CHEM40079 *Introductory Chemistry*
Term 1 - 2020

Profile information current as at 13/12/2025 03:55 pm

General Information

Overview
Introductory Chemistry prepares students for university study in the chemical sciences. This unit introduces a range of topics such as matter, molecules, bonding, chemical reactions, measurements, acids and bases, pH, and organic chemistry. Students will gain an introductory understanding of chemical concepts and learn to perform chemical calculations.

Details
Career Level: *Non-award*
Credit Points: *6*
Student Contribution Band: *8*
Fraction of Full-Time Student Load: *0.125*

Pre-requisites or Co-requisites
There are no requisites for this unit.
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 - 2020

- 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

Recommended Student Time Commitment

Each 6-credit Non-award unit at CQUniversity requires an overall time commitment of an average of 12.5 hours of study per week, making a total of 150 hours for the unit.

Class Timetable

Regional Campuses
Bundaberg, Cairns, Emerald, Gladstone, Mackay, Rockhampton, Townsville

Metropolitan Campuses
Adelaide, Brisbane, Melbourne, Perth, Sydney

Assessment Overview

1. **Online Quiz(zes)**
Weighting: 20%
2. **Written Assessment**
Weighting: 30%
3. **Written Assessment**
Weighting: 30%
4. **Written Assessment**
Weighting: 20%

Assessment Grading

This is a graded unit: your overall grade will be calculated from the marks or grades for each assessment task, based on the relative weightings shown in the table above. You must obtain an overall mark for the unit of at least 50%, or an overall grade of 'pass' in order to pass the unit. If any 'pass/fail' tasks are shown in the table above they must also be completed successfully ('pass' grade). You must also meet any minimum mark requirements specified for a particular assessment task, as detailed in the 'assessment task' section (note that in some instances, the minimum mark for a task may be greater than 50%). Consult the University's Grades and Results Policy for more details of interim results and final grades.

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
- Monitoring Academic Progress (MAP) Policy and Procedure – Domestic Students
- Monitoring Academic Progress (MAP) Policy and Procedure – International Students
- Student Refund and Credit Balance Policy and Procedure
- Student Feedback – Compliments and 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 Student Evaluation

Feedback

Certain sections of some of the Module videos appeared pixelated.

Recommendation

Review the Module videos and fix the issue identified in the affected videos.

Feedback from Student Evaluation

Feedback

Assessment items were made available after the previous assessment submission date was over. Some students felt that this prevented them from starting work on the next assessment task earlier.

Recommendation

Release all assessment items in Week 1.

Unit Learning Outcomes

On successful completion of this unit, you will be able to:

1. Recall fundamental chemical concepts including matter, atomic structure, molecules, bonding, physical and chemical properties, acids and bases, chemical reactions and organic compounds.
2. Interpret the Periodic Table of the elements.
3. Apply chemical concepts, quantities and calculations to develop solutions to chemistry problems.

Alignment of Learning Outcomes, Assessment and Graduate Attributes

— N/A Level ◦ Introductory Level • Intermediate Level • Graduate Level ◦ Professional Level ◦ Advanced Level

Alignment of Assessment Tasks to Learning Outcomes

Assessment Tasks	Learning Outcomes		
	1	2	3
1 - Online Quiz(zes) - 20%	•	•	•
2 - Written Assessment - 30%	•	•	•
3 - Written Assessment - 30%	•	•	•
4 - Written Assessment - 20%	•		•

Alignment of Graduate Attributes to Learning Outcomes

Graduate Attributes	Learning Outcomes		
	1	2	3
1 - Self Management	—	—	—
2 - Communication	—	—	—
3 - Information Literacy		—	—
4 - Information Technology Competence			—
5 - Problem Solving		—	—
6 - Critical Thinking			—
7 - Cross-Cultural Competence			
8 - Ethical Practice			
9 - Aboriginal and Torres Strait Islander Cultures			

Alignment of Assessment Tasks to Graduate Attributes

Assessment Tasks	Graduate Attributes								
	1	2	3	4	5	6	7	8	9
1 - Online Quiz(zes) - 20%	—	—	—	—	—				
2 - Written Assessment - 30%	—	—	—		—	—			
3 - Written Assessment - 30%	—	—			—	—			
4 - Written Assessment - 20%	—	—			—	—			

Textbooks and Resources

Textbooks

There are no required textbooks.

