OPTI-502 Equation Sheet
Midterm

$OPL = nl$

$n_1 \sin \theta_1 = n_2 \sin \theta_2$

$\gamma = 2\alpha$

$d = t\left(\dfrac{n-1}{n}\right) = t - \tau$

$\phi = (n' - n)C$

$\dfrac{n'}{z'} = \dfrac{n}{z} + \phi$

$f_E = \dfrac{1}{\phi} = -\dfrac{f_F}{n} = \dfrac{f_R'}{n'}$

$m = \dfrac{z'/n'}{z/n} = \dfrac{\omega}{\omega'}$

$m = \dfrac{f_{F2}}{f_{R1}'} = -\dfrac{f_2}{f_1}$

$\bar{m} = \dfrac{n'}{n} m^2$

$\dfrac{\Delta z'/n'}{\Delta z/n} = m_1 m_2$

$m_N = \dfrac{n}{n'}$

$P'N' = PN = f_F + f_R'$

$\tau = \dfrac{t}{n} \qquad \omega = nu$

$\phi = \phi_1 + \phi_2 - \phi_1\phi_2\tau$

$\delta' = \dfrac{d'}{n'} = -\dfrac{\phi_1}{\phi}\tau \qquad BFD = d' + f_R'$

$\delta = \dfrac{d}{n} = \dfrac{\phi_2}{\phi}\tau \qquad FFD = d + f_F$

$\omega' = \omega - y\phi \qquad n'u' = nu - y\phi$

$\phi = -\dfrac{\omega_k'}{y_1}$

$y' = y + \omega'\tau' \qquad y' = y + u't'$

$\bar{u} = \tan(\theta_{1/2})$

$Sag \approx \dfrac{y^2}{2R}$