



# SCIE11022 *Introductory Science*

## Term 1 - 2020

Profile information current as at 27/04/2024 07:09 am

All details in this unit profile for SCIE11022 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.

### Corrections

#### Unit Profile Correction added on 19-04-20

The end of term examination has now been changed to an alternate form of assessment. Please see your Moodle site for details of the assessment.

### General Information

#### Overview

On successful completion of this unit, you will have a sound understanding of the fundamental principles and concepts of physical and chemical sciences, with particular reference to applied health and safety. You will be able to use appropriate scientific units and notation, and explain the chemical principles relating to atoms, molecules, biomolecules, solutions, pH and chemical reactions. You will apply the physical principles associated with the behaviour of gases, electromagnetic radiation, sound, motion and forces to solve problems relevant to the workplace. You will also study aspects of science relevant to your specific discipline.

#### Details

Career Level: *Undergraduate*

Unit Level: *Level 1*

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 Undergraduate 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. **Written Assessment**

Weighting: 30%

#### 2. **Online Test**

Weighting: 20%

#### 3. **Examination**

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 Student evaluation on Moodle.

##### Feedback

Students enjoyed the lectures but would like to have more videos showing how to do calculations.

##### Recommendation

Some videos showing how to do calculations will be recorded.

#### Feedback from Student evaluation on Moodle.

##### Feedback

Students would like some more detail in some of the lectures, particularly the chemistry as they found parts of it hard to follow.

##### Recommendation

Lectures will be reviewed to see where more detail might be helpful.

#### Feedback from Student evaluation on Moodle.

##### Feedback

Students would like to have more zoom sessions.

##### Recommendation

More frequent zoom sessions will be scheduled even though zoom sessions conducted last year were very poorly attended.

## Unit Learning Outcomes

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

1. Explain the basic chemical principles relating to atoms and molecules, solutions, pH, chemical bonding and reactions with particular reference to applied health
2. Apply the concepts of scientific measurement to the presentation of quantitative data and use appropriate scientific units and scientific and logarithmic notation
3. Explain the basic physical principles associated with the behaviour of gases, electromagnetic radiation and sound with particular reference to applied health
4. Apply the principles of motion and forces in the context of applied health and safety
5. Explain introductory scientific principles pertaining to your area of specialisation with either a physics or environmental focus.

## Alignment of Learning Outcomes, Assessment and Graduate Attributes



### Alignment of Assessment Tasks to Learning Outcomes

Assessment Tasks	Learning Outcomes				
	1	2	3	4	5
<b>1 - Written Assessment - 30%</b>	•	•			

Assessment Tasks	Learning Outcomes				
	1	2	3	4	5
2 - Online Test - 20%			•	•	
3 - Examination - 50%	•	•	•	•	•

### Alignment of Graduate Attributes to Learning Outcomes

Graduate Attributes	Learning Outcomes				
	1	2	3	4	5
1 - Communication	•	•	•	•	•
2 - Problem Solving	•	•	•	•	•
3 - Critical Thinking		•		•	
4 - Information Literacy	•	•	•	•	•
5 - Team Work					
6 - Information Technology Competence	•	•	•	•	•
7 - Cross Cultural Competence					
8 - Ethical practice					
9 - Social Innovation					
10 - 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	10
1 - Written Assessment - 30%	•	•	•	•		•				
2 - Online Test - 20%	•	•	•	•		•				
3 - Examination - 50%	•	•	•	•		•				

## 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)

## Referencing Style

**All submissions for this unit must use the referencing styles below:**

- [American Psychological Association 6th Edition \(APA 6th edition\)](#)
- [Harvard \(author-date\)](#)

For further information, see the Assessment Tasks.

## Teaching Contacts

**Judith Wake** Unit Coordinator  
[j.wake@cqu.edu.au](mailto:j.wake@cqu.edu.au)

## Schedule

### Week 1 - 09 Mar 2020

Module/Topic	Chapter	Events and Submissions/Topic
Matter: The elements and atomic structure	Module 1	

### Week 2 - 16 Mar 2020

Module/Topic	Chapter	Events and Submissions/Topic
Compounds: Molecules and their chemical bonds	Module 2	

### Week 3 - 23 Mar 2020

Module/Topic	Chapter	Events and Submissions/Topic
Presenting data: Numbers, units and graphs	Module 3	

### Week 4 - 30 Mar 2020

Module/Topic	Chapter	Events and Submissions/Topic
Solutions: Composition and concentrations	Module 4	

