



# CHEM40079 *Introductory Chemistry*

## Term 3 - 2018

Profile information current as at 09/05/2024 01:30 am

All details in this unit profile for CHEM40079 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

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 3 - 2018

- Distance

#### 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 Feedback

##### Feedback

Some students felt that the lectures were long. They felt the unit was content heavy.

##### Recommendation

Produce short summary instruction videos highlighting what the students should be getting out of each lecture.

#### Feedback from Student Feedback

##### Feedback

Weekly modules did not answer some assessment questions.

##### Recommendation

Rewrite the assignment instructions to explicitly inform students that a percentage of each assessment task is designed to encourage students to think innovatively. The assignment instructions should make this clear.

## 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



### 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.**

#### Additional Textbook Information

This unit is supported by comprehensive study notes (and a range of other resources, including lecture podcasts) that are available on the Introductory Chemistry unit Moodle site.

### IT Resources

**You will need access to the following IT resources:**

- CQUniversity Student Email
- Internet
- Unit Website (Moodle)
- Access to printer and scanner

## 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](mailto:b.kumar@cqu.edu.au)

## Schedule

### Week 1 - 05 Nov 2018

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

### Week 2 - 12 Nov 2018

Module/Topic	Chapter	Events and Submissions/Topic
Module 2. Elements, atoms and molecules		

### Week 3 - 19 Nov 2018

Module/Topic	Chapter	Events and Submissions/Topic
Module 3. Electronic configuration and the Periodic Table		<b>Assessment 1 Online Quiz</b> Due: Week 3 Wednesday (21 Nov 2018) 11:45 pm AEST

### Week 4 - 26 Nov 2018

Module/Topic	Chapter	Events and Submissions/Topic
Module 4. Ionic and covalent compounds		

### Vacation Week - 03 Dec 2018

Module/Topic	Chapter	Events and Submissions/Topic
Study Break		

### Week 5 - 10 Dec 2018

Module/Topic	Chapter	Events and Submissions/Topic
Module 5. Chemical reactions		

### Week 6 - 17 Dec 2018

Module/Topic	Chapter	Events and Submissions/Topic
Module 6. Redox reactions		

### Week 7 - 31 Dec 2018

Module/Topic	Chapter	Events and Submissions/Topic
Module 7. The Mole		<b>Assessment 2</b> Due: Week 7 Wednesday (2 Jan 2019) 11:45 pm AEST

### Week 8 - 07 Jan 2019

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

### Week 9 - 14 Jan 2019

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

#### Week 10 - 21 Jan 2019

Module/Topic	Chapter	Events and Submissions/Topic
Module 10. Acids and bases		<b>Assessment 3</b> Due: Week 10 Wednesday (23 Jan 2019) 11:45 pm AEST

#### Week 11 - 28 Jan 2019

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

#### Week 12 - 04 Feb 2019

Module/Topic	Chapter	Events and Submissions/Topic
Module 12. Chemical equilibrium		<b>Assessment 4</b> Due: Week 12 Wednesday (6 Feb 2019) 11:45 pm AEST

#### Exam Week - 11 Feb 2019

Module/Topic	Chapter	Events and Submissions/Topic
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## Term Specific Information

Unit Coordinator: Brij Kumar, email: b.kumar@cqu.edu.au, phone: (07) 4940 7860, Ooralea Campus, Mackay.

## Assessment Tasks

### 1 Assessment 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.

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
- avoid using the internet to find answers because 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 formulae correctly.

#### Number of Quizzes

1

#### Frequency of Quizzes

#### Assessment Due Date

Week 3 Wednesday (21 Nov 2018) 11:45 pm AEST

This quiz closes at this time. Ensure you access, complete and submit by this time.

#### Return Date to Students

Week 5 Wednesday (12 Dec 2018)

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 resubmission is 40%.

**Assessment Criteria**

Marks will be awarded for correct response to multi-choice or short answer questions.

**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 6. 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 development of answers, must be shown.

**Assessment Due Date**

Week 7 Wednesday (2 Jan 2019) 11:45 pm AEST

**Return Date to Students**

Week 9 Wednesday (16 Jan 2019)

If the assessment is submitted after the due date, the assessment return will be two weeks after submission.

**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.

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

- 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 7 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 the relevant material (content, examples and practice quizzes) required to complete the assessment. All working, including development of answers, must be shown.

### Assessment Due Date

Week 10 Wednesday (23 Jan 2019) 11:45 pm AEST

### Return Date to Students

Week 12 Wednesday (6 Feb 2019)

If the assessment is submitted after the due date, the assessment return will be two weeks after submission.

### 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.

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

- 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 development of answers, must be shown.

The resources provided on the CHEM40079 Moodle site contain all the relevant material (content, examples and practice quizzes) required to complete the assessment.

### Assessment Due Date

Week 12 Wednesday (6 Feb 2019) 11:45 pm AEST

### Return Date to Students

Two weeks after the due date, or two weeks after submitted if the assessment is submitted after the due date.

### 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 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.

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