

CHEM4002A: Research Communication I: Thesis Preparation

Callaghan

Semester 2 - 2024



THE UNIVERSITY OF
NEWCASTLE
AUSTRALIA

OVERVIEW

Course Description Research Communication I: Thesis Preparation forms part of the Honours Program in Chemistry. This course utilises students' skills and knowledge in the development and communication of research and findings. Students will conduct research relevant to the nature of their course that will be the foundation of their thesis. Students will communicate the results of both theoretical and experimental work along with a Seminar, Literature Review and Progress Report, and an Experimental Assessment. This course is part of the multi-sequence research component of Honours which requires the development of original research under the supervision of a member of academic staff from the School of Environmental and Life Sciences.

Academic Progress Requirements Nil

Contact Hours **Callaghan Workshop**
Face to Face On Campus
2 hour(s) per term

Unit Weighting Workload 30
Students are required to spend on average 120-140 hours of effort (contact and non-contact) including assessments per 10 unit course.

Multi-Term Sequence Advice This course is part of a multi-term sequence. Both Part A and Part B must be completed to meet the requirements of the sequence. Part A and Part B must be completed in consecutive terms. Students must complete Part A before completing Part B. Students must complete the sequence within a twelve month period. If students complete Part A but are unable to complete Part B within the timeframe, they must re-enrol in Part A. Part A cannot be completed as a standalone course, it will only count towards your program once you have successfully completed Part B.

COURSE OUTLINE

CONTACTS

| | |
|---------------------------|---|
| Course Coordinator | Callaghan Dr Robert Chapman Robert.Chapman@newcastle.edu.au (02) 4985 4260 Consultation: By appointment |
| Teaching Staff | Other teaching staff will be advised on the course Canvas site. |
| School Office | School of Environmental and Life Sciences Room C228 Chemistry Building Callaghan Science-SELS@newcastle.edu.au +61 2 4921 5080 9am-5pm (Mon-Fri) |

SYLLABUS

| | |
|---------------------------------|--|
| Course Content | <ul style="list-style-type: none">• Discussion and guidance on use of appropriate quantitative and/or qualitative methodology and data collection. Ethical implications, legal requirements, Work Health and Safety requirements, outline of Honours program, introductory.• Identify literature relevant to field of study, analyse key themes, evaluate arguments/evidence within literature, provide a rationale for the inclusion of research materials, identify limitations, formulate research questions, and identify appropriate methodology.• Development of advanced experimental techniques, analysis, and report of the experimental methodology relevant to the proposed research project area. |
| Course Learning Outcomes | <p>On successful completion of this course, students will be able to:</p> <ol style="list-style-type: none">1. Establish the aims, objectives and boundaries of the thesis, methodology and research plan, and an appropriate timetable for completion.2. Select appropriate research principles (including ethics where applicable), and procedures and capacity to obtain appropriate approval for a research project.3. Critically analyse and evaluate published research material.4. Demonstrate scientific writing skills.5. Present information in written and verbal formats in a logical and comprehensive manner.6. Undertake scientific experimentation from the generation of a hypothesis through to the publishing of results including ethics and safety considerations.7. Work safely in a variety of laboratory and/or field contexts. |
| Course Materials | <p>Other Resources:</p> <ul style="list-style-type: none">- Scholarly literature (journal articles and reviews) as determined by your topic. |

ASSESSMENTS

This course has 3 assessments. Each assessment is described in more detail in the sections below.

| | Assessment Name | Due Date | Involvement | Weighting | Learning Outcomes |
|---|---------------------------------------|--------------------------------------|-------------|-----------|---------------------|
| 1 | Mid-year Seminar | Week 13 (at discipline research day) | Individual | Formative | 1, 2, 3, 5 |
| 2 | Literature Review and Progress Report | End of week 13 | Individual | 80% | 1, 2, 3, 4, 5 |
| 3 | Experimental Assessment | N/A | Individual | 20% | 1, 2, 3, 4, 5, 6, 7 |

Late Submissions

The mark for an assessment item submitted after the designated time on the due date, without an approved extension of time, will be reduced by 10% of the possible maximum mark for that assessment item for each day or part day that the assessment item is late. Note: this applies equally to week and weekend days.

Assessment 1 - Mid-year Seminar

| | |
|---------------------------------|---|
| Assessment Type | Presentation |
| Purpose | By way of practice, a non-assessable, but compulsory progress seminar will be scheduled for approximately halfway through the project. |
| Description | This is an oral presentation of the research – overview, aims and results to date - to the Discipline, whose primary aim is to receive feedback for overall project improvement. The supervisor(s) and examiners will be in attendance and possibly other members of academic staff and postgraduate students. This relaxed forum will serve to give the candidate the feedback and practice for the subsequent assessable seminar. |
| Weighting | This is a formative assessment. |
| Length | 12 min + 3 min Q&A |
| Due Date | Week 13 (at discipline research day) |
| Submission Method | In Class |
| Assessment Criteria | According to the criteria outlined in the honours handbook |
| Return Method | Online |
| Feedback Provided | Online - 1 week after the presentation. Grades and comments from all markers. |
| Opportunity to Reattempt | Students WILL NOT be given the opportunity to reattempt this assessment. |

