

Course Title: **Organic Synthesis and Molecular Design**

Course Code: **CHEM704**

Descriptor Start Date: **01/01/2026**

POINTS: **15.00**

LEVEL: **7**

PREREQUISITE/S: **CHEM603**

COREQUISITE/S:

RESTRICTION/S:

## LEARNING HOURS

Hours may include lectures, tutorials, online forums, laboratories. Refer to your timetable and course information in Canvas for detailed information.

**Total learning hours: 150**

## PRESCRIPTOR

An examination of the driving forces and mechanisms behind organic reactions, including the importance of stereochemistry and asymmetric methodology.

## LEARNING OUTCOMES

1. Deduce the likely reaction mechanism(s) of chemical reactions.
2. Propose likely outcomes of reactions including pathways and product ratios..
3. Interpret the spectroscopic data of organic compounds.
4. Design organic syntheses.
5. Demonstrate understanding of how organic synthesis is performed in the laboratory.

## CONTENT

- Methods for asymmetric synthesis
- The importance of stereochemistry in synthesis
- The driving forces behind organic reactions
- Pericyclic reactions
- Characterisation of organic compounds
- Investigating reactions and reaction mechanisms
- Practical synthetic techniques

**Disclaimer: Course descriptors may be amended between teaching periods/semesters**

## LEARNING & TEACHING STRATEGIES

This course will be offered as a combination of lectures and laboratories.

## ASSESSMENT PLAN

Assessment Event	Weighting %	Learning Outcomes
Test 1 (50 mins)	30.00	LO1, LO2, LO4
Test 2 (110 mins)	50.00	LO1, LO2, LO3, LO4
Practical Portfolio	20.00	LO1, LO2, LO3, LO5

### Grade Map

#### MAP1

A+ A A- Pass with Distinction

B+ B B- Pass with Merit

C+ C C- Pass

D Fail

### Overall requirement/s to pass the course:

Students must achieve an overall average grade of at least C- across all summative assessments to pass this course.

## LEARNING RESOURCES

AUT (Current). *AUT lecture and Laboratory Manual for Advanced Organic Chemistry*. AUT. School of Science (n.d.). *CHEM704 Laboratory Manual*. Auckland University of Technology. McMurray J (2007). *Organic Chemistry* (7th Ed). Thomson Brooks/Cole. Please refer to the additional information for a list of the recommended readings or resources.

**For further information, contact:** Te Ara Hauora A Putaiao - Faculty of Health & Environmental Science

**Principal Programme:** HA1041, Bachelor of Science

**Related Programme/s:** AK1041 Bachelor of Science

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