



**KENOSHA UNIFIED SCHOOL DISTRICT NO. 1
CURRICULUM AND INSTRUCTIONAL SERVICES**

**COURSE SYLLABUS FOR CHEMISTRY
(431011 & 431012)**

Number of Credits: 1 **Locations:** Bradford, Harborside, Hillcrest, Indian Trail, Lake View Tech, Reuther, Tremper

Prerequisites: Successful completion of Biology and Algebra 1.

Course Description

Chemistry is a lab-oriented course in which students are introduced to concepts traditionally covered in first year chemistry. Topics include: atomic structure, electron configuration, periodic properties of the elements, chemical bonding, chemical calculations, chemical equations, and the gas laws. Throughout the term, the kinetic molecular theory is constantly stressed. Students will use the process skills of analyzing data, inquiry, and problem solving; and study concepts of chemistry to increase their understanding of current technology-related problems and awareness of the impact that chemistry has on society. Note: This course is not open to students who have successfully completed Chemistry-Honors.

Course Standards

Standard A: Science Connections

Standard B: Nature of Science

Standard C: Science Inquiry

Standard D: Physical Science

Standard G: Science Applications

Standard H: Science in Social and Personal Perspectives

Explanations of standards and most essential benchmarks may be viewed at: www.kusd.edu.

Lifelong Learning Standards

- Knowledgeable person
- Effective communicator
- Quality producer
- Complex thinker
- Self-directed learner
- Contributing citizen

Lifelong learning benchmarks may be viewed at: www.kusd.edu.

Course Outline

- I. Introduction and Review
 - a. Lab Safety
 - i. Techniques Lab
 - ii. Physical Identification Lab
 - b. Base Units
 - c. Derived Units
 - d. Density
 - i. Density Lab

- e. Scientific Notation
- f. Dimensional Analysis (Scientific Method)
- g. Significant figures
- h. Graphing
- II. The Properties of Matter
 - a. Chemical and Physical Properties
 - b. Chemical and Physical Changes
 - c. Mixtures
 - i. Chromatography Lab
 - d. Elements and Compounds
 - i. Identify the Product of a Chemical Reaction Lab
- III. Atoms
 - a. Atomic Theories
 - b. Atomic Composition
 - c. Atomic Number and Mass
 - d. Isotopes
- IV. Periodic Table
 - a. Development of the Periodic Table
 - b. Reading the Periodic Table
 - c. Classifications of elements
 - i. Metal Nonmetal Lab
- V. Ionic Compounds and Metals
 - a. Forming Ions (cations and anions)
 - b. Ionic Bonds and Compounds
 - c. Names and Formulas
 - d. Metallic Bonds
 - i. Formation of Salt Lab OR
 - ii. Synthesize an Ionic Compound
- VI. Covalent Bonds
 - a. Types (Single and Multiple)
 - b. Naming Molecules
 - c. Naming Acids
 - d. Molecular structure
 - e. Polar Covalent Bonds
 - i. Model Molecular Shapes
- VII. Chemical Reactions
 - a. Representing reactions
 - b. Balancing equations
 - c. Synthesis Type Reaction
 - d. Combustion Type Reaction
 - e. Decomposition Type Reaction
 - f. Single Replacement Type Reaction
 - g. Double Replacement Type Reaction
 - i. Precipitate Lab OR
 - ii. Flinn Science Precipitate Lab
- VIII. The Mole

- a. Measuring
 - b. Converting
 - c. Molar Mass
 - d. Moles of Compounds
 - e. Percent Composition
 - f. Empirical Formula
 - i. Mole Lab (Flinn Lab?)
- IX. Stoichiometry
- a. Mole Ratio
 - b. Calculations
 - c. Percent yield
- X. States of Matter
- XI. Gases
- a. Boyle's Law
 - b. Charles' Law
 - c. Ideal Gas Law
 - d. Stoichiometry
 - i. Boyle's Law Lab (Supplemental)
 - ii. Charles's Law Lab (Supplemental)

Board-Approved Instructional Materials

Buthelezi, Thandi et al (2008). *Chemistry Matter and Change*. Glencoe McGraw-Hill.

Methods of Assessment

Final exams should be cumulative in nature, emphasizing the most essential benchmarks for the course. Results of the final exam represent 20 percent of the final grade, but this single measure *may not* drop a student's grade by more than one letter grade. In courses that rely heavily on a major project, performance exhibition, etc., the project should be divided into stages or components and each of those should be graded separately, providing students with frequent and specific feedback.

Board-Approved Grading Scale

Excerpts taken from School Board Rule 6452

GRADING SCALE

A+=98-100 percent	B+=86-89 percent	C+=76-79 percent	D+=66-69 percent
A=93-97 percent	B=83-85 percent	C=73-75 percent	D=63-65 percent
A-=90-92 percent	B-=80-82 percent	C-=70-72 percent	D-=60-62 percent
			F=0-59 percent

MAKE-UP WORK

Students submitting work up to ten school days late without prior approval may receive up to two grades lower on the work than they would have received if the work had been submitted on time (i.e., B+ lowered to a D+). Student work submitted after ten school days without prior approval shall not be accepted for credit and shall be recorded with a score of zero.

Upon returning to school after an absence, a student has the responsibility within the number of days equal to the length of the absence or suspension to meet with the teacher to develop a plan for making up missed work, quizzes, and examinations. A truant student has the responsibility on the first day he or she returns to the course/class to meet with the teacher to develop a plan for making up missed work, quizzes, and examinations. Lower grades may not be given for late work due to excused absences, suspension, or truancy unless the work is submitted later than agreed upon deadlines.

See Rule 6452 in its entirety at: www.kusd.edu.