



## 1. General Course Information

### 1.1 Course Details

<b>Course Code:</b>	<b>1022SCG</b>
<b>Course Name:</b>	<b>Chemistry 1B</b>
<b>Trimester:</b>	<b>Trimester 1, 2020</b>
<b>Program:</b>	Diploma of Science
	In Person
	Mt Gravatt
<b>Credit Points:</b>	10
<b>Course Coordinator:</b>	Dr. Gretel Heber
<b>Document modified:</b>	

### Course Description

Chemistry is known as the central science, in that it is important to our understanding interactions that occur in all the other scientific disciplines through the study of matter; its properties, reactions and associated energies. Chemistry 1B extends the knowledge gained in Chemistry 1A, introducing students to concepts, experimental methodologies and problem solving in organic systems (organic molecules, their properties and reactions), physical chemistry and inorganic chemistry. Students will explain chemical concepts and solve problems (quantitative and qualitative) within the context of these modules. Fundamental concepts of matter underpin understanding and problem solving in biomolecular, biological, biotechnical, chemical, environmental, engineering, forensic, materials and medicinal sciences. Consequently, Chemistry 1B is a core course in the study of these fields. Skills that will be developed include academic language/reporting, scientific methodology and approaches, quantitative literacy, critical reasoning (explaining macro phenomena using chemical concepts), laboratory techniques and safe work practices.

Learning activities will be structured across three modules, as follows:

Module 1: Organic chemistry. Topics include structure, naming, stereoisomerism, properties, mechanisms and reactions.

Module 2: Physical chemistry. Topics include electrochemistry, reaction kinetics, spectroscopy and nuclear chemistry.

Module 3: Inorganic chemistry. Topics include coordination compound (d-block) properties and naming, and p-block chemistry.

## Assumed Knowledge

1021SCG Chemistry 1A is a prerequisite for this course and must be completed successfully before you can be eligible to undertake this course.

## 1.2 Teaching Team

Your lecturer/tutor can be contacted via the email system on the portal.

Name	Email
Gretel Heber	<a href="mailto:Gretel.heber@staff.griffithcollege.edu.au">Gretel.heber@staff.griffithcollege.edu.au</a>

## 1.3 Staff Consultation

Your lecturer/tutor is available each week for consultation outside of normal class times. Times that your lecturer/tutor will be available for consultation will be given in the first week of lectures. A list of times and rooms will be published on the Griffith College Portal under the "Support and Services/Teacher Consultation Times" link.

## 1.4 Timetable

Your timetable is available on the Griffith College Portal at Class Timetable in Student and Services.

## 1.5 Technical Specifications

All students must have access to a computer or suitable mobile device.

## 2. Aims, Outcomes & Generic Skills

### 2.1 Course Aims

1. To introduce students to the basic concepts, theory and experimental methods of organic, physical and inorganic chemistry;
2. To build on knowledge of physical chemistry obtained in Chemistry 1A, extending thermodynamics into redox chemistry, weak acid/base chemistry and developing knowledge of chemical kinetics;
3. To establish core concepts and approaches to problem solving in nuclear and inorganic chemistry;
4. To encourage and facilitate chemical problem solving in a variety of contexts, including practical applications;
5. To apply chemical knowledge in other fields, such as the medical, biological, environmental and biomolecular science;
6. To engage students in chemistry, chemical problem solving and the application of chemistry to a range of scientific disciplines.

### 2.2 Learning Outcomes

After successfully completing this course you should be able to:

1. Explain chemical concepts, reactions, properties and relationships in the fields of organic, physical and inorganic chemistry,
2. Demonstrate effective communication, collaboration and critical analysis skills in a range of problem solving contexts,
3. Prepare appropriate solutions to quantitative and qualitative problems in organic chemistry, physical chemistry and inorganic chemistry.
4. Analyse experimental data, procedures and workplace health and safety in the laboratory.

## 2.3 Generic skills

For further details on the Generic Skills please refer to the Graduate Generic Skills and Capabilities policy.

