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The published on-line version of the Course Profile is the authoritative version and by the publication of the Course Profile on-line the University deems the student has been notified of and read the course requirements.

1. General Course Information

1.1 Course Details

COURSE CODE	1023SCG
COURSE TITLE	Chemistry I
ACADEMIC ORGANISATION	ESC School of Environment and Science
TRIMESTER	Trimester 3 2023
MODE	Mixed Mode
LEVEL	Undergraduate
LOCATION	Gold Coast, On Campus
CREDIT POINT VALUE	10

Course Description:

The course will introduce the student to the fundamental theoretical and practical principles of the Chemical sciences. Students will be encouraged to develop problem solving skills and apply these to the solution of real chemical problems. Assessment is by laboratory reports, quizzes and a final examination. Incompatible: 1001SCE Chemistry 1A, 1009ENV General Chemistry, 1001ENV Chemistry 1, 1021SCG Chemistry 1A, 1001MSC Chemistry of Biological Systems

1.2 Course Introduction

The course will introduce the student to the fundamental theoretical and practical principles of the Chemical sciences. Students will be encouraged to develop problem-solving skills and apply these to the solution of real chemical problems.

Previous Student Feedback

In the past, students have found Chemistry I to be a well-organised course that thoroughly prepared them for future chemistry courses.

Student Evaluation of Course (SEC) results from past years indicate a high level of satisfaction with the course overall:

2018 - 4.4/5.0

2019 - 4.6/5.0

2020 - 4.7/5.0

2021 - 4.4/5.0

2022 - 4.3/5.0

1.3 Course Staff

Primary Convenor **APro Yun Wang**

EMAIL	yun.wang@griffith.edu.au
HOMEPAGE	https://experts.griffith.edu.au/9808-yun-wang/
CAMPUS	Gold Coast Campus
BUILDING	Science 1 (G24)
ROOM	3.36

1.4 Timetable

Timetables are available on [the Programs and Courses website](#).

NB: Details contained in this Section of the course profile and Section 4.1 Learning Activities are to be read in conjunction with the official class timetable. The published class timetable which is the authoritative source for timetabling information for all campuses can be located by clicking on the above link.

Additional Timetable Information

This course will be offered in a mixed mode in Trimester 3, 2023. This means that some course components will be offered online during the Trimester. Ensure you check the Learning@Griffith course site for specific details of classes.

1.5 Lecture Capture

It is standard practice at Griffith University that lectures timetabled in lecture capture-enabled venues are recorded and made available to students on the relevant course site, in accordance with the University's [Lecture Capture Policy](#).

The lecture series delivered as part of this course will be recorded and accessible via the Learning@Griffith course site.

2. Aims, Outcomes & Graduate Attributes

2.1 Course Aims

The aims of this course are to:

1. Introduce students to the basic theory and experimental methods of chemistry
2. Encourage students to apply the knowledge and skills gained to practical situations in the chemical, physical, biological, environmental, health and material sciences
3. Provide knowledge and skills fundamental to other courses with chemistry requirements

This is a core course of the Bachelor of Science program, in which students are expected to graduate with an understanding of the fundamental aspects of chemical science. This course also forms the necessary basis for future study of chemistry in the BSc.

2.2 Learning Outcomes

After successfully completing this course you should be able to:

- 1 Demonstrate knowledge of basic chemical principles and concepts
- 2 Apply chemical knowledge to solving simple chemistry problems
- 3 Perform simple experimental procedures in the chemical laboratory using appropriate techniques and tools
- 4 Collect, record and interpret qualitative and quantitative chemical data
- 5 Apply workplace health and safety practices in the chemical laboratory

2.3. Graduate Attributes

For further details on the Griffith Graduate please [click here](#)

Griffith University prepares influential graduates to be:

- [Knowledgeable and skilled, with critical judgement](#)
- [Effective communicators and collaborators](#)
- [Innovative, creative and entrepreneurial](#)
- [Socially responsible and engaged in their communities](#)
- [Culturally capable when working with First Australians](#)
- [Effective in culturally diverse and international environments](#)

This table demonstrates where each of the Griffith Graduate Attributes is taught, practised and assessed in this course.

