



UNSW Course Outline

CHEM2021 Organic Chemistry: Mechanisms and Biomolecules - 2024

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General Course Information

Course Code : CHEM2021

Year : 2024

Term : Term 2

Teaching Period : T2

Is a multi-term course? : No

Faculty : Faculty of Science

Academic Unit : School of Chemistry

Delivery Mode : In Person

Delivery Format : Standard

Delivery Location : Kensington

Campus : Sydney

Study Level : Undergraduate

Units of Credit : 6

Useful Links

[Handbook Class Timetable](#)

Course Details & Outcomes

Course Description

Organic molecules are at the heart of the chemistry of life and industry. This course builds on the

fundamental chemical principles learned in first year, exploring many of the central reactions that form the basis of living processes, modern research, and contemporary industrial transformations. The course consists of three modules (stereochemistry and mechanism, aromatic chemistry, chemistry of carbonyl compounds) which will be delivered through weekly lectures and workshops. The concepts of reactivity and selectivity in the manipulation of more complex compounds will be highlighted, with an emphasis on biologically relevant molecules. Key preparative skills will be taught through the weekly laboratory classes that build on the theory presented.

Course Aims

The aim of this course is to present the chemistry of organic molecules and highlight their importance in the real world. It will give students the skills, both theoretical and practical, to understand and carry organic processes and apply them, in context, to a range of applications.

Course Learning Outcomes

Course Learning Outcomes
CL01 : Describe functional groups, carbon-carbon bond forming processes and the key mechanistic theory underpinning organic chemistry.
CL02 : Design, plan and execute multi-step organic syntheses.
CL03 : Undertake laboratory experiments and techniques to separate, isolate, purify and identify substances and compounds in a safe and responsible manner.
CL04 : Maintain appropriate records of experiments consistent with standards of practice.
CL05 : Interpret experimental results and discuss in terms of presented theory and literature precedent.

Course Learning Outcomes	Assessment Item
CL01 : Describe functional groups, carbon-carbon bond forming processes and the key mechanistic theory underpinning organic chemistry.	<ul style="list-style-type: none">• Exam• Mid-session test• Assignments
CL02 : Design, plan and execute multi-step organic syntheses.	<ul style="list-style-type: none">• Exam• Mid-session test• Assignments
CL03 : Undertake laboratory experiments and techniques to separate, isolate, purify and identify substances and compounds in a safe and responsible manner.	<ul style="list-style-type: none">• Laboratory Practical Component• Exam
CL04 : Maintain appropriate records of experiments consistent with standards of practice.	<ul style="list-style-type: none">• Laboratory Practical Component
CL05 : Interpret experimental results and discuss in terms of presented theory and literature precedent.	<ul style="list-style-type: none">• Laboratory Practical Component

Learning and Teaching Technologies

Moodle - Learning Management System

Assessments

Assessment Structure

Assessment Item	Weight	Relevant Dates
Laboratory Practical Component Assessment Format: Individual	30%	Start Date: Not Applicable Due Date: Not Applicable
Exam Assessment Format: Individual	40%	Start Date: Not Applicable Due Date: Not Applicable
Mid-session test Assessment Format: Individual	20%	
Assignments Assessment Format: Individual	10%	Start Date: Not Applicable Due Date: Not Applicable

Assessment Details

Laboratory Practical Component

Assessment Overview

There is a laboratory class every week for nine weeks during term, and this part of the course is continuously assessed, with laboratory record books and reports assessed each week.

You are assessed on your ability to carry out experiments safely and effectively, your appropriate keeping of records, and your written reports. Written feedback will be given on each item assessed.

Hurdle: A minimum 80% attendance is required to pass the course.

Course Learning Outcomes

- CL03 : Undertake laboratory experiments and techniques to separate, isolate, purify and identify substances and compounds in a safe and responsible manner.
- CL04 : Maintain appropriate records of experiments consistent with standards of practice.
- CL05 : Interpret experimental results and discuss in terms of presented theory and literature precedent.