Griffith College aims to develop graduates who have an open and critical approach to learning and a capacity for lifelong learning. Through engagement in their studies, students are provided with opportunities to begin the development of these and other generic skills.

Studies in this course will give you opportunities to begin to develop the following skills:

Generic Skills	Taught	Practised	Assessed
Knowledge and skills with critical judgement	✓	✓	✓
Communication and collaboration skills	✓	✓	✓
Self-directed and active learning skills	✓	✓	✓
Creative and future thinking skills	✓	✓	✓
Social responsibility and ethical awareness	✓	✓	
Cultural competence and awareness in a culturally diverse environment		✓	

## 3. Learning Resources

### 3.1 Required Resources

Brown, Lemay, Bursten et al. (2014) Chemistry: The Central Science (3e), Pearson.

1021SCG Griffith College Chemistry 1B Laboratory Manual.

Hardcopies of these resources are available from the Campus bookshop (M09). The laboratory manual and course notes are available from the Griffith College portal. The textbook should be used in conjunction with lecture notes and other materials provided in lectures and via the course web site as a major source of detailed information about the course material. It provides detailed diagrams, illustrations and problems that should be valuable aids in your learning.

Laboratory safety glasses, lab coat and appropriate footwear are also required for compulsory laboratory activities. Laboratory safety glasses and lab coats can be purchased from the campus bookshop or safety supply stores.

### 3.2 Recommended Resources

A scientific calculator is recommended for laboratory classes, workshops, workshop quizzes, tutorials and exams. **Graphics calculators are not permitted in any workshop quiz or examination.**

Android/Apple device with Socrative student app installed or PC.

### 3.3 College Support Services and Learning Resources

The College provides many facilities and support services to assist students in their studies. Links to information about College support resources that are available to students are included below for easy reference.

[Digital Library](#) – Databases to which Griffith College students have access to through the Griffith Library Databases.

MyStudy – there is a dedicated website for this course via MyStudy on the Griffith College Portal.

[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 breaches of academic integrity, understand what skills you will need in order to maintain academic integrity, and learn about the processes of referencing styles.

Services and Support provides a range of services to support students throughout their studies including personal support such as Counselling; Academic support; and Welfare support.

Jobs and Employment in the [Student Hub](#) can assist students with career direction, resume and interview preparation, job search tips, and more.

[IT Support](#) provides details of accessing support, information on s numbers and internet access and computer lab rules.

### 3.4 Other Learning Information

#### **Attendance**

You are expected to attend all lectures and tutorials and to actively engage in learning during these sessions. You are expected to bring all necessary learning resources to class such as the required textbook and /or Workbook. In addition, you may BYOD (bring your own device) to class such as a laptop or tablet. This is not a requirement as computer lab facilities are available on campus, however, the use of such devices in the classroom is encouraged with appropriate and considerate use principles being a priority.

#### **Preparation and Participation in Class**

In order to enhance learning, prepare before lectures and tutorials. Read the relevant section of your text book before a lecture, and for a tutorial read both the textbook and the relevant lecture notes. If you have been given tutorial exercises, make sure you complete them. Active participation in lectures and tutorials will improve your learning. Ask questions when something is unclear or when you want to bring some issue to your lecturer or tutor's attention; respond to questions to test your knowledge and engage in discussion to help yourself and others learn.

#### **Consultation Sessions**

Teachers offer extra time each week to assist students outside the classroom. This is known as 'consultation time.' You may seek assistance from your teacher on email or in person according to how the teacher has explained this to the class. Attendance during consultation time is optional but you are encouraged to use this extra help to improve your learning outcomes.

#### **Course Materials**

Lecture notes will be made available to you in MyStudy on the Griffith College Portal and you are advised to either print these out and bring them to each class so that extra notes can be added or BYOD (bring your own device) and add extra notes digitally.

