

MATS6700B: Materials Research B

Callaghan

Semester 1 - 2024



Welcome to Materials Research B Course

OVERVIEW

Course Description	The research project prepares students to conduct and report on a materials science research project on a given topic under supervision. The research project provides students with the necessary research training required to develop their skills for reviewing and critically analysing the literature. The research project is aimed at developing skills in quantitative research and reporting research findings (empirical work), drawing implications and conclusions.
Academic Progress Requirements	Nil
Contact Hours	Callaghan Individual Supervision Face to Face On Campus 2 hour(s) per week(s) for 13 week(s) starting Week 1 Seminar Face to Face On Campus 1 hour(s) per week(s) for 13 week(s) starting Week 1
Unit Weighting Workload	20 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**
Prof Ajayan Vinu
Ajayan.Vinu@newcastle.edu.au
(02) 4921 8669
Consultation: Consultation by appointment

Teaching Staff Other teaching staff will be advised on the course Canvas site.

School Office **School of Engineering**
EAG03
EA Building
Callaghan
SENG-Admin@newcastle.edu.au
9.00am-1.00pm and 2.00pm-5.00pm (Monday to Friday)

SYLLABUS

Course Content

1. Introduction to research and the research process
2. Research ethics and integrity
3. Critical appraisal of the literature
4. Introduction to quantitative research, study designs and methods
5. Analysis and interpretation of quantitative data
6. Critical appraisal of quantitative research
7. Conduct a Materials Science research project

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

1. Conduct a given research project under supervision while maintaining high level of ethics and integrity
2. Use quantitative analysis of data as the bases for judgments, drawing insight and qualified conclusions from data.
3. Employ a wide range of written communication conventions particular to technical reports, including organisation, presentation, formatting and stylistic choices.
4. Use persuasive and purposeful oral communication skills to present findings.

Course Materials

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	Part A - Research Proposal and Presentation		Individual	Formative	1, 2, 3, 4
2	Part B - Technical Report	15.06.2024	Individual	90%	1, 2, 3
3	Part B - Presentation	18.06.2024	Individual	10%	2, 4

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 - Part A - Research Proposal and Presentation

Assessment Type	Proposal / Plan
Description	
Weighting	
Due Date	
Submission Method	
Assessment Criteria	
Return Method	
Feedback Provided	

Assessment 2 - Part B - Technical Report

Assessment Type	Report
Purpose	To assess the overall research work conducted by the student throughout the semester.
Description	The student will be submitting a formal thesis as a part of the assessment containing all the aspects of the project work including - Introduction of the work, critical literature review, hypothesis and proposed objectives of the work, materials and methods, results and discussion, conclusions and recommendations from the research work.
Weighting	90%
Length	20 to 30 pages
Due Date	15.06.2024
Submission Method	Online
Assessment Criteria	
Return Method	In Person
Feedback Provided	

Assessment 3 - Part B - Presentation

Assessment Type	Presentation
Purpose	To assess the overall understanding of the student about the research work conducted as a part of the research project.
Description	A formal PowerPoint presentation (30 minutes) will be made by the student and presented to a committee.
Weighting	10%
Length	30 minutes
Due Date	18.06.2024
Submission Method	In Class
Assessment Criteria	
Return Method	In Person
Feedback Provided	

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:

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 30/01/2024 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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