

## Chemistry Course Outline

Text: Sarquis, Mickey and Jerry L. *Modern Chemistry*. Orlando: Houghton Mifflin Harcourt, 2012.

Materials: Throughout the course, basic chemistry lab equipment will be used. A scientific calculator is required for the course. Resources provided through the online textbook, as well as Internet resources, interactive websites, and iPad apps are also used. Class materials and vodcasts of class lectures are provided on *NCS Chemistry and Physics*, at <http://tskinnersbec.edublogs.org/>.

### Second Nine Weeks

#### 1. Chemical Formulas and Chemical Compounds (3 weeks)

##### A. Objectives

1. Chemical formulas for ionic and molecular compounds
2. Nomenclature
3. Oxidation numbers

##### B. Activities, Assessment, and Materials:

1. thLAB: Chemical Formula Simulation
2. Experiment: Test for Iron Ions
3. Homework – end of chapter review
4. Homework – chemical formula worksheets
5. Homework – chemical formula online practice
6. Science In the News summaries
7. Web posts
8. Quiz – polyatomic ions
9. Quiz – acids
10. Test on chapter 7a

C. Biblical Integration – God’s command for us to do things decently and in order is for our benefit. 1 Cor. 14:30

#### 2. Using Chemical Formulas and Chemical Compounds (3 weeks)

##### A. Objectives

1. Formula mass and molar mass
2. Moles and Avogadro’s number
3. Percent composition
4. Empirical and molecular formulas
5. Polymers

##### B. Activities, Assessment, and Materials:

1. Critical Thinking Activity: iPads – *Math Squared, Math Scaled*
2. Experiment: Moles of Chalk
3. Take Home Lab (thLAB): Calculating Moles
4. Experiment: Percent Composition

5. Virtual Lab (vLAB): Determining an Empirical Formula
  6. Experiment: Polymers
  7. DVD: Brain Games
  8. Homework – chapter 7 review and worksheets
  9. Science In the News summaries
  10. Web posts
  11. Test on chapter 7
- C. Biblical Integration – God’s command for us to do things decently and in order is for our benefit. 1 Cor. 14:30

**3. Atoms (2 weeks)**

A. Objectives

1. Atomic theory
2. Atomic structure
3. Isotopes
4. Particle physics

B. Activities, Assessment, and Materials:

1. thLAB: Average Atomic Mass Simulation
2. Activity: Model of an Atom
3. Project: Carbon Isotopes
4. Computer Lab (cLAB): Particle Physics
5. Science In the News summaries
6. Web posts
7. Homework – chapter 3 end of chapter review

- C. Biblical Integration – For by Him were all things created, that are in heaven, and that are in earth, visible and invisible .... all things were created by Him, and for Him. And He is before all things, and by Him all things consist.  
Colossians 1:16-17

Revised 5/23/14