

Chemistry HL/SL - objectives

The objectives for all group 4 subjects reflect those parts of the aims that will be assessed. Wherever appropriate, the assessment will draw upon environmental and technological contexts and identify the social, moral and economic effects of science.

It is the intention of all the Diploma Programme experimental science courses that students should achieve the following objectives.

1. Demonstrate an understanding of:
 - a. scientific facts and concepts
 - b. scientific methods and techniques
 - c. scientific terminology
 - d. methods of presenting scientific information.
2. Apply and use:
 - a. scientific facts and concepts
 - b. scientific methods and techniques
 - c. scientific terminology to communicate effectively
 - d. appropriate methods to present scientific information.
3. Construct, analyse and evaluate:
 - a. hypotheses, research questions and predictions
 - b. scientific methods and techniques
 - c. scientific explanations.
4. Demonstrate the personal skills of cooperation, perseverance and responsibility appropriate for effective scientific investigation and problem solving.
5. Demonstrate the manipulative skills necessary to carry out scientific investigations with precision and safety.

SYLLABUS OVERVIEW

The syllabus for the Diploma Programme chemistry course is divided into three parts: the core, the additional higher level (AHL) material and the options. A syllabus overview is provided below.

Core [80h]

Topics

	Teaching Hours
1. Stoichiometry	11
2. Atomic theory	4
3. Periodicity	6
4. Bonding	12
5. States of matter	5
6. Energetics	11
7. Kinetics	4
8. Equilibrium	5
9. Acids and bases	5
10. Oxidation and reduction	7
11. Organic chemistry	10

Additional Higher Level [55h]

Topics

12. Atomic theory	4
13. Periodicity	4
14. Bonding	6
15. Energetics	4
16. Kinetics	6
17. Equilibrium	4
18. Acids and bases	11
19. Oxidation and reduction	7
20. Organic chemistry	9

Options

Teaching Hours

Options Standard Level

A. Higher physical organic chemistry 15

Options Standard Level/Higher Level

B. Medicines and drugs 15/22

C. Human biochemistry 15/22

D. Environmental chemistry 15/22

E. Chemical industries 15/22

F. Fuels and energy 15/22

Options Higher Level

G. Modern analytical chemistry 22

H. Further organic chemistry 22

Standard level candidates are required to study any **two** options from A–F.
The duration of each option is 15 hours.
Higher level candidates are required to study any **two** options from B–H.
The duration of each option is 22 hours.