Waterloo Region District School Board
FOREST HEIGHTS COLLEGIATE INSTITUTE

Grade 11 University Chemistry – SCH 3UI
Course Overview 2013 - 2014

Course Type: University **Grade Level:** 11
Teacher: Mr. White **Department:** Science
Textbook: Chemistry 11 by Nelson Publishing

Course Description:

This course enables students to deepen their understanding of chemistry through the study of the properties of chemicals and chemical bonds; chemical reactions and quantitative relationships in those reactions; solutions and solubility; and atmospheric chemistry and the behaviour of gases. Students will further develop their analytical skills and investigate the qualitative and quantitative properties of matter, as well as the impact of some common chemical reactions on society and the environment.

Prerequisite: Science, Grade 10, Academic

Big Ideas:

Matter, Chemical Trends, and Chemical Bonding
- Every element has predictable chemical and physical properties determined by its structure.
- The type of chemical bond in a compound determines the physical and chemical properties of that compound.
- It is important to use chemicals properly to minimize the risks to human health and the environment.

Chemical Reactions
- Chemicals react in predictable ways.
- Chemical reactions and their applications have significant implications for society and the environment.

Quantities in Chemical Reactions
- Relationships in chemical reactions can be described quantitatively.
- The efficiency of chemical reactions can be determined and optimized by applying an understanding of quantitative relationships in such reactions.

Solutions and Solubility
- Properties of solutions can be described qualitatively and quantitatively, and can be predicted.
- Living things depend for their survival on the unique physical and chemical properties of water.
- People have a responsibility to protect the integrity of Earth's water resources.

Gases and Atmospheric Chemistry
- Properties of gases can be described qualitatively and quantitatively, and can be predicted.
- Air quality can be affected by human activities and technology.
- People have a responsibility to protect the integrity of Earth's atmosphere

Overall Expectations:

Matter, Chemical Trends, and Chemical Bonding

B1. Analyze the properties of commonly used chemical substances and their effects on human health and the environment, and propose ways to lessen their impact;
B2. Investigate physical and chemical properties of elements and compounds, and use various methods to visually represent them;
B3. Demonstrate an understanding of periodic trends in the periodic table and how elements combine to form chemical bonds.

Chemical Reactions

C1. Analyze chemical reactions used in a variety of applications, and assess their impact on society and the environment
C2. Investigate different types of chemical reactions;
C3. Demonstrate an understanding of the different types of chemical reactions.

Quantities in Chemical Reactions

D1. Analyze processes in the home, the workplace, and the environmental sector that use chemical quantities and calculations, and assess the importance of quantitative accuracy in industrial chemical processes;
D2. Investigate quantitative relationships in chemical reactions, and solve related problems;
D3. Demonstrate an understanding of the mole concept and its significance to the quantitative analysis of chemical reactions.

Solutions and Solubility

E1. Analyze the origins and effects of water pollution, and a variety of economic, social, and environmental issues related to drinking water;
E2. Investigate qualitative and quantitative properties of solutions, and solve related problems;
E3. Demonstrate an understanding of qualitative and quantitative properties of solutions.

Gases and Atmospheric Chemistry

F1. Analyze the cumulative effects of human activities and technologies on air quality, and describe some Canadian initiatives to reduce air pollution, including ways to reduce their own carbon footprint;
F2. Investigate gas laws that explain the behaviour of gases, and solve related problems;
F3. Demonstrate an understanding of the laws that explain the behaviour of gases.

ASSESSMENT AND EVALUATION:

A variety of assessment tasks will be used to evaluate student progress.

- **Late and Missed Assignments** – To achieve success in this course, all essential course components must be demonstrated. Incomplete work is **NOT** an option.
- **Cheating and Plagiarism** – It is important for students to do their own best work. If a student is suspected of cheating or plagiarizing, the teacher in consultation with administration, will determine the next steps and/or consequences.
- **Learning Skills and Work Habits** – The areas of Responsibility, Organization, Independent Work, Collaboration, Initiative, and Self-regulation are important and will be assessed and reflected on the provincial report card.
- **Attendance**– Attendance and punctuality in classes are important parts of learning and an expectation of student behaviour. Lates are to be avoided to benefit from full instructional time and not disrupt other's learning time. When a student is absent, a parent/guardian must call the school's attendance line on the date of absence, or provide a note explaining the absence for the student to submit the following day. Students are responsible for missed work during their absence.

Course Evaluation:

Matter, Chemical Trends, Chemical Bonding --12%	Solutions and Solubility --- 12%
Chemical Reactions --- 12%	Gases and Atmospheric Chemistry --- 12%
Quantities in Chemical Reactions --- 12%	Literacy --- 5%
Nomenclature --- 10%	Final Evaluation --- 30%

Website: http://dl.dropboxusercontent.com/u/40016123/index.htm

By signing this course outline, I acknowledge that I have read and understood the expectations and requirements for successful completion of this course.

_____ _____
Student's Name Date

_____ _____
Parent/Guardian Signature Date