

CHEMISTRY

There are three 50-hour modules which make up the entire Chemistry program.

Gases CHE 5041-2

In this course, by learning about the scientific method, students will gain a better understanding of the behavior of gases, as well as be able to establish links with related technical phenomena, social changes and environmental consequences.

This module covers the following topics:

- The properties of the states of matter and the general behavior of substances undergoing phase changes;
- The presence of gases in nature and their use by humans;
- The laws governing the behavior of gases;
- The ideal gas law and Dalton's law of partial pressures;
- The energy balance of a chemical reaction occurring in a gaseous state.

Chemical Reactions 1: Energy and Chemical Dynamics CHE 5042-2

In this course, by learning about the scientific method, students will gain a better understanding of chemical dynamics and energy transfers involved in chemical reactions, as well as be able to establish links with related technical phenomena, social changes and environmental consequences.

This module covers the following topics:

- Energy transfers related to phase changes, mixtures of substances at different temperatures, solutions or chemical reactions;
- The rate of chemical reactions and the factors on which it depends;
- The collision theory and the relationship between energy, the rate of a chemical reaction and the factors on which such a rate depends.

Chemical Reactions 2: Equilibrium and Oxidation-Reduction CHE 5043-2

In this course, by learning about the scientific method, students will gain a better understanding of chemical equilibrium and oxidation-reduction, as well as be able to establish links with related technical phenomena, social changes and environmental consequences.

This module covers the following topics:

- Qualitative and quantitative analysis of chemical equilibrium;
- Oxidation-reduction and the operation of electrochemical cells.