COURSE OUTLINE

UCC104 Chemistry - Enabling your Future

School: School of Education and Tertiary Access

2023 | Semester 1

UniSC Sunshine Coast
UniSC Moreton Bay

BLENDED LEARNING

Most of your course is on campus but you may be able to do some components of this course online.

Please go to unisc.edu.au for up to date information on the teaching sessions and campuses where this course is usually offered.

1. What is this course about?

1.1. Description

The purpose of this course is to ensure you are familiar with the core understandings in chemistry, ways of thinking and core competencies required to study science. This course is designed to develop your engagement and fascination with science. You will be introduced to chemical concepts, and how science works. You will acquire knowledge in the foundational principles of chemistry which will support your study in undergraduate chemistry and biology.

1.2. How will this course be delivered?

ACTIVITY	HOURS	BEGINNING WEEK	FREQUENCY
BLENDED LEARNING			
Learning materials – You are required to engage and interact with pre-recorded learning materials accessed through Canvas.	2hrs	Week 1	13 times
Tutorial/Workshop 1 – You will develop your understanding by engaging with on-campus activities which make application of the learning materials.	2hrs	Week 1	13 times
Independent Study/Research – In addition to engaging with pre-recorded learning materials and on-campus activities, you are required to undertake independent study. This includes workbook reading and problem solving, preparing for and completing formative and summative assessment tasks, etc. You may also be invited/ required to attend occasional campus seminars.	7.5hrs	Week 1	13 times

1.3. Course Topics

Matter and the structure of the atom

The periodic table and electron configuration

Ionic and covalent bonding with an introduction to organic chemistry

Electronegativity, bond and molecule polarity, intermolecular forces

Chemical reactions and the Mole

Scientific notation and measurements

Concentrations, water, acids and bases.

2. What level is this course?

100 Level (Introductory)

Engaging with discipline knowledge and skills at foundational level, broad application of knowledge and skills in familiar contexts and with support. Limited or no prerequisites. Normally, associated with the first full-time study year of an undergraduate program.

3. What is the unit value of this course?

12 units

4. How does this course contribute to my learning?

COURSE LEARNING OUTCOMES On successful completion of this course, you should be able to...		GRADUATE QUALITIES Completing these tasks successfully will contribute to you becoming...
1	Demonstrate theoretical knowledge of the atomic structure of matter in the world around us.	Empowered
2	Extrapolate information from the periodic table to understand interactions and chemical bonding.	Knowledgeable
3	Explain chemical terms and concepts using scientific language.	Knowledgeable
4	Apply the law of mass conservation to balancing chemical equations.	Empowered
5	Demonstrate mathematical knowledge, conceptual understanding and scientific reasoning skills with chemical calculations.	Knowledgeable

5. Am I eligible to enrol in this course?

Refer to the UniSC Glossary of terms for definitions of “pre-requisites, co-requisites and anti-requisites”.

5.1. Pre-requisites

Must be enrolled in Program UC103

5.2. Co-requisites

Not applicable

5.3. Anti-requisites

Not applicable

5.4. Specific assumed prior knowledge and skills (where applicable)

Not applicable

5.5. Microcredential Information

Not applicable

6. How am I going to be assessed?

6.1. Grading Scale

Standard Grading (GRD)

High Distinction (HD), Distinction (DN), Credit (CR), Pass (PS), Fail (FL).

6.2. Details of early feedback on progress

You will receive immediate feedback from the knowledge builder quizzes which can be used as practice.
Feedback and feed-forward will be provided individually for the graded task 2 (week 3) assessment.

