CHEM11042 *Fundamentals of Chemistry*
Term 2 - 2020

Profile information current as at 15/05/2024 08:30 am

General Information

Overview

This unit will provide you with the fundamental principles of chemistry that underpin the medical sciences and provide a strong foundation on which you can develop an understanding of biochemistry and molecular science. You will gain an appreciation of the nature of matter, classic atomic structure and how energy is involved in bond formation. These concepts will be developed to explain the forces between molecules that govern chemical interaction. You will be introduced to the chemistry of electrolytes, acids, bases and buffers. This study will be supported by simple calculations to assist you in relating to the pH scale. The study of organic chemistry and molecules central to the life sciences will enable you to develop an understanding of the biochemistry and molecular biology relevant to your specific discipline. The naming and classifying of chemical compounds will enable you to be conversant with accepted scientific terms. Tutorials and on-line activities will complement the theoretical knowledge gained in lectures and provide you with the basic mathematical and analytical tools required in the application of chemistry 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 2 - 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. **Online Quiz(zes)**
Weighting: 30%
2. **Written Assessment**
Weighting: 20%
3. **Take Home Exam**
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 Have your say Email Moodle forums

Feedback
Students raised some sound issues that occurred during live lectures.

Recommendation
If issues persist, staff will notify TaSAC of any sound issues that occur in lecture theatres. Staff could also consider recording lectures from the desk.

Feedback from Have your say

Feedback
Students found the study guide beneficial towards their learning process.

Recommendation
Staff will continue to provide and update the study guide.

Feedback from Have your say

Feedback
Whilst the students were very appreciative about the implementation of the study guide for this unit, they also highlighted the need to correct some of the answers to the review questions.

Recommendation
Staff will continue to provide and update the study guide. Errors will be corrected promptly.

Feedback from Have your say

Feedback
Some students still do not believe that chemistry is relevant to their chosen field, this also impacted negatively on their engagement with the units learning materials.

Recommendation
Staff will continue to redesign the unit in consultation with appropriate disciplines and will take action to rectify any future issues.

Unit Learning Outcomes

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

1. Apply concepts of atomic structure to explain molecular bonding and nuclear reactivity
2. Apply chemical concepts to healthcare situations
3. Identify categories of organic compounds and their potential chemical interactions
4. Perform basic chemical calculations.

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
1 - Online Quiz(zes) - 30%	•		•	•
2 - Written Assessment - 20%		•		
3 - Take Home Exam - 50%	•		•	•

Alignment of Graduate Attributes to Learning Outcomes

Graduate Attributes	Learning Outcomes			
	1	2	3	4
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 - Online Quiz(zes) - 30%		•	•	•		•				
2 - Written Assessment - 20%	•	•	•	•		•				
3 - Take Home Exam - 50%	•	•	•	•						

Textbooks and Resources

Textbooks

There are no required textbooks.

Additional Textbook Information
A Study Guide will be provided to students in lieu of a textbook.

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: Vancouver
For further information, see the Assessment Tasks.

Teaching Contacts

Shaneel Chandra Unit Coordinator
s.chandra@cqu.edu.au

Schedule

Week 1 - 13 Jul 2020

Module/Topic	Chapter	Events and Submissions/Topic
Introduction to Chemistry Matter Atoms Periodic Table	Chemistry Foundations Study Guide - Topics 1, 2 and 3	

Week 2 - 20 Jul 2020

Module/Topic	Chapter	Events and Submissions/Topic
Ions Bonding Intermolecular Forces	Chemistry Foundations Study Guide - Topics 4, 5, 6 and 7	

Week 3 - 27 Jul 2020

Module/Topic	Chapter	Events and Submissions/Topic
The Mole Mole-Mass Conversions Solutions and Dilutions	Chemistry Foundations Study Guide - Topics 8 and 9	Online Quiz 1 closes 11:55 pm (AEST), Sunday 2 August 2020

Week 4 - 03 Aug 2020

Module/Topic	Chapter	Events and Submissions/Topic
Chemical Reactions 1	Chemistry Foundations Study Guide - Topics 10 and 11	

Week 5 - 10 Aug 2020

Module/Topic	Chapter	Events and Submissions/Topic

Chemical Reactions 2	Chemistry Foundations Study Guide - Topics 11 and 12	

Vacation Week - 17 Aug 2020

Module/Topic	Chapter	Events and Submissions/Topic

Week 6 - 24 Aug 2020

Module/Topic	Chapter	Events and Submissions/Topic
Electrolytes Acids and Bases	Chemistry Foundations Study Guide - Topics 13 and 14	

Week 7 - 31 Aug 2020

Module/Topic	Chapter	Events and Submissions/Topic
Buffers Introduction to Nuclear Chemistry	Chemistry Foundations Study Guide - Topics 15 and 16	Written Assessment due: 11:55 pm (AEST), Sunday, 6 September 2020

