WORKING WITH THE ELECTRIC POTENTIAL

Prof. Stephen Sekula 9/15/2010 Supplementary Material for PHY1308 (General Physics -Electricity and Magnetism)

ANNOLINCEMENTS

- Homework 4:
 - Due next Monday by 9am
- Next quiz:
 - Friday, in class
 - Covers Homework 3
- First Exam!
 - Sep. 24, in class
 - Covers Homework 1-4 (Ch. 20-22)

DEFINITIONS

WORK (J):

$$W = \int \vec{F} \cdot d\vec{r}$$

DIFFERENCE IN POTENTIAL ENERGY: (J) $\Delta U_{AB} = -W_{AB} = -\int_{A}^{B} \vec{F} \cdot d\vec{r}$

DIFFERENCE IN ELECTRIC POTENTIAL: (J/C = VOLTS)

$$\Delta V_{AB} = \Delta U_{AB} / q = -\int_{A}^{B} (\vec{F} / q) \cdot d\vec{r} = -\int_{A}^{B} \vec{E} \cdot d\vec{r}$$