



Grand River Collegiate Institute COURSE OUTLINE

For students and their families.

Course Name

Chemistry, Grade 12, University Preparation

Curriculum Document <http://www.edu.gov.on.ca/eng/curriculum/secondary/>

Course Code

SCH 4U

Prerequisite

SCH 3UI

Teacher

Ms. Ruby

Contact

519-576-5100 (ext.3219)

Textbook

Nelson Chemistry 12 (Replacement Cost \$99.95)

Course Description:

This course enables students to deepen their understanding of chemistry through the study of organic chemistry, the structure and properties of matter, energy changes and rates of reaction, equilibrium in chemical systems, and electrochemistry. Students will further develop their problem-solving and investigation skills as they investigate chemical processes, and will refine their ability to communicate scientific information. Emphasis will be placed on the importance of chemistry in everyday life and on evaluating the impact of chemical technology on the environment.

Essential Learnings/Expectations/Skills - To be successful in this course you **must** be able to demonstrate **all** of these essential expectations.

Scientific Investigation Skills and Career Exploration (throughout the course):

- Demonstrate scientific investigative skills (related to both inquiry and research) in the four areas of skills (initiating and planning, performing and recording, analysing and interpreting, and communicating).
- Identify and describe careers related to the fields of science under study, and describe the contributions of scientists, including Canadians, to those fields.

Electrochemistry (Strand 1):

- Analyse technologies and processes relating to electrochemistry, and their implications for society, health and safety, and the environment.
- Investigate oxidation-reduction reactions using a galvanic cell, and analyse electrochemical reactions in qualitative and quantitative terms.
- Demonstrate an understanding of the principles of oxidation-reduction reactions and the many practical applications of electrochemistry.

Energy Changes and Rates of Reaction (Strand 2):

- Analyse technologies and chemical processes that are based on energy changes, and evaluate them in terms of their efficiency and their effects on the environment.
- Investigate and analyse energy changes and rates of reaction in physical and chemical processes, and solve related problems.
- Demonstrate an understanding of energy changes and rates of reaction.

Chemical Systems and Equilibrium (Strand 3):

- Analyse chemical equilibrium processes, and describe their impact on biological, and biochemical systems.
- Investigate the qualitative and quantitative nature of chemical systems at equilibrium, and solve related problems.
- Demonstrate an understanding of the concept of dynamic equilibrium and the variables that cause shifts in the equilibrium of chemical systems.

Structure and Properties of Matter (Strand 4):

- Identify the benefits to society and describe the environmental impact of products and technologies that apply principles related to the structure and properties of matter.
- Investigate the molecular shapes and physical properties of various types of matter.
- Demonstrate an understanding of atomic structure and chemical bonding, and how they relate to the physical properties of ionic, molecular, covalent network, and metallic substances.

Organic Chemistry (Strand 5):

- Describe the social and environmental impact of organic compounds used in everyday life, and propose ways to reduce the use of compounds that are harmful to human health and the environment.
- Investigate organic compounds and organic chemical reactions, and use various methods to represent the compounds.
- Demonstrate an understanding of the structure, properties, and chemical behaviour of compounds within each class of organic compounds.

EVALUATION – Evidence of Learning

Formative Assessment:

There will be many ongoing formative assessments throughout the course. Formative assessments serve as practice for students prior to being evaluated (summative assessment). The ongoing feedback helps students to recognize their strengths and weaknesses and provides information to the teacher regarding next steps for the student's learning. In the case where, due to extenuating circumstances, a student has been unable to compete a summative assessment, formative assessments may be used as additional evidence to support the teacher's professional judgment when determining a final grade.

Summative Assessment:

Summative assessment will occur near the end of the unit/instruction and is used to evaluate student learning and to determine grades

The types of formative and summative assessments are outlined below:

Assessment Technique	Purpose
Quizzes – (on-line and in-class)	Formative
Laboratory Reports	Formative and Two Major Summative Reports
Tests (one per strand)	Summative
Assignments (one per strand)	Summative

Final Grade	
Term Work	
• Tests	45 %
• Lab Reports and Assignments	25 %
Final Written Exam – 2 Hour Exam	30 %

Refer to the **GRCI Web Site** www.grc.wrdsb.ca for Assessment, Evaluation and Reporting Policies as well as Academic Honesty and Late Policies.

Procedures

Late and Missing Assignments: It is important for students to develop good personal management skills (such as time management and planning). These skills will be reflected in the **learning skills** area of the report card. It is expected that students will complete and submit all essential tasks as they are the opportunity for you to demonstrate your learning to your teacher.

Attendance: Attendance in classes is an important part of learning, and absences should be avoided. 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 what they missed during their absence.

Cheating and Plagiarism: It is important for students to do their own best work. Most assignments for this class are done within the classroom, observed by the teacher, and this helps to minimize the chances of cheating and plagiarism. In the event that cheating or plagiarism occurs, the following consequences may be implemented, in consultation with administration, depending on the situation:

1. The student may be required to redo all or part of the assignment or assessment.
2. The student may be required to complete an alternate assignment or assessment.
3. The student's work may be treated as a missed assignment.

There may also be other consequences that are determined to be appropriate (e.g. detention, suspension, etc.) as per the school's progressive discipline process. Parents/guardians will be informed about the infraction and the consequences.

Please refer to the school website: <http://grc.wrdsb.ca/about/policies> for more details on these policies and other academic procedures.

Signatures

Please sign below indicating you have read and understand the requirements for successful completion of this course.

Student Name

Parent/Guardian Name

Student Signature

Parent/Guardian Signature

Date

Date

Daytime phone number

Evening phone number

Email address