University of California, Davis, Fall Quarter 2005

***Atmospheric Science 60***

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***ATMOSPHERIC PHYSICS AND DYNAMICS***

Topics

Introduction:  Concepts and terminology

Atmospheric composition and structure

Radiation laws

Solar and terrestrial radiation

Radiation and the atmosphere

Global radiation balance

Greenhouse effect and global warming

Gas laws

Hydrostatic equation

First law of thermodynamics

Atmospheric moisture

Adiabatic processes

Atmospheric stability

Atmospheric instability

\*\*\*\*\*\*\*\*\*\*\*\*\*TEST/ Mid-term EXAM\*\*\*\*\*\*\*\*\*\*\*\*\*\*

Cloud formation and classification

Precipitation

Thunderstorms and Tornadoes

Laws of motion and the atmosphere

Rotation and the Coriolis force

Geostrophic balance

Conservation of angular momentum & Motion

Vorticity, Rossby Waves

Air masses, fronts, and wave cyclones

Local Systems

General circulation concepts

Mid-latitude and tropical regimes

Summary and final exam preview

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