



1. General Course Information

1.1 Course Details

Course Code:	1015MSC
Course Name:	Chemistry of Biological Systems II
Trimester:	Trimester 1, 2025
Program:	Diploma of Health Sciences
Credit Points:	10
Course Coordinator:	Tessa Daal
Document modified:	24/01/2024

Course Description

Chemistry of Biological Systems II, builds on material presented in Chemistry of Biological Systems I. The course introduces organic and biological chemistry, which underpins all biochemical processes and the molecular basis of life. The knowledge obtained will provide a solid foundation for following courses in biomedical science, health science, physiotherapy & exercise science, and pharmaceutical science.

The course has an emphasis on practical laboratory skills. This, with the other components of the course, will allow students to develop problem solving skills relevant to the scientific method, competency in laboratory methods, and an ability to interpret laboratory results. The course covers the following topics: introductory organic chemistry, an overview of carbohydrate, lipid, nucleic acid, amino acid and protein chemistry, the chemistry of food, exercise & medicine, metals, and fundamentals of bioenergetics.

Assumed Knowledge

To successfully enrol in this course, you must provide evidence that you have completed one of the following Courses:

- 1001GRC- Chemistry of Biological Systems I
- 1013ENV - Chemistry of Biological Systems I
- 1001MSC - Essentials of Chemistry & Physics

1.2 Teaching Team

Your teacher/s can be contacted via email as below:

You will also find their email in the Teacher's tile on your Course Site.

Name	Email
Tessa Daal	Tessa.daal@griffithcollege.edu.au
Claire Hoffman	Claire.Hoffman@griffithcollege.edu.au

1.3 Meet with your teacher

Your teacher is available each week to meet outside of normal class times. This is called consultation. Times that your teacher will be available for consultation will be found on the Teacher's tile on your Course Site.

1.4 Timetable

Your timetable is available on the Griffith College Digital Campus at My Apps, Timetable.

1.5 Technical Specifications

All students must have access to a computer or suitable mobile device such as laptop or tablet (mobile phones are not suitable). In addition, up-to-date browser access, a reliable high-speed internet connection with enough upload and download capacity, a webcam and headset including microphone are needed.

2. Aims, Outcomes & Generic Skills

2.1 Course Aims

The purpose of the course is to provide essential knowledge and understanding of introductory general and organic, analytical chemistry, then to build an understanding of biochemical processes; hence the molecular basis of life.



2.2 Learning Outcomes

After successfully completing this course you should be able to:

1. Demonstrate an understanding of selected chemistry related concepts, principles and theories and solve chemistry related problems for functional groups such as alkanes, carboxylic acid, esters and stereochemistry.
2. Demonstrate understanding and solve chemistry related problems for some biological macromolecules (lipids, carbohydrates, proteins, enzymes and nucleic acids) and bioenergetics.
3. Develop a professional identity and employability-related skills through creating, controlling, and curating an organised electronic evidence base of your work through ePortfolio and a LinkedIn Profile.
4. Demonstrate knowledge of basic chemistry laboratory skills and interpret laboratory results by integrating the laws, concepts, and principles of chemistry in the form of a lab report.



2.3 Graduate Capabilities and Employability Skills

For further details on the Graduate Capabilities and Employability Skills please refer to the [Graduate Generic Skills and Abilities policy](#).

Griffith College is committed to producing graduates who are able to demonstrate progress toward the development of a number of generic skills / capabilities that will allow them to successfully continue their studies at the tertiary level. This set of skills includes employability related skills that will ensure graduates are capable in the workplace of the future.

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

Graduate Capabilities and Employability Skills			Focus within this course
Interacting with People	Teamwork		✓
	Communication		✓
	Respect for Culture and Diversity		
Readiness for the Workplace	Problem Solving		✓
	Planning and Organisation		✓
	Creativity and Future Thinking		✓



3. Learning Resources

3.1 Required Learning Resources

Hein, M., Pattison, S., & Arena. (2015). Introduction to general, organic and biochemistry (11th ed.). Hoboken, NJ: John Wiley & Sons Inc. (ISBN: 978-1-118-41389-0)

Griffith College Laboratory Lessons for Chemistry of Biological Systems II. Available on the course site.
Griffith College Laboratory Workbook for Chemistry of Biological Systems II. Available on the course site.
Griffith College Content notes for Chemistry of Biological Systems II. Available on the course site.

