

Course description:

Chemistry is a senior science course, often required for the CEGEP Science programs and many diploma programs. The following topics are covered: Gases, Reaction Rates, Energy in Chemical Reactions, and Equilibrium.

Textbook: Quantum Chemistry

Additional Resource: Heath Chemistry (1996 edition): Chapters 1 - 5 (review), 6, 7, 16, 17, 18, 19 and 20
Parts of other chapters may be used for the purpose of review or enrichment.

Evaluation:

Student marks will be assessed by competency using the assigned percentages according as determined by MEES and the QEP.

Competency

40% Competency 1/Lab: Seeks answers or solutions to scientific or technological problems

60% Competency 2/Theory: Makes the most of his/her knowledge of science and technology

Compulsory Concepts (Second Year of Cycle Two)			
Gases	Energy Changes in Reactions	Reaction Rate	Chemical Equilibrium
<ul style="list-style-type: none"> - Chemical properties of gases • Reactivity - Physical properties of gases • Kinetic theory of gases • General gas law • Ideal gas law • Dalton's law • Avogadro's hypothesis • Molar volume of a gas 	<ul style="list-style-type: none"> - Energy diagram - Activation energy - Enthalpy change - Molar heat of reaction 	<ul style="list-style-type: none"> - Factors that influence reaction rate • Nature of reactants • Concentration • Surface area • Temperature • Catalysts - Rate law 	<ul style="list-style-type: none"> - Factors that influence the state of equilibrium • Concentration • Temperature • Pressure - Le Chatelier's principle - Equilibrium constant • Water ionization constant • Acidity and alkalinity constants • Solubility-product constant - Relationship between the pH and the molar concentration of hydronium and hydroxide ions