

Notes for ECE 26400 - Advanced C Programming

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These are lecture notes for fall 2023 ECE 26400 at Purdue. Modify, use, and distribute as you please.

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Course Introduction

Equations

1. $\vec{F} = \frac{1}{4\pi\epsilon_0} \frac{q_1 q_2}{r^2} \hat{r}$

2. $\vec{E}_1 = \frac{1}{4\pi\epsilon_0} \frac{q_1}{r^2} \hat{r}$

3. $\vec{F}_2 = E_1 q_2$

Electric field

We can represent electric fields as lines emanating from a point charge. The greater the density of the lines, the greater the strength of the electric field. Note that at the origin, the force is undefined (infinite), since $|r| = 0$.

Consider the relative strengths of the electric and gravitational fields.

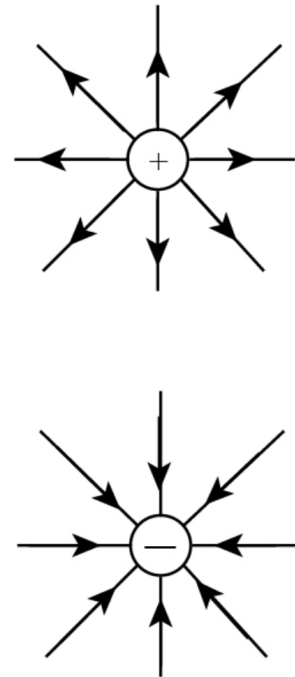


Figure 1: An electric field coming from point charges. Notice how the densities of the lines vary with distance from the source.