

GROUP 4 - CHEMISTRY SL/HL

NATURE OF THE SUBJECT

Chemistry is an experimental science that combines academic study with the acquisition of practical and investigational skills. It is often called the central science, as chemical principles underpin both the physical environment in which we live and all biological systems. Apart from being a subject worthy of study in its own right, chemistry is a prerequisite for many other courses in higher education, such as medicine, biological science and environmental science, and serves as useful preparation for employment.

"Chemistry Guide. First Assessment 2016." *Ibo.org*. IBO, 2015. Web. 12 Sept. 2017.

AIMS

- appreciate scientific study and creativity within a global context through stimulating and challenging opportunities
- acquire a body of knowledge, methods and techniques that characterize science and technology
- apply and use a body of knowledge, methods and techniques that characterize science and technology
- develop an ability to analyse, evaluate and synthesize scientific information
- develop a critical awareness of the need for, and the value of, effective collaboration and communication during scientific activities
- develop experimental and investigative scientific skills including the use of current technologies
- develop and apply 21st-century communication skills in the study of science
- become critically aware, as global citizens, of the ethical implications of using science and technology
- develop an appreciation of the possibilities and limitations of science and technology
- develop an understanding of the relationships between scientific disciplines and their influence on other areas of knowledge.

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SYLLABUS – OUTLINE

(The syllabus is subject to changes according to the needs and preferences of the class)

Year 1

- **Topic 1: Quantitative chemistry**
- **Topic 11: Measurement and data processing**
- **Topic 10: Organic Chemistry- first part**
- **Topic 2: Atomic structure**
- **Topic 3: Periodicity**
- **Topic 4: Bondings**
- **Topic 6: Chemical Kinetics**
- **Topic 7: Equilibrium**

- **Topic 8: Acids and bases**

Year 2

- **Topic 5: Energetics**
- **Topic 9: Redox**
- **Topic 10: Organic Chemistry- Reactivity of compounds**
- **Option to be chosen among the following:**
 - **Materials**
 - **Biochemistry**
 - **Energy**
 - **Medicinal Chemistry**

ASSESSMENT – OUTLINE

Assessment component	Weighing
<p>External assessment SL</p> <p>Paper 1 (45 min) • 30 multiple-choice questions on core</p> <p>Paper 2 (75 min) • Short-answer and extended-response questions on core material.</p> <p>Paper 3 (60 min) • Section A: one data-based question and several short-answer questions on experimental work. • Section B: short-answer and extended-response questions from the option.</p>	<p>20%</p> <p>40%</p> <p>20%</p>
<p>External assessment HL</p> <p>Paper 1 (60 min) • 40 multiple-choice questions on core and AHL material.</p> <p>Paper 2 (135 min) • Short-answer and extended-response questions on the core and AHL material.</p> <p>Paper 3 (75 min) • Section A: one data-based question and several short-answer questions on experimental work. • Section B: short-answer and extended-response questions from the option.</p>	<p>20%</p> <p>36%</p> <p>24%</p>
<p>Internal assessment</p> <p>The externally-moderated Internal Assessment task will be one scientific investigation taking about 10 hours. The work should be about 6 to 12 pages long. The task produced should be complex and commensurate with the level of the course.</p>	<p>20%</p>