

General Course Information

CHEM431

Research Methods 2: Literature Review and Poster Design

0.125 EFTS 15 Points
Second Semester 2026

Description

This course comprises a series of workshops of advanced study in contemporary research methodology in the chemical sciences, such as research and professional scientific communication skills including written, visual and oral communication; directed inquiry and problem-solving skills; critical analysis and in-depth studies in specific specialised areas of contemporary chemical research. In 2025 there will also be a networking session for Canterbury students to exchange ideas with students from Kiel and Siegen Universities, Germany.

The topics covered by this course are:

- Writing a literature review
- Designing and presenting a poster
- Networking

This course is presented in the second semester only. It counts 15 points towards a Bachelor of Science with Honours / Master of Science / Postgraduate Diploma of Science degree and should be taken in conjunction with other 400-level courses as advised by the postgraduate coordinator.

Timetable

Refer to the online course information system or MyTimetable.

Workshops will be held every week given by various staff in the School of Physical and Chemical Sciences with assistance of staff from the Academic Skills Centre and others.

Presentations will be held every week starting in week 3 with speakers from New Zealand and Germany.

Assignments: There will be two assignments for this course which constitute the credit for the course. The timing and nature of each assignment will be at the discretion of each lecturer but are generally due at the end of each term. The assignments will take the form of a literature review (Assignment 1) and the design and presentation of a research poster (Assignment 2).

NOTE: If you do not submit an assignment for assessment, you will be allotted zero marks, which will severely affect your result. You should ensure that you collect marked assignments and keep them until the end of the course as evidence that the work was completed and marked in the case that either is disputed. To guard against accidental loss, it would be prudent to keep photocopies or electronic copies of anything submitted. If you submit work electronically, please cc a copy to yourself in lieu of keeping a physical copy

Students should note that, in the Faculty of Science, students are responsible for about three hours of additional study or work on assignments for each hour of lectures, tutorials or workshops at the 400-level.

Course Co-ordinator

Prof. Sarah Masters, School of Physical and Chemical Sciences

email: sarah.masters@canterbury.ac.nz

Email, phone or come and see me **at any time** if you have **any** questions about the course.

Assessment

Assignment 1: 50 % total

Assignment 2: 50 % total

Textbook

There is no textbook for this course. Material for each assignment and continuing professional development task will be provided on the Learn site.

Prerequisites

There are no set prerequisites for the course.

Web-based resources

Various learning resources (workshop material, reference links, discussion forums etc.) for this course are available via the University of Canterbury's *Learn* web site – <http://learn.canterbury.ac.nz/>. This site will also be used regularly as a means of communication and information distribution for all your Canterbury courses. **You should familiarise yourself with *Learn* as soon as possible.**

Goals of the Course

To ensure that students develop a solid portfolio of skills relevant to research and communication in the chemical sciences. Students will develop a range of skills that are relevant to research in the chemical sciences, including written and oral communication skills. Students will undertake studies in a specific specialised area of chemistry that will allow them to develop an in-depth understanding of an area of contemporary research.

More specifically, the goals of each component of the course are:

Literature review

- To introduce how to write a literature review
- To introduce software for literature searching
- To discuss how to collate references for a literature review
- To discuss how to critically analyse the references
- To synthesize the data into a coherent document
- To appraise the usefulness of each reference source
- To prepare a literature review on a chosen relevant research topic

Poster design and presentation

- To introduce how to design a poster
- To understand the importance of communication in research
- To assess what information is important on a poster
- To understand how to present a poster at a poster session
- To prepare and present a poster on the relevant research topic

SUMMARY OF THE COURSE CONTENT

LITERATURE REVIEW

(TERM 1)

Writing the literature review will enable students to become familiar with the key articles that are relevant to their research project and develop an understanding of the project area. Students will see their project in a wider context and be able to identify gaps and omissions in previous work which may be useful in developing their research hypotheses. Writing the literature review also provides an opportunity for students to hone their critical analysis and writing skills.

Lecturers:

Representative from Academic Skills Centre

Prof. Sarah Masters, sarah.masters@canterbury.ac.nz

John Arnold, Library Liaison, john.arnold@canterbury.ac.nz

POSTER DESIGN AND PRESENTATION

(TERM 2)

Communicating science is critically important. It is possible to do world class science but for the message to be lost due to poor communication. When attending a conference using a poster is a common form of science communication, however at a large conference a presenter can become lost in a sea of posters. How do students make their poster stand out from the rest? How do students ensure that the initial interaction they have with attendees is one that make them want to know more? These skills will be developed in this section of the course.

