

# Chemistry 1A 1021SCG - Tri 1 2021 - Nathan Campus - Blended

## 1. General Course Information

### 1.1 Course Details

<b>Course code</b>	1021SCG
<b>Course title</b>	Chemistry 1A
<b>Academic organisation</b>	ESC School of Environment and Science
<b>Trimester</b>	Trimester 1 2021
<b>Mode</b>	Blended
<b>Level</b>	Undergraduate
<b>Location</b>	Nathan, On Campus
<b>Credit point value</b>	10

### Course Description:

This course introduces the fundamental concepts and methods of general chemistry. Basic skills of laboratory chemical analysis are developed. Lecture content includes three modules: Introduction and basic concepts; molecular structure and bonding; and energy and physical processes. Incompatible: 1001SCE Chemistry 1A, 1009ENV General Chemistry, 1001ENV Chemistry 1, 1023SCG Chemistry 1

### Assumed Background:

Prerequisites: English (4SA)

Assumed Knowledge: Maths A or B (4SA)

Recommended: At least one of Biology, Chemistry or Physics

### 1.2 Course Introduction

Chemistry is the study of matter and energy. Matter is anything that has mass and occupies space and constitutes the physical material of the Universe. Energy is a measure of capacity to change and is fundamental to understanding the properties of matter.

The aims of this course are:

- to introduce students to the basic theory and experimental methods of chemistry;
- to encourage students to apply the knowledge and skills gained to practical situations in the chemical, physical, biological, environmental, health and material sciences; and
- to provide knowledge and skills fundamental to all courses which require a knowledge of chemistry.

### Previous Student Feedback

Student evaluation of Course (SEC) from the previous year indicated a high level of satisfaction with the course overall:

**Year 2019 - 4.3/5.0**

**Year 2020 - 4.3/5.0**

**Comments from 2019 and 2020 students included:**

- Lots of support from the lecturers/tutors and practice questions in the lectures were really useful.
- PASS sessions were really helpful
- Access to online workshop questions made studying a lot easier because the large content made it seem overwhelming.
- It was interesting applying theories into practical lab conditions.
- The Mastering homework helped me to revise each week as I went along.
- The quizzes every now and again were a good judge to see how I was progressing in each part of the course.
- The quality of teaching was really high
- Remote teaching went well with the collaborate sessions for workshops and labs
- There was a lot of online support which was good

### 1.3 Course Staff

Primary Convenor

**APro Sarah Cresswell**

<b>Email</b>	<a href="mailto:s.cresswell@griffith.edu.au">s.cresswell@griffith.edu.au</a>
<b>Campus</b>	Nathan Campus
<b>Building</b>	Science 1 (N25)
<b>Room</b>	2.22

Lecturer **Dr Tak Kim**

<b>Email</b>	<a href="mailto:t.kim@griffith.edu.au">t.kim@griffith.edu.au</a>
<b>Campus</b>	Nathan Campus
<b>Building</b>	Science 1 (N25)
<b>Room</b>	0.10

### 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

The theoretical content for this course will be delivered using online interactive self-paced learning modules. These will allow students to gain an understanding of the concepts which will then be developed, and further explained, in workshops either online or in person. These workshops will give students the opportunity to practice working with chemical formulae, undertake mole calculations and determine physical chemistry data from reactions.

The workshops will give students to skills to allow them to solve chemical problems, build confidence in working with chemical data and allow opportunities to ask questions and clarify any misconceptions.

### 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

Chemistry is the study of matter and energy. Matter is anything that has mass and occupies space and constitutes the physical material of the Universe. Energy is a measure of capacity to change and is fundamental to understanding the behaviour of matter.

The aims of this course are:

- to introduce students to the basic theory and experimental methods of chemistry;
- to encourage students to apply the knowledge and skills gained to practical situations in the chemical, physical, biological, environmental, health and material sciences; and

- to provide knowledge and skills fundamental to other courses with chemistry requirements.

## 2.2 Learning Outcomes

After successfully completing this course you should be able to:

- 1 Understand the basic principles of chemistry
- 2 Solve problems in the pure and applied chemical sciences
- 3 Perform simple experimental procedures and 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		•	
Innovative, creative and entrepreneurial	•	•	•
Socially responsible and engaged in their communities	•	•	•

### Additional Course Information on Graduate Attributes

#### Professional Skills

The course teaches chemical laboratory skills that are practiced 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 are included below for easy reference.

