

Chemistry

Option Subject: Chemistry

Applied:

Academic: ✓

Vocational:

General introduction to the subject:

Chemistry involves a dynamic and engaging study of the material world. It is a field of human endeavour based on the broad understanding of physical concepts and models which are united by common procedural and intellectual processes. Chemistry and the work of chemists have a profound impact on the environment, quality of life and on social and cultural practices.

(2020 Chemistry SEC 06 Syllabus, MATSEC, UM)

List topics studied:

Subject foci:

- a. *Materials from the Earth – The Atmosphere*
- b. *Materials from the Earth – The Sea*
- c. *Materials from the Earth – The Land*
- d. *Making New Materials: How fast? How far? How much?*
- e. *Carbon compounds from the Earth – Meeting our energy needs.*

Class activities involved:

- a. *Theoretical lessons*
- b. *Routine laboratory practice*
- c. *Investigative laboratory practice*
- d. *Site visits*
- e. *Research*
- f. *Presentations*

Homework assigned:

- a. *Variety of tasks intended to sustain class learning*
- b. *Routine laboratory reports*
- c. *Investigative laboratory reports*
- d. *Site visit reports*
- e. *Research-related tasks*
- f. *Preparation of presentations*

Assessment given:

- a. *Homework*
- b. *Classwork*
- c. *Laboratory reports*
- d. *Site visit reports*
- e. *Presentations*
- f. *End of topic tests*

List skills acquired studying the subject:

- a. a knowledge of basic chemical concepts and an understanding of chemical principles and patterns*
- b. appreciate that chemistry is a dynamic and evolving subject and that its principles and theories may change*
- c. adopting the scientific method of investigation*
- d. relevant practical skills whilst having due regard to correct and safe laboratory practice*
- e. experimental and investigative competence*
- f. form hypotheses and design experiments to test these hypotheses*
- g. organize, interpret and evaluate chemical information to draw conclusions, make decisions and / or solve problems*
- h. communicate chemical knowledge and findings in appropriate ways*
- i. apply chemical knowledge and understanding to familiar and unfamiliar situations*
- j. develop appreciation of the environmental and technological applications of chemistry and of the economic, ethical and social implications of these*

(adapted from: 2020 Chemistry SEC 06 Syllabus, MATSEC, UM)

List skills required to study the subject:

- a. A good command of the English language*
- b. Basic mathematics that includes:*
 - the ability to perform simple arithmetical processes such as addition, subtraction, multiplication and division of quantities expressed in decimal form, as fractions, or in index notation;*
 - the ability to calculate volumes; simple percentage calculations; calculations involving ratios and proportion;*
 - the ability to use and interpret simple graphs, carry out extrapolations and interpolations and measure gradients.*

(2020 Chemistry SEC 06 Syllabus, MATSEC, UM)

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