

CHEMISTRY II

2009-10 COURSE SYLLABUS

MRS. CHAPMAN

Course Description: Chemistry II begins with a review of the basic concepts of chemistry, which were taught in Advanced Chemistry I. Following this segment, several topics will be covered in-depth---molecular geometry, chemical kinetics, chemical equilibrium, chemical thermodynamics, electrochemistry, nuclear chemistry, organic chemistry, and biochemistry.

Instructional Philosophy: This course requires students to work individually and in small groups. It is my goal to provide students with a variety of activities that will challenge and interest them so that they may be successful participants in the real world. It is also important that I teach objectives that must be met at the Chemistry II level, so that students will gain a vast knowledge of the subject matter.

Major Course Goals: The student will demonstrate an understanding of the following concepts:

1. The process of scientific inquiry and investigations.
2. Write a balanced chemical equation for a reaction.
3. The classification and identification of chemical reactions.
4. Solve stoichiometry problems.
5. The thermodynamic properties of enthalpy and entropy.
6. The types of forces that exist on the molecular level.
7. The state of chemical equilibrium.
8. The use of a phase diagram to relate state, temperature, and pressure of a substance.
9. The properties of acids, bases, and salts
10. Names and structures of organic compounds.
11. The structure and function of carbohydrates, lipids, and proteins.
12. The concepts developed by the literacy and numeracy committees.

Major Course Objectives/Benchmarks by Quarter: Mastery of the course objectives is required with a minimum 70%.

First Quarter

1. Develop abilities in science including scientific inquiry and investigations.
2. Write and interpret a balanced chemical equation for a reaction.
3. Classify chemical reactions and predict the products.
4. Perform stoichiometry calculations.
5. Identify the limiting reactant and excess reactant for a reaction.

Second Quarter

1. Develop an understanding of enthalpy and entropy and perform thermodynamic calculations.
2. Contrast dipole-dipole forces, hydrogen bonds, and London dispersion forces.
3. Identify systems that have multiple phases and determine whether they are in equilibrium.
4. Interpret a phase diagram.
5. Predict the effect of the properties of the solvent or solute on the solubility of a substance.

Third Quarter

1. Compare and contrast the properties of acidic, basic, and neutral solutions.
2. Describe the procedure for carrying out a titration to determine the concentration of an acidic or basic solution.
3. Balance equations for oxidation-reduction reactions through the half-reaction method.

Fourth Quarter

1. Describe how changes in the nucleus of an atom during a nuclear reaction result in the emission of radiation.
2. Draw and interpret structural formulas for common organic compounds.
3. Relate the structure of carbohydrates to their role in biological systems.
4. Describe the general amino acid structure and explain how they form proteins.

Required/Recommended Reading:

1. Students will be required to read their textbook.
2. Students will be required to read their laboratory and be prepared before class.
3. Students will be required to have appropriate reading material to read during all SSR times.
4. Students will read articles from scientific journals and magazines during the school year.
5. Students will participate in the literacy program by reading 300 pages of science related material.

Major course projects and Instructional Activities: Students will participate in the following projects and activities:

1. Students will participate in a variety of laboratory activities centered around the scientific method.
2. Students will participate in a variety of laboratory activities that will introduce them to the instruments and procedures used by laboratory technicians.
3. Students will participate in a variety of laboratory activities that will tie together our units of study.
4. Students will have a group project during the quarter that will be graded as a group and individual grades will also be given.

Course Assessment Plan: Students will be assessed in the following manner:

1. All students will be required to keep a portfolio of their work in a 1 inch 3-ringed binder to be assessed at the end of each quarter.
2. There will be a test and/or project at the completion of each unit of study. Test will consist of open ended constructive response questions, performance events, and objective questions.
3. Students will be required to complete homework as part of their grade.
4. A comprehensive quarter final will be given at the end of each quarter.
5. A comprehensive end of course exam will be given at the conclusion of the course.

Classroom Expectations:

1. Be on time and in your seat when the bell rings.
2. Be prepared at the beginning of class. Have your textbook, loose-leaf notebook paper, binder, homework, and a pen or pencil. On SSR days, you must have your reading material.
3. Be respectful of all people and property in the room.
4. Read and follow all directions, as given, the first time.
5. No gum, food, or drink in the room at any time.
6. No grooming (fixing hair, make-up, etc.)
7. Keep your feet on the floor and not on the chairs.
8. Keep book bags out of the aisles and purses on the floor during class.
9. The teacher, NOT THE BELL, dismisses the class.

All discipline problems will be handled as described in the student handbook. Be sure you know the consequences for your actions in this classroom.

Supplies and Materials Needed: Students should have the following materials for class:

1. Loose-leaf notebook paper
2. 1 inch, 3-ringed binder
3. Pen or pencil
4. Post-it notes
5. Scientific calculator

Homework Policy and Grading Scale: Please refer to the Student Handbook for the Homework Policy. The grading scale is as follows:

A	100-95	C	76-73
A-.....	94-90	C-.....	72-70
B+.....	89-87	D+.....	69-67
B	86-83	D	66-63
B-.....	82-80	D-.....	62-60
C+.....	79-77	F.....	59-0

Extra Help: If you need any extra assistance I will be available before and after school.

Time and Place to be Reached by Parent: If you need to contact me for any reason please feel free to call and leave me a message at 431-2616 Ext. 4133. I can also be reached by email at cchapman@centralr3.org. Homework assignments can be found online at new.schoolnotes.com.