[Readings](#) - New online service enabling students to access Required and Recommended Learning resources. It connects to the library catalogue to assist with quickly locating material held in Griffith libraries and enables students to manage and prioritise their readings, add personal study notes and export citations.

[Learning@Griffith](#) - there is a dedicated website for this course via the Learning@Griffith at myGriffith.

[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.

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.

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

Support for learning - the University provides access to common use computing facilities for educational purposes.

Code of Practice - Griffith Information Technology Resources.

### 3.5 Other Learning Resources & Information

Required Supporting Material:

#### Laboratory Manual

A copy of the manual can be purchased through the Nathan Bookshop. Your copy of the lab manual **must** accompany you to the laboratory sessions as marks are entered into your book during laboratory classes.

#### Laboratory Coat and Safety Glasses

You must also bring your laboratory coat and safety glasses (also available from the bookshop) to every laboratory class. You **must also wear enclosed shoes** to all lab classes.

#### Scientific Calculator

This is required for laboratory classes, workshops, workshop quizzes, and exams. **Graphics Calculators are not permitted in any workshop quiz or examination;** for this reason we recommend purchasing a standard scientific calculator for this course.

#### Other Supporting Material

Dependent on the topic, other supporting material will be available through Learning@Griffith.

## 4. Teaching & Learning Activities

### 4.1 Learning Activities

Date	Workshop	Other Activities
8 Mar - 14 Mar	<b>Introduction to Chemistry, Basic Concepts:</b> Introduction to Matter and Measurement: Chapter 1 of the Chemistry Text <b>Learning Outcomes:</b> 1, 2	
15 Mar - 21 Mar	<b>Introduction to Chemistry, Basic Concepts:</b> Atoms, Molecules and Ions : Chapter 2 of the Chemistry Text <b>Learning Outcomes:</b> 1, 2	<b>Laboratory Classes (Laboratory):</b> This course requires each student to complete five 3-hour lab classes as per timetable <b>Learning Outcomes:</b> 3
22 Mar - 28 Mar	<b>Introduction to Chemistry, Basic Concepts:</b> Stoichiometry: Calculations with Chemical Formulae and Equations : Chapter 3 of the Chemistry Text <b>Learning Outcomes:</b> 1, 2	<b>Laboratory Classes (Laboratory):</b> This course requires each student to complete five 3-hour lab classes as per timetable <b>Learning Outcomes:</b> 3

