

SCHOOL OF CIVIL AND ENVIRONMENTAL ENGINEERING

THE UNIVERSITY OF
NEW SOUTH WALES

Sessions 1 and 2, 2013



CVEN 4032/4033 HIGHER HONOURS THESIS PARTS A & B

COURSE DETAILS

Units of Credit 12 (CVEN4032) + 12 (CVEN4033)

Contact hours as agreed with supervisor

Course Coordinator Associate Professor Ian Turner
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phone: 807 19829 (Water Research Laboratory, Manly Vale)

Additional Lecturers Topic Supervisor as nominated

INFORMATION ABOUT THE COURSE

The purpose of the Higher Honours courses CVEN4032 and CVEN4033 are to engage the participation of top-performing students with current and leading-edge research activities across the School. Together, the courses promotes higher level independence in learning to prepare students for their professional and/or research careers; with a particular emphasis on the development of research, writing and presentation skills that would assist their participation in further (postgraduate) research and for a career in industry. A university WAM (assessed at the completion of all stage 3 courses) of a minimum of 80 is required for entry into the course.

This course is differentiated from the 6+6 units of credit Honours Courses CVEN4030/CVEN4031 by the additional requirements of:

CVEN4032

- extended review of literature and project report
- research presentation
- a more rigorous assessment procedure (refer below)

CVEN4033

- an extended research thesis (approx. 30,000 equivalence)
- Completion of a submission ready research paper to an international journal standard.
- Professional presentation within the school seminar program to full School audience.

The unique learning outcomes from these courses are in promotion of higher level independence in learning, above that of CVEN4030/CVEN4031, by preparing students for a potential career in research and/or higher independent research skills used in industry. The advanced skill set to be developed emphasises the development of research, writing and presentation skills.

This course is in two parts. CVEN4032 covers Part A in the first Semester of enrolment, which is a prerequisite for CVEN4033 Part B which is undertaken in the following Session.

Prerequisite:

A university WAM (assessed at the completion of all stage 3 courses) of a minimum of 80 is required for entry into the course. In addition, all courses to the end of Year 3 in the discipline of the thesis topic need to be completed.

HANDBOOK DESCRIPTIONS

CVEN4032

This course is the first of two parts and is undertaken prior to CVEN4033 Higher Honours Thesis B. Successful completion of Parts A and B are required to obtain an honours degree. The higher honours thesis may describe a higher level directed research work on an approved topic and will be completed under the guidance and supervision of a member of the academic staff. The research may involve a directed laboratory or field investigation, analytical or numerical modelling, a detailed design or such other individual research project approved by the Head of School. All projects must include a literature review. Part A involves the satisfactory formulation of the project, thesis outline, completion of the literature review, commencement of a significant portion of the research, and a presentation of 'in progress' research to staff and peers.

CVEN4033

This course is the second of two parts and is undertaken after the successful completion of CVEN4032 Higher Honours Thesis A.. The higher honours thesis may describe a higher level directed research work on an approved topic and will be completed under the guidance and supervision of a member of the academic staff. The research may involve a directed laboratory or field investigation, analytical or numerical modelling, a detailed design or such other individual research project approved by the Head of School. Part B involves the completion of a significant thesis, completion of a research paper that is submission-ready to an international journal, and a research presentation to staff and student peers.

Also available online at:

www.handbook.unsw.edu.au/undergraduate/courses/2013/CVEN4032.html
www.handbook.unsw.edu.au/undergraduate/courses/2013/CVEN4033.html

***PROCEDURE FOR SELECTION AND CONFIRMATION OF A THESIS TOPIC (CVEN4032)**

- Browse online the selection of available topics and identify potential supervisors
<http://www.civeng.unsw.edu.au/information-for/current-students/current-undergraduates/honours>

Note: It is unlikely that this list is fully up to date and comprehensive – it is strongly advised that individual students approach School teaching staff in area(s) of potential interest, to explore the range of possible thesis topics that may be available.