For further details on the Griffith Graduate Attributes please refer to [The Griffith Graduate policy](#).

University wide attributes

GRADUATE ATTRIBUTE	TAUGHT	PRACTISED	ASSESSED
Knowledgeable and skilled, with critical judgement	•	•	•
Effective communicators and collaborators	•	•	•

Additional Course Information on Graduate Attributes

Professional Skills

The course teaches chemical laboratory skills that are practised and assessed in laboratories.

3. Learning Resources

3.1 Required Resources

Details of your Required Learning Resources are available from the [Reading List](#).

3.2 Recommended Resources

Details of your Recommended Learning Resources are available from the [Reading List](#).

3.3 University Learning Resources

The University provides many facilities and support services to assist students in their studies. Links to information about University support resources that are available to students include:

Readings: From the reading list, students can access Required and Recommended Learning Resources through direct links to articles, ebooks, databases, websites, the Library catalogue and digitised readings in one convenient place. Students can also prioritise their readings, add personal study notes, and export citations.

Learning@Griffith: There is a dedicated page for this course at myGriffith.

Student Support: Provides a range of services to support students throughout their studies including personal support such as Counselling and Health Services; Academic support; and Financial and Welfare support.

Careers and Employment: The team provides Career Wellbeing, Career Planning and Decision Making, Finding Jobs, Skills Identification and Development, Graduate Employment Information, LinkedIn Profile Review, Interview Preparation, Online Psychometric and Aptitude Test Preparation, International Student Support, Disability Disclosure Strategies and Higher Degree Research (HDR) Career Consultations.

Library: The Library provides a wide range of quality client-focused services and programs to students, researchers and staff of the University. The Library works in collaboration with the academic community to achieve academic and research outcomes.

Student Computing: The University provides access to common use computing facilities for educational purposes.

[Griffith Information Technology Code of Practice](#).

Academic Integrity Tutorial: This tutorial helps students to understand what academic integrity is and why it matters. You will be able to identify types of academic misconduct, understand what skills you will need in order to maintain academic integrity, and learn about the processes of referencing styles.

Academic Integrity Declaration

Breaches of academic integrity seriously compromise student learning, as well as the academic quality of the University's programs. All breaches of academic integrity are taken seriously.

By enrolling in this course and submitting assessment, I agree that:

- I have read the [Institutional Framework for Promoting Academic Integrity among Students](#) and the [Student Academic Misconduct Policy](#).
- Except where indicated through references/citations, all assessment submitted will be my own work, based on my personal study and/or research.
- I will not collude with another student or person in the production of assessment in this course unless group work and collaboration is an expectation of the assessment item.
- No assessment item has been submitted for assessment in any other course at Griffith, or at any other University or at any other time in the same course without the permission of the relevant Course Convenor.
- I will not copy in part or in whole or otherwise plagiarise the work of other students and/or other persons.
- I will not make any of my assessment in this course available to another student, without the permission of the Course Convenor.
- In the case of online quizzes and examinations, I will only access the materials permitted in the exam instructions and limit my internet usage to what is needed to take the exam.

I accept that should I be found to be in breach of the non-disclosure provision identified above, action will be taken under the [Student Academic Misconduct Policy](#). Penalties may include failing the course or exclusion from the University.

I also **acknowledge** and agree that the course convenor may:

- Give access to assessment to another Griffith staff member for the purpose of marking.
- Submit assessment items to a text-matching service. This web-based service will retain a copy of any assessment item for checking the work of other students but will not reproduce it in any form.
- Use assessment items for the purposes of moderation, or as exemplars, according to University policies.

3.5 Other Learning Resources & Information

Additional Required Items:

Laboratory Coat (available from Bookshop). You must bring your laboratory coat to every laboratory class - you will not be permitted to commence the laboratory activity without it.

Laboratory Manual. This will be distributed to you in Week 1 and must be brought to every laboratory class.

Scientific Calculator. This is required for the tutorials, quizzes and the mid-trimester and final exams. Graphics calculators are not permitted in any examination; for this reason we recommend purchasing a standard scientific calculator for this course so you can practice using it in tutorial and lab classes prior to your examinations.

Recommended: any general chemistry text book to use as an additional resource.

