

## Chemistry

Chemistry explores the structure, composition and reactions of and between all elements, compounds and mixtures that exist in the Universe. The discovery and synthesis of new compounds, the monitoring of elements and compounds in the environment, and an understanding of industrial processes and their applications to life processes are central to human progress and our ability to develop future industries and sustainability. Chemistry students will investigate the physical and chemical properties of substances, chemical reactions and processes, and the interaction of energy and matter, and attempt to explain and predict events at the atomic and molecular level.

Who should choose to study Chemistry?

Students who are likely to succeed in Chemistry will have demonstrated, at least, an overall high achievement level in their Stage 5 Science course and have acquired, at least, an average development of literacy and numeracy skills. This course provides the foundation knowledge and skills required to study chemistry after completing school, and supports participation in a range of careers in the scientific, medical, industrial, environmental and engineering fields. It also provides a sound base of scientific understanding for living and working in the world today.

### Course Content

The Year 11 and Year 12 courses each comprise four modules.

#### Year 11

- Module 1: Properties and Structure of Matter
- Module 2: Introduction to Quantitative Chemistry
- Module 3: Reactive Chemistry
- Module 4: Drivers of Reactions

#### Year 12

- Module 5: Equilibrium and Acid Reactions
- Module 6: Acid/Base Reactions
- Module 7: Organic Chemistry
- Module 8: Applying Chemical Ideas

Chemistry uses Working Scientifically processes to develop scientific investigative skills. It focuses on developing problem-solving and critical thinking skills in order to understand how chemicals interact. Students are provided with opportunities to design and conduct chemical investigations both individually and collaboratively. A minimum of 15 hours of in-class time is allocated to **depth studies** in both Year 11 and Year 12. The course focuses on the exploration of models, understanding of theories and laws, and the application of technologies in chemical investigations.

See the NESA Chemistry syllabus on the website below for more information.

<https://educationstandards.nsw.edu.au/wps/portal/nesa/11-12/stage-6-learning-areas/stage-6-science/chemistry-2017>