- Discuss your selection with topic supervisors.
- Complete a **thesis commencement form**.
- Submit to School office no later than the commencement of Week 1 in the Session of CVEN4032 enrolment.

OBJECTIVES

The purpose of the Higher Honours courses CVEN4032 and CVEN4033 are to engage the participation of top-performing students with current and leading-edge research activities across the School. Together, the courses promotes higher level independence in learning to prepare students for their professional and/or research careers; with a particular emphasis on the development of research, writing and presentation skills that would assist their participation in further (postgraduate) research and for a career in industry.

The Higher Honours Project is an individual research project in which each student works under the guidance of a nominated member of the academic staff (supervisor). The Higher Honours course requires students to submit both an extended research thesis (as a guide, approximately 30,000 word equivalence) plus a journal-ready manuscript ready for submission. A co-supervisor may also be nominated depending on the set up of the project. The work may involve laboratory experiments, field or industry based investigations, design applications or theoretical research.

WHAT IS AN HONOURS THESIS?

That depends quite a bit on your field of study. However, all honours theses have at least two things in common:

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

In addition to the preparation of their research in the extended report format of a thesis, the major additional task for students undertaking the Higher Honours courses is that they will also be required to synthesise their study findings in the shorter and more specific format of a submission-ready journal manuscript.

WHY WRITE AN HONOURS THESIS?

- ***Satisfy your intellectual curiosity***

This is the most compelling reason to write a 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.

- ***Develop transferable skills***

Whether you choose to stay in your field of study 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:

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

- ***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.

- ***Open windows into future professions***

The rigour and discipline required to complete an honours 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.

Furhter, rhe publication of a journal manuscript will greatly enhance a student's potential future research career and or employment opportunities.

TEACHING STRATEGIES

The Honours Project is an individual project in which each student works under the guidance of a nominated member of the academic staff (supervisor). A co-supervisor may also be nominated depending on the set up of the project. The work may involve laboratory experiments, field or industry based investigations, design applications or theoretical research.

PRIVATE STUDY

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

SUPERVISION

- There are no specific hours assigned to this course, except for the scheduled Workshops (see the Course Programme).
- Meetings between the supervisor and the student may take place periodically or by private arrangement.
- 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

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

EXPECTED LEARNING OUTCOMES

This course enhances the student's skills for undertaking scholarly enquiry by attempting to achieve a specific topic objective within a defined period of time. A significant component of the course (CVEN4030 Part A) relates to the review of literature, which promotes independent and reflective learning as well as increases students' capacity to develop information literacy. The report and presentation are expected to reinforce the student's ability and confidence in the written and oral communication of technical information.

ASSESSMENT – KEY DATES FOR YOUR DIARY

There is no mark (i.e., Pass, CR, DN, HD) for CVEN4032. A satisfactory assessment (SY) in all Components of CVEN4032 listed below is essential for progression to CVEN4033.

Assessment will consist of the following deliverables:

CVEN4032 ASSESSMENT

- Project plan
 - Literature review
 - Project report
 - Research presentation
- } component 1
component 2
component 3

Submissions 1 and 2 must be given to the supervisor by 4.00pm on Friday of the submission week.

The literature review and project report will be assessed by the supervisor and by an independent examiner, to be appointed by the Elite Student coordinator or HOS.

The research presentation is to be presented in conjunction with CVEN4031 student seminars in the same session, with assessment undertaken by supervisor and by the independent examiner.

The assessment is more rigorous than for the 6 units of credit CVEN4030 “Honours Thesis A” course requiring an extended review and report, research presentation, and assessment by the independent examiner in addition to supervisor. A ‘satisfactory’ assessment from both the supervisor and external examiner is required for an overall satisfactory grade to be awarded.