IT Resources

You will need access to the following IT resources:

- CQUniversity Student Email
- Internet
- Unit Website (Moodle)
- Access to printer and scanner for printing and scanning Assessments 2, 3 and 4. A legible photo of the Assessment is also acceptable if sent as one document.

Referencing Style

All submissions for this unit must use the referencing style: Harvard (author-date)
For further information, see the Assessment Tasks.

Teaching Contacts

Brijesh Kumar Unit Coordinator
b.kumar@cqu.edu.au

Schedule

Week 1 - 09 Mar 2020

Module/Topic	Chapter	Events and Submissions/Topic
Module 1: Matter		

Week 2 - 16 Mar 2020

Module/Topic	Chapter	Events and Submissions/Topic
Module 2: Elements, Atoms and Molecules		

Week 3 - 23 Mar 2020

Module/Topic	Chapter	Events and Submissions/Topic
Module 3: Electronic Configuration and the Periodic Table		**Online Quiz** Due: Week 3 Thursday (26 Mar 2020) 11:55 pm AEST

Week 4 - 30 Mar 2020

Module/Topic	Chapter	Events and Submissions/Topic
Module 4: Ionic and Covalent Compounds		

Week 5 - 06 Apr 2020

Module/Topic	Chapter	Events and Submissions/Topic
Module 5: Chemical Reactions		

Vacation Week - 13 Apr 2020

Module/Topic	Chapter	Events and Submissions/Topic
Study Break		

Week 6 - 20 Apr 2020

Module/Topic	Chapter	Events and Submissions/Topic
Module 6: Redox Reactions		**Assessment 2** Due: Week 6 Thursday (23 Apr 2020) 11:55 pm AEST

Week 7 - 27 Apr 2020

Module/Topic	Chapter	Events and Submissions/Topic
Module 7. The Mole		

Week 8 - 04 May 2020

Module/Topic	Chapter	Events and Submissions/Topic
Module 8. Concentration / molarity		

Week 9 - 11 May 2020

Module/Topic	Chapter	Events and Submissions/Topic
Module 9. Reactions and calculations		

Week 10 - 18 May 2020

Module/Topic	Chapter	Events and Submissions/Topic
Module 10. Acids and bases		**Assessment 3** Due: Week 10 Thursday (21 May 2020) 11:55 pm AEST

Week 11 - 25 May 2020

Module/Topic	Chapter	Events and Submissions/Topic
Module 11. Organic chemistry		

Week 12 - 01 Jun 2020

Module/Topic	Chapter	Events and Submissions/Topic
Module 12. Chemical equilibrium		**Assessment 4** Due: Week 12 Thursday (4 June 2020) 11:55 pm AEST

Review/Exam Week - 08 Jun 2020

Module/Topic	Chapter	Events and Submissions/Topic

Exam Week - 15 Jun 2020

Module/Topic	Chapter	Events and Submissions/Topic

Term Specific Information

Contact Details:
Unit Coordinator
Brij Kumar
b.kumar@cqu.edu.au
Ph 07-49407860
PLEASE NOTE: It is highly recommended that you print the Introductory Chemistry Study Guide and the Periodic Table of Elements from the Chemistry Moodle site.

Assessment Tasks

1 Online Quiz

Assessment Type
Online Quiz(zes)

Task Description
Assessment 1 is available on the CHEM40079 Moodle site. It is a compulsory online quiz that covers material from Modules 1 and 2. The quiz comprises multiple-choice, matching and short answer questions.
The resources provided on the CHEM40079 Moodle site (including the Periodic Table) contain all the relevant material (content, examples and practice quizzes) required to complete the assessment.
Below are tips for successfully completing this quiz.

