

**CHM311 Medicinal Organic Chemistry**

School: School of Science, Technology and Engineering

2026 | Trimester 2

UniSC Sunshine Coast  
UniSC Moreton Bay**BLENDED  
LEARNING**

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

Please go to [unisc.edu.au](http://unisc.edu.au) for up to date information on the teaching sessions and campuses where this course is usually offered.

## 1. What is this course about?

### 1.1. Description

Medicinal Organic Chemistry extends the concepts covered in CHM202 Organic Chemistry. The course includes biological stereochemistry, reactions of heteroaromatics, advanced analytical and spectroscopic techniques, pericyclic reactions, the retro-synthesis approach to target compounds and natural product chemistry for drug discovery. There will be special emphasis on examples relevant to the Graduate Medical Schools Admission Test. By the end of this course, you will have an advanced knowledge of organic reactions and designing of organic syntheses.

### 1.2. How will this course be delivered?

ACTIVITY	HOURS	BEGINNING WEEK	FREQUENCY
<b>BLENDED LEARNING</b>			
<b>Learning materials</b> – Online learning materials	1hr	Week 1	12 times
<b>Tutorial/Workshop 1</b> – Fortnightly 2 hour on-campus tutorial	2hrs	Week 2	6 times
<b>Laboratory 1</b> – Fortnightly 3 hour on-campus practical	3hrs	Week 1	6 times

### 1.3. Course Topics

- Heteroaromatics
- Pericyclic Reactions
- Retrosynthesis
- Asymmetric Synthesis
- Advanced Analytical and Spectroscopic Techniques
- Natural Product Chemistry
- Drug Discovery
- Drug Design.

## 2. What level is this course?

300 Level (Graduate)

Demonstrating coherence and breadth or depth of knowledge and skills. Independent application of knowledge and skills in unfamiliar contexts. Meeting professional requirements and AQF descriptors for the degree. May require pre-requisites where discipline specific introductory or developing knowledge or skills is necessary. Normally undertaken in the third or fourth full-time study year of an undergraduate program.

### 3. What is the unit value of this course?

12 units

### 4. How does this course contribute to my learning?

COURSE LEARNING OUTCOMES		GRADUATE QUALITIES
On successful completion of this course, you should be able to...		Completing these tasks successfully will contribute to you becoming...
1	Plan and conduct laboratory experiments	Empowered
2	Apply and explain mechanisms and reactions in Organic Chemistry	Knowledgeable

### 5. Am I eligible to enrol in this course?

Refer to the [UniSC Glossary of terms](#) for definitions of "pre-requisites, co-requisites and anti-requisites".

#### 5.1. Pre-requisites

CHM202

#### 5.2. Co-requisites

Not applicable

#### 5.3. Anti-requisites

Not applicable

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

You must have an introductory knowledge of Organic Chemistry

#### 5.5. Microcredential Information

Not applicable

### 6. How am I going to be assessed?

#### 6.1. Grading Scale

Standard Grading (GRD)

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

#### 6.2. Details of early feedback on progress

In week 4, your tutorial participation and progress with understanding the chemical concepts will be informally assessed, and the opportunity given for student feedback.

#### 6.3. Assessment tasks

DELIVERY MODE	TASK NO.	ASSESSMENT PRODUCT	INDIVIDUAL OR GROUP	WEIGHTING %	WHAT IS THE DURATION / LENGTH?	WHEN SHOULD I SUBMIT?	WHERE SHOULD I SUBMIT IT?
All	1	Practical / Laboratory Skills	Individual	30%	3 x 500 - 800 words	Refer to Format	To Supervisor
All	2	Examination - not Centrally Scheduled	Individual	30%	1 hour, 800 words	Refer to Format	In Class
All	3	Examination - Centrally Scheduled	Individual	40%	2 hours, 1000 words	Exam Period	Exam Venue

### All - Assessment Task 1: Laboratory reports and assignment

<b>GOAL:</b>	Laboratory skills are an essential of organic chemistry. The laboratory classes develop practical skills in planning and conducting experiments safely. Report writing is extended.						
<b>PRODUCT:</b>	Practical / Laboratory Skills						
<b>AUTHORSHIP STATEMENT:</b>							
<b>FORMAT:</b>	Submit: 3 lab reports in weeks 5, 9 and 12. Standard Scientific Report Title, Abstract, Experimental Procedure, Discussion, References						
<b>CRITERIA:</b>	<table border="1"><thead><tr><th>No.</th><th></th><th>Learning Outcome assessed</th></tr></thead><tbody><tr><td>1</td><td>Demonstration of good laboratory technique assessed by the laboratory supervisor, clear and concise scientific communication in the report.</td><td>1 2</td></tr></tbody></table>	No.		Learning Outcome assessed	1	Demonstration of good laboratory technique assessed by the laboratory supervisor, clear and concise scientific communication in the report.	1 2
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1	Demonstration of good laboratory technique assessed by the laboratory supervisor, clear and concise scientific communication in the report.	1 2					
<b>GENERIC SKILLS:</b>	Communication, Collaboration, Problem solving, Organisation						

