UNSW Course Outline

ZEIT3901 Engineering Research 3A - 2024

Published on the 12 Feb 2024

General Course Information

Course Code : ZEIT3901
Year : 2024
Term : Semester 1
Teaching Period : Z1
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 6 unit of credit 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

Run concurrently with ZEIT2901 and ZEIT4901.

Course Learning Outcomes

Course Learning Outcomes	Engineers Australia - Professional Engineer (Stage 1)
CLO1 : Produce a survey of peer-reviewed background research literature.	• PEE1.3 : In-depth understanding of specialist bodies of knowledge within the engineering discipline • PEE3.2 : Effective oral and written communication in professional and lay domains
CLO2 : Apply engineering theory to work towards achieving a project's specific technical goals. Note that it is more important to demonstrate a logical and persistent approach than to achieve the specific goals.	• PEE2.1 : Application of established engineering methods to complex engineering problem solving • PEE3.3 : Creative, innovative and pro-active demeanour
CLO3 : Demonstrate independent self-directed learning and critical thinking in approaching your research problem.	• PEE1.3 : In-depth understanding of specialist bodies of knowledge within the engineering discipline • PEE3.3 : Creative, innovative and pro-active demeanour
CLO4 : Prepare a substantial and logical discussion of the research project's progress, results and conclusions.	• PEE3.2 : Effective oral and written communication in professional and lay domains
CLO5 : Critically assess novel engineering theory and research projects.	• PEE1.4 : Discernment of knowledge development and research directions within the engineering discipline • PEE3.3 : Creative, innovative and pro-active demeanour

Course Learning Outcomes	Assessment Item
CLO1 : Produce a survey of peer-reviewed background research literature.	• Report (document) • Seminar 1 • Report (project)
CLO2 : Apply engineering theory to work towards achieving a project's specific technical goals. Note that it is more important to demonstrate a logical and persistent approach than to achieve the specific goals.	• Seminar 2 • Report (document) • Report (project)
CLO3 : Demonstrate independent self-directed learning and critical thinking in approaching your research problem.	• Seminar 2 • Report (document) • Report (project)
CLO4 : Prepare a substantial and logical discussion of the research project's progress, results and conclusions.	• Seminar 1 • Seminar 2 • Report (document) • Report (project)
CLO5 : Critically assess novel engineering theory and research projects.	• Seminar 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

Other Professional Outcomes

A complete mapping of courses to Program Learning Outcomes can be found online here.

Additional Course Information

The course will be run in a series of seminars. The seminars include student project presentations and guest seminars.

Each student is required to perform an independent research project supervised by an academic supervisor. The students are expected to meet weekly or as agreed with the supervisors to discuss the progress of the research project.

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	Engineers Australia - Professional Engineer (Stage 1)
Report (document) Assessment Format: Individual	25%	Due Date: 17/06/2024 11:59 PM	
Seminar 1 Assessment Format: Individual	5%	Start Date: Not Applicable Due Date: Week 4: 18 March - 22 March	• 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 • PEE3.2 : Effective oral and written communication in professional and lay domains • PEE3.3 : Creative, innovative and pro-active demeanour
Seminar 2 Assessment Format: Individual	10%	Start Date: 20/05/2024 12:00 AM Due Date: Week 9: 06 May - 10 May	• 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 • PEE2.1 : Application of established engineering methods to complex engineering problem solving • PEE3.2 : Effective oral and written communication in professional and lay domains • PEE3.3 : Creative, innovative and pro-active demeanour
Report (project) Assessment Format: Individual	50%	Start Date: Not Applicable Due Date: 17/06/2024 11:59 PM	• 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 • PEE2.1 : Application of established engineering methods to complex

			engineering problem solving • PEE3.2 : Effective oral and written communication in professional and lay domains • PEE3.3 : Creative, innovative and pro-active demeanour
Seminar Journal Assessment Format: Individual	10%	Start Date: Not Applicable Due Date: 07/06/2024 11:59 PM	• 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 • PEE3.2 : Effective oral and written communication in professional and lay domains • PEE3.3 : Creative, innovative and pro-active demeanour

Assessment Details

Report (document)

Assessment Overview

A 3000 to 5000 word final report is to be submitted both electronically and in hard copy to your academic supervisor and the course coordinator. 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

- CLO1 : Produce a survey of peer-reviewed background research literature.
- CLO2 : Apply engineering theory to work towards achieving a project's specific technical goals. Note that it is more important to demonstrate a logical and persistent approach than to achieve the specific goals.
- CLO3 : Demonstrate independent self-directed learning and critical thinking in approaching your research problem.
- CLO4 : Prepare a substantial and logical discussion of the research project's progress, results and conclusions.

