CHEM40079 *Introductory Chemistry*
Term 2 - 2024

Profile information current as at 09/07/2025 08:13 pm

General Information

Overview
Introductory Chemistry will provide you with a foundation for university study in the chemical sciences. This unit will provide fundamental principles of chemistry by introducing topics such as matter, molecules, bonding, chemical reactions, stoichiometry, acids and bases, and organic chemistry. In addition to gaining an introductory understanding of chemical concepts, you will 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 2 - 2024

- 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: 50%

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 Unit Coordinators

Feedback

Low participation in Zoom sessions.

Recommendation

Continue to improve efforts to engage with students and promote the available classes to encourage attendance and participation.

Unit Learning Outcomes

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

1. Explain fundamental chemical concepts including matter, atomic structure, molecules, bonding, physical and chemical properties, stoichiometry, acids and bases, chemical reactions and organic compounds
2. Interpret the periodic table of the elements
3. Apply chemical concepts and calculations of quantities to solve 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 - 50%	•		•

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	—		

Graduate Attributes	Learning Outcomes		
	1	2	3
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 - 50%	—	—	—		—				

Textbooks and Resources

Textbooks

CHEM40079

Prescribed

Introductory Chemistry
Edition: Fifth (2023)
Authors: School of Access Education
CQUniversity Publishing Unit
Rockhampton , Queensland , Australia
ISBN: N/A
Binding: Spiral
A current printable version of the textbook can be found on the CHEM40079 Moodle site. The textbook is not available for purchase from the CQUniversity Bookshop, so it is strongly recommended that you print your own copy. Your Access Coordinator will provide advice on printing options.
Please note that the textbook also contains pictures and sections of text in colour which will not be shown in black and white prints. It is strongly advised that a digital version be saved to view these sections in colour.

IT Resources

You will need access to the following IT resources:

- CQUniversity Student Email
- Internet
- Unit Website (Moodle)

Referencing Style

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

Teaching Contacts

Flavia Santamaria Unit Coordinator
f.santamaria@cqu.edu.au

Schedule

Week 1 - 08 Jul 2024

Module/Topic	Chapter	Events and Submissions/Topic
Module 1: Matter	1	Complete Week 1 module review quiz

Week 2 - 15 Jul 2024

Module/Topic	Chapter	Events and Submissions/Topic
Module 2: Atoms and the periodic table	2	Complete week 2 module review quiz

Week 3 - 22 Jul 2024

Module/Topic	Chapter	Events and Submissions/Topic
Module 3: Molecules and ions	3	Complete week 3 module review quiz Assessment 1 (Online Quiz) - available Week 3 Friday (26 July, 2024)

Week 4 - 29 Jul 2024

Module/Topic	Chapter	Events and Submissions/Topic
Module 4: Ionic and covalent compounds	4	Complete Week 4 module review quiz **Assessment 1 (Online Quiz)** Due: Week 4 Thursday (1 Aug 2024) 11:45 pm AEST

Week 5 - 05 Aug 2024

Module/Topic	Chapter	Events and Submissions/Topic
Module 5: Chemical reactions	5	Complete Week 5 module review quiz

Vacation Week - 12 Aug 2024

Module/Topic	Chapter	Events and Submissions/Topic
Study week		Revision of topics

Week 6 - 19 Aug 2024

Module/Topic	Chapter	Events and Submissions/Topic
Module 6: Redox reactions	6	Complete Week 6 module review quiz

Week 7 - 26 Aug 2024

Module/Topic	Chapter	Events and Submissions/Topic
Module 7. The mole	7	Complete Week 7 module review quiz Assessment 2 - available Week 7 Friday (30 August, 2024)

Week 8 - 02 Sep 2024

Module/Topic	Chapter	Events and Submissions/Topic
Module 8: Concentration and molarity	8	Complete Week 8 module review quiz **Assessment 2** Due: Week 8 Thursday (5 Sept 2024) 11:45 pm AEST

Week 9 - 09 Sep 2024

Module/Topic	Chapter	Events and Submissions/Topic
Module 9. Reactions and calculations	9	Complete Week 9 module review quiz

Week 10 - 16 Sep 2024

Module/Topic	Chapter	Events and Submissions/Topic
Module 10. Acids and bases	10	Complete Week 10 module review quiz

Week 11 - 23 Sep 2024

Module/Topic	Chapter	Events and Submissions/Topic
Module 11. Organic chemistry	11	Complete Week 11 module review quiz Assessment 3 - available Week 11 Friday (27 September, 2024)

Week 12 - 30 Sep 2024

Module/Topic	Chapter	Events and Submissions/Topic
Module 12. Chemical equilibrium	12	**Assessment 3** Due: Week 12 Thursday (3 Oct 2024) 11:45 pm AEST

Review/Exam Week - 07 Oct 2024

Module/Topic	Chapter	Events and Submissions/Topic

Exam Week - 14 Oct 2024

Module/Topic	Chapter	Events and Submissions/Topic

Term Specific Information

The Unit Coordinator for this term is:
Dr Flavia Santamaria
f.santamaria@cqu.edu.au
+61 7 4930 6978

Assessment Tasks

1 Assessment 1 (Online Quiz)

Assessment Type
Online Quiz(zes)

