Physics 151 Reading Assignment for June 4
Sections 1.4, 1.5, and 2.1-2.3

Please notice that this file is two pages long.

1.4 A Sense of Scale: Significant Figures, Scientific Notation, and Units

- If you have a good working knowledge of significant figures, scientific notation, the S. I. system of units, and unit conversions this section is complete review. If you are weak on any of these areas, please read them carefully.
- Estimation - not something I find important. You may skip.

1.5 Vectors and Motion: A First Look

- I'm going to mostly save this section for when we do chapter 3 (and actually need it).
- For now, it suffices for you to know the difference between a scalar and a vector.
- Including velocity on motion diagrams

2.1 Describing Motion

- Position-versus-time graphs - very important. They are *not* a picture of the motion
- Representing Velocity - these v_x and v_y equations are only for uniform motion
- From Position to Velocity
  - the slope of the *position-versus-time* graph gives velocity.

  - steeper slope $\Rightarrow$ faster
  - velocity versus time graphs - how they look compared to position graphs

- From Velocity to Position - being able to go "backwards" is useful

2.2 Uniform Motion

- You've probably noticed that the graphs have the same shape as in the previous section. We really only expect you to know the graphs for two types of motion - uniform motion and constant acceleration (which are later this chapter). In lecture, I will jump straight into uniform motion.

- Equations for uniform motion - you may recognize $x_f = x_i + v_x \Delta t$ as "distance = rate times time". This is true *only* for uniform motion. I'm probably just going to use $v_x = \frac{\Delta x}{\Delta t}$ since it's basically the same thing.

- From Velocity to Position, One More Time - displacement is area under velocity versus time. Carefully read the "Note" on page 38.

2.3 Instantaneous Velocity

- Instantaneous Velocity - velocity at one instant of time.

- From now on, velocity = instantaneous. $\frac{\Delta x}{\Delta t}$ = average velocity.

- Instantaneous velocity still slope of position-versus-time graph.

- Watch out for this procedure at the bottom of page 39. Even though the textbook does a numerical example, we rarely have enough information in our problems to get the correct value for velocity.

- Displacement still area under the velocity-versus-time graph.