



UNSW Course Outline

ZEIT3902 Engineering Research 3B - 2024

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General Course Information

Course Code : ZEIT3902

Year : 2024

Term : Semester 2

Teaching Period : Z2

Is a multi-term course? : No

Faculty : UNSW Canberra

Academic Unit : School of Engineering and Technology

Delivery Mode : In Person

Delivery Format : Standard

Delivery Location : UNSW Canberra at ADFA

Campus : UNSW Canberra

Study Level : Undergraduate

Units of Credit : 6

Useful Links

[Handbook Class Timetable](#)

Course Details & Outcomes

Course Description

This course is restricted to students undertaking the BE(Aero)(CDF), BE(Civil)(CDF), BE(Elec)(CDF), BE(Mech)(CDF), or BTech(Aero)(CDF) programs. Students undertake problem-based learning or research project on a nominated topic approved by the course authority in a specific

discipline area that is commensurate with study at Year 3 level.

As one of the aims of the program is to further develop critical thinking and independent research skills, the project will involve "hands on" research experience in collaboration with a staff member and their research team. A supervisor, who will work closely with the student, will manage each project. Final assessment will be based on a written paper and an oral presentation, with appropriate weighting.

Course Aims

In this course you will undertake an individual research project under the supervision of an academic staff member. Students are expected to undertake a diverse range of projects over the length of their CDF program, to be determined in consultation with the CDF Coordinator.

Relationship to Other Courses

Prerequisite: Enrolment in CDF Program

Course Learning Outcomes

Course Learning Outcomes	Engineers Australia - Professional Engineer (Stage 1)
CL01 : Produce a survey of peer-reviewed background research literature.	<ul style="list-style-type: none"> • PEE1.1 : Comprehensive, theory based understanding of the underpinning natural and physical sciences and the engineering fundamentals applicable to the engineering discipline • PEE1.2 : Conceptual understanding of the mathematics, numerical analysis, statistics, and computer and information sciences which underpin the engineering discipline • PEE1.3 : In-depth understanding of specialist bodies of knowledge within the engineering discipline • PEE1.4 : Discernment of knowledge development and research directions within the engineering discipline
CL02 : Apply engineering theory to work towards achieving a project's specific technical goals. It is more important to demonstrate a logical approach than achieve the specific goals.	<ul style="list-style-type: none"> • PEE2.1 : Application of established engineering methods to complex engineering problem solving • PEE2.2 : Fluent application of engineering techniques, tools and resources • PEE3.2 : Effective oral and written communication in professional and lay domains
CL03 : Demonstrate independent self-directed learning and critical thinking in approaching your research problem.	<ul style="list-style-type: none"> • PEE1.3 : In-depth understanding of specialist bodies of knowledge within the engineering discipline • PEE3.3 : Creative, innovative and pro-active demeanour
CL04 : Prepare a substantial, coherent and logical discussion of the research results and their attendant conclusions.	<ul style="list-style-type: none"> • PEE3.2 : Effective oral and written communication in professional and lay domains • PEE3.5 : Orderly management of self, and professional conduct
CL05 : Critically assess novel engineering theory and research projects.	<ul style="list-style-type: none"> • PEE3.3 : Creative, innovative and pro-active demeanour • PEE3.5 : Orderly management of self, and professional conduct

Course Learning Outcomes	Assessment Item
CLO1 : Produce a survey of peer-reviewed background research literature.	<ul style="list-style-type: none"> • Seminar 1 • Report (project) • Report (document)
CLO2 : Apply engineering theory to work towards achieving a project's specific technical goals. It is more important to demonstrate a logical approach than achieve the specific goals.	<ul style="list-style-type: none"> • Seminar 2 • Report (project) • Report (document)
CLO3 : Demonstrate independent self-directed learning and critical thinking in approaching your research problem.	<ul style="list-style-type: none"> • Seminar 2 • Report (project) • Report (document)
CLO4 : Prepare a substantial, coherent and logical discussion of the research results and their attendant conclusions.	<ul style="list-style-type: none"> • Seminar 1 • Seminar 2 • Report (project) • Report (document)
CLO5 : Critically assess novel engineering theory and research projects.	<ul style="list-style-type: none"> • Journal • Report (project)

Learning and Teaching Technologies

Moodle - Learning Management System

Learning and Teaching in this course

The Learning Management System

Moodle is the Learning Management System used at UNSW Canberra. All courses have a Moodle site which will become available to students at least one week before the start of semester.

Please find all help and documentation (including Blackboard Collaborate) at the [Moodle Support](#) page.

UNSW Moodle supports the following web browsers:

» Google Chrome 50+

» Safari 10+

** Internet Explorer is not recommended

** Addons and Toolbars can affect any browser's performance.

Operating systems recommended are:

Windows 7, 10, Mac OSX Sierra, iPad IOS10

For further details about system requirements click [here](#).

Log in to Moodle [here](#).