Seminar 1

Assessment Overview

You will be required to present a short (~10 minute) introductory seminar on your project topic, followed by ~2 minutes of question time. These seminars are intended to give you practice in preparing and presenting your work, and to stimulate discussion between yourself and your peers in an informal and collegial atmosphere. These seminars will be assessed, and you will be given a grade and written feedback on your performance.

Course Learning Outcomes

- CLO1 : Produce a survey of peer-reviewed background research literature.
- CLO4 : Prepare a substantial and logical discussion of the research project's progress, results and conclusions.

Assessment Length

10 minutes presentation

Assignment submission Turnitin type

Not Applicable

Seminar 2

Assessment Overview

You will be required to present a more comprehensive (~15 minutes) seminar on your project topic. Each presentation will be followed by ~5 minutes of question time. These seminars are intended to give you practice in preparing and presenting your work, and to stimulate discussion between yourself and your peers in an informal and collegial atmosphere. These seminars will be assessed, and you will be given a grade and written feedback on your performance.

Course Learning Outcomes

- CLO2 : Apply engineering theory to work towards achieving a project's specific technical goals. Note that it is more important to demonstrate a logical and persistent approach

than to achieve the specific goals.
- CLO3 : Demonstrate independent self-directed learning and critical thinking in approaching your research problem.
- CLO4 : Prepare a substantial and logical discussion of the research project's progress, results and conclusions.

Assignment submission Turnitin type

This is not a Turnitin assignment

Report (project)

Assessment Overview

A 3000 to 5000 word final report is to be submitted both electronically and in hard copy to your academic supervisor and the course coordinator. 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

- CLO1 : Produce a survey of peer-reviewed background research literature.
- CLO2 : Apply engineering theory to work towards achieving a project’s specific technical goals. Note that it is more important to demonstrate a logical and persistent approach than to achieve the specific goals.
- CLO3 : Demonstrate independent self-directed learning and critical thinking in approaching your research problem.
- CLO4 : Prepare a substantial and logical discussion of the research project's progress, results and conclusions.
- CLO5 : Critically assess novel engineering theory and research projects.

Detailed Assessment Description

Please email the report to both your academic supervisor and the course coordinator.

Submission notes

Please email the report to both your academic supervisor and the course coordinator.

Assignment submission Turnitin type

This assignment is submitted through Turnitin and students can see Turnitin similarity reports.

Seminar 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

- CLO5 : Critically assess novel engineering theory and research projects.

Assignment submission Turnitin type

Not Applicable

General Assessment Information

Late Submission of Assessment

- *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.*

Use of Generative AI in Assessments

1. SIMPLE EDITING ASSISTANCE (for report writing)

For this assessment task, you may use standard editing and referencing software, but not Generative AI. You are permitted to use the full capabilities of the standard software to answer the question (e.g. you may wish to specify particular software such as Microsoft Office suite, Grammarly, etc.).

If the use of generative AI such as ChatGPT is detected, it will be regarded as serious academic misconduct and subject to the standard penalties, which may include 00FL, suspension and exclusion.

2. PLANNING ASSISTANCE (for research activities)

As this assessment task involves some planning or creative processes, 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.

** To cite: OpenAI (Year Accessed). ChatGPT. OpenAI. https://openai.com/models/chatgpt/*

** Please note that the outputs from these tools are not always accurate, appropriate, nor properly referenced. You should ensure that you have moderated and critically evaluated the outputs from generative AI tools such as ChatGPT before submission.*

Referencing

APA referencing format is recommended in your project report.

https://www.student.unsw.edu.au/how-cite-references-apa-style

You are also welcome to use any formal referencing style that has been agreed between you and your academic supervisor.

Please be aware that most students lose marks for using/citing references improperly. Please double-check and make sure you use the proper citations and reference format.

Grading Basis

Standard

Requirements to pass course

The overall passing mark is set at 50%. *All assessment items must be submitted to pass this course.*

Course Schedule

Teaching Week/Module	Activity Type	Content
Week 1 : 26 February - 1 March	Lecture	Introduction of the course
Week 2 : 4 March - 8 March	Presentation	ZEIT4901 (+ Honorary) Seminars
Week 3 : 11 March - 15 March	Other	Canberra Day
Week 4 : 18 March - 22 March	Presentation	ZEIT3901 Seminars
Week 5 : 25 March - 29 March	Presentation	ZEIT3901 Seminars
Week 6 : 1 April - 5 April	Other	Easter Monday
Week 7 : 22 April - 26 April	Presentation	ZEIT2901 Seminars
Week 8 : 29 April - 3 May	Presentation	Invited speakers
Week 9 : 6 May - 10 May	Presentation	ZEIT3901 Seminars
Week 10 : 13 May - 17 May	Presentation	ZEIT3901 Seminars
Week 11 : 20 May - 24 May	Presentation	ZEIT3901 Seminars
Week 12 : 27 May - 31 May	Presentation	ZEIT2901 Seminars
Week 13 : 3 June - 7 June	Presentation	ZEIT2901 Seminars
	Assessment	The due date of the Seminar Journal is 2359, the 7th June.