3.2 Recommended Learning Resources

No other recommended resources

3.3 College Support Services and Learning Resources

Griffith College provides many facilities and support services to assist students in their studies. Links to information about 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.
- [Study Toolbox](#) – there is a dedicated website for this course on the Griffith College Digital Campus.
- [Academic Integrity](#) - Griffith College is committed to ensuring academic integrity is understood and maintained by all staff and students. All students learn about academic integrity through engagement with Academic Integrity online modules within the Academic and Professional Studies course.
- [Services and Support](#) provides a range of services to support students throughout their studies including academic advice and assignment help from Student Learning Advisors, and personal and welfare support from Student Counsellors.
- [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 Information about your Learning

Preparation and Participation in Learning

You need to prepare before attending your scheduled Learning Experience (In Class). Work through the Learning Content (Before Class) prepared by your teacher which is found on the course site. Make sure you complete the Learning Activities (After Class) set each week. Active participation in your learning will enhance your success. Ask questions when something is unclear or when you want to bring some issue to your teacher's attention; respond to questions to test your knowledge and engage in discussion to help yourself and others learn.

Attendance

You are expected to actively engage in all learning experiences which underpin the learning content in this course. Attendance will be recorded by your teacher in each learning experience to ensure you are meeting the requirements of the program you are studying and/or your visa conditions. You are expected to engage with the learning content and learning activities outside of timetabled class times. You are expected to bring all necessary learning resources to class such as the required textbook and /or Workbook.

Laboratories

ATTENDANCE AT LABORATORIES WILL BE RECORDED AND IS COMPULSORY.

This course has five (5) face to face labs and two (2) Lab report support sessions. Each laboratory session runs for two (2) hours as per the laboratory timetable made available on the Griffith College student portal.

Students who are absent from laboratory classes for medical reason will require a proper medical certificate as indicated by Griffith College policy.

These practical sessions provide learning activities that are essential to the learning outcomes in this course. Students will work in small groups to conduct experiments and develop problem solving skills.

Content covered in these laboratories complements lecture material and hence will be assessed in both laboratory reports and examinations.

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 Learning Materials

Learning materials are made available to you in the course site. The learning materials are arranged in Modules. In each Module you will find Learning Content (Before Class), Learning Experiences (In Class) and Learning Activities (After Class). **Learning Content (Before Class)** will be engaged with prior to the scheduled **Learning Experience (In Class)**. This will ensure you are prepared for the scheduled Learning Experience (In Class) by being aware of the content to be covered and therefore will be able to actively participate in the session. **Learning Activities (After Class)** are accessed after the scheduled session for purposes of review, consolidation of learning, and preparation for the Evidence of Learning Tasks (Assessments) in the course.

In addition, **Missed Class** learning material is provided in the course, providing support, interactive tools and directions for students who occasionally cannot attend the weekly scheduled Learning Experience (In Class, either in person or on Zoom – note that some programs do not offer Zoom links) perhaps due to illness or other commitments. The Missed Class learning material should also be used in conjunction with Learning Content (Before Class) and Learning Activities (After Class) resources.

Self-Directed Learning

You will be expected to learn independently. This means you must organise and engage with the course Learning Content (Before Class) even when you are not specifically asked to do so by your teacher. The weekly guide (below) will be helpful to organise your learning. This involves revising the weekly Learning Content (Before Class) and completing the Learning Activities (After Class). It also means you will need to find additional information to evidence your learning beyond that given to you, 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%, students are engaged in their learning 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].

International students enrolled in Language Development Modules (LDM100 / LDM200)

Successful completion of LDM100 and LDM200 is **required** to graduate with your Diploma award and progress to your Bachelor. If you do not achieve non-graded passes for these language modules your progression to your Bachelor will be affected. Please attend all your classes and submit your assessment.

