

**MATS6003: Industry Seminar**

Callaghan

Semester 1 - 2024



*Welcome to Industry Seminar Course*

## OVERVIEW

<b>Course Description</b>	Students will develop a broad understanding of the strategies and processes involved in the commercialisation of advanced materials. Through a case study and interview tasks, students will gain insights into industry demands for nanomaterials. Case study analysis and interview tasks will provide students with opportunities to build professional relationships with industry leaders and researchers from academia. Students will develop professional oral communication skills.
<b>Academic Progress Requirements</b>	Nil
<b>Contact Hours</b>	<b>Callaghan Seminar</b> Face to Face On Campus 2 hour(s) per week(s) for 13 week(s) starting Week 1
<b>Unit Weighting Workload</b>	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

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# 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](mailto:SENG-Admin@newcastle.edu.au)  
9.00am-1.00pm and 2.00pm-5.00pm (Monday to Friday)

# SYLLABUS

**Course Content**             1. The requirements of industries for advanced materials  
2. Understanding the process of commercialising advanced materials as per the needs of the industries.  
3. Oral presentation skills and analysis for industrial case studies.

**Course Learning Outcomes**     **On successful completion of this course, students will be able to:**  
1. Investigate and report on the relationships between nanomaterial development, fabrication and application across commercial and research settings.  
  
2. Describe and critically evaluate the ways industry professionals and academics translate scientific results to commercial products.  
  
3. Determine the personal and professional qualities required to establish partnerships or collaborations with industry in research.  
  
4. Use professional communication skills to present a seminar to a knowledgeable audience.  
  
5. Use teamwork skills to plan and produce a written document according to specified requirements.

**Course Materials**

# SCHEDULE

Week	Week Begins	Topic	Learning Activity	Assessment Due
1	26 Feb	Industry seminar		
2	4 Mar	Industry seminar		
3	11 Mar	Site visiting		
4	18 Mar	Industry seminar		Information about case study
5	25 Mar	Industry seminar		
6	1 Apr	Industry mentor interview		
7	8 Apr	Industry Seminar		Case Study Report Due
<b>Mid-Semester Recess</b>				
<b>Mid-Semester Recess</b>				
8	29 Apr	Oral Presentation by the students on the industry related topics and the commercialisation		Assessment 2 Due
9	6 May	Site Visit		
10	13 May	Industry Seminar		
11	20 May	Industry Seminar		
12	27 May	Industry Seminar		
13	3 Jun	Industry Seminar		Industry Orientated Project -15/06/2024 Due
<b>Examination Period</b>				
<b>Examination Period</b>				

# 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	Case study Report	12/04/2024	Individual	25%	1, 2, 3
2	Industry Mentor interview: How expert nanomaterial scientist/engineers think	03/05/2024	Group	35%	1, 5
3	Industry Orientated Project		Individual	40%	1, 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 - Case study Report

### Assessment Type Purpose

Case Study / Problem Based Learning  
To assess the students to understand the problems existing in industries and how can it be solved by research in universities or research organizations; to develop oral presentation skills.

### Description

A presentation will be given on the topic of one of the industry seminars

### Weighting

25%

### Due Date

12/04/2024

### Submission Method

Online

### Assessment Criteria

Assessment rubric will be discussed in class

### Return Method

### Feedback Provided

**Opportunity to Reattempt** Students WILL NOT be given the opportunity to reattempt this assessment.

## Assessment 2 - Industry Mentor interview: How expert nanomaterial scientist/engineers think

**Assessment Type** Interview  
**Purpose** To assess the students what the industry needs and how to establish connections with industries.  
**Description** To write an interview report  
**Weighting** 35%  
**Due Date** 03/05/2024  
**Submission Method** Online  
**Assessment Criteria**  
**Return Method**  
**Feedback Provided**  
**Opportunity to Reattempt** Students WILL NOT be given the opportunity to reattempt this assessment.