Detailed Assessment Description

The laboratory course is worth 30% of your overall assessment for CHEM2021. The assessment for the laboratory section of this course is as follows:

- | | |
|--|-----|
| i. Prelab quizzes (all experiments) | 10% |
| ii. Lab notebooks (Experiments 3 and 4)* | 15% |

iii. Experimental write-ups and questions (Experiments 3 and 4)* 25%

iv. Lab Test** (Experiment 5) 50%

*The lab notebooks and reports will be marked for experiments 1 and 2 to give feedback; these will not contribute to the overall mark.

**The lab test will include components for the lab notebook and experimental writeup also.

Hurdle rules

50% overall

50% in the lab test

Exam

Assessment Overview

The exam covers all of the syllabus material –except the first 9 lectures, which are already covered by the Mid-session Test.

The exam will require you to answer a combination of multi-choice and written-answer questions. It is a closed book exam.

The exam will be held in the formal examination period. It is typically two hours in duration (exact details confirmed in-term).

Feedback is available to you through inquiry with the course convenor.

Course Learning Outcomes

- CLO1 : Describe functional groups, carbon-carbon bond forming processes and the key mechanistic theory underpinning organic chemistry.
- CLO2 : Design, plan and execute multi-step organic syntheses.
- CLO3 : Undertake laboratory experiments and techniques to separate, isolate, purify and identify substances and compounds in a safe and responsible manner.

Hurdle rules

35% combined with midsession Test

Mid-session test

Assessment Overview

This test focuses only on the first 9 lectures. You will be required to answer a combination of

multi-choice and written answer questions. The marks are returned to you during the teaching period, and the lecturer is also available to give one-on-one feedback by appointment.

Course Learning Outcomes

- CL01 : Describe functional groups, carbon-carbon bond forming processes and the key mechanistic theory underpinning organic chemistry.
- CL02 : Design, plan and execute multi-step organic syntheses.

Hurdle rules

35% combined with exam

Assignments

Assessment Overview

There are three take-home assignments – Assignment 1 will cover Topic 1, Assignment 2 will cover Topic 2, Assignment 3 will cover Topic 3. These will require you to respond to short answer written questions and each will be worth approximately 3%. They will be due approximately two weeks after the completion of the topic that they cover. These are primarily designed to prepare you for the exam. The assignments are returned to you, annotated by the marker, in order to provide feedback.

Course Learning Outcomes

- CL01 : Describe functional groups, carbon-carbon bond forming processes and the key mechanistic theory underpinning organic chemistry.
- CL02 : Design, plan and execute multi-step organic syntheses.

General Assessment Information

Grading Basis

Standard

Requirements to pass course

50% in the laboratory component, 50% in the laboratory test

35% in the exam components.

Course Schedule

Attendance Requirements

Students are strongly encouraged to attend all classes and review lecture recordings.

General Schedule Information

See Moodle page

Course Resources

Recommended Resources

Recommended 9781292160344 Organic Chemistry 8e

Bruice Paula Yurkanis 8e16 _____

Digital - <https://unswbookshop.vitalsource.com/products/-v9781292160351>

Recommended 9780199270293 Organic Chemistry 2ed

CLAYDEN 2nd Re _____

Digital - <https://unswbookshop.vitalsource.com/products/-v9780192518545>

Course Evaluation and Development

myExperience and informal surveys based in the laboratory.

Surveys of continuing students to highlight deficiencies.

Previously, key issues were identified that

- a) lab skills not explicitly assessed
- b) reports did not correlate to lab skills
- c) insufficient assessment of NMR spectroscopy and mechanism in laboratory component

All of these (a-c) have been addressed with modified lab approach.

Staff Details

Position	Name	Email	Location	Phone	Availability	Equitable Learning Services Contact	Primary Contact
Convenor	Jason Harper				By appointment	Yes	Yes
Lecturer	Samantha Furfari				By appointment	No	No
	Naresh Kumar				By appointment	No	No

Other Useful Information

Academic Information

Upon your enrolment at UNSW, you share responsibility with us for maintaining a safe, harmonious and tolerant University environment.

