–1:00 p.m. and by appointment

Text:

Wallace, J. M., and P. V. Hobbs, 2006: *Atmospheric Science: An Introductory Survey*, 2nd ed. Academic Press, 483 pp. (Required)

Prerequisites:

Atm 315; Phy 240

Corequisite:

Atm 321

Grading:

A–E grading: In-class exams (25% each); Final exam (30%); Homework (20%)

Scope of Course:

This course is an introduction to atmospheric thermodynamics. The first half covers the thermodynamics of dry air, and the second half addresses the extensions necessary to account for the presence of moisture in both unsaturated and saturated forms. Topics include: the equation of state; the first and second laws of thermodynamics; the thermodynamics of water vapor and moist (including saturated) air; phase changes and latent heat; thermodynamic diagrams; and parcel and layer stability concepts pertinent to atmospheric convection. Although the course will focus on the systematic, quantitative development of principles and concepts of atmospheric thermodynamics, their application to commonly observed meteorological phenomena and processes will be emphasized.

The course will be conducted primarily through classroom lectures, supplemented by hand-outs and homework assignments. There will be two in-class exams during the semester and a comprehensive exam during the final-exam period.