



## ALTERNATIVE EDUCATION

<b>Contact Information</b>	Teacher Name: Site Phone Number: Teacher Email:
<b>Prerequisite</b>	A mark of at least 50% in Chemistry 20.
<b>Required Materials &amp; Resources</b>	<ul style="list-style-type: none"><li>• Seven modules and seven assignment booklets</li><li>• Textbook: Chemistry, Nelson Education Ltd, 2007</li><li>• Chemistry Data Booklet, Updated 2010, Government of Alberta</li><li>• Scientific calculator</li></ul>

**Course Overview**

Chemistry 30 consists of four units of study, as outlined below. These units emphasize the nature of science, science and technology and science in societal and environmental contexts.

<b>Unit</b>	<b>Topics of Study</b>	<b>Weighting</b>
A. Thermochemical Changes:  Chapter 11: Enthalpy Change Chapter 12: Explaining Chemical Change	<ul style="list-style-type: none"><li>• enthalpy of formation</li><li>• enthalpy of reaction</li><li>• <math>\Delta H</math> notation</li><li>• Hess' law</li><li>• molar enthalpy energy diagrams</li><li>• activation energy</li><li>• catalysts</li><li>• calorimetry</li><li>• fuels and energy efficiency</li></ul>	20%
B. Electrochemical Changes:  Chapter 13: Redox Reaction Chapter 14: Electrochemical Cells	<ul style="list-style-type: none"><li>oxidation</li><li>• reduction</li><li>• oxidizing agent</li><li>• reducing agent</li><li>• oxidation-reduction (redox) reaction</li><li>• oxidation number</li><li>• half-reaction</li><li>• disproportionation</li><li>• spontaneity</li><li>• standard reduction potential</li><li>• voltaic cell</li><li>• electrolytic cell</li><li>• electrolysis</li><li>• standard cell potential</li><li>• Faraday's law</li><li>• corrosion</li></ul>	30%
C. Chemical Changes of Organic Compounds:  Chapter 9: Hydrocarbons from Petroleum Chapter 10: Hydrocarbon Derivatives, Organic Reactions, and Petrochemicals	<ul style="list-style-type: none"><li>• organic compounds</li><li>• naming organic compounds</li><li>• structural formulas</li><li>• structural isomers</li><li>• monomers</li><li>• polymers</li><li>• aliphatic and aromatic compounds</li><li>• saturated/unsaturated hydrocarbons</li><li>• functional groups identifying alcohols, carboxylic acids,</li></ul>	20%

	<ul style="list-style-type: none"> <li>esters and halogenated hydrocarbons</li> <li>• esterification</li> <li>• combustion reactions</li> <li>• polymerization</li> <li>• addition, substitution</li> <li>• elimination</li> </ul>	
<p>D. Chemical Equilibrium Focusing on Acid-Base Systems: Chapter 15: Equilibrium Systems: Chapter 16: Equilibrium in Acid-Base System</p>	<ul style="list-style-type: none"> <li>• chemical equilibrium systems</li> <li>• Bronsted–Lowry acids and bases</li> <li>• reversibility of reactions</li> <li>• Le Chatelier’s principle</li> <li>• titration curves</li> <li>• conjugate pairs of acids and bases</li> <li>• equilibrium law expression</li> <li>• amphiprotic substances</li> <li>• equilibrium constants <math>K_c</math> , <math>K_w</math> , <math>K_a</math> , <math>K_b</math></li> <li>• buffers</li> <li>• acid-base equilibrium</li> <li>• indicators</li> </ul>	30%

<b>Assessment</b>	The student’s grade will be calculated based on the following:	
	Coursework	20%
	Unit Evaluations – quizzes, exams, labs, projects	80%
	*Final Grade: 70% School awarded mark + 30% provincial diploma exam mark.  Parents and students are encouraged to keep up to date on PowerSchool and contact their teacher if there are any issues.	
<b>Important Note Regarding Assessment</b>	A wide range of assessment information is used in the development of a student’s final grade. In Edmonton Catholic Schools, individualized assessments provide specific information regarding student progress and overall performance in class. Assessment may vary from student to student, differentiating for various student needs. It should also be noted that not all assignments are used to determine the final grade, and that scale factors may have been used to determine the weight of individual assignments.	