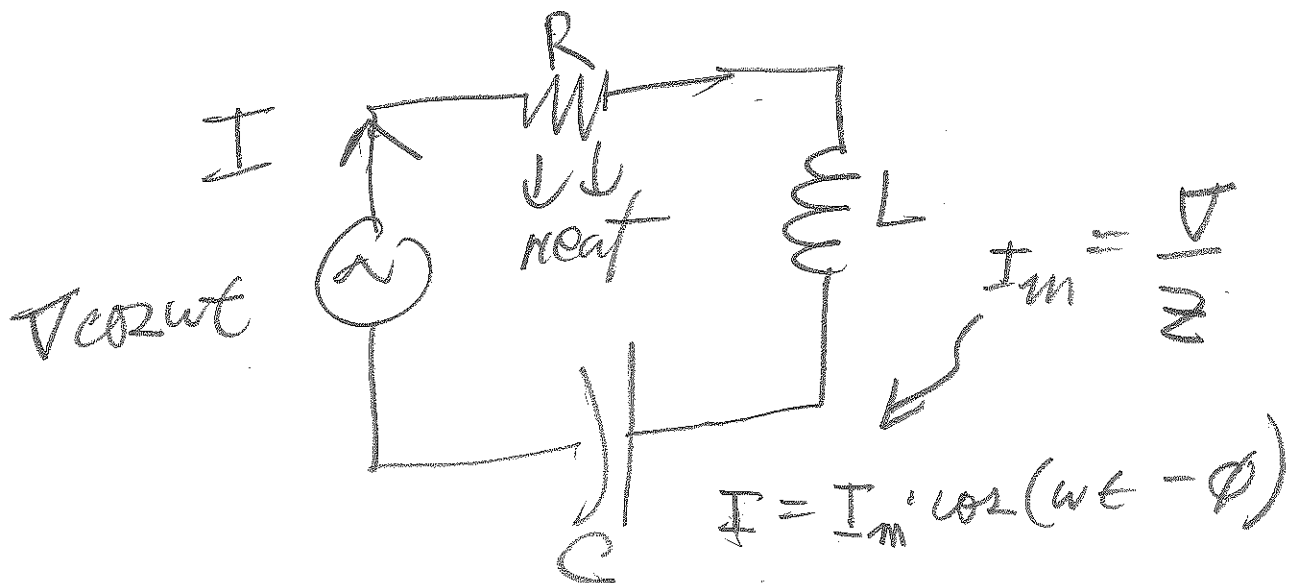
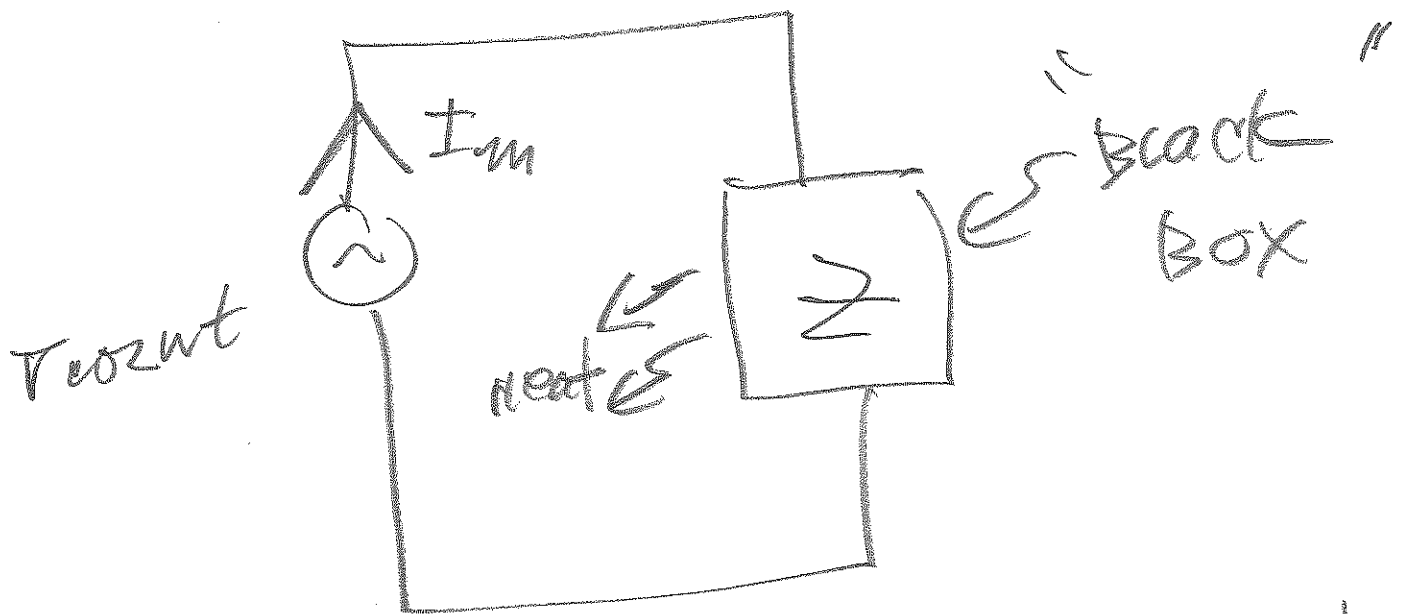


TOPIC IN ENGINEERING 93  
(TRANSFER COURSE  
ON CIRCUITS, ALSO OFFERED  
AT UCB) =

RLC - CIRCUITS,  
AS THEY APPLY  
TO RADIOS, WIFIS,  
MEDICAL APPS, TV  
RECEPTION, ETC:





$$I_m = \frac{V}{Z} \cos(\omega t - \phi)$$

$$\cos \phi = \frac{\omega L - \frac{1}{\omega C}}{R}$$

Average  
power =

$$\text{Power} = \frac{I_m^2 R}{2} = \frac{I_m \cdot I_m \cdot R}{2} = \frac{I \cdot I \cdot Z \cos \phi}{2}$$

Average over  
one cycle

Average  $\cos^2(\omega t - \phi) = \frac{1}{2}$  OVER MANY CYCLES.

$$\text{Power} = \frac{I_m \cdot V \cdot \cos \phi}{2}$$

$$= I_{\text{RMS}} \cdot V_{\text{RMS}} \cdot \cos \phi$$

$$I_{\text{RMS}} = \frac{I_m}{\sqrt{2}}$$

$$V_{\text{RMS}} = \frac{V}{\sqrt{2}}$$

