Fairfield Ludlowe High School - Fairfield Warde High School

CHEMISTRY 31

Insert Teacher Name | Insert Room Number

Full Year | Insert Period

Insert Email Address

COURSE DESCRIPTION

Chemistry 31 is an honors level class. The course meets seven periods a week including two double lab periods. This advanced sequence course will provide students with a detailed and intricate knowledge of chemistry and will prepare students for entry into the advanced placement program. Major topics of study include: atomic and molecular structure, chemical reactions, the periodic table, the separation of substances, energy in chemical change, and solutions.

Students will investigate these topics through a variety of classroom activities which include: pre-written and open-ended laboratory experiments; small group discussions; lectures and note taking; viewing videos; learning and applying problem-solving techniques; and relating chemical principles to daily experience. Students will understand the role of chemistry in explaining natural phenomena and in seeking solutions to scientific and technological problems that citizens of the 21st century will face.

COURSE OBJECTIVES

Students will understand that:

- scientific numeracy includes the ability to use mathematical operations and procedures to calculate, analyze and present scientific data and ideas.
- biological, chemical, and physical properties of matter result from the ability of atoms to form bonds from electrostatic forces between electrons and protons and between atoms and molecules.
- atoms react with one another to form new molecules.
- the periodic table displays the elements in increasing atomic number and shows how periodicity of the physical and chemical properties of the elements relates to atomic structure.
- due to its unique chemical structure, carbon forms many organic and inorganic compounds.
- chemical technologies present both risks and benefits to the health and well being of humans, plants and animals.
- the conservation of atoms in chemical reactions leads to the principle of conservation of matter and the ability to calculate the mass of products and reactants.
- energy cannot be created or destroyed; however, energy can be converted from one form to another.
- the use of resources by human populations may affect the quality of the environment.
- chemical reaction rates depend on factors that influence the frequency of collision of reactant molecules.

UNITS OF STUDY

- Scientific Knowledge & Reasoning
- Dimensional Analysis, Problem Solving & Significant Figures
- States of Matter & Energy Changes
- Structure of Matter
- Periodic Table
- Bonding & Molecular Structure
- Formula Writing
- Mathematics of Chemical Formulas
- Types of Reactions
- Stoichiometry of Chemical Reactions

- Thermochemistry
- Gas Laws
- Solids, Liquids, and Solutions
- Kinetics, Equilibrium, and Thermodynamics
- Acids & Bases
- Oxidation, Reduction and Electrochemistry

COURSE POLICIES AND REQUIREMENTS

GRADING

Summative Assessments: 90%
Insert Categories/Weighting (ie. Papers – 30%)

Formative Assessments: 10%
Insert Categories/Weighting (ie. Quizzes – 50%)

Behavioral Characteristics: 0%
Insert Categories/Weighting (ie. Particip. - 90%)

Insert Additional Grading Information Here

MATERIALS

Insert Course Materials Here (ie. Textbook, Binder, Calculator, Highlighters)

EXPECTATIONS OF STUDENTS

Insert Course Expectations Here

EXTRA HELP

Insert Course Expectations Here

Insert Additional Information Here