Lecturers

Mr Matthew Walters, Biological Sciences, matt.walters@canterbury.ac.nz

Prof. Sarah Masters, sarah.masters@canterbury.ac.nz

ORAL PRESENTATIONS

(TERMS 1 AND 2)

In these sessions students will network with students from Kiel and Siegen Universities and present their honours research or research plan for ~15 minutes including Q&A. Time will also be given to networking so ideas can be exchanged, along with generally finding out about research life in different institutions.

LEARNING OUTCOMES

At the end of the literature review topic, students should be able to:

- Construct a literature review of suitable length
- Cite relevant literature to the chosen review topic
- Know how to search for appropriate references
- Demonstrate understanding of the literature in their chosen field

At the end of the poster topic, students should be able to:

- Describe what makes a good or bad poster
- Discuss what a poster should contain
- Assess posters and articulate whether they are well-constructed or not
- Construct a poster on a given topic
- Debate content of a poster within a small group
- Participate in a poster session

CONTINUING PROFESSIONAL DEVELOPMENT

Continuing professional development (CPD) is very important and CHEM431 students will participate in activities to promote CPD. CHEM431 students participate in group meetings appropriate to their research area. These group meetings will involve various activities (discussed/actioned by each group). These meetings are non-assessed; however, attendance is expected, and persistent non-attendance will be noted. Students also attend and present in the oral presentations with Kiel and Siegen Universities. These presentations are non-assessed; however, attendance is expected and persistent non-attendance will be noted.

All CHEM431 students attend the regular School of Physical and Chemical Sciences seminars given by external and internal speakers as advertised. These seminars will be on a wide range of topics given by excellent national and international scientists.

Policy on 'Dishonest Practice' | Ngā Takahitanga me ngā Tinihanga

The University has strict guidelines regarding 'dishonest practice' and 'breach of instructions' in relation to the completion and submission of examinable material. In cases where dishonest practice is involved in tests or other work submitted for credit, a department may choose to not mark such work – see the online guidelines in relation to ['Academic Integrity'](#).

The School of Physical and Chemical Sciences upholds this policy. It considers plagiarism, collusion, copying and ghost writing – all detailed below – to be unacceptable and dishonest practices:

- **Plagiarism | Tārua Whānako** is the presentation of any material (text, data or figures, on any medium including computer files) from any other source without clear and adequate acknowledgement of the source.
 - **Collusion** is the presentation of work performed in whole, or in part, in conjunction with another person or persons, but submitted as if it has been completed by the named author alone. This interpretation is not intended to discourage students from having discussions about how to approach an assigned task and incorporating general ideas that come from those discussions into their own individual submissions, but acknowledgement is necessary.
 - **Copying** is the use of material (in any medium, including computer files) produced by another person or persons with or without their knowledge and approval. **This includes copying of the lab reports (raw data may be shared within the group if permitted or required by the experiment) – data analysis and interpretation of obtained results MUST be performed individually.**
 - **Ghost writing** is the use of other person(s) (whether with or without payment) to prepare all or part of an item of work submitted for assessment.
 - **Generative AI Tools: The following shall apply to all assessments in this course, except where a lecturer has specifically stated otherwise in written instructions for an assessment.**
- 1.1.** In all assessments, you are strictly prohibited from using generative artificial intelligence (AI) to generate any materials or content related to the assessment. This is because students are expected to solve problems and demonstrate knowledge and understanding without the assistance of AI. The use of AI-generated content is not permitted and may be considered a breach of academic integrity. Please ensure that all work submitted is the result of your own human knowledge, skills, and efforts.

Special consideration of assessment | Ngā Pairuri Motuhake

'[Special Consideration](#)' (previously termed 'Aegrotat Application') for an item of assessment is for students who have covered the work involved but have been prevented from demonstrating their knowledge or skills at the time of the assessment due to unforeseen circumstances, whether illness, injury, bereavement, car crash or any other extenuating circumstance *beyond one's control*. Special Consideration for a test/exam may be because a student has not sat it or has done so with impaired performance. Applications can be submitted via the above link and must be made **no later than five working days after the assessment due date**. Note that special consideration is **not available for items worth less than 10% of the overall course mark**. In the case of illness or injury, medical consultation should normally have taken place either shortly before or within 24 hours after the due date for the required work or test/examination.

