

BIOL4001: Research Methodologies

Callaghan

Semester 1 - 2024



OVERVIEW

Course Description	Research Methodologies forms part of the Honours Program in Biology. This course covers advanced approaches to research methodology, with relevance to Honours projects undertaken by students at the 4000 level. Students enrolled in this course will explore contemporary perspectives in Biological research and focus specifically on; developing research skills; formulating research proposals; framing research questions; reviewing existing research; and choosing appropriate methodologies for different types of study. Methodologies are examined in the context of their application to their project (and associated research grouping), such as Plant Sciences, Reproductive Biology, Wildlife Biology and Management, Drug Design and Discovery, or Molecular Structure and Detection.
Academic Progress Requirements	Nil
Contact Hours	Callaghan Workshop Face to Face On Campus 2 hour(s) per term
Unit Weighting Workload	10 Students are required to spend on average 120-140 hours of effort (contact and non-contact) including assessments per 10 unit course.

COURSE OUTLINE

CONTACTS

Course Coordinator **Callaghan**
A/Pr Ian Grainge
Ian.Grainge@newcastle.edu.au
4921 7238
Consultation: Please email to arrange a meeting

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

- 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.
- Establish research topic, identify relevant literature, formulate research question, undertake a literature review, design appropriate research methodology, and formulate a research proposal.

Course Learning Outcomes **On successful completion of this course, students will be able to:**

1. Apply discipline specific theoretical and practical research skills.
2. Demonstrate skills in information searching, selection, retrieval, and interpretation.
3. Identify appropriate methods of quantitative and/or qualitative data collection as relevant to the research project undertaken.
4. Design and develop a structured research plan using cognitive skills and critical thinking.
5. Interpret, summarise, and synthesise the literature of academic and professional literature.

ASSESSMENTS

This course has 2 assessments. Each assessment is described in more detail in the sections below.

	Assessment Name	Due Date	Involvement	Weighting	Learning Outcomes
1	First Seminar	FULL TIME COMMENCING IN SEMESTER 1, 2023 First Seminar due week of 06/05/2023	Individual	40%	1, 2, 3, 4, 5
2	Research Proposal	5 p.m., 3rd Monday in April (15/04/2024)	Individual	60%	1, 2, 3, 4, 5

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 - First Seminar

Assessment Type Purpose

Participation

The First Seminar is your opportunity to set the stage for your Research Project. The period for your First Seminar is 25 minutes in total, and consists of; (1) 15 minutes oral presentation, and; (2) 10 minutes question time. The two Examiners of your Research Proposal will lead the questioning during question time (but if time permits, questioning will be opened to the audience).

Description

The First Seminar is held within four weeks of submission of the Research Proposal document. Its purpose is to provide you with an opportunity to present the background, objectives and methodology of your Project and to detail the experimental design that will be applied to address your Project aims. The First Seminar also provides an excellent opportunity for the student to gather constructive feedback from academics, fellow Honours students and RHD candidates. It will consist of 15 minutes oral presentation time and 10 minutes of question/discussion time. The First Seminar should consist of approximately 5 minutes background/introduction, and 10 minutes outlining the proposed research (the opposite of the weightings for these two corresponding sections in your Research Proposal document).

Weighting Length

40%

15 minutes plus 10 minutes questions

Due Date

FULL TIME COMMENCING IN SEMESTER 1, 2023 First Seminar due week of 06/05/2023

Submission Method

In Class

Oral presentation to Biology Discipline

Assessment Criteria

See Honours Guidelines for detailed assessment criteria.

Return Method

In Person

Online

Feedback Provided

In Person

Assessment 2 - Research Proposal

Assessment Type	Proposal / Plan
Purpose	The purpose of the Research Proposal is to give you an opportunity to review the background literature to your project and to crystallise the nature of the experimental component of your research Project, such as the Aim(s) and Hypothesis(es) that will be examined in your research study.
Description	The Research Proposal should illustrate that you have a broad conceptual framework of the topic involved, plus an in depth understanding of a particular aspect of the topic. It also presents you with an opportunity to refine the questions you will be asking during your Project and to crystallize your objectives. Thus, your Research Proposal document should be a literature review of your topic area (~70% of the document), that is linked to the aims and hypotheses of the Honours Project that you will examine. The proposal should also contain a detailed outline of the research you are proposing to conduct (~30% of the document) during your Honours year to address your research aims and hypotheses.
Weighting	60%
Length	15 pages maximum
Due Date	5 p.m., 3rd Monday in April (15/04/2024)
Submission Method	Online Online via Canvas link
Assessment Criteria	See Honours Guidelines for detailed assessment criteria
Return Method	Online
Feedback Provided	Online - Online - ~Three weeks after submission.

ADDITIONAL INFORMATION

Grading Scheme

This course is graded as follows:

Range of Marks	Grade	Description
85-100	High Distinction (HD)	Outstanding standard indicating comprehensive knowledge and understanding of the relevant materials; demonstration of an outstanding level of academic achievement; mastery of skills*; and achievement of all assessment objectives.
75-84	Distinction (D)	Excellent standard indicating a very high level of knowledge and understanding of the relevant materials; demonstration of a very high level of academic ability; sound development of skills*; and achievement of all assessment objectives.
65-74	Credit (C)	Good standard indicating a high level of knowledge and understanding of the relevant materials; demonstration of a high level of academic achievement; reasonable development of skills*; and achievement of all learning outcomes.
50-64	Pass (P)	Satisfactory standard indicating an adequate knowledge and understanding of the relevant materials; demonstration of an adequate level of academic achievement; satisfactory development of skills*; and achievement of all learning outcomes.
0-49	Fail (FF)	Failure to satisfactorily achieve learning outcomes. If all compulsory course components are not completed the mark will be zero. A fail grade may also be awarded following disciplinary action.

*Skills are those identified for the purposes of assessment task(s).

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.
- Email: Students will receive communications via their student email account.
- Face to Face: Communication will be provided via face to face meetings or supervision.

Course Evaluation	<p>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.</p> <p>As a result of student feedback, the following changes have been made to this offering of the course:</p> <ul style="list-style-type: none">- Welcome to Honours with explanation of what is expected in the Honours year- Mid-year catch up with each student and Honours co-ordinator to ensure progress is good.- Writing "workshop" to explain the requirements for the Honours thesis held ~ 6 weeks before submission
Oral Interviews (Vivas)	<p>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.</p>
Academic Misconduct	<p>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.</p>
Adverse Circumstances	<p>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:</p> <ol style="list-style-type: none">1. the assessment item is a major assessment item; or2. 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; or4. the course has a compulsory attendance requirement. <p>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</p>
Important Policy Information	<p>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.</p>

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.

© 2024 The University of Newcastle, Australia