- Download the questions from the CHEM40079 Moodle site and complete the assessment on paper prior to entering your answers in the online quiz.
- Please ensure that you **do not use the internet in seeking answers**, as this assessment is not a research task, but is assessing your knowledge and understanding of topics covered in the Unit. Moreover, the information from some sites is unreliable, generalised or not as specific as is required for this assessment.
- Follow the information provided on the quiz site about presenting chemical formulas correctly.

Number of Quizzes
1

Frequency of Quizzes

Assessment Due Date
Week 3 Thursday (26 Mar 2020) 11:55 pm AEST

This quiz closes at 11:55 PM. Ensure you access, complete and submit by this time.

Return Date to Students
Week 5 Thursday (9 Apr 2020)

The quiz will automatically return an interim result on completion. Short answer responses will be checked for automated marking errors and, if necessary, manually corrected within 14 days.

Weighting
20%

Minimum mark or grade
You must obtain at least 40% of the marks available for this assessment. If you achieve less than 40% on your first attempt, you may be offered an opportunity to resubmit. The maximum you can achieve on re-submission is 40%.

Assessment Criteria
Marks will be awarded for the correct response to multi-choice and short answer questions. Responses are scored based on:

- correct use of terminology
- factual correctness of presented material
- correct use of science conventions
- perform calculations, providing units where relevant.
- relevance of stated content to the question asked
- application of foundation concepts to the question asked
- clarity, thoroughness and completeness of explanations
- logic of explanations and problem-solving
- balance equations including states of matter.
- writing chemical formulas using appropriate subscripts and superscripts.

Referencing Style

- Harvard (author-date)

Submission
Online

Learning Outcomes Assessed

- Recall fundamental chemical concepts including matter, atomic structure, molecules, bonding, physical and chemical properties, acids and bases, chemical reactions and organic compounds.
- Interpret the Periodic Table of the elements.
- Apply chemical concepts, quantities and calculations to develop solutions to chemistry problems.

Graduate Attributes

- Self Management
- Communication
- Information Literacy
- Information Technology Competence
- Problem Solving

2 Assessment 2

Assessment Type
Written Assessment

Task Description
Assessment 2 is available on the CHEM40079 Moodle site. It is a compulsory written assessment that covers material from Modules 2 to 5. The assessment comprises various question types that require handwritten responses. Depending on the question, you may be required to do one or more of the following:

- Perform simple calculations, providing units where relevant.
- Balance equations including states of matter.
- Present information graphically.
- Use examples and diagrams to support your answer.

- Write chemical formulas using appropriate subscripts and superscripts.

The resources provided on the CHEM40079 Moodle site contain all the relevant material (content, examples and practice quizzes) required to complete the assessment. All working, including the development of answers, must be shown. **Please ensure that you do not use the internet in seeking answers, as this assessment is not a research task, but is assessing your knowledge and understanding of topics covered in the Unit.** Moreover, the information from some sites is unreliable, generalised or not as specific as is required for this assessment. You are also not required to reference as all the information you need to use is found in the Unit material. Also, please don't answer using the information found in the Study Guide word for word but paraphrase it to demonstrate your understanding of topics.

Assessment Due Date
Week 6 Thursday (23 Apr 2020) 11:55 pm AEST

Return Date to Students
Week 8 Thursday (7 May 2020)

Assessment will be returned within two weeks of the assessment due date or received date, whichever is later.

Weighting
30%

Minimum mark or grade
You must obtain at least 40% of the marks available for this assessment. If you achieve less than 40% on your first attempt, you may be offered an opportunity to resubmit. The maximum you can achieve on resubmission is 40%.

Assessment Criteria
Marks are allocated for the following:

- setting the solution out appropriately
- sequencing steps correctly
- using appropriate examples and diagrams
- writing units, equations and formulas accurately

The number of marks allocated to each question is detailed in the assessment task on Moodle.
Answers to all questions must be handwritten on the assessment task sheets, using additional paper if extra space is required, and clearly presented with full working provided in order to obtain the maximum allocation of marks.

