## PHYSICS 232 – CHAPTER 33: LIGHT

Speed of light in material of index of refraction $n$:

$$v = \frac{c}{n}$$

Law of refraction (Snell's Law):

$$n_a \sin\theta_a = n_b \sin\theta_b$$

Total internal reflection for $\theta > \theta_{crit}$ (if $n_a < n_b$):

$$\sin\theta_{crit} = \frac{n_a}{n_b}$$

Intensity through polarizer (Malus's Law):

$$I = I_{max} \cos^2\phi,$$

Complete polarization perpendicular to the plane of incidence:

$$\tan\theta_p = \frac{n_b}{n_a}$$