#### **Self-Directed Learning**

You will be expected to learn independently. This means you must organise and learn the course content even when you are not specifically asked to do so by your lecturer or tutor. This involves revising the weekly course material. It also means you will need to find additional information for some assessment items beyond that given to you in textbooks and lecture notes, and to construct your own response to a question or topic. All of this requires careful planning of your time. Expect to spend, on average, at least 10 hours per week including class time for each of your courses.

#### **Program Progression**

You are reminded that satisfactory Program Progression requires that attendance in classes is maintained at equal to or greater than 80%, and that GPA is maintained at equal to or greater than 3.5 [please see Griffith College Policy Library - Program Progression Policy - for more information].

#### **Teacher and course Evaluation**

Your feedback is respected and valued by your lecturers and tutors. You are encouraged to provide your thoughts on the course and teaching, both positive and critical, directly to your lecturer and tutor or by completing course and lecturer evaluations via Griffith College's evaluation tool whenever these are available.

## 4. Learning and Teaching Activities

### 4.1 Weekly Learning Activities

Week	Topic	Activity	Readings	Learning Outcomes
1	Module 1: organic chemistry introduction (functional group structure and nomenclature)	Lecture	Course notes Textbook: 22, 24 - 29	1, 2, 3
	Organic chemistry	Tutorial/Workshop		1, 2, 3
	Week 1 homework	Online		1, 2, 3
2	Module 1: stereochemistry and arenes	Lecture	Textbook ch. 23, 28; class notes	1, 2, 3
	Organic chemistry	Tutorial/Workshop		1, 2, 3
	Week 2 homework	Online		1, 2, 3
3	Module 1: organic properties, nucleophiles and electrophiles, reactions (electrophilic Markovnikov addition)	Lecture	Textbook ch. 17-18, 24, 27; class notes	1, 2, 3
	Organic chemistry	Tutorial/Workshop		1, 2, 3
	Week 3 homework	Online		1, 2, 3
4	Module 1: organic reactions continued (nucleophilic addition, nucleophilic substitution, electrophilic substitution, esterification, redox)	Lecture	Textbook ch. 25-28; class notes	1, 2, 3
	Organic chemistry	Tutorial/Workshop		1, 2, 3
	Week 4 homework	Online		1, 2, 3
5	Module 2: Electrochemistry (galvanic cells, cell potentials, Nernst equation)	Lecture	Textbook ch. 19	1, 2, 3
	Organic chemistry	Tutorial/Workshop		1, 2, 3
	Module 1.2 online quiz	Online quiz 2		1, 2, 3
	Week 5 homework	Online		1, 2, 3
6	Module 2: Reaction kinetics (Rate laws, orders, initial rates, mechanisms)	Lecture	Textbook ch. 15 and class notes	1, 2, 3
	Electrochemistry	Tutorial/Workshop		1, 2, 3
	Week 6 homework	Online		1, 2, 3
7	Module 2: Spectroscopy (FTIR, Mass spectrometry, NMR, UV/Vis spectroscopy)	Lecture	Textbook ch. 30 and class notes	1, 2, 3
	Reaction kinetics	Tutorial/Workshop		1, 2, 3
	Week 7 homework	Online		1, 2, 3
8	Module 2: Nuclear chemistry	Lecture	Textbook ch 5 and class notes	1, 2, 3
	Spectroscopy	Tutorial/Workshop		1, 2, 3
	Week 8 homework	Online		1, 2, 3
9	Module 3: Transition metal complexes I (ligands, oxidation state, electron configuration, naming)	Lecture	Textbook ch 21 and class notes	1, 2, 3

Week	Topic	Activity	Readings	Learning Outcomes
	Nuclear chemistry	Tutorial/Workshop		<b>1, 2, 3</b>
	Week 9 homework	Online		<b>1, 2, 3</b>
10	Module 3: transition metal complexes II (stereoisomerism, CFT for $O_h$ complexes, applications)	Lecture	Textbook ch 20 and class notes	<b>1, 2, 3</b>
	Inorganic chemistry	Tutorial/Workshop		<b>1, 2, 3</b>
	Week 10 homework	Online		<b>1, 2, 3</b>
11	Module 3: p-block chemistry (groups 14 to 17)	Lecture	Textbook ch 20 and class notes	<b>1, 2, 3</b>
	Inorganic chemistry	Tutorial/Workshop		<b>1, 2, 3</b>
12	Course revision	Lecture/Tutorial/Workshop		<b>1, 2, 3</b>

Lab activities will be conducted as outlined in your timetable. Pre-laboratory assignments should be completed before the lab. Note: There is no facility to defer laboratory assignments and laboratory assignments are compulsory.