4. Teaching & Learning Activities

4.1 Learning Activities

Week Commencing	Activity	Learning Outcomes
6 Nov 23	Measurement and Calculations in Chemistry (Lecture): Readings/Ref: Chemistry Companion [Chapter 1]	1, 2
13 Nov 23	Laboratory 1 - Chemical Hazards and Measurement (Laboratory):	1, 3, 4, 5
13 Nov 23	Matter (Lecture): Readings/Ref: Chemistry Companion [Chapters 2 & 3]	1, 2
20 Nov 23	Particles and Language of Chemistry (Lecture): Readings/Ref: Chemistry Companion [Chapters 3 & 4]	1, 2
27 Nov 23	Quantitative Chemistry (Lecture): Readings/Ref: Chemistry Companion [Chapter 5]	1, 2
4 Dec 23	Aqueous solution chemistry (Lecture): Readings/Ref: Chemistry Companion [Chapter 6]	1, 2
4 Dec 23	Laboratory 2 - Aqueous Solutions (Laboratory):	1, 3, 4, 5
11 Dec 23	Concentration of Reactants in Solution (Lecture): Readings/Ref: Chemistry Companion [Chapter 7]	1, 2
18 Dec 23	Electronic Structure of Atoms and Periodicity (Lecture): Readings/Ref: Chemistry Companion [Chapters 8 & 9]	1, 2
8 Jan 24	Kinetics (Lecture): Readings/Ref: Chemistry Companion [Chapter 11]	1, 2
8 Jan 24	Laboratory 3 - Aqueous solution chemistry (Laboratory):	1, 3, 4, 5
15 Jan 24	Laboratory 4 - Volumetric Techniques (Laboratory):	1, 3, 4, 5
15 Jan 24	Chemical Bonding (Lecture): Readings/Ref: Chemistry Companion [Chapter 10]	1, 2
22 Jan 24	Chemical Equilibrium (Lecture): Readings/Ref: Chemistry Companion [Chapter 12]	1, 2
29 Jan 24	Laboratory 5 - Reaction Rate and Rate Law (Laboratory):	1, 3, 4, 5
29 Jan 24	Acid-Base Equilibria (Lecture): Readings/Ref: Chemistry Companion [Chapter 13]	1, 2
5 Feb 24	Revision Lectures (Lecture):	1, 2
5 Feb 24	Laboratory 6- Le Chatelier's Principle (Laboratory):	1, 3, 4, 5

4.2 Other Teaching and Learning Activities Information

Student Vacation Week

If a class is usually scheduled on a day that falls on a public holiday, or is cancelled for any reason, the content will be delivered online or integrated across other classes, as appropriate.

The course is taught on the Gold Coast campus and involves the following activities:

2 hours of pre-recorded lectures per week from Week 2 to Week 12, to be viewed by the student in their own time.

1-hour on-campus revision workshop per week.

2-hour on-campus problem-solving workshop per week.

3-hour on-campus laboratory session in Weeks 2, 5, 8, 9, 11, and 12.

Lectures are primarily geared toward an understanding of the qualitative concepts of foundation chemistry, although all requisite quantitative principles are also introduced. The students are provided with detailed lecture notes at the beginning of the course, which need only be annotated as required.

The workshop sessions are designed primarily to assist with the quantitative aspects of foundation chemistry (stoichiometry/chemical calculations etc.).

The laboratory component brings both the qualitative and quantitative aspects together in a hands-on practical manner.

Students should read the relevant sections in the textbook and the notes **before the lectures**.

Students are expected to be fully prepared for the laboratory classes by reading the relevant chapters in the laboratory manual and wearing a laboratory coat, safety glasses and proper shoes that enclose the whole foot. The laboratory component is graded by continuous assessment of the laboratory experiments. All experiments are compulsory and satisfactory attendance and performance are required for successful completion of the course.

Disability or Health Condition:

If a student has a disability or health condition that may require reasonable adjustments to undertake any of the learning activities in this course, or may require individualised Workplace Health and Safety arrangements to support their safe participation in learning activities (such as laboratory activities), the convenor requires notification by email, by no later than Week 1 of the trimester, to ensure appropriate accommodations can be arranged to support students' safe participation in these activities.