Note that you may be required to sit a special exam or your grade may not be changed if there is insufficient evidence of your performance from other invigilated assessment items in the course. **You have the right to appeal any decision.**

It is important to understand that Special Consideration is only available *where course work has been covered*, and the inability to demonstrate this fully is both *no longer possible* AND is due to *unexpected circumstances beyond one's control*. Thus Special Consideration is **NOT available for**:

- essays, assignments or quizzes where an extension of time is available to complete the assessment item (see below for the process to involved);
- missed lectures during the semester;
- experiencing examination anxiety;
- having several examinations or assessments close together;

- known impairment, such as chronic illness (medical or psychological), injury or disability unless medical evidence confirms that the circumstances were exacerbated, despite appropriate management, at the time of assessment;
- mistaking the date or time of an examination (this is a circumstance one can control!);
- failing to turn up to an examination or test because of sleeping in (a circumstance as above!);
- where applications are repeatedly made for the same or similar reason, then the application may be declined on the grounds that the reason is not unexpected;
- where the application is made at the time of the assessment but the supporting documentation is received significantly after this date or after the date results are released; or
- the application is made following the release of results (unless under exceptional circumstances).

Extensions of deadlines | Tononga Wā Āpiti

Where an extension may be granted for an assessment item, this will be decided by application to the course co-ordinator and/or the lecturer concerned.

Late withdrawal from a course

If you are prevented by extenuating circumstances from completing the course after the final date for withdrawing from the course, you may apply for special consideration for late discontinuation. For details on special consideration, or to make an application, refer to the Examinations Office website <http://www.canterbury.ac.nz/exams/>. Applications must be submitted **within five days** of the end of the main examination period for the semester.

Missing of tests | Te Matangaro i ngā Whakamātautau

In rare cases a student will not be able to sit a test. In such cases, the student should consult with the course co-ordinator to arrange alternative procedures. **This must be done well in advance of the set date for the test.**

Past exams

Past exams can be found on the [Library website](#).

Submission of reports and assignments

Reports (including lab reports) and assignments should be handed in on time. Extensions will be granted only in exceptional circumstances (such as illness or bereavement). If an extension is required, as early as possible you should request it from the lecturer concerned.

Note: If you do not submit an assignment for assessment, you will be allotted zero marks, which will affect your final result. You should ensure that you pick up marked assignments and keep them until the end of the course as evidence that the work was completed and marked in the case that either is disputed. To guard against accidental loss, it would be prudent to keep photocopies or electronic copies of anything submitted.

Late Work

Acceptance of late work for assessment will be at the discretion of the course coordinator and/or the lecturer concerned. If your assessment is likely to be late, please contact the relevant of these people **before the assessment is due**. Never assume that an extension will be automatically granted – some courses have the policy of no late work being accepted. A commonly exercised policy is to deduct 10% of the total marks for each day that the work is late, where weekends and public holidays also count as such days.

Marks and Grades | Taumata Ako

The following numbers should be considered as a guide to the expected grades under normal circumstances.

Grade:	A+	A	A–	B+	B	B–	C+	C	C–	D	E
Minimum mark %:	90	85	80	75	70	65	60	55	50	40	0

The School reserves the right to adjust this mark/grade conversion, up or down, to achieve consistency of assessments standards.

Reconsideration of Grades: Students should, in the first instance, speak to the course co-ordinator about their marks. If they cannot reach an agreeable solution, or have questions about their grade in a course, students should then speak to the Coordinator of 400-level studies, [Professor Sarah Masters](#) (phone 369 4229). Students can appeal any decision made on their final grade. You can apply at the Registry for

reconsideration of the final grade within four weeks of the date of publication of final results. Be aware that there are time limits for each step of the appeals process.

Student Accessibility Services | Te Whaikaha

Students can speak with someone at [Student Accessibility Service](#), phone: 369 3334 (or ext. 93334), email: sas@canterbury.ac.nz).

Academic Advice: [Professor Sarah Masters](#) is the coordinator of 400-level chemistry courses. Her interest is in the academic performance and well-being of all such students. Anyone experiencing problems with their chemistry courses or requiring guidance about their 400-level courses should get in contact with Sarah.

Sarah Masters
Coordinator of 400-level Chemistry Courses
School of Physical and Chemical Sciences
2026