

## AP Physics 1: Electrostatics Unit Guide (Testing Deadline Jan 21<sup>st</sup>)

### **Learning Objectives:**

#### **Learning Objective (1.B.1.1):**

The student is able to make claims about natural phenomena based on conservation of electric charge

#### **Learning Objective (1.B.1.2):**

The student is able to make predictions, using the conservation of electric charge, about the sign and relative quantity of net charge of objects or systems after various charging processes, including conservation of charge in simple circuits.

#### **Learning Objective (1.B.2.1):**

The student is able to construct an explanation of the two-charge model of electric charge based on evidence produced through scientific practices.

#### **Learning Objective (1.B.3.1):**

The student is able to challenge the claim that an electric charge smaller than the elementary charge has been isolated.

#### **Learning Objective (3.C.2.1):**

The student is able to use Coulomb's law qualitatively and quantitatively to make predictions about the interaction between two electric point charges.

### **Suggested Readings:**

- Conceptual Physics textbook, Sections 32.1, 32.2, 32.3, 32.4, 32.5, 32.6 and 32.7
- OpenStax online textbook, Sections 18.1, 18.2, and 18.4
- Giancoli Physics textbook, Sections 16-1, 16-2, 16-3, 16-4, and 16-5

### **Notes:**

Electric Charge and Force (on class website)

Charging by Conduction vs Induction (given in class)

### **Graded Assignments:**

- Electrostatics – An Introduction (on class website)
- Electric Charge and Force Conceptual (on class website)
- Coulomb's Law Practice Problems (on class website)
- Electric Charge and Force Quiz (see me when ready)
- Electrostatics Finale (on class website)
- Conceptual Physics textbook pg 659: 2, 7, 10, 14, 16, 17, 20, 21, 23, 24, 25, 26, 28, 31, 33, 38
- Giancoli Physics textbook pg 464: 5, 6, 8, 11, 12 pg 465: 2, 5, 6, 12

### **Tutorials:**



Khan Academy Vids



A Plus Physics Vids



The Physics Classroom