

CIVL4591: Environmental Engineering Project 1

Callaghan

Semester 1 - 2024



THE UNIVERSITY OF
NEWCASTLE
AUSTRALIA

OVERVIEW

Course Description	Provides a problem-based introduction to design techniques in environmental engineering. Several applications are considered with an emphasis on real-world problems typically encountered by graduates. The problems are set by practicing engineers and cover most aspects of environmental engineering design.
Academic Progress Requirements	Nil
Assumed Knowledge	Students must satisfy standard entry requirements for fourth year environmental engineering.
Contact Hours	Callaghan Integrated Learning Session Face to Face On Campus 3 hour(s) per week(s) for 13 week(s) starting Week 1 Integrated Learning Session Face to Face On Campus 2 hour(s) per week(s) for 13 week(s) starting Week 1
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/Prof. Jose Rodriguez
Jose.Rodriguez@newcastle.edu.au
(02) 4921 7376
Consultation: Please arrange via email

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

School Office **School of Engineering**
EAG02
EA Building
Callaghan
Seng-admin@newcastle.edu.au
9.00am-1.00pm and 2.00pm-5.00pm (Monday to Friday)

SYLLABUS

Course Content Broadly covers analysis of environmental problems and development of sustainable, economic solutions. This may include investigation for environmental impact assessment and design of pollution control systems. Students typically visit sites of interest, and interact with a broad range of professionals, regulatory authorities and practicing engineers. One major design project is undertaken, led by an outside consulting engineer with internal academic supervision.

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

1. Apply environmental engineering design philosophies to a multifaceted project.
2. Apply research and design skills acquired in earlier courses in environmental engineering and related disciplines to solve design problems and conduct investigations
3. Communicate design solutions.
4. Develop an appreciation of the social, economic and institutional factors affecting environmental engineering design and investigation.
5. Develop the ability to function effectively as a member of a design team.

Course Materials

ASSESSMENTS

This course has 4 assessments. Each assessment is described in more detail in the sections below.

	Assessment Name	Due Date	Involvement	Weighting	Learning Outcomes
1	Seminar 1	week 4	Individual	10%	1, 2, 3, 4, 5
2	Report 1	week 4	Group	15%	1, 2, 3, 4, 5
3	Seminar 2	week 10	Individual	15%	1, 2, 3, 4, 5
4	Report 2	week 12	Group	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 - Seminar 1

Assessment Type Presentation
Description Oral presentation of project proposal and conceptual design.
Weighting 10%
Due Date week 4
Submission Method In Class
Assessment Criteria The oral presentations are marked on the ability of the individuals to clearly communicate their findings, and on their ability to field questions arising from their presentation.
Return Method Online
Feedback Provided Online - three weeks after due date.
Opportunity to Reattempt Students WILL NOT be given the opportunity to reattempt this assessment.

Assessment 2 - Report 1

Assessment Type Project
Description Written project proposal and conceptual design.
Weighting 15%
Due Date week 4
Submission Method Online
Assessment Criteria The written submissions are marked on the presentation style (i.e. clarity, focus, addressing client's needs, etc), organisation and content (i.e. technical skill as demonstrated by the report presentation).
Return Method Online
Feedback Provided Online - three weeks after due date.
Opportunity to Reattempt Students WILL NOT be given the opportunity to reattempt this assessment.

Assessment 3 - Seminar 2

Assessment Type Presentation
Description Final project presentation.
Weighting 15%
Due Date week 10
Submission Method In Class
Assessment Criteria The oral presentations are marked on the ability of the individuals to clearly communicate their findings, and on their ability to field questions arising from their presentation.
Return Method Online
Feedback Provided Online - three weeks after due date.
Opportunity to Reattempt Students WILL NOT be given the opportunity to reattempt this assessment.

Assessment 4 - Report 2

Assessment Type	Project
Description	Written project report.
Weighting	60%
Due Date	week 12
Submission Method	Online
Assessment Criteria	The written submissions are marked on the presentation style (i.e. clarity, focus, addressing client's needs, etc), organisation and content (i.e. technical skill as demonstrated by the report presentation). This assessment has both individual and group components
Return Method	Online
Feedback Provided	Online - three weeks after due date.
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.

*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

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: <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. 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.

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)
	Professional Attributes				
11	3.1. Ethical conduct and professional accountability	x	x	x	4
12	3.2. Effective oral and written communication in professional and lay domains.	x	x	x	4
13	3.3. Creative, innovative and pro-active demeanour.	x	x	x	4
14	3.4. Professional use and management of information.	x	x	x	4
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	x	4
	Engineering Ability				
7	2.1. Application of established engineering methods to complex engineering problem solving.	x	x	x	4
8	2.2. Fluent application of engineering techniques, tools and resources.	x	x	x	4
9	2.3. Application of systematic engineering synthesis and design processes.	x	x	x	4
10	2.4. Application of systematic approaches to the conduct and management of engineering projects.	x	x	x	4
	Knowledge Base				
1	1.1. Comprehensive, theory-based understanding of the underpinning natural and physical sciences and the engineering fundamentals applicable to the engineering discipline.	x	x	x	4
2	1.2. Conceptual understanding of the mathematics, numerical analysis, statistics, and computer and information sciences which underpin the engineering discipline.	x	x	x	4
3	1.3. In-depth understanding of specialist bodies of knowledge within the engineering discipline.	x	x	x	4
4	1.4. Discernment of knowledge development and research directions within the engineering discipline.	x	x	x	4
5	1.5. Knowledge of contextual factors impacting the engineering discipline.	x	x	x	4
6	1.6. Understanding of the scope, principles, norms, accountabilities and bounds of contemporary engineering practice in the specific discipline.	x	x	x	4

This course outline was approved by the Head of School on the 31/01/2024. 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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