## 5. Assessment Plan

### 5.1 Assessment Summary

Item	Assessment Task	Weighting	Learning Outcomes	Due Date
1	Online quizzes (1-5)	10%	<b>1, 2, 3</b>	
1	Laboratory Assignments (a) Laboratory reports (b) Pre-laboratory assignments  <i>- Students must pass this assessment with a mark of at least 15 out of 25 (60%) to pass the course</i>	20% 5%	<b>1-4</b> <b>1-5</b>	Progressive 1-12
2	In-class quiz 1, Module 1 (weeks 1-4)	10%	<b>1, 2, 3</b>	6 and 10
	In-class quiz 2, Modules 2-3 (weeks 5-9)	10%	<b>1, 2, 3</b>	
2	End of Trimester Exam  <i>- Students must pass this assessment with a mark of at least 40% to pass the course</i>	45%	<b>1, 2, 3</b>	TBA

### 5.2 Assessment Detail

#### Online Quiz 1-10 (1% each)

These quizzes will test students' understanding, interpretation and application of the relevant course materials and problem solving skills. These quizzes will help students to prepare before undertaking the in-class tests.

#### In-class quizzes 1 and 2 (10% each)

These quizzes will assess students' understanding, interpretation and application of the relevant course materials and problem solving skills under normal (closed book) exam conditions. Quiz format will constitute a mixture of multiple choice and short answer questions. Sample assessment examples are available on the student portal

#### Laboratory Assessment (25 %):

Attendance and participation in **ALL** the Laboratory sessions is compulsory. Attendance and participation will be recorded. The labs and pre-labs are worth 25%. **Pre-lab assignments** will be completed before the respective laboratory. The pre-laboratory assignments themselves will be worth 5% of the total grade.

Students must attend **ALL laboratory sessions** and gain an overall pass of 15/25 on the Laboratory component, including pre-laboratory assignments, in order to gain any credit for the course.

For further instructions on the laboratory component and for details on laboratory assessment please refer to the separate "Griffith College 1022SCG Chemistry 1B Laboratory Manual". Failure to attend an allocated Laboratory session at the specified time will result in non-attendance being recorded and zero marks being allocated for the specific Laboratory component, unless documentary evidence of medical or other extenuating circumstances is provided to the Laboratory Convenor (Dr Gretel Heber) within three (3) days of the laboratory session. Where satisfactory evidence is so provided, final attendance and laboratory marks will be proportionately adjusted to account for the approved absence(s).

**STUDENTS ARE REMINDED THAT PUNCTUALITY IS EXTREMELY IMPORTANT - THIS IS PARTICULARLY SO WITH LABORATORY EXPERIMENTS. IF STUDENTS ARE LATE, MARKS WILL BE DEDUCTED FROM THEIR MARK FOR THAT EXPERIMENT - THIS WILL BE EXPLAINED DURING LECTURES PRIOR TO STARTING THE LABORATORY SESSIONS.**

### 5.3 Late Submission

An assessment item submitted after the due date, without an approved extension from the Course Coordinator, will be penalised. The standard penalty is the reduction of the mark allocated to the assessment item by 5% of the maximum mark applicable for the assessment item, for each working day or part working day that the item is late. Assessment items submitted more than five working days after the due date are awarded zero marks.

Please refer to the Griffith College website - Policy Library > Assessment Policy for guidelines and penalties for late submission.

### 5.4 Other Assessment Information

#### Retention of Originals

You must be able to produce a copy of all work submitted if so requested. Copies should be retained until after the release of final results for the course.

