ASTR368
Midterm Review

Equations to memorize:

$$m_\lambda - M_\lambda = 5 \log d - 5 + A_\lambda \tag{1}$$
$$P(z) = P_0 \exp(-z/H) \tag{2}$$
$$n(z) = n_0 \exp(-z/H) \tag{3}$$
$$\Omega(R) = \Theta(R)/R \tag{4}$$
$$v_r = (\Omega - \Omega_0) R_0 \sin \ell \tag{5}$$
$$a_c = v^2/r \tag{6}$$
$$U = -\frac{3}{5}\frac{GM^2}{R} \tag{7}$$
$$\tag{8}$$

A couple larger themes:
Relationship between orbital parameters and mass/mass distribution
Relationships between integrated properties of galaxies and their stellar populations

Topics:
ISM
Dust: extinction effects, emission properties
Gas: components, emission
Properties of the gas determined from emission lines
HII regions

Milky Way
Components
Scale height, and scale height values for various components
Metallicity
Galactic rotation, including LSR, Peculiar velocity, and Oort constants

Galaxies
Types and properties of each type
Schechter luminosity function
Light distributions
Tully Fisher
Faber-Jackson
Spiral structures
Lin-Shu density wave theory

Galactic Evolution
Dynamical friction
Bottom-up vs top-down formation

AGN
Unified model of AGN