

St. Croix Lutheran High School
Advanced Chemistry
Syllabus
2011-2012

Mr. Jeff Strehlow

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Text:

World of Chemistry. McDougal Littell, 2006.

Course Outcomes:

- ◆ The student will give glory to God for his infinite wisdom shown in the awesome design of his creation;
- ◆ The student will understand the nature of matter including its forms, properties and interactions.
- ◆ The student will describe chemical reactions and the factors that influence them.
- ◆ The student will understand energy forms, transformations and transfers.
- ◆ The student will understand the nature of scientific ways of thinking and that scientific knowledge changes and accumulates over time.
- ◆ The student will design and conduct a scientific investigation.
- ◆ The student will understand the relationship between science and technology and how both are used.
- ◆ The student will recognize the historical and cultural context of scientific endeavors and how they influence each other.
- ◆ The student will practice and appreciate the collaborative nature of science.

Course Content (*Essential Questions*):

- ◆ CONCEPTS TAUGHT AND REVIEWED THROUGHOUT THE YEAR
 - Lab Safety / Lab Equipment Use
 - *“How could I get hurt in this class?”*
 - Measurements and Calculations
 - *“How do I use the quantitative tools of science?”*
- ◆ SEMESTER I
 - Nature of Science & Engineering
 - *“How does a scientist think?”*
 - Matter ó States
 - *“What’s the matter?”*
 - Matter - Mixtures
 - *“How does matter ‘mix it up’?”*
 - Chemical Foundations: Elements & Compounds
 - *“What are the elements of an atom?”*
 - *“What are compounds?”*
 - *“How does one communicate compound formulas and names?”*
 - Chemical Composition
 - *“What’s a ‘mole’ for?”*
 - Nature of Science & Engineering
 - *“Who does science?”*

- ◆ SEMESTER II
 - Chemical Reactions: An Introduction
 - “How can we make a chemical reaction react faster?”
 - “What’s so great about a balanced chemical equation?”
 - Reactions in Aqueous Solutions
 - “What important chemical reactions often take place ‘underwater’?”
 - Energy
 - “What energizes chemistry?”
 - “How could our energy choices affect the earth and society?”
 - Nature of Science & Engineering
 - “How is science limited?”
 - Modern Atomic Theory
 - “How did we arrive at our modern atomic theory?”
 - “Why do we care about where electrons are in an atom?”
 - Chemical Bonding
 - “Why do atoms develop relationships?”
 - “What does organic chemistry basically look like?”
 - Nuclear Energy
 - “How have scientists tried to work with radioactive decay?”
 - “What happens during a nuclear reaction?”

Procedures & Policies:

- ◆ *Classroom Behavior Rule: “Respect.”*
- ◆ *Safety: Students will demonstrate a commitment to safety by learning proper laboratory procedures and by signing a chemistry student safety contract.*
- ◆ *Passing period: The passing period will be extended 1 minute for Mr. Strehlow’s room. Students may use this extra time to use the restroom or to retrieve an item forgotten in a locker. Once class has begun, students are not allowed to leave the classroom unless it is an emergency.*
- ◆ *Online: Students are encouraged to utilize Mr. Strehlow’s webpage and their own online grade reports regularly.*
- ◆ *Grades*
 - *Letter grades are designed to strictly assess students’ levels of mastery.*
 - *Extra credit work will not be offered.*
 - *Daily work is to be viewed as “practice”; therefore, its weight for the overall grade is minimal.*
 - *Weighting for overall grade*

▪ <i>Tests / Performance Assessments</i>	<i>40%</i>
▪ <i>Quizzes</i>	<i>25%</i>
▪ <i>Daily Work</i>	<i>10%</i>
▪ <i>Lab Reports</i>	<i>10%</i>
▪ <i>Semester Exam/Project</i>	<i>15%</i>
 - *Grading scale: St. Croix’s standard scale as listed in the Student Handbook*

Thank you for taking this class. I look forward to growing with you as we explore and appreciate the wonders of God’s creation. - Mr. Strehlow

