



Course: Chemistry 11

Course Description:

In this course, students will develop a foundational understanding of chemical principles and their real-world applications. Through hands-on experiments and problem-solving activities, they will learn about atomic structure, chemical reactions, bonding, stoichiometry, solutions, and organic chemistry. Students will develop their creative thinking, critical thinking, laboratory skills, and their ability to communicate scientific information.

Big Ideas: By the end of this course, students will understand:

Atoms and molecules

- Atoms are the building blocks of matter
- The quantum mechanical model extends our understanding of the atom
- Atomic structure determines chemical properties

Organic chemistry

- Organic compounds differ in structure and properties
- Carbon is the basis for all living things
- The structure and geometry of organic compounds contribute to their usefulness in medicine

Mole

- A mole is a unit of measure of atoms
- The mole concept is essential for chemical calculations

Chemical reactions

- Chemical reactions involve the rearrangement of atoms
- Energy changes accompany chemical reactions
- Chemical reactions take place around us in our everyday life

Solubility

- Polarity and molecular structure influence solubility
- Temperature and Pressure impact solubility

Core Competencies:

Communication

- Communicate scientific ideas, findings, and arguments clearly using appropriate terminology, models, and representations.
- Collaborate with peers to discuss and analyze chemical concepts and experimental results.
- Interpret and explain data from graphs, tables, and equations in both written and verbal formats.
- Justify conclusions using scientific evidence from experiments, research, and real-world applications.



Thinking

- Apply scientific reasoning and critical thinking to solve problems related to chemical reactions, stoichiometry, and atomic structure.
- Use the mole concept and mathematical calculations to analyze chemical quantities.
- Make predictions and develop hypotheses based on observed chemical patterns and trends.
- Design and conduct experiments safely, considering variables, controls, and sources of error.
- Evaluate the reliability and validity of data, drawing meaningful conclusions from experimental results.

Personal & Social

- Demonstrate responsibility in handling chemicals, lab equipment, and safety procedures.
- Recognize the role of chemistry in environmental sustainability, technology, and daily life.
- Reflect on ethical considerations related to chemical use and industrial applications.
- Show perseverance and adaptability when faced with complex scientific problems.
- Engage in respectful discussions and consider multiple perspectives in scientific and environmental issues.

Resources: Hebden Workbook, Heath Chemistry Laboratory Experiments Book, Data Booklet, Mole Concept Reference Charts, Organic Chemistry & Functional Groups Study Charts, Molecular Model Kits

Assessment:

Formative

Think-Pair-Share, Interactive Questioning, Self-Assessments, Homework, Presentations, Exit Slips, Quick Summaries, Open-Ended Questions

Summative

Unit Tests, Lab Reports, Research Project, Midterm and Final Exam

Evaluation:

Quizzes	10%
Mid-Term Exam	25%
Final Exam	25%
Labs	25%
Project	10%
Participation	5%
Total	100%

Please note that Assessment and Evaluation weights may be changed. Students will be informed of any changes ahead of time.



With respects to the First People's Principles of Learning, students may be alternatively assessed in ways that people can display knowledge and subject mastery. The alternative assessment can be storytelling, art or other expressions of self, knowing and learning.

- Learning involves recognizing the consequences of one's actions.
- Learning involves generational roles and responsibilities.

Expectations:

- Be sure to check MyCC regularly for updates and announcements related to the course.
- Always follow all lab safety rules and procedures.
- Actively participate in class discussions, group work, and lab activities.
- Complete all assignments and homework on time.
- Always exhibit responsible, cooperative, and respectable behavior
- Avoid plagiarism and maintain academic honesty in all assignments and labs.