Referencing Style

- Harvard (author-date)

Submission
Online

Submission Instructions
Please submit as a single PDF via Moodle, do not send via email.

Learning Outcomes Assessed

- Recall fundamental chemical concepts including matter, atomic structure, molecules, bonding, physical and chemical properties, acids and bases, chemical reactions and organic compounds.
- Interpret the Periodic Table of the elements.
- Apply chemical concepts, quantities and calculations to develop solutions to chemistry problems.

Graduate Attributes

- Self Management
- Communication
- Information Literacy
- Problem Solving
- Critical Thinking

3 Assessment 3

Assessment Type
Written Assessment

Task Description
Assessment 3 is available via the CHEM40079 Moodle site. It is a compulsory written assessment that covers material from Modules 6 to 9, in addition to fundamental concepts covered in earlier modules. The assessment comprises various question types that require handwritten responses.
Depending on the question, you may be required to do one or more of the following:

- Choose the correct response from multiple choice questions.
- Perform simple or multi-step calculations, providing and using appropriate formulas and units where relevant.
- Analyse primary and secondary data to determine solutions.
- Provide short or extended answer responses using examples and diagrams to support your answer.
- Present information in the correct chemical format (i.e. use subscripts and superscripts, and balance equations, including states of matter).

The resources provided on the CHEM40079 Moodle site contain all of the relevant material (content, examples and practice quizzes) required to complete the assessment. All working, including the development of answers, must be shown. **Please ensure that you do not use the internet in seeking answers, as this assessment is not a research task, but is assessing your knowledge and understanding of topics covered in the Unit.** Moreover, the information from some sites is unreliable, generalised or not as specific as is required for this assessment. You are also not required to reference as all the information you need to use is found in the Unit material. Also, please don't answer using the information found in the Study Guide word for word but paraphrase it to demonstrate your understanding of topics.

Assessment Due Date
Week 10 Thursday (21 May 2020) 11:55 pm AEST

Return Date to Students
Week 12 Thursday (4 June 2020)

Assessment will be returned within two weeks of the assessment due date or received date, whichever is later.

Weighting
30%

Minimum mark or grade
You must obtain at least 40% of the marks available for this assessment. If you achieve less than 40% on your first attempt, you may be offered an opportunity to resubmit. The maximum you can achieve on re-submission is 40%

Assessment Criteria
Marks are allocated for the following:

- setting the solution out appropriately
- sequencing steps correctly
- using appropriate examples and diagrams
- writing units, equations and formulas accurately

The number of marks allocated to each question is detailed in the assessment task on Moodle.
Answers to all questions must be handwritten on the assessment task sheets, using additional paper if extra space is required, and clearly presented with full working provided in order to obtain the maximum allocation of marks.

Referencing Style

- Harvard (author-date)

Submission
Online

Submission Instructions
Please submit as a single PDF via Moodle, do not send via email.

Learning Outcomes Assessed

- Recall fundamental chemical concepts including matter, atomic structure, molecules, bonding, physical and chemical properties, acids and bases, chemical reactions and organic compounds.
- Interpret the Periodic Table of the elements.
- Apply chemical concepts, quantities and calculations to develop solutions to chemistry problems.

Graduate Attributes

- Self Management

- Communication
- Problem Solving
- Critical Thinking

4 Assessment 4

Assessment Type
Written Assessment

Task Description
Assessment 4 is available via the CHEM40079 Moodle site. It is a compulsory assessment that covers material from Modules 10 and 11, in addition to fundamental concepts covered in earlier modules.
The assessment comprises various question types that require handwritten responses.
Depending on the question, you may be required to do one or more of the following:

- Choose the correct response from multiple-choice questions.
- Perform simple or multi-step calculations, providing and using appropriate formulas and units where relevant.
- Analyse primary and secondary data to determine solutions.
- Provide short or extended answer responses using examples and diagrams to support your answer.
- Present information in the correct chemical format (i.e. present correct and clear representation of organic molecules).

