

PHYS 1444 – Section 003

Lecture #2

Wednesday, Aug. 31, 2005

Dr. **Jaehoon Yu**

- Coulomb's Law
- The Electric Field
- Field Lines
- Electric Fields and Conductors
- Motion of a Charged Particle in an Electric Field
- Electric Dipoles
- CH22: Gauss' Law



Announcements

- Next Monday, Sept. 5, is a Labor day.
 - No class
 - Homework due has been changed to noon, Tuesday, Sept. 6, to reflect this.
- Your five extra credit points for e-mail subscription is till midnight tonight. Please take a full advantage of the opportunity.
 - Nine of you have subscribed so far. Thank you!!!
- All of you have registered in the homework system.
 - I am TOTALLY impressed!!! GOOOOOOOOD Job!!
 - Two of the registered, though, forgot to submit the homework. I will extend the free 100% credit on HW#1 till midnight tonight, unless you don't want me to....



Coulomb's Law

- Charges exert force to each other. What factors affect the magnitude of this force?
 - Any guesses?
- Charles Coulomb figured this out in 1780's.
- Coulomb found that the electrical force is
 - Proportional to the multiplication of the two charges
 - If one of the charges doubles the force doubles.
 - If both the charges double, the force quadruples.
 - Inversely proportional to the square of the distances between them.
 - Electric charge is a fundamental property of matter, just like mass.
- How would you put the above into a formula?

