

Course Syllabus – SCH3U
Chemistry, Grade 11 University Preparation

Teacher: **Mr. Kaiser**

Semester 1, 2017-18

Description

Chemistry is the study of the ways that the basic elements of our world interact with each other and the underlying principles of these interactions. God created an orderly, predictable world that reflects His character, and He invites us to learn about Him as we make observations and inferences about His world.

Our society and lifestyle are dependent on chemical industries, processes, and their applications. An understanding of basic Chemistry, its implications, and its impacts is vital to anyone living in modern society.

This course is an introduction to the study of Chemistry. We will study some of the fundamental areas of Chemistry and lay the foundation for further studies in this field and other sciences. Problem solving and laboratories will be central activities in this course. Laboratories will focus on developing the safety, lab, and investigative skills needed to succeed in science.

Outline of Course Content

Topic	Text reference
Unit 1: Matter, Chemical Trends, and Chemical Bonding	Ch. 1, 2
Unit 2: Chemical Reactions	Ch. 3, 4
Unit 3: Quantities in Chemical Reactions	Ch. 5, 6, 7
Unit 4: Solutions and Solubility	Ch. 8, 9, 10
Unit 5: Gases and Atmospheric Chemistry	Ch. 11, 12

Text: Chemistry 11 (Clancy et al., McGraw-Hill Ryerson) 2011
Replacement cost if lost or damaged: \$75

Course Materials

- 3-ring binder with plenty of loose-leaf **lined** and **graph** paper
- Pens, pencils, eraser, ruler
- Calculator (two-line recommended; only non-graphing allowed on tests/exams)

Assessment As, Of, and For Learning

- Assessment *FOR* learning are activities that help you learn course concepts while also informing you and your teacher of how you are progressing in the course – without counting towards your final grade (homework, quiz, observation/discussion, worksheet...).
- Assessment *AS* learning (eg. self and peer assessment) are activities that cause you to reflect on your own (or someone else's) learning, and to act on your thinking to improve your learning.
- Assessment *OF* learning is the course work (tests, assignments, labs ...) that demonstrates formally what you have learned in the course. This is evaluated by your teacher and will make up 70% of your final grade. Your final exam will be worth 30% and consists of a written exam (25%) and a practical lab exam (5%).

Evaluation	Categories	Weighting
Term Work	Knowledge / Understanding	20 %
	Thinking / Problem Solving	20 %
	Communication	15 %
	Application	15 %
Final Evaluation	Final Exam (Written & Practical)	30%

Absences and Late Assignments

- Talk to the teacher if you know you will be away for a test or to negotiate an extension on an assignment. Tests missed due to skipping will be recorded as zero. Tests missed due to legitimate absence will be written on the return of the student during lunch or after school.
- **Paper copies** of assignments are due **on my desk** at the **beginning of class** on their **due date**. Late assignments will be deducted 10% per day and the student assigned to Study Hall until complete.

Student Expectations

Active class participation and on-time completion of homework and assignments are important tools for success in this course. Don't hesitate to ask questions (though I may not always have answers).

Classroom Rules

1. Bring ALL books/materials to class AND take them all with you when you leave.
2. Be in your assigned seat and ready to work when the bell rings.
3. Treat each person in the room with dignity and respect (me and each other).
4. Follow directions the first time they're given.
5. Follow all procedures and policies as outlined in the RCHS student handbook.

Classroom Procedures

- Go to the bathroom before class. Do not expect to be allowed to go during class.
- Keep a neat and organized notebook. Notes should have dates and should be in order. **You** are responsible for getting any notes or assignments missed when you are absent. Keep tests and quizzes to study from.
- Complete your homework on time with proper headings (name, date, page). Homework will be assigned and checked regularly. Repeated failure to complete homework will result in study hall.
- The bell does not dismiss you – the teacher does. Stay in your seat until you are told you may go.

SCH3U – Course Overall Expectations

A. SCIENTIFIC INVESTIGATION SKILLS AND CAREER EXPLORATION

Throughout this course, students will:

1. demonstrate scientific investigation skills (related to both inquiry and research) in the four areas of skills (initiating and planning, performing and recording, analysing and interpreting, and communicating);
2. identify and describe careers related to the fields of science under study, and describe the contributions of scientists, including Canadians, to those fields.

B. MATTER, CHEMICAL TRENDS, AND CHEMICAL BONDING

By the end of this course, students will:

1. analyse the properties of commonly used chemical substances and their effects on human health and the environment, and propose ways to lessen their impact;
2. investigate physical and chemical properties of elements and compounds, and use various methods to visually represent them;
3. demonstrate an understanding of periodic trends in the periodic table and how elements combine to form chemical bonds.

C. CHEMICAL REACTIONS

By the end of this course, students will:

- 1. analyse chemical reactions used in a variety of applications, and assess their impact on society and the environment;**
- 2. investigate different types of chemical reactions;**
- 3. demonstrate an understanding of the different types of chemical reactions.**

D. QUANTITIES IN CHEMICAL REACTIONS

By the end of this course, students will:

1. analyse 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;
2. investigate quantitative relationships in chemical reactions, and solve related problems;
3. demonstrate an understanding of the mole concept and its significance to the quantitative analysis of chemical reactions.

E. SOLUTIONS AND SOLUBILITY

By the end of this course, students will:

1. analyse the origins and effects of water pollution, and a variety of economic, social, and environmental issues related to drinking water;
2. investigate qualitative and quantitative properties of solutions, and solve related problems;
3. demonstrate an understanding of qualitative and quantitative properties of solutions.

LEARNING SKILLS AND WORK HABITS IN GRADES 1 TO 12

Learning Skills and Work Habits	Sample Behaviours
Responsibility	<p>The student:</p> <ul style="list-style-type: none"> • fulfils responsibilities and commitments within the learning environment; • completes and submits class work, homework, and assignments according to agreed-upon timelines; • takes responsibility for and manages own behaviour.
Organization	<p>The student:</p> <ul style="list-style-type: none"> • devises and follows a plan and process for completing work and tasks; • establishes priorities and manages time to complete tasks and achieve goals; • identifies, gathers, evaluates, and uses information, technology, and resources to complete tasks.
Independent Work	<p>The student:</p> <ul style="list-style-type: none"> • independently monitors, assesses, and revises plans to complete tasks and meet goals; • uses class time appropriately to complete tasks; • follows instructions with minimal supervision.
Collaboration	<p>The student:</p> <ul style="list-style-type: none"> • accepts various roles and an equitable share of work in a group; • responds positively to the ideas, opinions, values, and traditions of others; • builds healthy peer-to-peer relationships through personal and media-assisted interactions; • works with others to resolve conflicts and build consensus to achieve group goals; • shares information, resources, and expertise and promotes critical thinking to solve problems and make decisions.
Initiative	<p>The student:</p> <ul style="list-style-type: none"> • looks for and acts on new ideas and opportunities for learning; • demonstrates the capacity for innovation and a willingness to take risks; • demonstrates curiosity and interest in learning; • approaches new tasks with a positive attitude; • recognizes and advocates appropriately for the rights of self and others.
Self-regulation	<p>The student:</p> <ul style="list-style-type: none"> • sets own individual goals and monitors progress towards achieving them; • seeks clarification or assistance when needed; • assesses and reflects critically on own strengths, needs, and interests; • identifies learning opportunities, choices, and strategies to meet personal needs and achieve goals; • perseveres and makes an effort when responding to challenges.