Week 8 - 07 Sep 2020

Module/Topic	Chapter	Events and Submissions/Topic
Introduction to Organic Chemistry Saturated Hydrocarbons	Chemistry Foundations Study Guide - Topics 17 and 18	

Week 9 - 14 Sep 2020

Module/Topic	Chapter	Events and Submissions/Topic
Unsaturated Hydrocarbons Aromatic Compounds	Chemistry Foundations Study Guide - Topics 19 and 20	

Week 10 - 21 Sep 2020

Module/Topic	Chapter	Events and Submissions/Topic
Alcohols, ethers, alkyl halides, thiols and amines	Chemistry Foundations Study Guide - Topics 21, 22 and 23	

Week 11 - 28 Sep 2020

Module/Topic	Chapter	Events and Submissions/Topic
Aldehydes and Ketones Carboxylic Acids and their Derivatives	Chemistry Foundations Study Guide - Topics 24 and 25	

Week 12 - 05 Oct 2020

Module/Topic	Chapter	Events and Submissions/Topic
Review		Online Quiz 2 (Parts A and B) closes 11:55 pm (AEST), Sunday, 11 October 2020

Review/Exam Week - 12 Oct 2020

Module/Topic	Chapter	Events and Submissions/Topic

Exam Week - 19 Oct 2020

Module/Topic	Chapter	Events and Submissions/Topic

Assessment Tasks

1 Assessment 1

Assessment Type
Online Quiz(zes)

Task Description
This assessment is comprised of 2 online quizzes which will assess your understanding of the topics presented in this unit. This assessment requires you to apply the concepts presented in lectures to answer a series of multiple choice questions. All questions in each quiz are of equal value.
Quiz 1 will contribute 10%
Quiz 2 will contribute 20%.
The 2 online quizzes will contribute a total of 30% of the assessment for this unit. The quizzes are not timed and you are allowed two attempts. The highest score of the two attempts will be recorded. Note that quiz questions are generated randomly and you will receive different questions on subsequent attempts.

Number of Quizzes
1

Frequency of Quizzes
Other

Assessment Due Date

Quiz closes 11:55 pm (AEST), Sunday, 2 August 2020. Quiz 2 closes 11:55 pm (AEST), Sunday, 11 October 2020

Return Date to Students

Quizzes will be released after the completion of each attempt. Answers to the Quiz questions will be released after each Quiz has closed.

Weighting
30%

Assessment Criteria
All questions are of equal weighting. One mark will be awarded for each correct response.
Incorrect responses will not incur a penalty.

Referencing Style

- Vancouver

Submission
Online

Submission Instructions
Complete each Quiz by following the relevant link on the CHEM11042 Moodle site.

Learning Outcomes Assessed

- Apply concepts of atomic structure to explain molecular bonding and nuclear reactivity
- Identify categories of organic compounds and their potential chemical interactions
- Perform basic chemical calculations.

Graduate Attributes

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

2 Assessment 2

Assessment Type
Written Assessment

Task Description
This assessment is designed to assess your comprehension of the concepts presented in the Unit through their application to answer a series of questions.
Marks will be awarded for each question as indicated in the assessment item (please see the Moodle site for further details).

Explanations for each answer must be provided and if calculations are required, all workings must be demonstrated.

Assessment Due Date

11:55 pm (AEST), Sunday, 6 September 2020

Return Date to Students
Week 10 Friday (25 Sept 2020)

Weighting
20%

Assessment Criteria
Marks will be awarded for each question as indicated in the assessment item (please see the Moodle site for further details).

Referencing Style

- Vancouver

Submission
Online

Submission Instructions
Upload assessment in MS WORD format by following instructions on the Moodle site for CHEM11042.

Learning Outcomes Assessed

- Apply chemical concepts to healthcare situations

Graduate Attributes

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

3 Assessment 3

Assessment Type
Take Home Exam

Task Description
The alternative assessment will be a written assessment/take home exam that will cover the content you have studied this term. This assessment is designed to assess your comprehension of the concepts presented in the unit through their application to answer a series of questions.

Assessment Due Date

Take home exam - dates to be advised on Moodle.

Return Date to Students

Weighting
50%

Minimum mark or grade
40

Assessment Criteria
Marks will be awarded for each question as indicated in the assessment item (please see the Moodle site for further details). All submissions should be typed and saved as a word document.

Referencing Style

- Vancouver

Submission
Online

Submission Instructions
Submissions must be in MS Word format

Learning Outcomes Assessed

- Apply concepts of atomic structure to explain molecular bonding and nuclear reactivity
- Identify categories of organic compounds and their potential chemical interactions
- Perform basic chemical calculations.

Graduate Attributes

- Communication
- Problem Solving
- Critical Thinking
- Information Literacy

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