Chemistry

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Text: **Prentice Hall *Chemistry*** by Wilbraham, Matta, Staley, & Waterman

Course Description

- This is a project- and laboratory-based course where you will be allowed to generate knowledge about chemistry [a fancy term for the study of matter (aka anything that has mass and takes up space)] with your peers.
- Your teacher will be a guide for the journey, a facilitator, an events planner, and occasionally a source of information.
- Other sources of information will be the textbook, charts and diagrams, videos, and many internet sources selected by the guide and by you.
- Always remember, you are the learner here! You are the one who needs to actively acquire knowledge.

Semester 1

- Nature & History of Chemistry
- Matter & Change
- Scientific Measurement
- Atomic Structure
- Electrons in Atoms
- The Periodic Table
- Chemical Bonding
- Chemical Names & Formulas
- Chemical Quantities
- Chemical Reactions
- Stoichiometry

Semester 2

- States of Matter
- Behavior of Gases
- Solutions
- Acids & Bases
- Thermochemistry
- Reaction Rates and Equilibrium
- Oxidation-Reduction Reactions
- Electrochemistry
- Nuclear Chemistry
- Organic Chemistry
- Biological Chemistry

Goals and Objectives :

At the completion of Chemistry, the student will be able to

1. develop and design scientific experiments and interpret experimental results.
2. describe how models are developed and used in chemistry.
3. describe the subatomic structure of atoms,
4. use the periodic table to identify physical and chemical properties of representative elements.
5. describe the differences between physical and chemical changes and provide examples for each.
6. describe the three states of matter (gas, liquid, and solid) at atomic and visible levels.
7. explain the laws of definite proportions, multiple proportions, and conservation of mass.
8. identify products and reactants in a chemical reaction, balance chemical equations, and calculate the mass of products and reactants.
9. describe the formation of ionic, covalent, and metallic bonds.
10. use the Kinetic Molecular Theory to describe the motion of atoms and molecules.
11. apply the gas laws to relations among pressure, temperature, and volume of any amount of an ideal gas or any mixture of ideal gases.
12. describe the properties of acids, bases, and salt solutions and factors that affect the solubility of different substances.
13. describe energy transformations that occur during physical changes and chemical reactions.
14. describe factors that affect reaction rates and chemical equilibrium.
15. describe the structure of organic compounds.
16. describe nuclear processes, including radioactive decay, nuclear fission, and nuclear fusion.
17. discuss the historical development of major ideas and theories in chemistry.

Requirements
COME TO CLASS PREPARED:

- Read the text assignments
- **TURN IN ASSIGNMENTS ON TIME (This means organize your time!)**
- Bring Text to Class
- Bring a Pen or Pencil, Notebook, and Lab Notebook to class
- Bring colored pens or pencils and a metric ruler
- **TURN IN ASSIGNMENTS ON TIME (did I mention this?)**
- **Late assignments, including LABS, are NOT accepted!**
  If you are ill, your work is due the DAY you get back!
- **Students are expected to treat each other with respect in both words and actions.**
  Inappropriate language and behavior is NOT tolerated!
- **Students may NOT eat in the classroom but may drink WATER.**

Tests

- 100 points each
- 6 per semester
- Multiple choice, label diagrams, fill in the blanks.....
- Critical Thinking Questions
- Vocabulary Intensive
- Graphing and Data Analysis
- Short paragraphs
- NO DROPPED TESTS
- If you are ill on the day of the test, you must make arrangements to make up the test within 3 days of coming back to school!

Quizzes

- 5~25 points each
- Element , Ions, Laws, Properties
- MAY BE UNANNOUNCED!!!!!
- Quizzes may NOT be made up!

- Labs
- 25~100 points each
- Observations, Data Gathering, Data Organizing, Graphing
- Periodic Table
- Lab Simulations using Virtual ChemLab and online simulation sites
- Write-up in Lab Notebook

Projects

- 100 points each
- In Class Preparation
- Group and Individual
- Involve Library and Internet Research
- PowerPoint/Web Pages/Word or other presentation format
- Presented In Class and/or Viewed on the Web
- Reflection Essay

Homework

- Chapter questions and problems
- 10 points per chapter

Semester Final: 20 percent of the semester grade

- Science Comprehension:
  - Read and interpret information related to chemistry
- Science Content:
  - Similar to chapter tests~~questions taken from these tests
- Data Analysis:
  - Organizing, graphing, and interpreting data related to chemistry
- Critical Thinking:
  - Application of chemistry content to decision-making and data analysis

- **Grading Scale: Standard Scale used school-wide: see page 6 of student manual.**
  - **Grades are NOT rounded!**
- **Extra Credit:**
  - **An Extra Credit Reading Assignment is offered over Christmas Break**
  - **An Extra Credit Web Project is offered over Easter Break**
  - **THESE ARE THE ONLY EXTRA CREDIT ASSIGNMENTS FOR THE YEAR**
- **Projects are flexible in DESIGN, not in DUE DATE**
  - **Turn in all assignments on time.....**
  - **Have I mentioned this?**
- **Late assignments, including LABS, are NOT accepted!**
- **NO DROPPED TESTS**
- **Quizzes May Be Unannounced...**
  - Come to Class Prepared....
  - Quizzes may not be made up!
- **Extended Time Accommodations:**
  - It is the responsibility of the student to notify the teacher one day in advance of the need for extended time on a test or quiz, and it is the responsibility of the teacher to arrange for the extended time so that it does not impact other classes during the day.
- **Protocol for Addressing Student and Parent Concerns:**
  - Students and parents are requested to speak first to the teacher regarding all issues of concern including grade challenges, and other matters related to classroom conduct, and evaluation, at an appropriate time. If, after addressing the matter directly with the teacher, the student or parent needs further help addressing the issue, he or she should proceed to the grade level academic advisor who will bring the parties together to satisfactorily resolve the issue. Students should be empowered by this process - and know that they are their own best advocates.
- **Senior Waiver Policy:**
  - Second semester seniors who have achieved an average of 92.5 may waive their second semester final exams in disciplines that allow such waivers. Not all departments allow waivers; however, decisions must be made with department consensus.
- **Cell Phone Policy:**
  - Pagers and cell phones must be turned off when students are in the classroom or any building on campus. If a cell phone or beeper goes off during class, it will be taken from the student and given to the Dean of Students until the end of the day. In addition, the student will serve a detention. A student's continued abuse of her the cell phone may result in more serious consequences.
- **Absences and Tardies**
  - You are considered tardy if you are NOT in your seat when the bell rings. You will be marked tardy if you enter class within the 1st 10 minutes of class. If you arrive after the 1st 10 minutes you will be sent to get a READMIT and will be considered ABSENT
- **Academic Integrity:**
  - All work (homework, quizzes, tests, papers, projects, labs, etc.) must be your own.
  - Cheating includes, but is not limited to
    - submitting work copied from a friend or an outside source (without attribution)
    - giving work to a friend or giving/receiving excessive assistance from someone
    - Accepting or giving help during a test or quiz.
    - Using a calculator or notes without expressed permission of the teacher
    - Using notes stored on a calculator with expressed permission of the teacher
  - Plagiarism, a form of cheating, involves presenting someone else's ideas or words, *whether deliberate or inadvertent*, without giving credit!