Attendance Requirements

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

General Schedule Information

A preliminary arrangement of the seminars is listed and may be subjected to changes. The exact schedule may vary depending on the availability of guest speakers. The students are required to attend all seminars and submit a seminar report at the end of the semester as part of the assessments.

Course Resources

Prescribed Resources

There are no required resources for students. Recommended resources will be specified by students' individual project supervisors.

Recommended Resources

Students might find the following references useful for improving research and technical writing skills:

User Guides, Manuals, and Technical Writing: A Guide to Professional English

Wallwork, Adrian, New York : Springer; 2014

Research methods for engineers

Thiel, David V., Cambridge : Cambridge University Press; 2014

The references can be accessed via the links below through the library:

https://link-springer-com.wwwproxy1.library.unsw.edu.au/book/10.1007/978-1-4939-0641-3

https://www-cambridge-org.wwwproxy1.library.unsw.edu.au/core/books/research-methods-for-engineers/DD1A91B7C81C464EE764EFA89BF94AAB

Additional Costs

Please discuss with individual supervisors for any cost incurred for research activities.

Course Evaluation and Development

Students are encouraged to provide feedback to the course coordinator anytime in any form during the course. The coordinator will act accordingly depending on the urgency and availability of resources. Any request regarding research activities can be discussed with academic supervisors. Students need to talk to the course coordinator when having difficulties communicating with academic supervisors.

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 can also provide feedback during the semester via 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

Other Useful Information

Academic Information

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 each 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 (where applicable). Student opinions really do make a difference. Refer to the Moodle site for your 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.

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

Equitable Learning Services (ELS)

Students living with neurodivergent, physical and/or mental health conditions or caring for someone with these conditions may be eligible for support through the Equitible Learning Services team. Equitable Learning Services is a free and confidential service that provides

practical support to ensure your mental or physical health conditions do not adversely affect your studies.

Our team of dedicated **Equitable Learning Facilitators** (ELFs) are here to assist you through this process. We offer a number of services to make your education at UNSW easier and more equitable.

Further information about ELS for currently enrolled students can be found at: https://www.student.unsw.edu.au/equitable-learning

Academic Honesty and Plagarism

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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

Submission of Assessment Tasks

Special Consideration

Special Consideration is the process for assessing and addressing the impact on students of short-term events, that are beyond the control of the student, and that affect performance in a specific assessment task or tasks.

Applications for Special Consideration will be accepted in the following circumstances only:

- Where academic work has been hampered to a substantial degree by illness or other cause;
- The circumstances are unexpected and beyond the student's control;
- The circumstances could not have reasonably been anticipated, avoided or guarded against by the student; and either:

(i) they occurred during a critical study period and was 3 consecutive days or more duration, or a total of 5 days within the critical study period; or

(ii) they prevented the ability to complete, attend or submit an assessment task for a specific date (e.g. final exam, in class test/quiz, in class presentation)

Applications for Special Consideration must be made as soon as practicable after the problem occurs and at the latest within three working days of the assessment or the period covered by the supporting documentation.

By sitting or submitting the assessment task the student is declaring that they are fit to do so and cannot later apply for Special Consideration (UNSW 'fit to sit or submit' requirement).

Sitting, accessing or submitting an assessment task on the scheduled assessment date, after applying for special consideration, renders the special consideration application void.

Find more information about special consideration at: https://www.student.unsw.edu.au/special/consideration/guide

Or apply for special consideration through your MyUNSW portal.

Late Submission of assessment tasks (other than examinations)

UNSW has a standard late submission penalty of:

- 5% per day,
- capped at five days (120 hours) from the assessment deadline, after which a student cannot submit an assessment, and
- no permitted variation.

Students are expected to manage their time to meet deadlines and to request extensions as early as possible before the deadline.

Electronic submission of assessment

Except where the nature of an assessment task precludes its electronic submission, all assessments must be submitted to an electronic repository, approved by UNSW or the Faculty, for archiving and subsequent marking and analysis.

Release of final mark

All marks obtained for assessment items during the session are provisional. The final mark as published by the university following the assessment review group meeting is the only official mark.