## Assessment 3 - Industry Orientated Project

**Assessment Type** Professional Task  
**Purpose** To assess the students to understand research topics in advanced materials and their correlation with industries  
**Description**  
**Weighting** 40%  
**Due Date**  
**Submission Method** Online  
**Assessment Criteria** Assessment rubric will be discussed in class  
**Return Method**  
**Feedback Provided**  
**Opportunity to Reattempt** Students WILL NOT be given the opportunity to reattempt this assessment.

# 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.

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<b>Attendance</b>	<p>*Skills are those identified for the purposes of assessment task(s). Attendance/participation will be recorded in the following components:</p> <ul style="list-style-type: none"><li>- Seminar (Method of recording: Manual)</li></ul>
<b>Communication Methods</b>	Communication methods used in this course include:
<b>Course Evaluation</b>	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.
<b>Oral Interviews (Vivas)</b>	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 <a href="#">Oral Examination (viva) Procedure</a> . 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 <a href="#">Student Conduct Rule</a> .
<b>Academic Misconduct</b>	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 <a href="https://policies.newcastle.edu.au/document/view-current.php?id=35">https://policies.newcastle.edu.au/document/view-current.php?id=35</a> .
<b>Adverse Circumstances</b>	<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"><li>1. the assessment item is a major assessment item; or</li><li>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;</li><li>3. you are requesting a change of placement; or</li><li>4. the course has a compulsory attendance requirement.</li></ol> <p>Before applying you must refer to the Adverse Circumstance Affecting Assessment Items Procedure available at: <a href="https://policies.newcastle.edu.au/document/view-current.php?id=236">https://policies.newcastle.edu.au/document/view-current.php?id=236</a></p>
<b>Important Policy Information</b>	<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 <a href="https://www.newcastle.edu.au/current-students/respect-at-uni/policies-and-procedures">https://www.newcastle.edu.au/current-students/respect-at-uni/policies-and-procedures</a> that support a safe and respectful environment at the University.</p>

## Graduate Profile Statements

This course builds students' capacity in the following University of Newcastle Bachelor of Engineering Graduate Profile Statements (based on 2011 Engineers Australia revised Stage 1 Competency Standards for Professional Engineers):

UON Att.	University of Newcastle Bachelor of Engineering Graduate Profile Statements/ Engineers Australia Stage 1 competency statements	Taught	Practised	Assessed	Skill Level (1-4)
	<b>Professional Attributes</b>				
11	3.1. Ethical conduct and professional accountability				
12	3.2. Effective oral and written communication in professional and lay domains.		X	X	4
13	3.3. Creative, innovative and pro-active demeanour.	X	X	X	3
14	3.4. Professional use and management of information.	X	X	X	3
15	3.5. Orderly management of self, and professional conduct.	X	X	X	4
16	3.6. Effective team membership and team leadership.	X	X		3
	<b>Engineering Ability</b>				
7	2.1. Application of established engineering methods to complex engineering problem solving.	X	X	X	3
8	2.2. Fluent application of engineering techniques, tools and resources.	X	X	X	3
9	2.3. Application of systematic engineering synthesis and design processes.	X	X	X	2
10	2.4. Application of systematic approaches to the conduct and management of engineering projects.	X	X	X	3
	<b>Knowledge Base</b>				
1	1.1. Comprehensive, theory based understanding of the underpinning natural and physical sciences and the engineering fundamentals applicable to the engineering discipline.	X			3
2	1.2. Conceptual understanding of the, mathematics, numerical analysis, statistics, and computer and information sciences which underpin the engineering discipline.				
3	1.3. In-depth understanding of specialist bodies of knowledge within the engineering discipline.	X	X	X	3
4	1.4. Discernment of knowledge development and research directions within the engineering discipline.	X	X	X	3
5	1.5. Knowledge of contextual factors impacting the engineering discipline.				
6	1.6. Understanding of the scope, principles, norms, accountabilities and bounds of contemporary engineering practice in the specific discipline.	X	X	X	3

*This course outline was approved 31/01/2024 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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