It is recommended that students with a disability also register with [Student Disability and Accessibility](#). At Griffith University, we seek to remove barriers that students with disabilities may face in higher education, including access to learning environments.

Students Repeating a Course: Normally, students repeating a course should not 'carry forward' marks from a previous attempt. Assessment items are usually offered to provide formative experience as well as summative assessment. Therefore, NO MARK for any assessment item from a previous attempt will be carried forward.

5. Assessment Plan

5.1 Assessment Summary

This is a summary of the assessment in the course. For detailed information on each assessment, see [5.2 Assessment Detail](#) below.

ASSESSMENT TASK	DUE DATE	WEIGHTING	MARKED OUT OF	LEARNING OUTCOMES	MAXIMUM EXTENSION PERIOD
<i>Test or quiz</i> Quizzes (x10)	6 Nov 23 - 9 Feb 24 Ten quizzes	10%	100 marks (x10)	1, 2	
<i>Assignment - Laboratory/</i> <i>Laboratory Report</i> Laboratory Reports (x6)	13 Nov 23 - 9 Feb 24	30%	125 marks (x6) (Must achieve a min of 62.5 out of 125 overall)	1, 3, 4, 5	
<i>Exam - selected response</i> Mid-trimester exam (Week 7)	21 Dec 23 10:00 - 21 Dec 23 12:00	20%	30 marks	1, 2	
<i>Exam - selected response</i> Final exam	Examination Period	40%	30 marks (Must achieve a min of 12 out of 30)	1, 2	

5.2 Assessment Detail

Title: Quizzes (x10)

Type: Test or quiz

Learning Outcomes Assessed: 1, 2

Due Date:

6 Nov 23 - 9 Feb 24 Ten quizzes

Weight: 10%

Marked out of: 100

Task Description:

Quizzes will be held during Workshop classes (weeks 1-6 and 8-11). There are a total of 10 quizzes, worth 1% each. The quizzes consist of 10 multiple-choice questions. Each quiz will take 45 minutes to complete.

The quizzes will be marked in class immediately after finishing them.

Criteria & Marking:

Each quiz consists of 10 questions worth 1 mark each.

Submission: In Person at the School Department.

This assessment item:

- is a school based activity
- is an individual activity
- does not include a self assessment activity
- does not have a re-attempt provision

Title: Laboratory Reports (x6)

Type: Assignment - Laboratory/Laboratory Report

Learning Outcomes Assessed: 1, 3, 4, 5

Due Date:

13 Nov 23 - 9 Feb 24

Weight: 30%

Marked out of: 125

Task Description:

Length: Templates

The laboratory reports will develop the student's technical writing skills, in particular their ability to interpret and present scientific data, and carry out appropriate statistical analysis on the data to assess its validity.

They are largely designed to introduce the student to the requirements of scientific report writing.

Criteria & Marking:

5 laboratory reports worth 6% each (total 30% weighting). Only labs 2-6 will be formally assessed and contribute to your overall grade; however, lab 1 is compulsory and must still be handed in.

Submission: Via the 'Assignments' tool in Learning@Griffith. In Person at the School Department. Completed laboratory templates are to be submitted 1 week from the completion of the laboratory session with the exception of lab 6, which is due at the end of that laboratory session.

This assessment item:

- is a school based activity
- is an individual activity

- does not include a self assessment activity
 - does not have a re-attempt provision
 - contains a mandatory pass component
-

Title: Mid-trimester exam (Week 7)

Type: Exam - selected response

Learning Outcomes Assessed: 1, 2

Due Date:

21 Dec 23 10:00 - 21 Dec 23 12:00

Weight: 20%

Marked out of: 30

Perusal: 10 minutes

Duration: 110 minutes

Exam Type: Closed Book

Exam Format: On Campus

Task Description:

This mid-trimester exam is worth 20% and will consist of 30 multiple-choice questions, worth 1 mark each. The exam will cover lecture content from Chapters 1 through 7 (inclusive). This exam is intended to test the student's understanding, interpretation and application of the chemical principles studied and developed during the course.

Criteria & Marking:

30 multiple-choice questions worth 1 mark each

Location of Examination: The mid-trimester exam will be on the 21st of December from 10:00 am - 12.00 pm.

