SCIE11022 *Introductory Science*
Term 1 - 2018

Profile information current as at 14/11/2025 04:38 am

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 - 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 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

Feedback

The lectures were brief and contain no more information then the power point slides. Would prefer to have hour long lectures that explain topics thoroughly.

Recommendation

Lectures are meant to be brief. Science topics, if covered and delivered entirely by lectures would mean lecture sessions of several hours duration. Therefore, it is standard practice to have brief lectures that cover the basic concepts with detailed theory in modules (as in this unit), texts or students' own learning (strongly recommended). Students undertaking their own supplemental readings (via texts or online as they may require) is standard practice across all good universities worldwide. It is encouraged in recognition of different learning styles and capabilities. All lectures will be increased to 40-min duration.

Action

Students were who had not registered for Residential School were reminded through EASICONNECT twice (Weeks 6 and 6) to nominate and sign-up for their Residential School session. This was successful as it also identified students who were repeating the unit and had to have their marks transferred to their previous attempt.

Feedback from Student Evaluation

Feedback

This unit was too content heavy. 14 weeks of units and then holding an exam that covers all 14 weeks is quite heavy for an intro unit.

Recommendation

The unit has content for 12 weeks and this content has been developed by experienced and qualified educators. There will be no reduction in content from the existing 12 weeks as it meets the University's expectation of the teaching term length.

Action

Additional tutorial questions were developed and added to Modules 10, 11 and 14 under "Activities".

Feedback from Student Evaluation

Feedback

I think someone needs to have a review of all the modules. There are some typos and errors with symbols that need to be fixed. I can't remember which but in one of the modules, it had just given some sort of information. The very next sentence in bold and italics said something like Error! There is no reference to support this!

Recommendation

This will definitely be considered and a review undertaken to remove misplaced live links in the Modules. All incidences of typos will be checked prior to delivery in the next offering.

Feedback from Student Evaluation

Feedback

Weekly modules for the entire unit need to be accessible from week one allowing those who wish to can stay ahead.

Recommendation

Good suggestion that will be implemented.

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

— 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	4	5
1 - Written Assessment - 30%	•	•			
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					

Graduate Attributes	Learning Outcomes				
	1	2	3	4	5
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

Schedule

Week 1 - 05 Mar 2018

Module/Topic	Chapter	Events and Submissions/Topic

Matter: The elements and atomic structure	Module 1	
Week 2 - 12 Mar 2018		
Module/Topic	**Chapter**	**Events and Submissions/Topic**
Compounds: Molecules and their chemical bonds	Module 2	
Week 3 - 19 Mar 2018		
Module/Topic	**Chapter**	**Events and Submissions/Topic**
Presenting data: Numbers, units and graphs	Module 3	
Week 4 - 26 Mar 2018		
Module/Topic	**Chapter**	**Events and Submissions/Topic**
Solutions: Composition and concentrations	Module 4	
Week 5 - 02 Apr 2018		
Module/Topic	**Chapter**	**Events and Submissions/Topic**
Electrolytes, acids, bases and buffers	Module 5	
Vacation Week - 09 Apr 2018		
Module/Topic	**Chapter**	**Events and Submissions/Topic**
Week 6 - 16 Apr 2018		
Module/Topic	**Chapter**	**Events and Submissions/Topic**
An introduction to organic chemistry and biomolecules	Module 6	**Short Answer Questions** Due: Week 6 Monday (16 Apr 2018) 11:45 pm AEST
Week 7 - 23 Apr 2018		
Module/Topic	**Chapter**	**Events and Submissions/Topic**
Gases and the respiratory system	Module 7	
Week 8 - 30 Apr 2018		
Module/Topic	**Chapter**	**Events and Submissions/Topic**
Waves, sight and sound, and nuclear radiation	Module 8	
Week 9 - 07 May 2018		
Module/Topic	**Chapter**	**Events and Submissions/Topic**
Motion kinematics	Module 9	
Week 10 - 14 May 2018		
Module/Topic	**Chapter**	**Events and Submissions/Topic**
Forces and motion	Module 10	
Week 11 - 21 May 2018		
Module/Topic	**Chapter**	**Events and Submissions/Topic**
Option A: Work energy and momentum Option B: Climate and weather, and the water and carbon cycles	Module 11A & B	**Multiple Choice Quiz** Due: Week 11 Monday (21 May 2018) 11:45 pm AEST
Week 12 - 28 May 2018		
Module/Topic	**Chapter**	**Events and Submissions/Topic**

Option A: Electricity Option B: Geology and erosion	Module 12 A & B	

Review/Exam Week - 04 Jun 2018

Module/Topic	Chapter	Events and Submissions/Topic

Exam Week - 11 Jun 2018

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 course. You must provide explanations for each of your answers which should be uploaded in a single Word document through the assessment link in Moodle. You must ensure that all of the work is your own, in line with University requirements

Assessment Due Date
Week 6 Monday (16 Apr 2018) 11:45 pm AEST

Return Date to Students
Week 8 Monday (30 Apr 2018)

Weighting
30%

Minimum mark or grade
30%

Assessment Criteria
Marks will be awarded for each question as indicated on the assessment item. Explanations for each of your answers must be provided. 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 30 multiple-choice questions based on the concepts presented in Modules 6 - 10 of this course. Each question is worth 1 mark.

Assessment Due Date
Week 11 Monday (21 May 2018) 11:45 pm AEST

Return Date to Students
Review/Exam Week Monday (4 June 2018)

Weighting
20%

Minimum mark or grade
30%

Assessment Criteria
All questions are of equal weighting. One mark will be awarded for each correct response. Incorrect responses incur no penalty.

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