Magnetic Fields

For direction of Magnetic Fields created by a wire, see power point slides.

Force on a current Carrying Wire:

F=BIL

F=Force

B=Magnetic Field (Tesla T)

L- Length of the current carrier

1. Current (amps A)

Ex: A 4.14A current is in a uniform magnetic field of 11T. The length of the wire is 0.5m. What is the Magnetic force on the Wire?

Another Magnetic Formula

F=qvB

F: Force (N)

q= charge (C)

B: Magnetic Field (T)

V= Velocity of the particle

Ex: A proton is travelling at 3.89 x 105m/s in a magnetic field of 7.6T directed upward. If the proton had been travelling East, what force would it have experienced?

Magnetic Field Drawing

When drawing magnetic fields, draw the lines from the North to the South poles.

The formula for finding a magnetic field around a current carrying wire is:

B= $\frac{µ\_{0}I}{2πr } where µ\_{o}=4π^{} x 10^{-7}$

Ex: What magnetic field is created by a wire carrying 100. A straight up and down at 1.35m north of the wire?