

Name: \_\_\_\_\_ Date: \_\_\_\_\_ Course: \_\_\_\_\_ Professor: \_\_\_\_\_

## B5b Prelab: Magnetic Force & Fields



Read lab instructions and watch the video before answering the questions

1. In this lab you will be measuring the magnetic field unfortunately it is not possible to measure the magnetic force being experienced by the electromagnetic wire directly. However, by applying Newton's 1st Law to the system of this experiment, it does become possible to find an experimentally viable equation for  $B_{ext}$ . Write the equation you will be using to find  $B_{ext}$ .
  
2. Victor is conducting this experiment in the lab he measures a length  $l = .053$  m, a radius  $R = .72$  m, a mass  $m = .004651$  kg, a displacement  $d = .0603$  m, and a current of 1.69 A. Using the equation what is the magnetic field  $B_{ext}$  that Victor calculates?
  
3. If Victor switches the direction of the current but leaves everything else the same what should he expect to see?