If you need further assistance with Moodle:

For enrolment and login issues please contact:

IT Service Centre

Email: itservicecentre@unsw.edu.au

Phone: (02) 9385-1333

International: +61 2 9385 1333

For all other Moodle issues please contact:

External TELT Support

Email: externalteltsupport@unsw.edu.au

Phone: (02) 9385-3331

International: +61 2 938 53331

Opening hours:

Monday – Friday 7:30am – 9:30 pm

Saturday & Sunday 8:30 am – 4:30pm

Additional Course Information

Academic Integrity and Plagiarism

UNSW has an ongoing commitment to fostering a culture of learning informed by academic integrity. All UNSW staff and students have a responsibility to adhere to this principle of academic integrity. All students are expected to adhere to UNSW's Student Code of Conduct <https://www.gs.unsw.edu.au/policy/documents/studentcodepolicy.pdf>

Plagiarism undermines academic integrity and is not tolerated at UNSW. *It is defined as using the words or ideas of others and passing them off as your own, and can take many forms, from deliberate cheating to accidental copying from a source without acknowledgement.*

For more information, please refer to the following:

<https://student.unsw.edu.au/plagiarism>

Referencing

In this course, students are required to reference following the APA 7 / Chicago NB referencing style. Information about referencing styles is available at: <https://guides.lib.unsw.adfa.edu.au/c.php?g=472948&p=3246720>

Study at UNSW Canberra

<https://www.unsw.adfa.edu.au/study>

Study at UNSW Canberra has lots of useful information regarding:

- Where to get help
- Administrative matters
- Getting your passwords set up
- How to log on to Moodle
- Accessing the Library and other areas.

Additional Information as required

CRICOS Provider no. 00098G

The University of New South Wales Canberra.

Assessments

Assessment Structure

Assessment Item	Weight	Relevant Dates
Seminar 1 Assessment Format: Individual	5%	Start Date: Not Applicable Due Date: Week 3: 29 July - 02 August
Journal Assessment Format: Individual	10%	Start Date: Not Applicable Due Date: 04/11/2024 12:00 AM
Report (project) Assessment Format: Individual Short Extension: Yes (1 day)	50%	Start Date: Not Applicable Due Date: 04/11/2024 12:00 AM
Report (document) Assessment Format: Individual Short Extension: Yes (1 day)	25%	Start Date: Not Applicable Due Date: 04/11/2024 12:00 AM
Seminar 2 Assessment Format: Individual	10%	Start Date: Not Applicable Due Date: Week 11: 07 October - 11 October

Assessment Details

Seminar 1

Assessment Overview

Students present a short introductory seminar on their individual research project (10 mins seminars, 2 mins questions). These seminars are intended to give students practice in preparing and presenting their work, and to stimulate discussion between the student and their peers in an informal and collegial atmosphere. They receive a grade worth 5%, and written feedback.

Course Learning Outcomes

- CL01 : Produce a survey of peer-reviewed background research literature.
- CL04 : Prepare a substantial, coherent and logical discussion of the research results and their attendant conclusions.

Detailed Assessment Description

The first project seminar will be held in Week 3 during the class.

Assessment Length

10 minutes presentation

Assignment submission Turnitin type

Not Applicable

Journal

Assessment Overview

An electronic seminar journal must be kept, to be handed in with the final report. Students' marks will be downgraded if they have not attended a particular seminar without a valid reason. This journal should include entries of ~250 words per week. These entries should answer the question what did you learn during the seminar. Include your own reflections, such as comments and questions on the material, and attempt to relate the material to what you already know.

Course Learning Outcomes

- CL05 : Critically assess novel engineering theory and research projects.

Assignment submission Turnitin type

Not Applicable

Report (project)

Assessment Overview

A 3000 to 5000 word final report is to be submitted electronically. The format of the report may be chosen by the student, though as a guide, your report may include the following sections: Abstract, aim, background, method, results, conclusions.

The report will be assessed by both your individual supervisor and the CDF coordinator. You will receive written feedback primarily from your individual supervisor, augmented with feedback from your supervisor. 50% of your course grade will be awarded based on how you approached your research project. The grade will be determined by the CDF coordinator, in consultation with the individual project supervisors.

Course Learning Outcomes

- CL01 : Produce a survey of peer-reviewed background research literature.
- CL02 : Apply engineering theory to work towards achieving a project's specific technical goals. It is more important to demonstrate a logical approach than achieve the specific goals.
- CL03 : Demonstrate independent self-directed learning and critical thinking in approaching your research problem.
- CL04 : Prepare a substantial, coherent and logical discussion of the research results and their attendant conclusions.
- CL05 : Critically assess novel engineering theory and research projects.

Assignment submission Turnitin type

This assignment is submitted through Turnitin and students do not see Turnitin similarity reports.

Report (document)

Assessment Overview

A 3000 to 5000 word final report is to be submitted electronically. The format of the report may be chosen by the student, though as a guide, your report may include the following sections: Abstract, aim, background, method, results, conclusions.

The report will be assessed by both your individual supervisor and the CDF coordinator. You will receive written feedback primarily from your individual supervisor, augmented with feedback from your supervisor.

