## **Swihart Ch. 5 Main Concepts**

Heating of planets from Sun

Flux from Sun, power absorbed, planet albedo

Power re-radiated, emission efficiency factor, greenhouse effect

Planet emission conditions (fast and slow rotators, subsolar point)

Equilibrium temperature and habitable zone

Planetary atmospheres

Hydrostatic equilibrium, total mass of atmosphere

Exponential structure of atmosphere (isothermal case), scale height

Atmospheric escape of gas

Single particle energy condition (KE + PE)

Ensemble of particles, Maxwell-Boltzmann distribution of speeds

Exosphere, conditions for retention of gas

Radioactive dating

Half-life, decay constant

Parent and daughter nuclei, exponential decay

Rocky planetary interior

Central pressure and temperature

Specific heat capacity, internal thermal energy

Planet formation

PE of sphere

Mass accretion (on solid planet)

Heating of surface (PE converted to radiation)

Heating of gas planet (PE converted to internal gas energy)