

In Progress

Please note that this Unit Profile is still in progress. The content below is subject to change.



CHEM12079 Structure and Reactivity: Physical and Inorganic Chemistry

Term 1 - 2027

Profile information current as at 16/09/2026 09:23 am

All details in this unit profile for CHEM12079 have been officially approved by CQUniversity and represent a learning partnership between the University and you (our student). The information will not be changed unless absolutely necessary and any change will be clearly indicated by an approved correction included in the profile.

General Information

Overview

This unit integrates key concepts from physical and inorganic chemistry to build your understanding of structure, bonding and reactivity in chemical systems. You will study the foundations of thermodynamics, kinetics and electrochemistry, and apply these principles to systems ranging from simple molecules to complex mixtures and materials. Topics include atomic structure and periodicity, bonding theories, molecular shape, solid-state structures, coordination chemistry, and the chemistry of transition metals. You will also examine state functions, enthalpy, phase behaviour, solutions, and interfacial processes that drive solute transport and reaction mechanisms. Electrochemical processes, from fuel cells to batteries, are explored alongside the roles of metal complexes in catalysis and other applications. Laboratory investigations support your theoretical learning and develop your ability to analyse, interpret and report experimental data. By linking physical and inorganic perspectives, this unit prepares you to evaluate chemical problems in environmental, industrial and biological contexts. It provides the foundation for advanced topics such as spectroscopy, nanotechnology and materials development.

Details

Career Level: *Undergraduate*

Unit Level: *Level 2*

Credit Points: 6

Student Contribution Band: 8

Fraction of Full-Time Student Load: 0.125

Pre-requisites or Co-requisites

Pre-requisites: CHEM11043 Atoms, Molecules and Matter and CHEM11044 Chemical Reactions

Important note: Students enrolled in a subsequent unit who failed their pre-requisite unit, should drop the subsequent unit before the census date or within 10 working days of Fail grade notification. Students who do not drop the unit in this timeframe cannot later drop the unit without academic and financial liability. See details in the [Assessment Policy and Procedure \(Higher Education Coursework\)](#).

Offerings For Term 1 - 2027

- Online

Attendance Requirements

All on-campus students are expected to attend scheduled classes – in some units, these classes are identified as a mandatory (pass/fail) component and attendance is compulsory. International students, on a student visa, must maintain a full time study load and meet both attendance and academic progress requirements in each study period (satisfactory attendance for International students is defined as maintaining at least an 80% attendance record).

Website

[This unit has a website, within the Moodle system, which is available two weeks before the start of term. It is important that you visit your Moodle site throughout the term. Please visit Moodle for more information.](#)

Class and Assessment Overview

Information for Class and Assessment Overview has not been released yet.
This information will be available on Monday 11 January 2027

CQUniversity Policies

All University policies are available on the [CQUniversity Policy site](#).

You may wish to view these policies:

- Grades and Results Policy
- Assessment Policy and Procedure (Higher Education Coursework)
- Review of Grade Procedure
- Student Academic Integrity Policy and Procedure
- Academic Progression Policy and Procedure
- Student Refund and Credit Balance Policy and Procedure
- Complaints Policy and Procedure
- Information and Communications Technology Acceptable Use Policy and Procedure

This list is not an exhaustive list of all University policies. The full list of University policies are available on the [CQUniversity Policy site](#).

Previous Student Feedback

Feedback, Recommendations and Responses

Every unit is reviewed for enhancement each year. At the most recent review, the following staff and student feedback items were identified and recommendations were made.

Feedback from Unit feedback

Feedback

Students recommended improving the video resources for the unit.

Recommendation

Content and assessment review and refresh should continue in the next offering.

Feedback from Unit feedback

Feedback

Some students noted difficulty connecting the unit content to their course of study and found the assessment questions ambiguous.

Recommendation

Content and assessment review and refresh should begin in the next offering.

Feedback from Staff reflection

Feedback

The high proportion of high grades in this unit suggest that assessment and assessment rubrics should be reviewed.

Recommendation

Review and update as required assessment and assessment rubrics.

Unit Learning Outcomes

Information for Unit Learning Outcomes has not been released yet.

This information will be available on Monday 11 January 2027

Alignment of Learning Outcomes, Assessment and Graduate Attributes

Information for Alignment of Learning Outcomes, Assessment and Graduate Attributes has not been released yet.

This information will be available on Monday 11 January 2027

Textbooks and Resources

Information for Textbooks and Resources has not been released yet.
This information will be available on Monday 15 February 2027

Academic Integrity Statement

Information for Academic Integrity Statement has not been released yet.
This unit profile has not yet been finalised.