## ECE 2210 / 00 **Capacitor Lecture Notes**

Fluid Model:

<sup>i</sup>C



condition. that means the currents and voltages are no longer changing.

$$\frac{d}{dt}v_{C} = 0 \qquad i_{C} = C \cdot \frac{d}{dt}v_{C} = 0$$

no current means it looks like an open

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"long time"

## **Capacitor Lecture Notes**

## ECE 2210 / 00 Inductor Lecture Notes



 $\mu$  is the permeability of the inductor core K is a constant which depends on the inductor geometry N is the number of turns of wire

Basic equations you should know:

 $v_L = L \frac{d}{dt} i_L$ 

$$i_{L} = \frac{1}{L} \int_{-\infty}^{t} v_{L} dt = \frac{1}{L} \int_{0}^{t} v_{L} dt + i_{L}(0)$$

parallel:  $L_{eq} = \frac{1}{\frac{1}{L_1} + \frac{1}{L_2} + \frac{1}{L_3}} + \dots$ 

Inductor current cannot change instantaneously

Energy stored in electric field:  $W_L = \frac{1}{2} \cdot L \cdot I_L^2$ 

series:

$$L_{eq} = L_1 + L_2 + L_3 +$$