- **Component 1 submission** should include: Statement of the Problem and Literature review.
- **Component 2 submission** should include: More detailed, revised and improved Introduction (Statement of the problem), Literature review, Thesis Outline, Study Methodology, Study Results to-date and outline of Project Time-Line for thesis completion and preparation of submission-ready journal manuscript.
- **Component 3 presentation** will be scheduled to coincide with presentation by completing CVEN4031 students in week 11.
- Participation in a series of **compulsory lunchtime Workshops** (Literature Review Workshop, Thesis Writing Workshop I) and a third **optional lunchtime Workshop** (Thesis Writing Workshop II). Note: due to relatively small student numbers for CVEN4030 enrolment in the Summer session, no workshops will be scheduled; however all workshop materials will be circulated by the Course Convenor.

In the event of an unsatisfactory assessment in any of components 1, 2 or 3, or non-approved absence at any of the compulsory workshops, student must submit a show cause. A plan of future action to improve student performance must be prepared and agreed upon by both the supervisor and course coordinator before progress to CVEN4033 is allowed. Failure to receive the progress assessment by the due date will result in the student results being withheld and/or failure.

At the completion of CVEN4032, the School reserves the right to require the student to complete their Honours Thesis by enrolment in CVEN4031, rather than continuation to Higher Honours Thesis CVEN4033.

***** REFER BELOW FOR DETAILED CVEN4032 COURSE PROGRAM *****

CVEN4033 ASSESSMENT

- Research thesis (as a guide, approximately 30,000 word equivalents)
- Completion of a research paper ready for submission to an international journal for peer-review
- Professional presentation (15 - 20 minute research presentation to staff and peers)

Again, the assessment is more rigorous than for the 6 units of CVEN4031 "Honours Thesis B" course requiring additional higher level research works comprising of thesis, submission-ready journal paper and a higher level presentation to a wide School audience, via the monthly School Seminar series. Students will be actively engaged with one of the School's research groups.

CVEN4033 SUBMISSIONS

1.	Thesis Abstract	Week 9	}	15 % of Final Mark
2.	Research Seminar	Week 11 (TBA)		
3.	Thesis + Journal Manuscript Submission (2 Hard Copies + CD)	Week 13	}	85 % of Final Mark

The thesis + manuscript are to be submitted to the School Office by 4.00pm on Friday of the submission week.

LATE PENALTY: The penalty for late submission of the Thesis and Journal Manuscript is 5% per day. Late submission beyond 7 days will result in the award of a maximum 50% PASS.

Further details of the requirements for the Thesis Abstract and Seminar format and scheduling will be advised by the Course Coordinator during the session.

<p>IT IS ESSENTIAL THAT YOU CHECK YOUR OFFICIAL UNSW EMAIL REGULARLY FOR UPDATES, REMINDERS, ETC.</p>
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RELEVANT RESOURCES

Honours Thesis Writing for Engineering Students: <http://www.lc.unsw.edu.au/thesis/index.html>

Online iWrite thesis writing tutorial: <http://iwrite.sydney.edu.au/tutorials/start/starthere.htm>

- Topic material as direct by the supervisor.
- Materials provided by course coordinator.

References on writing style and technical communication skill:

- Lindsay, D “A Guide to Scientific Writing” 2nd ed. Longman, 1995
- Eisenberg, A “Effective Technical Communication” 2nd ed. McGraw-Hill, 1992.
- Evans, D. “ How to write a better thesis or report” Melbourne University Press, 1995.
- Winkle, A and Hart, B “Report writing Style Guide for engineering students” 3rd ed. Faculty of Engineering, Flexible Learning Centre, University of South Australia, 1996.

COURSE EVALUATION AND DEVELOPMENT

The School of Civil and Environmental Engineering evaluates each course each time it is run through (i) the UNSW Course and Teaching Evaluation and Improvement (CATEI) process, and (ii) Focus Group Meetings.

