PHYS 212 Inductors and Inductance

 

1. Define inductance and express its SI unit.

2. Using Faraday’s law of induction show that the self-induced emf is given by:
 



3. Show that the inductance per length for a solenoid is given by:
 
 Inductance—like capacitance—depends only on the geometry of the device.

4. Show that the magnetic energy and magnetic energy density are given by:

 

5. RL circuits:
 