

## Chem 1710 -- Introduction to Chemistry and Physics

### Motion

Study Guide: Chapters 1 & 2 in *Conceptual Physical Science*, 4<sup>th</sup> edition

*Objectives:* When you finish this unit you should be able to:

- Define speed. Solve problems.
- State the difference between average and instantaneous speed. Solve problems.
- Understand the difference between speed and velocity. Define a vector. Work simple problems solving for the resultant vector.
- Define acceleration and determine how to use it to solve for final velocity as well as distance traveled.
- Describe the condition of free fall and work problems.
- Interpret graphs of distance traveled versus time and velocity versus time for straight line motion.
- State Newton's three laws of motion and apply to everyday situations.
- Work problems with Newton's 2<sup>nd</sup> law ( $F = ma$ )

*Activities:*

Describing motion with equations (Galileo)

- Read chapter 1.
- Answer several of the review questions to see if you have the basic concepts.
- Then focus on some Exercises. Try 22-32. You may need to write these down on paper.
- Finally work on some problems. In chapter 1 do problems 3-10. Definitely write these on paper.

Newton's Laws of Motion – the cause of motion

- Read chapter 1 and 2.
- Answer several of the review questions to see if you have the basic concepts.
- Focus on Exercises 6, 7, 11, 18 in Chapter 1 and Exercises 1, 2, 4, 10, 11, 21, 29, 30 in Chapter 2.
- Work on problem 2 in Chapter 1 and 1, 2, 4, 7 in Chapter 2. Write these on paper.
  
- Do Practice Book pages 3, 4, 5, 6, 13, 16, 17, 18. (4th ed)
- View and understand the demonstrations and lab activities in class