



School of Civil and Environmental Engineering

Term 2, 2021

CVEN4032/4033

HIGHER HONOURS THESIS

COURSE DETAILS

Units of Credit

12 + 12

Contact hours

as agreed with supervisor

Course Coordinator

Professor Ian Turner

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the development of research, writing and presentation skills.

## HANDBOOK DESCRIPTION

The thesis may describe directed laboratory, investigatory, design, field or research work on an approved subject and will be completed under the guidance and supervision of a member of the School's academic staff.

Online Handbook description is available at MyUNSW:

[www.handbook.unsw.edu.au/undergraduate/courses/2021/CVEN4032.html](http://www.handbook.unsw.edu.au/undergraduate/courses/2021/CVEN4032.html)

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## \*PROCEDURE FOR SELECTION AND CONFIRMATION OF A RESEARCH THESIS TOPIC

- x They are based on students' original research.
- x They take the form of a written report, which presents the findings of that research.

### **WHY WRITE AN HONOURS RESEARCH THESIS?**

#### **x *Satisfy your intellectual curiosity***

This is the most compelling reason to write a research thesis. You have studied courses during your degree that perhaps really piqued your interest. Now's your chance to follow your passions, explore further, and contribute some original ideas and research in your field.

#### **x *Develop transferable research skills***

Whether you choose to pursue further research (e.g. complete a PhD) or not, the process of developing and crafting a feasible research project will polish skills that will serve you well in almost any future job. After all, most jobs require some form of problem solving and oral and written communication. Writing an honours thesis requires that you:

- x ask smart questions
- x acquire the investigative instincts needed to find answers
- x navigate libraries, laboratories, archives, databases, and other research venues
- x develop the flexibility to redirect your research if your initial plan flops
- x master the art of time management
- x sharpen your argumentation skills
- x organize a lengthy piece of writing
- x polish your oral communication skills by presenting and defending your research to academic staff and students

#### **x *Work closely with academic staff***

At large research universities like UNSW, you have likely taken classes where you barely got to know your lecturer. Writing a thesis offers the opportunity to work one-on-one with an academic supervisor. Such relationships can enrich your intellectual development and later serve as invaluable references for postgraduate degree and employment.

#### **x *Open windows into future professions***

An honours research thesis will give you a taste of what it's like to do research in your field. It also might help you decide whether to pursue that field in your future career.

<b>TEACHING STRATEGIES</b>
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The Higher Honours Research Thesis is an individual project in which each student works under the guidance of a nominated member of the School's academic staff (supervisor). A co-supervisor (including from outside the School) may also be nominated depending on the set up of the project. The research may involve laboratory experiments, field or industry based investigations, design applications or theoretical investigation.

### **PRIVATE STUDY**

- x As a rough guide only, an average student would be expected to spend approximately 20+ hours per week on work related to this course.
- x More guidance is needed initially from the supervisor when the topic is being defined to establish the objectives and methodology of the thesis.

### **SUPERVISION**

- x There are no specific hours assigned to this course, except for the scheduled Workshops (see below).
- x Meetings between the supervisor(s) and the student may take place periodically or by private arrangement.
- x Should supervisors be on study leave or unavailable for a considerable period of the session, alternative arrangements need to be established and made known to both the student and course coordinator.

### **CONSULTATION**

- x The course coordinator will be available by prior appointment to liaise with enrolled students as needed

<b>EXPECTED LEARNING OUTCOMES</b>
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At the conclusion of this course, students should be able to:

1. Develop a design or a process or investigate a hypothesis following industry and professional engineering standards. (7, 8, 9, 10)
2. Critically reflect on a specialist body of knowledge related to their thesis topic. (3)
3. Apply scientific and engineering methods to solve an engineering problem. (7)
4. Analyse data objectively using quantitative and mathematical methods. (2, 7, 8)
5. Demonstrate oral and written communication in professional and lay domains. (12)

BE (Hons) Program Learning Outcomes :

1. Comprehensive, theory-based understanding of the underpinning natural and physical sciences and the engineering fundamentals applicable to the engineering discipline.
2. Conceptual understanding of the mathematics, numerical analysis, statistics, and computer and information sciences which underpin the engineering discipline.
3. In-depth understanding of specialist bodies of knowledge within the engineering discipline.
4. Discernment of knowledge development and research directions within the engineering discipline.
5. Knowledge of engineering design practice and contextual factors impacting the engineering discipline.
6. Understanding of the scope, principles, norms, accountabilities and bounds of sustainable engineering practice in the specific discipline.
7. Application of established engineering methods to complex engineering problem solving.
8. Fluent application of engineering techniques, tools and resources.
9. Application of systematic engineering synthesis and design processes.
- 10.



level presentation to a wide School audience. Students will be actively engaged with one of the School's research groups.

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**SUMMARY OF ALL HIGHER HONOURS THESIS MARKED ASSESSMENTS**

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Higher Honours Thesis A :

1.	Component A1	Week 7	Satisfactory/Unsatisfactory
2.	Component A2	Week 10	10 % of Final Mark
3.	Component A3	Week 10	5% of Final Mark

Higher Honours Thesis C :

1.	Seminar Abstract	Week 7	5 % of Final Mark
2.	Research Seminar	Week 9-10	10 % of Final Mark
3.	Thesis Submission	Week 11	70 % of Final Mark (incl. 10 % Supervisor)
4.	Submission-ready journal manuscript	Week 11	Satisfactory/Unsatisfactory

***Further details of the requirements for the Seminar Abstract and the format & scheduling of Seminars will be advised by the Course Coordinator during the term.***

The Research Thesis is to be submitted electronically as a single pdf by 4.00pm on Friday of the submission week via the School's web portal at: <http://intranet.civeng.unsw.edu.au/research-thesis-upload-page>

The submission-ready journal paper manuscript is to be submitted to the Supervisor by 4.00pm on Friday of the submission week.

Late Procedure – In all cases, applications for late submission can be applied for BEFORE the due date. This is at the discretion of the Thesis Coordinator, but should only be granted in exceptional circumstances. As per normal, students can also apply through myUNSW for special consideration.

- For all other assignments beside thesis – zero (0) mark.

- x Winkle, A and Hart, B "Report writing Style Guide for engineering students" 3<sup>rd</sup> ed. Faculty of Engineering, Flexible Learning Centre, University of South Australia, 1996.

#### DATES TO NOTE

Refer to MyUNSW for Important Dates available at: <https://student.unsw.edu.au/dates>

**PLAGIARISM Beware!** An assessment that includes plagiarised material will receive a 0% Fail, and students who plagiarise may fail the course. Students who plagiarise are also liable to disciplinary action, including exclusion from enrolment.

Plagiarism is the use of another person's work or ideas as if they were your own. When it is necessary or desirable to use other people's material you should adequately acknowledge whose words or ideas they are and where you found them (giving the complete reference details, including page number(s)). The Learning Centre provides further information on what constitutes Plagiarism at:

