**Chemistry 30 Course Outline**

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**Location**: TBA

**COURSE DESCRIPTION**

The themes of **systems, energy**, **diversity** and **change** are central in Chemistry 30.  The components of a **system**, which may be a collection of substances or processes, influence each other by the transfer of **energy** and **matter**.  Changes to one part result in changes to other parts of the system.  In a system at **equilibrium**, opposing reactions are balanced.

The major themes allow connections to be drawn between the four units of the course and between all eight units in Chemistry 20-30.

**COURSE OBJECTIVES**

* To develop an ability to communicate with increasing maturity, logic, and clarity in both written and verbal forms.
* To increase the ability to listen, speak, view, read, write, and represent in a logical, coherent, and clearly defined manner.
* To relate literary (and other mediums) to own personal experience and to broaden knowledge of own cultural heritage through the enjoyment of literature; to respond personally to a variety of texts.
* To develop the ability to make informed critical responses to literature (and other mediums) through understanding and appreciation of form, structure, and style.
* To use writing and other forms of representation to: explore, clarify, and reflect on thoughts, feelings, experiences, and learning; to use imagination.
* To create texts collaboratively and independently, using a variety of forms for a range of audiences and purposes.

**LEARNING OUTCOMES**

The Chemistry 30 program is based on the Alberta Program of Studies. The time designated to anyone unit may vary, depending on the number and type of skills and activities to be integrated into that theme. Every attempt will be made to teach concepts in an integrated fashion so that their interrelationship will be understood and applied by students

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**SEQUENCE OF UNITS**

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| **Unit A** | **Organic Chemistry** | HydrocarbonsPetrolium | 1. How do organic compounds influence our daily lives?
2. How should society balance the need for the products produced by organic compounds and the environmental implications of mining, refining, manufacturing and consuming these products?
3. What kinds of chemical reactions are used to manipulate hydrocarbons in order to produce petrochemicals?
4. How has the chemical industry responded to concerns about the environment?
5. What are some of the processes that occur within Alberta’s [petrochemical](http://thehub.fsd38.ab.ca/mod/glossary/showentry.php?eid=183&displayformat=dictionary) industry?
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|  | **Exam A** |  |  |
| **Unit B** | **Thermochemistry** | Energy in Chemical ChangeEnergy in Chemical Reactions | 1. How are [endothermic](http://thehub.fsd38.ab.ca/mod/glossary/showentry.php?eid=142&displayformat=dictionary) (energy absorbing) and [exothermic](http://thehub.fsd38.ab.ca/mod/glossary/showentry.php?eid=145&displayformat=dictionary) (energy releasing) reactions important to current technologies?
2. Why is it important to know the [enthalpy](http://thehub.fsd38.ab.ca/mod/glossary/showentry.php?eid=143&displayformat=dictionary) (energy change) of a reaction?
3. Why do we use gasoline to power automobiles? What other choices are there?
4. How important is knowing how energy flows through different chemical reactions for your selection of an effective fuel source?
5. In the choice of a [catalyst](http://thehub.fsd38.ab.ca/mod/glossary/showentry.php?courseid=3&eid=157&displayformat=dictionary), is faster always better?
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|  | **Exam B** |  |  |
| **Unit C** | **Electrochemistry** | Electrochemical ReactionsBatteries in Balance | 1. Why is it important to distinguish between electrochemical reactions and others?
2. How are [spontaneous](http://thehub.fsd38.ab.ca/mod/glossary/showentry.php?eid=160&displayformat=dictionary) and [non-spontaneous](http://thehub.fsd38.ab.ca/mod/glossary/showentry.php?eid=159&displayformat=dictionary) reactions used within modern technologies?
3. How is redox titration used in industry? Why is it important?
4. How do oxidation and reduction potentials inform the choice of materials used in manufacturing?
5. Are rechargeable batteries better than disposable ones?
6. What are the practical uses for electrolysis?
7. What considerations must be taken into account when selecting a voltaic cell/battery for a given purpose?
8. Should fuel cells be used in automobiles?
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|  | **Exam C** |  |  |
| **Unit D** | **Chemical Equilibrium focusing on Acid-Base Systems** | Chemical EquilibriumAcids and Bases | 1. What is happening in a system at [equilibrium](http://thehub.fsd38.ab.ca/mod/glossary/showentry.php?eid=190&displayformat=dictionary)?
2. How do scientists predict shifts in the [equilibrium](http://thehub.fsd38.ab.ca/mod/glossary/showentry.php?eid=190&displayformat=dictionary) of a system?
3. *How does the* [*equilibrium*](http://thehub.fsd38.ab.ca/mod/glossary/showentry.php?eid=190&displayformat=dictionary) *of acids and bases affect environmental and biological systems?*
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|  | **Exam D** |  |  |

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| **TEXTBOOK** | Nelson Chemistry, F. Jenkins at al.Online Textbook Resources <http://www.nelson.com/ABchem20-30/>Click on "Student Centre" on the left. Login found below:nelsonchem\_studentnelsonchem\_onlinelearningStrongly Recommended additional references:                                    The Key: Chemistry 30Exambank:  <http://www.alberta.exambank.ca/>                                    User name: fchs                                    Password: ahsfa | http://www.nelson.com/ABchem20-30/images/bookcover.jpg |

 **ASSESSMENTS AND EVALUATIONS**

In each topic, you will be given a project that provides you an opportunity to demonstrate your knowledge and understanding gained during the topic. Each project will have a description outlining what is required, as well as a rubric showing how you will be evaluated once you have submitted the project for grading.  The grading scheme for the course is as follows;

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| --- | --- |
| **Course 70%** | **Unit A (25% total)** |
| **Unit B (25% total)** |
| **Unit C (25% total)** |
| **Unit D (25% total)** |
| **Diploma Exam****30%** |  |

 **REQUIRED MATERIALS**

* A binder, in order and up-to-date, complete with both lined and blank paper
* 2+ writing utensils, incase you lose the first one
* Calculator (e.g. TI-84 or better is recommended, or equivalent)
* Geometry Set (containing ruler, protractor, compass,etc.)
* Coloured Pencils

**BEHAVIORAL EXPECTATIONS**

* I expect that you will attend class every day, prepared to work, with a writing utensil, an organized binder, and any other supplies or textbooks that are being used for the unit being studied.
* I expect that cell phones will be turned off before you enter the classroom; phones that are being used during class or that ring, chime, vibrate, etc. will be confiscated until the end of the lesson. Repeat offenders will receive further disciplinary action at the teacher/administrator level.
* I expect that any food or drink consumed in class is healthy and does not disturb others (smell, noises,or messes). The moment eating/drinking becomes detrimental to learning is the moment it becomes unacceptable.
* I expect that you will treat your teacher and fellow classmates with respect. Everyone has a right to be heard and to learn in a secure environment.
* I expect that you will treat the property of the school and the property of others in a proper manner.
* I expect you to always do your best. This means that you will participate in all activities involved in this class, including listening and viewing activities, and you must hand assignments in, on time and complete. I expect you to do well—and I know that you will.

**ATTENDANCE**

* Attendance is taken daily and SynerVoice—an interactive communication tool that delivers daily attendance and occasional school-wide messages to parents—is in operation at FCHS/AHSFA.
* IT IS THE STUDENT'S RESPONSIBILITY TO DETERMINE WHETHER ANY EVALUATIVE ACTIVITY HAS BEEN MISSED
* If a student is excusably absent from class on days during which an assignment, quiz, examination or other evaluation activity occurs, the student shall be given the opportunity to make up the missed work through either the original or replacement work if the following conditions are met:
	+ If a student is absent, a parent must call the school to indicate the reason for the absence.
	+ In the case of a missed test, the student must provide a note from home explaining the absence and a plan should be put into place to ensure the learning objectives are met.
	+ An alternative learning session may be required in order to make up any missed work.

**LATES**

* I expect that you will arrive to class on time (after the bell the door is closed and locked).
* If you are late for any reason, you will be marked late in Maplewood and disciplined according to school policy.
* Students will be responsible for material and information missed as a result of tardiness.

**DISCIPLINE CYCLE**

* If a student disrupts learning in the classroom or fails to adhere to school and/or classroom policies, s/he will be verbally warned.
* If the behavior continues s/he will be asked to stay after class or return for an informal break/lunch/after school detention to discuss his/her behavior.
* If the behavior continues, then parents/guardians will be contacted and a formal, after school detention will be arranged.
* If the student continues to disrupt learning in the classroom, or fails to attend detention, parents and administration will be contacted to discuss further disciplinary action.

**ACADEMIC EXPECTATIONS**

**EARNED ZERO POLICY**

* Students who demonstrate our core values of Courage, Commitment, and Integrity recognize that even though they may not be present at school on the day an assignment is due, the assignment is still expected and typically turn in their work prior to the absence, send day-of via e-mail, or drop off through a friend / parent. Regardless, if absent on the Due Date, the assignment is due the day you return to school.
* If absent when the assignment is given, you are still responsible for the Due Date—unless away for an extended time, then an extension may be given.
* A note about the terminology of Due Dates and Deadlines:
	+ Due Date—refers to the day the assignment is due.
	+ Cut-off Date / Deadline—refers to the final date the assignment will be accepted.  For this diploma course, the Cut-off date is near / before the Diploma date.   Please refer to the course calendar for all important dates.
* The following assignment policy will apply to the class:
	+ Assignments submitted on or before the Due Date—will be marked in as timely a fashion as possible (typically 2 weeks or less, depending on the size / type of assignment). These assignments will be given a rubric, and formative feedback.
	+ Assignments submitted after Cut-off Date—will be awarded a zero. By this point most students have received their work back and thus the opportunity for Academic Dishonesty is greater. Assignment / curricular objectives may be demonstrated using an alternative assignment.

**EXTENSIONS**

* Extensions on assignments will only be considered if a student makes arrangements at least one (1) day prior to the due date. An accompanying signature/note from a parent indicating the circumstances of the extension would be required.

**ACADEMIC DISHONESTY (CHEATING)**

* Providing or using unauthorized assistance, such as:
	+ Copying another’s work (including plagiarism)
	+ Telling others what is on a test
	+ Presenting another’s ideas as your own
	+ Taking notes/aids into a test situation
* Will result in the student(s) receiving a zero (0) without further re-attempt; and be referred to administration.

**MAPLEWOOD & MOODLE**

* Maplewood provides information about your grades and attendance. It can be accessed by following the links on the school’s webpage (<http://fchs.fsd38.ab.ca/>).  Please contact either your Leadership teacher or the main office (403-938-6116) for help with accessing these services.
* Assignments can be found on-line on Moodle by following the links on the school’s webpage; or via <http://thehub.fsd38.ab.ca>.  Student username and password will be required to access the entire course.