### Week 5 - 06 Apr 2020

Module/Topic	Chapter	Events and Submissions/Topic
Electrolytes, acids, bases and buffers	Module 5	

### Vacation Week - 13 Apr 2020

Module/Topic	Chapter	Events and Submissions/Topic
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Week 6 - 20 Apr 2020		
Module/Topic	Chapter	Events and Submissions/Topic
An introduction to organic chemistry and biomolecules	Module 6	<b>Short Answer Questions</b> Due: Week 6 Monday (20 Apr 2020) 11:45 pm AEST
Week 7 - 27 Apr 2020		
Module/Topic	Chapter	Events and Submissions/Topic
Gases and the respiratory system	Module 7	
Week 8 - 04 May 2020		
Module/Topic	Chapter	Events and Submissions/Topic
Waves, sight and sound, and nuclear radiation	Module 8	
Week 9 - 11 May 2020		
Module/Topic	Chapter	Events and Submissions/Topic
Motion kinematics	Module 9	
Week 10 - 18 May 2020		
Module/Topic	Chapter	Events and Submissions/Topic
Forces and motion	Module 10	
Week 11 - 25 May 2020		
Module/Topic	Chapter	Events and Submissions/Topic
Option A: Work energy and momentum Option B: Climate and weather, and the water and carbon cycles	Modules 11A & 11B	<b>Multiple Choice Quiz</b> Due: Week 11 Friday (29 May 2020) 11:45 pm AEST
Week 12 - 01 Jun 2020		
Module/Topic	Chapter	Events and Submissions/Topic
Option A: Electricity Option B: Geology and erosion	Modules 12 A & 12B	
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

## Assessment Tasks

### 1 Short Answer Questions

#### Assessment Type

Written Assessment

#### Task Description

You are required to provide short answers to a series of questions based on the concepts presented in Modules 1 to 5 of this unit. You must provide explanations and/or calculations for each of your answers which should be uploaded in a single Word document through the assessment link in Moodle. Your answers do not need to be referenced but you must ensure that all of the work is your own, in line with University requirements

**Assessment Due Date**

Week 6 Monday (20 Apr 2020) 11:45 pm AEST

**Return Date to Students**

Week 8 Monday (4 May 2020)

**Weighting**

30%

**Minimum mark or grade**

40%

**Assessment Criteria**

Marks will be awarded for each question as indicated on the assessment item. Explanations for your answers must be provided and/or if questions require calculations, all working must be shown.

**Referencing Style**

- [American Psychological Association 6th Edition \(APA 6th edition\)](#)
- [Harvard \(author-date\)](#)

**Submission**

Online

**Submission Instructions**

Upload as .doc or .docx file.

**Learning Outcomes Assessed**

- Explain the basic chemical principles relating to atoms and molecules, solutions, pH, chemical bonding and reactions with particular reference to applied health
- Apply the concepts of scientific measurement to the presentation of quantitative data and use appropriate scientific units and scientific and logarithmic notation

**Graduate Attributes**

- Communication
- Problem Solving
- Critical Thinking
- Information Literacy
- Information Technology Competence

## 2 Multiple Choice Quiz

**Assessment Type**

Online Test

**Task Description**

You are required to complete an online quiz comprised of multiple-choice type questions based on the concepts presented in Modules 6 - 10 of this unit. All questions are of equal weighting. Incorrect responses incur no penalty.

**Assessment Due Date**

Week 11 Friday (29 May 2020) 11:45 pm AEST

**Return Date to Students**

Week 12 Friday (5 June 2020)

**Weighting**

20%

**Minimum mark or grade**

40%

**Assessment Criteria**

Correctness of answers.

**Referencing Style**

- [American Psychological Association 6th Edition \(APA 6th edition\)](#)
- [Harvard \(author-date\)](#)

**Submission**

Online

### **Learning Outcomes Assessed**

- Explain the basic physical principles associated with the behaviour of gases, electromagnetic radiation and sound with particular reference to applied health
- Apply the principles of motion and forces in the context of applied health and safety

### **Graduate Attributes**

- Communication
- Problem Solving
- Critical Thinking
- Information Literacy
- Information Technology Competence

## **Examination**

### **Outline**

Complete an invigilated examination.

### **Date**

During the examination period at a CQUniversity examination centre.

### **Weighting**

50%

### **Length**

120 minutes

### **Minimum mark or grade**

40%

### **Exam Conditions**

Closed Book.

### **Materials**

Dictionary - non-electronic, concise, direct translation only (dictionary must not contain any notes or comments).

Calculator - all non-communicable calculators, including scientific, programmable and graphics calculators are authorised

## 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