All working, including the development of answers, must be shown.
The resources provided on the CHEM40079 Moodle site contain most of the relevant material (content, examples and practice quizzes) required to complete the assessment. **Please ensure that you do not use the internet in seeking answers, as this assessment is not a research task, but is assessing your knowledge and understanding of topics covered in the Unit.** Moreover, the information from some sites is unreliable, generalised or not as specific as is required for this assessment. You are also not required to reference as all the information you need to use is found in the Unit material. Also, please don't answer using the information found in the Study Guide word for word but paraphrase it to demonstrate your understanding of topics.

Assessment Due Date
Week 12 Thursday (4 June 2020) 11:55 pm AEST

Return Date to Students
Exam Week Thursday (18 June 2020)

Assessment will be returned within two weeks of the assessment due date or received date, whichever is later.

Weighting
20%

Minimum mark or grade
You must obtain at least 40% of the marks available for this assessment. If you achieve less than 40% on your first attempt, you may be offered an opportunity to resubmit. The maximum you can achieve on re-submission is 40%.

Assessment Criteria
Marks are allocated for the following:

- setting the solution out appropriately
- sequencing steps correctly
- using appropriate examples and diagrams
- writing units, equations and formulas accurately

The number of marks allocated to each question is detailed in the assessment task on Moodle.
Answers to all questions must be handwritten on the assessment task sheets, using additional paper if extra space is required, and clearly presented with full working provided in order to obtain the maximum allocation of marks.

Referencing Style

- Harvard (author-date)

Submission
Online

Submission Instructions
Assessment 4 is to be uploaded as a single pdf document through the CHEM40079 Moodle site.

Learning Outcomes Assessed

- Recall fundamental chemical concepts including matter, atomic structure, molecules, bonding, physical and chemical properties, acids and bases, chemical reactions and organic compounds.
- Apply chemical concepts, quantities and calculations to develop solutions to chemistry problems.

Graduate Attributes

- Self Management
- Communication
- Problem Solving
- Critical Thinking

Academic Integrity Statement

As a CQUniversity student you are expected to act honestly in all aspects of your academic work.

Any assessable work undertaken or submitted for review or assessment must be your own work. Assessable work is any type of work you do to meet the assessment requirements in the unit, including draft work submitted for review and feedback and final work to be assessed.

When you use the ideas, words or data of others in your assessment, you must thoroughly and clearly acknowledge the source of this information by using the correct referencing style for your unit. Using others' work without proper acknowledgement may be considered a form of intellectual dishonesty.

Participating honestly, respectfully, responsibly, and fairly in your university study ensures the CQUniversity qualification you earn will be valued as a true indication of your individual academic achievement and will continue to receive the respect and recognition it deserves.

As a student, you are responsible for reading and following CQUniversity's policies, including the **Student Academic Integrity Policy and Procedure**. This policy sets out CQUniversity's expectations of you to act with integrity, examples of academic integrity breaches to avoid, the processes used to address alleged breaches of academic integrity, and potential penalties.

What is a breach of academic integrity?
A breach of academic integrity includes but is not limited to plagiarism, self-plagiarism, collusion, cheating, contract cheating, and academic misconduct. The Student Academic Integrity Policy and Procedure defines what these terms mean and gives examples.

Why is academic integrity important?
A breach of academic integrity may result in one or more penalties, including suspension or even expulsion from the University. It can also have negative implications for student visas and future enrolment at CQUniversity or elsewhere. Students who engage in contract cheating also risk being blackmailed by contract cheating services.

Where can I get assistance?
For academic advice and guidance, the Academic Learning Centre (ALC) can support you in becoming confident in completing assessments with integrity and of high standard.

What can you do to act with integrity?

Be Honest
If your assessment task is done by someone else, it would be dishonest of you to claim it as your own

Seek Help
If you are not sure about how to cite or reference in essays, reports etc, then seek help from your lecturer, the library or the Academic Learning Centre (ALC)

Produce Original Work
Originality comes from your ability to read widely, think critically, and apply your gained knowledge to address a question or problem