



# LEVEL 3 CHEMISTRY

## 3CHE

### What is this course about?

Chemistry is the study of matter. Chemistry is about understanding the properties of different substances and how these substances can change. Chemical transformations happen all the time, everywhere. Chemistry goes on continuously, all around us. Chemists, and students who study chemistry, use their understanding of atoms, molecules, and ions – particles that are too tiny to be seen with our eyes – to explain and predict the properties and behaviour of different materials.

### What sorts of things will I do?

You will be involved in the active exploration of what chemistry is, and how chemists use a range of approaches and perspectives when viewing problems or issues. We will be exploring chemical analytical techniques, organic chemistry and the chemistry of aqueous systems. You will carry out investigations, data and research to be able to communicate the science of these issues.

### Learning capabilities/ critical skills

#### Significant Learning

- Engage with the iterative process of chemistry investigation through innovation, problem solving, inquiry, collaboration, and evaluation
- Recognise how different approaches can be used in chemistry investigations
- Consider mātauranga Māori and Pacific knowledges alongside chemistry in contexts that relate to Aotearoa New Zealand and the Pacific
- Identify interrelationships between chemistry practices, technological advances, mātauranga Māori, and the practical advancement of science knowledge
- Recognise that chemistry ideas are developed through critical and creative thinking, regulated by evidence
- Recognise that chemistry ideas are communicated using language, symbols and texts specific to chemistry
- Consider how the values and needs of a society can influence the focus of chemical endeavours
- Use chemistry understanding to critique claims or predictions made in communicated information

### Rangatiratanga: (as it appears in the Hikairo Schema)

Rangatiratanga (self-determination) supports ākonga to achieve. Thinking and meaning-making are promoted. Learning is meaningful and connected.

To experience success, students will have opportunities to develop their learning dispositions through:

#### Engagement:

- Use of inquiry approaches to direct learning
- Consider multiple perspectives on controversial topics to help formulate and understand their personal perspectives
- Student agency is encouraged by utilising tuakana to guide teina. This includes modelling, guidance, and practice opportunities

#### Managing self:

- Overcome roadblocks in learning by building resilient behaviours
- Use peer-to-peer evaluation, inquiry-based learning, and input into assessment design to support the development of characteristics of leadership of self

#### Learning relationships:

- Use of ako and tuakana-teina to lead learning activities.
- Engage in feedback loops that are purposeful, constructive, and acknowledge effort and achievement.

## What standards can I enter?

Your teacher will work with the whole class and with you to devise a learning programme that is responsive to your strengths, interests, and one that sets you up to aim high and achieve your potential.

NCEA Level	Standard Number	Name of standard	Assessment mode	Credits (W/R)	Time frame
3	91388	Demonstrate understanding of spectroscopic data in chemistry	<b>Internal:</b> In-class assessment	3	Mid - Term 2
3	91387	Carry out an investigation in chemistry involving quantitative analysis	<b>Internal:</b> Practical plus presentation of findings	4	Term 1 Week 8
3	91389	Demonstrate understanding of chemical processes in the world around us	<b>Internal:</b> Research plus presentation of findings	3 (W/R)	Mid - Term 3
3	91391	Demonstrate understanding of the properties of organic compounds	External Assessment	5	External
3	91392	Demonstrate understanding of equilibrium principles in aqueous systems	External Assessment	5	External

Key for Credits column:

**R** - UE reading literacy

**W** - UE writing literacy

## Scholarship Opportunity

**In this subject area - Scholarship opportunity looks like:**

- Joining and engaging the Scholarship Google classroom
- Attending and engaging in externally offered Webinars
- All NCEA level 2 and 3 available standards are examined by the Scholarship examination at the end of the year. Students will be expected to be doing this extra learning as part of their course.

Depending on student interest, we may negotiate one workshop a term.