

CHEMISTRY SYLLABUS OUTLINE

Teaching hours: SL 110h, HL 180h

Experimental programme: SL 40h, HL 60h

Class 3IB

Structure

Structure refers to the nature of matter from simple to more complex forms

Structure 1.

Models of the particulate nature of matter

Structure 1.1— Introduction to the particulate nature of matter

Structure 1.2—The nuclear atom

Structure 1.3—Electron configurations

Structure 1.4— Counting particles by mass: The mole

Structure 1.5—Ideal gases

Structure 2.

Models of bonding and structure

Structure 2.1—The ionic model

Structure 2.2—The covalent model

Structure 2.3—The metallic model

Structure 2.4—From models to materials

Structure 3.

Classification of matter

Structure 3.1— The periodic table: Classification of elements

Structure 3.2— Functional groups: Classification of organic compounds

Reactivity

Reactivity refers to how and why chemical reactions occur

Reactivity 1. What drives chemical reactions?

Reactivity 1.1—Measuring enthalpy changes

Reactivity 1.2—Energy cycles in reactions

Reactivity 1.3—Energy from fuels

Reactivity 1.4—Entropy and spontaneity (Additional higher level)

Practical work, Collaborative sciences project

Class 4IB

Reactivity

Reactivity refers to how and why chemical reactions occur

Reactivity 2. How much, how fast and how far?

Reactivity 2.1—How much? The amount of chemical change

Reactivity 2.2—How fast? The rate of chemical change

Reactivity 2.3—How far? The extent of chemical change

Reactivity 3.

What are the mechanisms of chemical change?

Reactivity 3.1—Proton transfer reactions

Reactivity 3.2—Electron transfer reactions

Reactivity 3.3— Electron sharing reactions

Reactivity 3.4— Electron-pair sharing reactions

Practical work, Scientific investigation

Revision before final exams