Syllabus for G&G 322a/522a, Fall 2008

Chapters for reading refer to Wallace and Hobbs 2nd Ed.
522a students should read all of each chapter; readings for 322a in ()

1. Introduction  Ch. 1; 2.2 and 2.5 suggested (9/04, 9/09)

2. Thermodynamics  Ch. 3 (skip 3.7.1, 3.7.4) (9/11, 9/16, 9/18, 9/23, 9/25)
   Ideal gases, hydrostatics; conserved quantities; water vapor; thermodynamic diagrams. Measuring state variables. Buoyancy and instability.
   Mini-MIDTERM I: Tuesday, September 23

3. Radiation  Ch. 4 (4.0-4.4.3b; 4.5.1; 4.5.5-4.6) (9/30, 10/02, 10/7)

4. Cloud physics  Ch. 6 (6.1-6.4.1) (10/9, 10/14)
   Condensation, precipitation and freezing processes; droplet growth in clouds; cloud seeding.
   MIDTERM exam: Tuesday, October 21

5. Fluid dynamics  Ch. 7 (skip 7.2.8-10) (10/16, 10/23, 10/28, 10/30, 11/04)
   Conservation laws of fluids and meteorological application thereof; theory and observations of the atmospheric circulation.

6. Weather  Ch. 8 (8.1, 8.3.1; skim the rest) (11/06, 11/11, 11/13)
   Extratropical cyclones and fronts; tropical cyclones and other severe weather systems.
   mini MIDTERM II: Thursday, November 18

7. Climate  Ch. 10 (skim 10.2, read rest) (11/18, 11/20, 12/02)
   Global energy transport; climatology and statistics; climate modeling; dynamical systems and chaos.

8. Review  (12/04)
   FINAL Exam: Saturday, December 16, 2 pm