Task Description
Assessment 1 (Online Quiz) is a 30 question online quiz which is worth 20% of the overall mark. This quiz covers material from Modules 1, 2 and 3 and will be completed in week 4. Once you start the Quiz, you have 1.5 hours to complete the 30 questions. Only one attempt is allowed, so it's important to choose a time that you can complete the quiz uninterrupted.
The Quiz will be available on the CHEM40079 Moodle site.
Please note the following requirements and advice:

- Follow the instructions provided throughout the quiz.
- 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.
- Use formulas and display your answers as they are shown in the study guide and throughout the material provided on the unit Moodle site.
- Sourcing answers and/or formulas from the internet or anywhere other than the unit material on the CHEM40079 Moodle site and/or checking your answers with anyone including artificial intelligence (AI) chatbots contravenes the Academic Integrity Policy. Moreover, the information from some sites may be unreliable or not as specific as is required for this assessment.
- Use your own words (paraphrase) the information found in the Textbook rather than copying it word for word. Conveying the information in your own words will demonstrate your understanding of topics.
- Use logical explanations and problem-solving.
- We will check to ensure that you are awarded marks for all your correct answers. (Moodle can only recognise answers that match exactly those provided in the system.)

Number of Quizzes
1

Frequency of Quizzes
Other

Assessment Due Date
Week 4 Thursday (1 Aug 2024) 11:45 pm AEST

This quiz closes at 11:45 pm. Ensure you complete and submit the quiz by this time. After this time, the quiz will only be available to students with an extension.

Return Date to Students
Vacation Week Thursday (15 Aug 2024)

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

Weighting
20%

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

- correct use of science conventions
- correct use of terminology
- application of foundation concepts to the question asked
- logic of explanations and problem-solving
- calculations which include chemical formulas, units and appropriate subscripts and superscripts.

Referencing Style

- Harvard (author-date)

Submission
Online

Learning Outcomes Assessed

- Explain fundamental chemical concepts including matter, atomic structure, molecules, bonding, physical and chemical properties, stoichiometry, acids and bases, chemical reactions and organic compounds
- Interpret the periodic table of the elements

Graduate Attributes

- Self Management
- Information Technology Competence

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 4, 5, 6 and 7, 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:

- perform 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.

Please note the following requirements and advice:

- Use formulas and display your answers as they are shown in the study guide and throughout the material provided on the Moodle site.
- All working, including the development of answers, must be shown.
- For Chemistry assessments, sourcing answers and/or formulas from the internet or anywhere other than the unit material on the Moodle site and/or checking your answers with anyone, including artificial intelligence (AI) chatbots, contravenes the Academic Integrity Policy. Moreover, the information from some sites may be unreliable or not as specific as is required for this assessment.
- Use your own words (paraphrase) the information found in the Textbook rather than copying it word for word. Conveying the information in your own words will demonstrate your understanding of topics.

Assessment Due Date
Week 8 Thursday (5 Sept 2024) 11:45 pm AEST

Download and print the document, address the questions, scan the pages and upload as one document.

Return Date to Students
Week 10 Thursday (19 Sept 2024)

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

Weighting
30%

Assessment Criteria
Marks are allocated for the following:

- appropriate setting out of the solution
- correct sequence of steps
- relevant use of examples and diagrams
- accurate use of units, equations and formulas.

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 2 is to be uploaded as a single pdf document through the CHEM40079 Moodle site.

Learning Outcomes Assessed

- Explain fundamental chemical concepts including matter, atomic structure, molecules, bonding, physical and chemical properties, stoichiometry, acids and bases, chemical reactions and organic compounds
- Interpret the periodic table of the elements

Graduate Attributes

- Self Management
- Communication
- Information Literacy

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 8, 9, 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. use subscripts, superscripts and balanced equations,).

Please note the following requirements and advice:

- Use formulas and display your answers as they are shown in the Textbook and throughout the material provided on the Moodle site.
- All working, including the development of answers, must be shown.
- For Chemistry assessments, sourcing answers and/or formulas from the internet or anywhere other than the unit material on the Moodle site and/or checking your answers with anyone including artificial intelligence (AI) chatbots contravenes the Academic Integrity Policy. Moreover, the information from some sites may be unreliable or not as specific as is required for this assessment.
- Use your own words (paraphrase) the information found in the Textbook rather than copying it word for word. Conveying the information in your own words will demonstrate your understanding of topics.

Assessment Due Date
Week 12 Thursday (3 Oct 2024) 11:45 pm AEST

Download and print the document, address the questions, scan the pages and upload as one document.

Return Date to Students
Exam Week Thursday (17 Oct 2024)

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

Weighting
50%

Minimum mark or grade
To pass this unit, you must obtain at least 50% of the marks available for this assessment.

Assessment Criteria
Marks are allocated for the following:

- appropriate setting out of the solution
- correct sequence of steps
- relevant use of examples and diagrams
- accurate use of units, equations and formulas.

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 3 is to be uploaded as a single pdf document through the CHEM40079 Moodle site.

Learning Outcomes Assessed

- Explain fundamental chemical concepts including matter, atomic structure, molecules, bonding, physical and

chemical properties, stoichiometry, acids and bases, chemical reactions and organic compounds
- Apply chemical concepts and calculations of quantities to solve chemistry problems.

Graduate Attributes

- Self Management
- Communication
- Information Literacy
- Problem Solving

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