Date	Workshop	Other Activities
29 Mar - 4 Apr	<p><b>Introduction to Chemistry, Basic Concepts:</b> Reactions in Aqueous Solutions : Chapter 4 of the Chemistry Text</p> <p><b>Learning Outcomes:</b> 1, 2</p>	<p><b>Laboratory Classes (Laboratory):</b> This course requires each student to complete five 3-hour lab classes as per timetable <b>Learning Outcomes:</b> 3</p> <hr/> <p><b>Quiz Week 4 (Quiz):</b> The 30-minute online quiz will be based on the content presented in Module 1 (Weeks 1 to 4 of the course material). The Quiz will be worth 6% of the course assessment and contain 15 multiple choice questions. <b>Learning Outcomes:</b> 1, 2</p>
12 Apr - 18 Apr	<p><b>Molecular Structure and Bonding:</b> Electronic structure of atoms: Chapter 6 of the Chemistry Text</p> <p><b>Learning Outcomes:</b> 1, 2</p>	<p><b>Laboratory Classes (Laboratory):</b> This course requires each student to complete five 3-hour laboratory class as per timetable <b>Learning Outcomes:</b> 3</p>
19 Apr - 25 Apr	<p><b>Molecular Structure and Bonding:</b> Periodic properties of the elements: Chapter 7 of the Chemistry Text Basic concepts of chemical bonding: Chapter 8 of the Chemistry Text</p> <p><b>Learning Outcomes:</b> 1, 2</p>	<p><b>Laboratory Classes (Laboratory):</b> This course requires each student to complete five 3-hour lab classes as per timetable <b>Learning Outcomes:</b> 3</p>
26 Apr - 2 May	<p><b>Molecular Structure and Bonding:</b> Basic concepts of chemical bonding: Chapter 8 of the Chemistry Text Molecular Geometries and Bonding Theories: Chapter 9 of the Chemistry Text</p> <p><b>Learning Outcomes:</b> 1, 2</p>	<p><b>Quiz Week 7 (Quiz):</b> The 30-minute online Quiz will be based on the content presented in Modules 1 and 2 (Weeks 4 to 7 of the course material). The Quiz will be worth 7% of the course assessment and contain 15 multiple choice questions. <b>Learning Outcomes:</b> 1, 2</p> <hr/> <p><b>Laboratory Classes (Laboratory):</b> This course requires each student to complete five 3-hour lab classes as per timetable <b>Learning Outcomes:</b> 3</p>
3 May - 9 May	<p><b>Molecular Structure and Bonding:</b> Molecular Geometries and Bonding Theories: Chapter 9 of the Chemistry Text</p> <p><b>Learning Outcomes:</b> 1, 2</p>	<p><b>Laboratory Classes (Laboratory):</b> This course requires each student to complete five 3-hour lab classes as per timetable <b>Learning Outcomes:</b> 3</p>
10 May - 16 May	<p><b>Energy and Physical Processes:</b> Intermolecular forces: Gases: Chapter 10 of the Chemistry Text</p> <p><b>Learning Outcomes:</b> 1, 2</p>	<p><b>Laboratory Classes (Laboratory):</b> This course requires each student to complete five 3-hour lab classes as per timetable <b>Learning Outcomes:</b> 3</p>
17 May - 23 May	<p><b>Energy and Physical Processes:</b> Intermolecular forces: Liquids and Solids: Chapter 11 of the Chemistry Text</p> <p><b>Learning Outcomes:</b> 1, 2</p>	<p><b>Laboratory Classes (Laboratory):</b> This course requires each student to complete five 3-hour lab classes as per timetable <b>Learning Outcomes:</b> 3</p>
24 May - 30 May	<p><b>Energy and Physical Processes:</b> Properties of solutions: Chapter 12 of the Chemistry Text</p> <p><b>Learning Outcomes:</b> 1, 2</p>	<p><b>Quiz Week 11 (Quiz):</b> The 30-minute Quiz will be based on the content presented in Modules 2 and 3 (Weeks 7 to 11 of the course material). The Quiz will be worth 7% of the course assessment and contain 15 multiple choice questions. <b>Learning Outcomes:</b> 1, 2</p> <hr/> <p><b>Laboratory Classes (Laboratory):</b> This course requires each student to complete five 3-hour lab classes as per timetable <b>Learning Outcomes:</b> 3</p>

Date	Workshop	Other Activities
31 May - 6 Jun	<b>Energy and Physical Processes:</b> Thermodynamics: Chapter 14 of the Chemistry Text  <b>Learning Outcomes:</b> 1, 2	

## 4.2 Other Teaching and Learning Activities Information

This course is taught on the Nathan Campus and online. It is presented through online content, weekly workshops and face-to-face laboratory practicals throughout the trimester. The weekly online content and workshops will cover the material described in the weekly teaching schedule. The face-to-face workshops will focus on solving problem sets that are related to the theoretical material and end of trimester examination. The laboratory practicals develop practical laboratory and safety skills and provide hands-on learning experience that complements related lecture material.

Students should read the relevant sections in the online notes and textbooks before the workshops. Attendance at workshops and participation in the homework exercises is expected for all students. **Students should only attend the workshops and laboratory sessions that have been assigned unless permission from the course convenor has been granted.**

The laboratory component is graded by continuous assessment of the laboratory experiments. All experiments are compulsory and students are required to attain an overall pass mark of 50% or greater for your lab reports and pre-laboratory exercises (averaged across all five laboratory experiments) for successful completion of the course.

Students are expected to be fully prepared for the laboratory classes by reading through the relevant sections in the laboratory manual and will not be permitted to enter the lab without wearing a **laboratory coat, safety glasses and proper shoes** that enclose the whole foot.

**Students who come late to laboratory classes will not be permitted to enter the laboratory.**

### **Disclosure of disability or health condition:**

**If any student has a disability and/or health condition that may impact on their ability to successfully undertake required learning activities in this course, they are encouraged to complete the Griffith University Disclosure Statement and advise their Course Convenor.**

**If a lecture or tutorial class is scheduled on a public holiday (or is cancelled for any unexpected reason), this class will be available online as timetabled.**

### **Students Repeating a Course:**

**Marks from previous assessments are not carried forward, with the exception of laboratory classes, where you may be able to gain credit if you successfully completed the labs (gained a mark of 50% or greater) within the past two years. If you have previously successfully completed the lab component, please submit an application for laboratory credit to the course convenor as soon as you can.**