

PHYSICS

Review: Magnetic Fields and Forces

Coulomb's Law

Conduction

Induction

Capacitance

RC Circuits

Circuit elements; resistors, capacitors, etc.

Magnetic poles; north/south; like poles repel; unlike poles attract

Magnetic field direction; north to south outside of magnet

Electromagnetic behavior; Right hand Rules RHR

Direction of field around a current-carrying wire

Magnetic polarity of a current-carrying coil

Force on a current-carrying wire in a magnetic field

Motor; electrical energy to mechanical energy and back

Faraday's Law - creating current from a changing magnetic field,
electromagnetic induction

Generator; mechanical energy to electrical energy

Lenz's Law, induced/back EMF

Equations:

$$\vec{F} = \frac{kq_1q_2}{r^2}$$

$$E = \frac{F}{q}$$

$$\Delta V = Ed$$

$$C = \frac{q}{V}$$

$$F = iLB$$

$$F = qvB$$

$$W = q\Delta V$$