25% of your course grade will be awarded based on the quality of your final report on your project. The grade will be determined by the CDF coordinator, in consultation with the individual

project supervisors.

Course Learning Outcomes

- CL01 : Produce a survey of peer-reviewed background research literature.
- CL02 : Apply engineering theory to work towards achieving a project's specific technical goals. It is more important to demonstrate a logical approach than achieve the specific goals.
- CL03 : Demonstrate independent self-directed learning and critical thinking in approaching your research problem.
- CL04 : Prepare a substantial, coherent and logical discussion of the research results and their attendant conclusions.

Assignment submission Turnitin type

Not Applicable

Seminar 2

Assessment Overview

Students present a more comprehensive seminar on their individual research project (15 mins seminars, 5 mins questions). These seminars are intended to give students practice in preparing and presenting their work, and to stimulate discussion between the student and their peers in an informal and collegial atmosphere. They receive a grade worth 10%, and written feedback.

Course Learning Outcomes

- CL02 : Apply engineering theory to work towards achieving a project's specific technical goals. It is more important to demonstrate a logical approach than achieve the specific goals.
- CL03 : Demonstrate independent self-directed learning and critical thinking in approaching your research problem.
- CL04 : Prepare a substantial, coherent and logical discussion of the research results and their attendant conclusions.

Assignment submission Turnitin type

Not Applicable

General Assessment Information

Seminar 1 will be held in week 3, feedback, grades and worked solutions will be given to students during week 4.

Unless prior arrangement is made with the lecturer or a formal application for special consideration is submitted, a penalty of 5% of the total available mark for the assessment will apply for each day that an assessment item is late up to a maximum of 5 days (120 hours) after which an assessment can no longer be submitted and a grade of 0 will be applied.

For the project report, you may use standard editing and referencing software, but not Generative AI. You are permitted to use the full capabilities of the standard software (such as Microsoft Office suite, Grammarly, etc.).

You are permitted to use software to generate initial ideas. However, you must develop or edit those ideas to such a significant extent that what is submitted is your own work, i.e. only occasional AI generated words or phrases may form part of your final submission. It is a good idea to keep copies of the initial prompts to show your lecturer if there is any uncertainty about the originality of your work. [Alternative wording: You are required to submit the original AI generated responses as set out below] (Consider what would be the minimum requirement for you to be satisfied of the originality of the submitted work, and the workload implications of any detailed examination as part of the marking).

If the outputs of generative AI such as ChatGPT form a part of your submission, it will be regarded as serious academic misconduct and subject to the standard penalties, which may include 00FL, suspension and exclusion.

Grading Basis

Standard

Requirements to pass course

At least 50% is required to pass the course.

Course Schedule

Teaching Week/Module	Activity Type	Content
Week 1 : 15 July - 19 July	Seminar	Introduction of the course Literature review techniques
Week 2 : 22 July - 26 July	Seminar	Introduction of Defence research centres (Land, and Sea)
Week 3 : 29 July - 2 August	Presentation	CDF Y3 seminar
Week 4 : 5 August - 9 August	Seminar	Invited seminar
Week 5 : 12 August - 16 August	Seminar	Invited seminar
Week 6 : 19 August - 23 August	Seminar	Invited seminar
Week 7 : 9 September - 13 September	Seminar	Invited seminar
Week 8 : 16 September - 20 September	Seminar	Invited seminar
Week 9 : 23 September - 27 September	Seminar	Invited seminar
Week 10 : 30 September - 4 October	Seminar	Invited seminar
Week 11 : 7 October - 11 October	Presentation	CDF Y3 project presentation
Week 12 : 14 October - 18 October	Other	No activity
Week 13 : 21 October - 25 October	Workshop	CDF project conference

Attendance Requirements

Students are strongly encouraged to attend all classes and review lecture recordings.

Course Resources

Prescribed Resources

N/A

Recommended Resources

N/A

Additional Costs

N/A

Course Evaluation and Development

6.5. Course evaluation and development

One of the key priorities in the 2025 Strategy for UNSW is a drive for academic excellence in education. One of the ways of determining how well UNSW is progressing towards this goal is by listening to our own students. Students will be asked to complete the myExperience survey towards the end of this course.

Students can also provide feedback during the semester via: direct contact with the lecturer, the “On-going Student Feedback” link in Moodle, Student-Staff Liaison Committee meetings in schools, informal feedback conducted by staff, and focus groups. Student opinions really do make a difference. Refer to the Moodle site for this course to see how the feedback from previous students has contributed to the course development.

Important note: Students are reminded that any feedback provided should be constructive and professional and that they are bound by the Student Code of Conduct Policy

<https://www.gs.unsw.edu.au/policy/documents/studentcodepolicy.pdf>

Staff Details

Position	Name	Email	Location	Phone	Availability	Equitable Learning Services Contact	Primary Contact
Convenor	Jianfeng Xue		R128 B20	51145225	Available by appointment	No	Yes