6.3. Assessment tasks

DELIVERY MODE	TASK NO.	ASSESSMENT PRODUCT	INDIVIDUAL OR GROUP	WEIGHTING %	WHAT IS THE DURATION / LENGTH?	WHEN SHOULD I SUBMIT?	WHERE SHOULD I SUBMIT IT?
All	1	Quiz/zes	Individual	0%	Varied	Throughout teaching period (refer to Format)	Online Test (Quiz)
All	2	Quiz/zes	Individual	10%	1 hour	Week 3	Online Test (Quiz)
All	3	Artefact - Technical and Scientific, and Written Piece	Individual	45%	1000 words	Refer to Format	Online Submission
All	4	Examination - Centrally Scheduled	Individual	45%	2 hours	Exam Period	Online Test (Quiz)

All - Assessment Task 1: Knowledge Builder Quizzes

GOAL:	These quizzes ensure that you are mastering the scientific concepts, skills and applications covered in the tutorials. The quizzes will develop and enhance your ability to make sense of and interpret scientific data and use appropriate terminology.
PRODUCT:	Quiz/zes
AUTHORSHIP STATEMENT:	
FORMAT:	These formative quizzes can be submitted each lesson 1-13. The quizzes are marked automatically and provide immediate feedback.
CRITERIA:	**No.** — **Learning Outcome assessed** 1 Demonstrating understanding of course concepts through responses to quiz questions. — 1 2 3 4 5
GENERIC SKILLS:	Communication, Problem solving, Information literacy

All - Assessment Task 2: Atomic Theory Quiz

GOAL:	The goal is for you to review and demonstrate knowledge of key terms and concepts in atomic theory.
PRODUCT:	Quiz/zes
AUTHORSHIP STATEMENT:	
FORMAT:	The quiz will be available online via Canvas. This test will consist of multiple-choice and short answer questions.
CRITERIA:	

No.		Learning Outcome assessed
1	Demonstration of theoretical knowledge of the atomic structure of matter.	1
2	Explanation of chemical terms and concepts using scientific language.	3
3	Extrapolation of information from periodic table to the understanding of chemical interactions and ionic bonding.	2

GENERIC SKILLS:	Communication, Applying technologies

All - Assessment Task 3: Chemistry Concepts

GOAL:	The goal is for you to review, demonstrate and apply knowledge of key terms and concepts in atomic theory, chemical bonding, shape and polarity; and to apply scientific reasoning to chemical calculations.
PRODUCT:	Artefact - Technical and Scientific, and Written Piece
AUTHORSHIP STATEMENT:	
FORMAT:	This task requires students to produce artefacts - short written answers to scenario-based or problem-based questions. The artefacts are due between lessons 7 and 10.
CRITERIA:	

No.		Learning Outcome assessed
1	Demonstrating theoretical knowledge of the atomic structure of matter.	1
2	Extrapolation of information from the periodic table to explain electronic configuration, chemical formulae, ionic and covalent bonding.	2
3	Explanation of chemical terms and concepts using scientific language.	3
4	Application of the law of conservation of mass to balancing chemical equations.	4
5	Demonstrate mathematical knowledge with chemical calculations.	5
6	Demonstration of conceptual understanding with chemical calculations.	5
7	Demonstration of scientific reasoning skills with chemical calculations.	5

GENERIC SKILLS:	Communication, Problem solving, Applying technologies, Information literacy

All - Assessment Task 4: Final Examination

GOAL:	You will demonstrate your understanding of concepts spanning the entire course.
PRODUCT:	Examination - Centrally Scheduled
AUTHORSHIP STATEMENT:	
FORMAT:	2-hour final examination in the exam period

CRITERIA:

No.		Learning Outcome assessed
1	Demonstration of theoretical knowledge of the atomic structure of matter.	1
2	Extrapolation of information from the periodic table to explain chemical interactions and chemical bonding.	2
3	Explanation of chemical terms and concepts using scientific language.	3
4	Application of the law of conservation of mass to balancing chemical equations.	4
5	Demonstration of mathematical knowledge, conceptual understanding and scientific reasoning skills with chemical calculations.	5

GENERIC SKILLS:	Communication, Problem solving, Information literacy

7. Directed study hours

A 12-unit course will have total of 150 learning hours which will include directed study hours (including online if required), self-directed learning and completion of assessable tasks. Student workload is calculated at 12.5 learning hours per one unit.