Assessment 2 - Literature Review and Progress Report

| | |
|---------------------------------|--|
| Assessment Type | Literature Review |
| Purpose | To establish the research question and project design in the context of the literature |
| Description | A literature search and review on the area of the research project, employing the library, SciFinder, or any other chemical information resources. The rationale behind this task is to introduce the student to the chosen field of research and needs to be clearly linked to the research project objectives/aims. The student will gain a good understanding of the background related to the particular research project and will constitute the introduction for the Honours thesis. |
| Weighting | 80% |
| Length | <5000 words |
| Due Date | End of week 13 |
| Submission Method | Online |
| Assessment Criteria | Three academics including your supervisor and at least two non-supervisors will assess the literature review. A marking rubric is provided in the honours handbook. |
| Return Method | Online |
| Feedback Provided | Online - Within 3 weeks of submission. Feedback will be provided on the technical content, formation of research hypothesis, writing style, and project plan, which can be incorporated into the final thesis. |
| Opportunity to Reattempt | Students WILL NOT be given the opportunity to reattempt this assessment. |

Assessment 3 - Experimental Assessment

| | |
|---------------------------------|---|
| Assessment Type | Tutorial / Laboratory Exercises |
| Purpose | This component is aimed to assess your laboratory practice and research methodology throughout the semester |
| Description | Your experimental assessment is split across all of the 4 honours courses (adding up to a total of 20% of your overall honours grade). It is designed to assess your individual experimental and interpretive skills. Whether your project involves synthetic chemistry, physical measurements or molecular modelling, it is expected that your skills as an independent researcher will grow and flourish during the course of your project. This vital part of research training can only be assessed by those you work closely with. The experimental assessment will therefore be graded by your supervisor(s) whether this be a single academic within the Discipline of Chemistry, or a partnership either within or outside the Discipline (including external to the University). There is no written requirement for this component. |
| Weighting | 20% |
| Length | N/A |
| Due Date | N/A |
| Submission Method | Ongoing Assessment |
| Assessment Criteria | The student's supervisor(s) will assess this component and an average mark calculated. The Project Work Assessment Criteria (below) will be used as a guideline for grading this component. |
| Return Method | In Person |
| Feedback Provided | In Person - Over the course of the semester, from your supervisor. |
| Opportunity to Reattempt | Students WILL NOT be given the opportunity to reattempt this assessment. |

ADDITIONAL INFORMATION

Grading Scheme

This course is Part A of a multi-term sequence. A grade will be awarded at the completion of Part B.

Communication Methods

Communication methods used in this course include:

- Canvas Course Site: Students will receive communications via the posting of content or announcements on the Canvas course site.

The Course Coordinator will communicate via Canvas, however students should have regular face to face meetings with their academic supervisor.

Course Evaluation

Each year feedback is sought from students and other stakeholders about the courses offered in the University for the purposes of identifying areas of excellence and potential improvement.

Oral Interviews (Vivas)

As part of the evaluation process of any assessment item in this course an oral examination (viva) may be conducted. The purpose of the oral examination is to verify the authorship of the material submitted in response to the assessment task. The oral examination will be conducted in accordance with the principles set out in the [Oral Examination \(viva\) Procedure](#). In cases where the oral examination reveals the assessment item may not be the student's own work the case will be dealt with under the [Student Conduct Rule](#).

Academic Misconduct

All students are required to meet the academic integrity standards of the University. These standards reinforce the importance of integrity and honesty in an academic environment. Academic Integrity policies apply to all students of the University in all modes of study and in all locations. For the Student Academic Integrity Policy, refer to <https://policies.newcastle.edu.au/document/view-current.php?id=35>.

**Adverse
Circumstances**

The University acknowledges the right of students to seek consideration for the impact of allowable adverse circumstances that may affect their performance in assessment item(s). Applications for special consideration due to adverse circumstances will be made using the online Adverse Circumstances system where:

1. the assessment item is a major assessment item; or
2. the assessment item is a minor assessment item and the Course Co-ordinator has specified in the Course Outline that students may apply the online Adverse Circumstances system;
3. you are requesting a change of placement; or
4. the course has a compulsory attendance requirement.

Before applying you must refer to the Adverse Circumstance Affecting Assessment Items Procedure available at:

<https://policies.newcastle.edu.au/document/view-current.php?id=236>

**Important Policy
Information**

The Help button in the Canvas Navigation menu contains helpful information for using the Learning Management System. Students should familiarise themselves with the policies and procedures

at <https://www.newcastle.edu.au/current-students/respect-at-uni/policies-and-procedures> that support a safe and respectful environment at the University.

This course outline was approved by the Head of School. No alteration of this course outline is permitted without Head of School approval. If a change is approved, students will be notified and an amended course outline will be provided in the same manner as the original.

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