

PHYS 1444 – Section 003

Lecture #6

Monday, Sept. 19, 2005
Dr. **Jaehoon Yu**

- Electric Potential Energy
- Electric Potential
- Electric Potential and Electric Field

Today's homework is homework #4, due noon, next Monday!!



Announcements

- I have all but 3 of you on the distribution list
 - Please come and check if you are in doubt..
- Homework #3
 - Problems 20 – 24 have been removed from the list since it involves dielectric, a type of material you haven't learned yet
 - These will, however, be re-issued when we learn dielectric in CH24.



Electric Potential Energy

- How would you define the change in electric potential energy $U_b - U_a$?
 - The potential gained by the charge as it moves from point **a** to point **b**.
 - The negative work done on the charge by the electric force to move it from **a** to **b**.
- Let's consider an electric field between two parallel plates w/ equal but opposite charges
 - The field between the plates is uniform since the gap is small and the plates are infinitely long...
- What happens when we place a small charge, $+q$, on a point at the positive plate and let go?
 - The electric force will accelerate the charge toward negative plate. What energy does the charged particle gain?
 - Kinetic energy