You are required to:

- Comply with the University's conditions of enrolment.
- Act responsibly, ethically, safely and with integrity.
- Observe standards of equity and respect in dealing with every member of the UNSW community.
- Engage in lawful behaviour.
- Use and care for University resources in a responsible and appropriate manner.
- Maintain the University's reputation and good standing.

For more information, visit the [UNSW Student Code of Conduct Website](#).

Academic Honesty and Plagiarism

Referencing is a way of acknowledging the sources of information that you use to research your assignments. You need to provide a reference whenever you draw on someone else's words, ideas or research. Not referencing other people's work can constitute plagiarism.

Further information about referencing styles can be located at <https://student.unsw.edu.au/referencing>

Academic integrity is fundamental to success at university. Academic integrity can be defined as a commitment to six fundamental values in academic pursuits: honesty, trust, fairness, respect, responsibility and courage. At UNSW, this means that your work must be your own, and others' ideas should be appropriately acknowledged. If you don't follow these rules, plagiarism may be detected in your work.

Further information about academic integrity, plagiarism and the use of AI in assessments can be located at:

- The [Current Students site](#),
- The [ELISE training site](#), and
- The [Use of AI for assessments](#) site.

The Student Conduct and Integrity Unit provides further resources to assist you to understand

your conduct obligations as a student: <https://student.unsw.edu.au/conduct>

Submission of Assessment Tasks

Penalty for Late Submissions

UNSW has a standard late submission penalty of:

- 5% per day,
- for all assessments where a penalty applies,
- capped at five days (120 hours) from the assessment deadline, after which a student cannot submit an assessment, and
- no permitted variation.

Any variations to the above will be explicitly stated in the Course Outline for a given course or assessment task.

Students are expected to manage their time to meet deadlines and to request extensions as early as possible before the deadline.

Special Consideration

If circumstances prevent you from attending/completing an assessment task, you must officially apply for special consideration, usually within 3 days of the sitting date/due date. You can apply by logging onto myUNSW and following the link in the My Student Profile Tab. Medical documentation or other documentation explaining your absence must be submitted with your application. Once your application has been assessed, you will be contacted via your student email address to be advised of the official outcome and any actions that need to be taken from there. For more information about special consideration, please visit: <https://student.unsw.edu.au/special-consideration>

Important note: UNSW has a “fit to sit/submit” rule, which means that if you sit an exam or submit a piece of assessment, you are declaring yourself fit to do so and cannot later apply for Special Consideration. This is to ensure that if you feel unwell or are faced with significant circumstances beyond your control that affect your ability to study, you do not sit an examination or submit an assessment that does not reflect your best performance. Instead, you should apply for Special Consideration as soon as you realise you are not well enough or are otherwise unable to sit or submit an assessment.

Faculty-specific Information

Additional support for students

- [The Current Students Gateway](#)
- [Student Support](#)
- [Academic Skills and Support](#)
- [Student Wellbeing, Health and Safety](#)
- [Equitable Learning Services](#)
- [UNSW IT Service Centre](#)
- Science EDI Student [Initiatives](#), [Offerings](#) and [Guidelines](#)

School-specific Information

UNSW Changes to Special Consideration: Short Extension

The School of Chemistry has carefully reviewed all of its assessments to determine whether they are suitable for automatic short extensions as set out by the UNSW Short Extension Policy. The current deadline structures for all assessment tasks in the School of Chemistry already accommodate the possibility of unexpected circumstances that may lead students to require additional time for submission. **The School of Chemistry has opted out of the UNSW Short Extension provision for all its courses**, and we have already integrated flexibility into our assessment deadlines. This decision is subject to revision in response to the introduction of new course offerings. All students may still apply for Special Consideration for any assessment via the usual procedures.

School Contact Information

Level 1, Dalton Building (F12)

W: www.chemistry.unsw.edu.au

Also see: ***Contacts and Support*** section of the course Moodle page (where applicable)