8. What resources do I need to undertake this course?

Please note: Course information, including specific information of recommended readings, learning activities, resources, weekly readings, etc. are available on the course Canvas site– Please log in as soon as possible.

8.1. Prescribed text(s) or course reader

> There are no required/recommended resources for this course.

8.2. Specific requirements

Scientific calculator (recommended: Casio Fx-82 AU Plus II 2nd edition) and copy of the Periodic Table is required.

9. How are risks managed in this course?

Health and safety risks for this course have been assessed as low. It is your responsibility to review course material, search online, discuss with lecturers and peers and understand the health and safety risks associated with your specific course of study and to familiarise yourself with the University's general health and safety principles by reviewing the online induction training for students, and following the instructions of the University staff.

10. What administrative information is relevant to this course?

10.1. Assessment: Academic Integrity

Academic integrity is the ethical standard of university participation. It ensures that students graduate as a result of proving they are competent in their discipline. This is integral in maintaining the value of academic qualifications. Each industry has expectations and standards of the skills and knowledge within that discipline and these are reflected in assessment.

Academic integrity means that you do not engage in any activity that is considered to be academic fraud; including plagiarism, collusion or outsourcing any part of any assessment item to any other person. You are expected to be honest and ethical by completing all work yourself and indicating in your work which ideas and information were developed by you and which were taken from others. You cannot provide your assessment work to others. You are also expected to provide evidence of wide and critical reading, usually by using appropriate academic references.

In order to minimise incidents of academic fraud, this course may require that some of its assessment tasks, when submitted to Canvas, are electronically checked through Turnitin. This software allows for text comparisons to be made between your submitted assessment item and all other work to which Turnitin has access.

10.2. Assessment: Additional Requirements

Eligibility for Supplementary Assessment Your eligibility for supplementary assessment in a course is dependent of the following conditions applying: The final mark is in the percentage range 47% to 49.4% The course is graded using the Standard Grading scale You have not failed an assessment task in the course due to academic misconduct

10.3. Assessment: Submission penalties

It is your responsibility to be familiar with USC assessment policy. Late submission of assessment tasks may be penalised at the following maximum rate: - 5% (of the assessment task's identified value) per day for the first two days from the date identified as the due date for the assessment task. - 10% (of the assessment task's identified value) for the third day - 20% (of the assessment task's identified value) for the fourth day and subsequent days up to and including seven days from the date identified as the due date for the assessment task. - A result of zero is awarded for an assessment task submitted after seven days from the date identified as the due date for the assessment task. Weekdays and weekends are included in the calculation of days late. To request an extension you must contact your course coordinator to negotiate an outcome.

10.4. Links to relevant University policy and procedures

For more information on Academic Learning & Teaching categories including:

- Assessment: Courses and Coursework Programs
- Review of Assessment and Final Grades
- Supplementary Assessment
- Central Examinations
- Deferred Examinations
- Student Conduct
- Students with a Disability

For more information, visit https://www.usc.edu.au/explore/policies-and-procedures#academic-learning-and-teaching

10.5. Student Charter

UniSC is committed to excellence in teaching, research and engagement in an environment that is inclusive, inspiring, safe and respectful. The Student Charter sets out what students can expect from the University, and what in turn is expected of students, to achieve these outcomes.

10.6. General Enquiries

In person:

- **UniSC Sunshine Coast** - Student Central, Ground Floor, Building C, 90 Sippy Downs Drive, Sippy Downs
- **UniSC Moreton Bay** - Service Centre, Ground Floor, Foundation Building, Gympie Road, Petrie
- **UniSC SouthBank** - Student Central, Building A4 (SW1), 52 Merivale Street, South Brisbane
- **UniSC Gympie** - Student Central, 71 Cartwright Road, Gympie
- **UniSC Fraser Coast** - Student Central, Student Central, Building A, 161 Old Maryborough Rd, Hervey Bay
- **UniSC Caboolture** - Student Central, Level 1 Building J, Cnr Manley and Tallon Street, Caboolture

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