Submission: In Person at the School Department.

This assessment item:

- is a school based activity
 - is an individual activity
 - does not include a self assessment activity
 - does not have a re-attempt provision
 - is a proctored examination
-

Title: Final exam

Type: Exam - selected response

Learning Outcomes Assessed: 1, 2

Due Date:

Examination Period

Weight: 40%

Marked out of: 30

Perusal: 10 minutes

Duration: 120 minutes

Exam Type: Closed Book

Exam Format: On Campus

Task Description:

This exam will consist of 30 multiple-choice questions. The exam is intended to test the student's understanding, interpretation and application of the chemical principles studied and developed during this course.

Students must obtain at least 40% of possible marks in this exam to pass the course.

Criteria & Marking:

Each Part of the exam will contain 30 multiple-choice questions worth 1 mark each.

This assessment item:

is a centrally organised activity

is an individual activity

contains a mandatory pass component

Criteria & Marking:

The final exam will contain 30 multiple-choice questions worth 1 mark each.

This assessment item:

- is a centrally organised activity
 - is an individual activity
 - does not include a self assessment activity
 - contains a mandatory pass component
-

5.3 Late Submission

For all courses (other than Honours Dissertation Courses): Refer to the [Assessment Procedure for Students](#).

For all Honours Dissertation courses: Enrolment in an Honours degree shall be cancelled and the candidature terminated if the candidate fails to lodge their Honours dissertation by the prescribed date including any approved extensions.

5.4 Other Assessment Information

Supplementary Assessment is available in this course.

Supplementary assessment may be awarded if you have submitted all the assessment requirements of the course, and you have received a grade of 3 or have achieved an overall percentage equivalent to the grade of 3 or higher, but you have not achieved a pass or the required minimum mark in one or more mandatory pass components of the course.

You are allowed one attempt at a supplementary assessment item per course per trimester. If you gain a pass mark for your supplementary assessment item, you will be awarded a grade of 4.

Where you do not achieve a pass mark for the supplementary assessment item, the original grade of 3 for the course will remain, except for courses using the Medical School grading basis where a non-graded fail (NGF) is awarded.

Please see the [Assessment Procedure for Students](#) for more information.

Final Grades

A student's final grade for this course will be based on the aggregation and weighting of marks across assessment, any mandatory pass components and grade cut-offs. Grade cut-offs can vary, so you will need to wait for the official release of grades to be sure of your grade for this course.

- This course is a graded course (i.e 7, 6, 5, 4, 3, 2, 1).
- This course contains mandatory pass components.

Mandatory pass component

To be eligible to pass this course, students must:

1. achieve an overall pass mark for this course
2. achieve a minimum of 62.5 out of 125 marks (50%) overall for the assessment task 'Laboratory Reports'
3. submit the assessment task: Final exam
4. achieve a minimum percentage mark of 40% [min 12 out of 30 for 'Final exam']

6. Policies & Guidelines

This section contains the details of and links to the most relevant policies and course guidelines. For further details on University Policies please visit the [Policy Library](#)

6.1 Assessment Related Policies and Guidelines

University Policies & Guidelines

The University's policies can be found in the [Griffith Policy Library](#).

Specific assessment policies include:

- [Assessment Policy](#)
- [Assessment Procedure for Students](#)

6.2 Other Policies and Guidelines

University Policies and Guidelines

Students are responsible for ensuring that they have read all sections of the Course Profile for the course/s in which they are enrolled in any enrolment period. The published online version of the Course Profile is the authoritative version and by the publication of the Course Profile online, the University deems the student has been notified of and read the course requirements. Variations to the Course Profile during the trimester of offer are not permitted except in exceptional circumstances and will be advised in writing to all enrolled students and via the Learning@Griffith website. Additional information regarding the content of this course may be published on the Learning@Griffith website.

Copyright matters

Copyright applies to all teaching materials and materials generated by students which substantially relate to Griffith University courses. *Students are warned against selling Griffith University teaching materials and their student notes online through commercial websites during and after their studies.* You will almost certainly be in breach of copyright law and Griffith's IT Code of Practice if you post these materials on the internet and commercial websites. Please refer to the [Copyright Guide for Students](#) for further information.