Teacher and Course Evaluation






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



4. Weekly Guide: Learning Content, Learning Experiences and Learning Activities

The information below lays out how your learning will be organised throughout the trimester:

4.1. Modules for Learning and Weekly Learning Content, Learning Experiences and Learning Activities

Week	Learning Content (Before Class)	Learning Experiences (In Class)	Learning Activities (After Class)	Evidence of Learning (Assessment)	Learning Outcome
					
Module 1					
1	Alkanes Introduction to PebblePad e-Portfolio & LinkedIn account	Topic notes activities, Discussion groups, Design e-Portfolio & LinkedIn	Weekly Exercises		1 & 3
2	Alkene & Alkynes	Topic notes activities, Discussion groups, Weekly exercises Content questions	Weekly Exercises		1
3	Alcohols, Ethers, Phenols, Thiols	Topic notes activities, Discussion groups, Weekly exercises Content questions	Weekly Exercises		1
4	Aldehydes & Ketones, Carboxylic Acid, Esters	Topic notes activities, Discussion groups, Weekly exercises Content questions	Weekly Exercises	Academic Integrity Certificate due	1
5	Amines & Amides, Stereoisomerism	Topic notes activities, Discussion groups, Weekly exercises Content questions	Weekly Exercises	e-Portfolio & LinkedIn assessment (8%)	1
Module 2					

6	Carbohydrates & Chemistry of Food- Carbohydrates	Topic notes activities, Discussion groups, Weekly exercises Content questions	Weekly Exercises		2
7	Lipids & Chemistry of Food - Fatty Acids	Topic notes activities, Discussion groups, Weekly exercises Content questions	Weekly Exercises	Mid trimester exam Module 1, Labs 1-2 (35%)	2
8	Amino Acids, Proteins. Chemistry of Food- Proteins	Topic notes activities, Discussion groups, Weekly exercises Content questions	Weekly Exercises		2
9	Enzymes & Chemistry of Medicine	Topic notes activities, Discussion groups, Weekly exercises Content questions	Weekly Exercises		2
10	Metals in Biological Systems	Topic notes activities, Discussion groups, Weekly exercises Content questions	Weekly Exercises	Lab Report (17%)	2
11	Nucleic Acids & Bioenergetics	Topic notes activities, Discussion groups, Weekly exercises Content questions	Weekly Exercises		2
12	Chemistry of Exercise	Topic notes activities, Discussion groups, Weekly exercises Content questions	Weekly Exercises		2
Exam Week	Review			Final Exam Module 2, Lab 4 & Lab 5 (40%)	
Module 3					
	PebblePad ePortfolio & LinkedIn account	Design PebblePad ePortfolio & LinkedIn account	Content Videos PebblePad Step by Step Guide & ePortfolio & LinkedIn account Guide	Online submission of PebblePad ePortfolio & LinkedIn account in week 5	3
Module 4					
	Laboratory component In-person	Glucose in Drinks – Lab Report Tutorials	5 Laboratory sessions	Lab Report Glucose in Drinks	4

4.2. Practical Laboratory Classes

This course has five (5) Practical laboratory classes. Please look out for the timetable details.



5. Evidence of Learning (Assessment)

5.1 Evidence of Learning Summary

	Evidence of Learning (Assessment)	Weighting	Learning Outcome	Due Date
1	ePortfolio & LinkedIn profile	8%	3	Week 5
2	Mid trimester Exam	35%	1	Week 7
3	Laboratory Report - Lab Results	17%	4	Week 10 Week 7
4	Final Exam <i>Students must obtain at least 40% on the final exam to pass the course</i>	40%	2	Week 13

5.2 Evidence of Learning Task Detail

You are required to **submit your own work** for marking. All planning, notes and drafts need to be retained so they can be presented to your teacher if requested.

Tools that generate course content or extensively enhance a student's English language capability are not permitted to be used. Web applications such as ChatGPT, Google Translate, Grammarly and Youdao (or equivalent services) are not permitted for outright assessment creation, translation, or extensive language assistance purposes. In addition, Wikipedia, Baidu, Weibo and WeTalk are not permitted to be used.

Students should follow all teacher directions about the use of Generative Artificial Intelligence (Gen-AI) tools in relation to formative and summative assessment tasks (including how to cite Gen-AI tools, if relevant). It should be noted that Turnitin provides teaching staff with a Gen-AI percentage indicator as well as an Originality Report which detects plagiarism.