### All - Assessment Task 2: Mid trimester exam

<b>GOAL:</b>	This exam will focus on theory and mechanism of organic reactions						
<b>PRODUCT:</b>	Examination - not Centrally Scheduled						
<b>AUTHORSHIP STATEMENT:</b>							
<b>FORMAT:</b>	Submit in week 6 in tutorial time. Individual written exam covering the first half of trimester's work.						
<b>CRITERIA:</b>	<table border="1"><thead><tr><th>No.</th><th></th><th>Learning Outcome assessed</th></tr></thead><tbody><tr><td>1</td><td>Correctly answering the questions on organic reactions and mechanisms</td><td>2</td></tr></tbody></table>	No.		Learning Outcome assessed	1	Correctly answering the questions on organic reactions and mechanisms	2
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1	Correctly answering the questions on organic reactions and mechanisms	2					
<b>GENERIC SKILLS:</b>	Problem solving						

### All - Assessment Task 3: Final exam

<b>GOAL:</b>	Demonstrate and apply knowledge of organic mechanisms and reactions						
<b>PRODUCT:</b>	Examination - Centrally Scheduled						
<b>AUTHORSHIP STATEMENT:</b>							
<b>FORMAT:</b>	Individual examination during central exam period						
<b>CRITERIA:</b>	<table border="1"><thead><tr><th>No.</th><th></th><th>Learning Outcome assessed</th></tr></thead><tbody><tr><td>1</td><td>Correctly answering questions on organic mechanisms and reactivity</td><td>1 2</td></tr></tbody></table>	No.		Learning Outcome assessed	1	Correctly answering questions on organic mechanisms and reactivity	1 2
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1	Correctly answering questions on organic mechanisms and reactivity	1 2					
<b>GENERIC SKILLS:</b>	Problem solving						

## 7. Directed study hours

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

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

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

### 8.1. Prescribed text(s) or course reader

You need regular access to the resource(s) below. Many texts are available as ebooks through the [Library](#) at no additional cost.

REQUIRED?	AUTHOR	YEAR	TITLE	EDITION	PUBLISHER
Required	Paula Yurkanis Bruice	2025	Organic Chemistry	9th	n/a
Recommended	Graham L. Patrick	2023	An Introduction to Medicinal Chemistry	7th	n/a

### 8.2. Specific requirements

Safety glasses, laboratory coat and covered shoes must be brought to laboratory classes

## 9. How are risks managed in this course?

Risk assessments have been performed for all laboratory classes and a moderate level of health and safety risk exists. Moderate risks are those associated with laboratory work such as working with chemicals and hazardous substances. You will be required to undertake laboratory induction training and it is also your responsibility to review course material, search online, discuss with lecturers and peers and understand the health and safety risks associated with your specific course of study and to familiarise yourself with the University's general health and safety principles by reviewing the [online induction training for students](#), and following the instructions of the University staff

## 10. What administrative information is relevant to this course?

### 10.1. Assessment: Academic Integrity

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

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

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

### 10.2. Assessment: Additional Requirements

#### Eligibility for Supplementary Assessment

Your eligibility for supplementary assessment in a course is dependent of the following conditions applying:

- The final mark is in the percentage range 47% to 49.4%; and
- The course is graded using the Standard Grading scale

### 10.3. Assessment: Submission penalties

Late submissions may be penalised up to and including the following maximum percentage of the assessment task's identified value, with weekdays and weekends included in the calculation of days late:

- One day: deduct 5%;
- Two days: deduct 10%;
- Three days: deduct 20%;
- Four days: deduct 40%;
- Five days: deduct 60%;
- Six days: deduct 80%;
- Seven days: A result of zero is awarded for the assessment task.

The following penalties will apply for a late submission for an online examination:

- Less than 15 minutes: No penalty
- From 15 minutes to 30 minutes: 20% penalty
- More than 30 minutes: 100% penalty

#### 10.4. Links to relevant University policy and procedures

For more information on Academic Learning & Teaching categories including:

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

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

#### 10.5. Student Charter

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

#### 10.6. General Enquiries

For course-specific questions, contact your teaching staff or Course Coordinator.

For other enquiries or to access support, please contact Student Central:

- [UniSC Student Central](#)
- [UniSC Adelaide Student Central](#)