Health and Safety

Griffith University is committed to providing a safe work and study environment. However, all students, staff and visitors have an obligation to ensure the safety of themselves and those whose safety may be affected by their actions. Staff in control of learning activities will ensure as far as reasonably practical, that those activities are safe and that all safety obligations are being met. Students are required to comply with all safety instructions and are requested to report safety concerns to the University.

General health and safety information is available on the [Health, Safety and Wellbeing](#) website.

Other Key Student-Related Policies

All University policy documents are accessible to students via the [Griffith Policy Library](#). Links to key policy documents, in addition to those listed in 6.1 above, are included below for easy reference:

- [Student Communications Policy](#)
- [Health, Safety and Wellbeing Policy](#)
- [Student Administration Policy](#)
- [Student Charter](#)
- [Student Review and Appeals Policy](#)
- [Student Review and Appeals Procedures](#)
- [Student Complaints Policy](#)
- [Students with Disabilities Policy](#)

Other Course Guidelines

A Health and Safety Assessment has been submitted to the Head of Discipline. A Risk Assessment has been completed as per GSafe number 14572

Learning Summary

Below is a table showing the relationship between the learning outcomes for this course, the learning activities used to develop each outcome and the assessment task used to assess each outcome.

Learning Outcomes

After successfully completing this course you should be able to:

- 1 Demonstrate knowledge of basic chemical principles and concepts
- 2 Apply chemical knowledge to solving simple chemistry problems
- 3 Perform simple experimental procedures in the chemical laboratory using appropriate techniques and tools
- 4 Collect, record and interpret qualitative and quantitative chemical data
- 5 Apply workplace health and safety practices in the chemical laboratory

Assessment & Learning Activities

LEARNING ACTIVITIES	LEARNING OUTCOMES				
	1	2	3	4	5
Measurement and Calculations in Chemistry (Lecture)	●	●			
Laboratory 1 - Chemical Hazards and Measurement (Laboratory)	●		●	●	●
Matter (Lecture)	●	●			
Particles and Language of Chemistry (Lecture)	●	●			
Quantitative Chemistry (Lecture)	●	●			
Aqueous solution chemistry (Lecture)	●	●			
Laboratory 2 - Aqueous Solutions (Laboratory)	●		●	●	●
Concentration of Reactants in Solution (Lecture)	●	●			
Electronic Structure of Atoms and Periodicity (Lecture)	●	●			
Kinetics (Lecture)	●	●			
Laboratory 3 - Aqueous solution chemistry (Laboratory)	●		●	●	●
Laboratory 4 - Volumetric Techniques (Laboratory)	●		●	●	●
Chemical Bonding (Lecture)	●	●			
Chemical Equilibrium (Lecture)	●	●			
Acid-Base Equilibria (Lecture)	●	●			
Laboratory 5 - Reaction Rate and Rate Law (Laboratory)	●		●	●	●

LEARNING ACTIVITIES	LEARNING OUTCOMES				
	1	2	3	4	5
Revision Lectures (Lecture)	•	•			
Laboratory 6- Le Chatelier's Principle (Laboratory)	•		•	•	•
ASSESSMENT TASKS					
Quizzes	•	•			
Laboratory Reports	•		•	•	•
Mid-trimester exam (Week 7)	•	•			
Final exam	•	•			

Graduate Attributes

For further details on the Griffith Graduate please [click here](#)

Griffith University prepares influential graduates to be:

- [Knowledgeable and skilled, with critical judgement](#)
- [Effective communicators and collaborators](#)
- [Innovative, creative and entrepreneurial](#)
- [Socially responsible and engaged in their communities](#)
- [Culturally capable when working with First Australians](#)
- [Effective in culturally diverse and international environments](#)

This table demonstrates where each of the Griffith Graduate Attributes is taught, practised and assessed in this course.

University wide attributes

GRADUATE ATTRIBUTE	TAUGHT	PRACTISED	ASSESSED
Knowledgeable and skilled, with critical judgement	•	•	•
Effective communicators and collaborators	•	•	•
Innovative, creative and entrepreneurial			
Socially responsible and engaged in their communities			
Culturally capable when working with First Australians			
Effective in culturally diverse and international environments			