

## SESSION 12

Reactances  $X_L = \omega L$  and  $X_C = \frac{1}{\omega C}$

Impedance of series RLC  $Z^2 = (X_L - X_C)^2 + R^2$

Impedance Matching  $R_1 = R_2$  or  $Z_1 = Z_2$

Charge on the capacitor  $Q = Q_0 \cos(\omega t - \phi)$ ;  $i = I_0 \sin(\omega t)$ ;  $Q_0 = \frac{V_0}{\omega Z}$

Phase Angle  $\phi = \tan^{-1}\left(\frac{X_L - X_C}{R}\right)$ ;

Transformers  $\frac{V_1}{V_2} = \frac{N_1}{N_2} = \frac{I_2}{I_1}$