#### Requests for extension

To apply for an extension of time for an assignment, you must submit an [Application for Extension of Assignment](#) form to your teacher at least 24 hours before the date the assignment is due. Grounds for extensions are usually: serious illness, accident, disability, bereavement or other compassionate circumstances and must be able to be substantiated with relevant documentation [e.g. [Griffith College Student Medical Certificate](#)]. Please refer to the Griffith College website - Policy Library - for guidelines regarding extensions and deferred assessment.

#### Return of Assessment Items

1. Marks awarded for in-trimester assessment items, except those being moderated externally with Griffith University, will be available on the Student Portal within fourteen [14] days of the due date. This does not apply to the final assessment item in this course (marks for this item will be provided with the final course result).
2. Students will be advised of their final grade through the Student Portal. Students can review their exam papers after student grades have been published (see relevant Griffith College Fact Sheet for allocated times at Support> Factsheets). Review of exam papers will not be permitted after the final date to enrol.
3. Marks for **all** assessment items including the final exam (if applicable) will be recorded in the Moodle Course Site and made available to students through the Moodle Course Site.

*The sum of your marks overall assessment items in this course does not necessarily imply your final grade for the course. Standard grade cut off scores can be varied for particular courses, so you need to wait for the official release of grades to be sure of your grade for this course.*

## 6. Policies & Guidelines

Griffith College assessment-related policies can be found in the [Griffith College Policy Library](#) which include the following policies:

Assessment Policy, Special Consideration, Deferred Assessment, Alternate Exam Sitting, Medical Certificates, Academic Integrity, Finalisation of Results, Review of Marks, Moderation of Assessment, Turn-it-in Software Use. These policies can be accessed using the 'Document Search' feature within the [Policy Library](#)

**Academic Integrity** Griffith College is committed to maintaining high academic standards to protect the value of its qualifications. Academic integrity means acting with the values of honesty, trust, fairness, respect and responsibility in learning, teaching and research. It is important for students, teachers, researchers and all staff to act in an honest way, be responsible for their actions, and show fairness in every part of their work. Academic integrity is important for an individual's and the College's reputation.

All staff and students of the College are responsible for academic integrity. As a student, you are expected to conduct your studies honestly, ethically and in accordance with accepted standards of academic conduct. Any form of academic conduct that is contrary to these standards is considered a breach of academic integrity and is unacceptable.

Some students deliberately breach academic integrity standards with intent to deceive. This conscious, pre-meditated form of cheating is considered to be one of the most serious forms of fraudulent academic behaviour, for which the College has zero tolerance and for which penalties, including exclusion from the College, will be applied.

However, Griffith College also recognises many students breach academic integrity standards without intent to deceive. In these cases, students may be required to undertake additional educational activities to remediate their behaviour and may also be provided appropriate advice by academic staff.

As you undertake your studies at Griffith College, your lecturers, tutors and academic advisors will provide you with guidance to understand and maintain academic integrity; however, it is also your responsibility to seek out guidance if and when you are unsure about appropriate academic conduct.

In the case of an allegation of a breach of academic integrity being made against a student he or she may request the guidance and support of a Griffith College Student Learning Advisor or Student Counsellor.

Please ensure that you are familiar with the Griffith College Academic Integrity Policy; this policy provides an overview of some of the behaviours that are considered breaches of academic integrity, as well as the penalties and processes involved when a breach is identified.

For further information please refer to the Griffith College website - Policy Library > Academic Integrity Policy

### **Reasonable Adjustments for Assessment – The Disability Services policy**

The Disability Services policy (accessed using the Document Search' feature with the [Policy Library](#)) outlines the principles and processes that guide the College in making reasonable adjustments to assessment for students with disabilities while maintaining academic robustness of its programs.

### **Risk Assessment Statement**

There are no out of the ordinary risks associated with this course.

---

Copyright © - Griffith College

Note: For all Diploma level programs, Griffith College acknowledges content derived from Griffith University.