1. Evidence of Learning Task 1: ePortfolio & LinkedIn Profile (8%)

Task Type: Assignment

Due Date: Friday Week 5

Weight: 8%, Marked out of 100

Task Description: Students to update ePortfolio and create professional LinkedIn account

Criteria and Marking: Students are assessed on ePortfolio and LinkedIn profiles according to marking criteria provided

Submission: Submission point via the course site

2. Evidence of Learning Task 2: Mid-trimester Exam (35%)

Task Type: Examination

Due Date: TBA Week 7

Weight: 35%

Duration: 90 min

Exam Type: Closed book

Task Description: Exam assessing content Module 1, Lab 1 & Lab 2

Criteria and Marking: Students are assessed on material from Module 1, Lab 1 & Lab 2

Quiz Format: On Campus

3. Evidence of Learning Task 4: Laboratory Report - 17%

Task Type: Written Assignments

Due Date: Friday Week 10

Weight: 17%, Laboratory Report (Marked out of 100)

Task Description: The lab component of the course will be assessed through a written Laboratory report for Glucose in Drinks lab (17%)

Criteria and Marking: Students are assessed on the Glucose in Drinks Lab for the Laboratory Report (Glucose in Drinks)

Submission: Turnitin via the course site

4. Evidence of Learning Task 3: Final Exam (40%)

Task Type: Examination

Due Date: TBA

Weight: 40%

Duration: 120 min

Exam Type: Closed book

Task Description: Exam assessing content from Module 2, Lab 4 & Lab 5

Criteria and Marking: Students are assessed on material from Module 2, Lab 4 & Lab 5

Exam Format: On Campus

In order to pass this course, students must:

A. Attempt all assessment items

B. demonstrate assurance of learning of all learning outcomes through graded Evidence of Learning Tasks

C. obtain at least 40% in the Final Exam

5.3 Late Submission

An Evidence of Learning Task submitted after the due date, without an approved extension from the teacher, will be penalised. The standard penalty is the reduction of the mark allocated to the Evidence of Learning Task by 5% of the maximum mark applicable for the Evidence of Learning Task, for each calendar day that the task is late. Evidence of learning tasks submitted more than seven calendar 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 Information about Evidence of Learning

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 evidence of learning task, 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 Evidence of Learning Tasks

1. Marks awarded for in-trimester evidence of learning tasks, except those being moderated externally with Griffith University, will be available on the course site within fourteen [14] days of the Due Week. This does not apply to the final evidence of learning task in this course (marks for this task will be provided with the final course result).
2. Students will be advised of their final grade through the Digital Campus. Students can review their final exam papers after student grades have been published. Review of final exam papers will not be permitted after the final date to enrol.
3. Marks for **all** evidence of learning tasks including the final exam (if applicable) will be recorded in the Course Site and made available to students through the Course Site.

The sum of your marks of evidence of learning tasks 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 Sitings](#), [Medical Certificates](#), [Academic Integrity](#), [Finalisation of Results](#), [Review of Marks](#), [Moderation of Assessment](#), [Turn-it-in Software Use](#). These policies can be accessed 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 teachers 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 Evidence of Learning Tasks – The Disability Services policy

The [Disability Services policy](#) (accessed within the [Policy Library](#)) outlines the principles and processes that guide the College in making reasonable adjustments to evidence of learning tasks for students with disabilities while maintaining academic robustness of its programs.

Risk Assessment Statement

This course follows Griffith College and Griffith University Workplace Health and Safety Laboratory guidelines.

The aim of workplace health and safety is to make sure that people do not get sick or injured at the workplace. The legislation dealing with this in Queensland is called the Workplace Health and Safety Act, 1995. Anyone who can affect workplace health and safety has an obligation under this Act.

As a student, you have an obligation to yourself and others to undertake activities in a safe manner. You must follow instructions which are provided for safety. You must not put yourself or anyone else at risk. Care especially needs to be taken when you are performing activities which can affect others. Additional Laboratory Rules if applicable will be available on the course site via the Griffith College Digital Campus.

It is imperative that students follow all health and safety procedures & clinical nursing guidelines, as well as any staff instructions given whilst in the lab.