As part of the CATEI process, your student evaluations on various aspects of the course are graded; the Course Coordinator prepares a summary report for the Head of School. Any problem areas are identified for remedial action, and ideas for making improvements to the course are noted for action the next time that the course is run.

Focus Group Meetings are conducted by the four Year Managers (academic staff) for any students who wish to attend, in each year of the civil and/or environmental engineering programs. Student comments on each course are collected and disseminated to the Lecturers concerned, noting any points which can help improve the course.

DATES TO NOTE

Refer to MyUNSW for Important Dates available at:
<https://my.unsw.edu.au/student/resources/KeyDates.html>

ACADEMIC ADVICE

For information about:

- Notes on assessments and plagiarism,
- School policy on Supplementary exams,
- Special Considerations,
- Solutions to Problems,
- Year Managers and Grievance Officer of Teaching and Learning Committee, and
- CEVSOC.

Refer to Academic Advice on the School website available at:
<http://www.civeng.unsw.edu.au/info-about/our-school/policies-procedures-guidelines/academic-advice>

CVEN4032 COURSE PROGRAM (for students commencing in Session 1 & Session 2)

Week	Milestones	Suggested Activities	Assessment/Workshops
1	Confirm Enrolment and Thesis Topic	- Confirm enrolment with School office. - Outstanding 'Thesis Commencement' forms to School Office.	
2		Meeting with course coordinator to discuss project expectations.	Orientation Session (by Ian Turner) Day/Time: Monday 11 th March 1:00 – 1:45pm Venue: Biomedical Theatre D
3	Confirm Project expectation	Work on literature review and consult with supervisor	Literature Review & Problem Statement Workshop (by Pam Mort, UNSW Learning Centre) Day/Time: Monday 18 th March 1 – 2pm Venue: Biomedical Theatre D
4		Work on literature review and consult with supervisor	
5	Prepare Draft for Component 1	Work on literature review and consult with supervisor.	
6		Work on literature review and consult with supervisor.	
7	Submit Component 1 – Statement of problem and literature review	Hand report to Supervisor Consult Investigation and Methodology with supervisor.	Component 1 Due – hand in to your supervisor
8	Receive review of Component 1 from supervisor	Consult Investigation and Methodology with supervisor.	
9		Expand on literature review and prepare draft project skeleton. Consult Investigation and Methodology with supervisor.	Thesis Writing Workshop I (by Pam Mort, UNSW Learning Centre) Day/Time: Monday 6 th May 1 – 2pm Venue: Biomedical Theatre D

10	Prepare Draft Component 2 Prepare Seminar	Consult Investigation and Methodology with supervisor.	<i>Thesis Writing Workshop II (optional)</i> (by Pam Mort, UNSW Learning Centre) Date/time/place: TBA
11	Prepare Draft Component 2 Prepare Seminar	Consult Investigation and Methodology with supervisor.	<i>Component 3 – date/time of seminars to be confirmed by Honours Coordinator</i>
12	Submit Component 2 – Project Report	Review Draft, expand on contents and finalise component 2	<i>Component 2 Due – hand in to your supervisor</i>
13	Receive review of Component 2 from supervisor	Confirm satisfactory assessment of CVEN4032 by your supervisor and ensure that supervisor has returned the results to the subject coordinator.	

CVEN4032 COURSE PROGRAM (for students commencing Summer Session)

Note: due to small student numbers for CVEN4030 enrolment in Semester Two, workshops will not be scheduled; however all workshop materials will be circulated by the Course Convenor

Week	Milestones	Suggested Activities	Assessment /Workshops
1	Confirm Enrolment and Thesis Topic	- Confirm enrolment with School office. - Outstanding 'Thesis Commencement' forms to School Office.	
2		Meeting with course coordinator to discuss project expectations.	Place/time: TBA Workshop materials circulated by Course Coordinator
3	Confirm Project expectation	Work on literature review and consult with supervisor	
4		Work on literature review and consult with supervisor	
5	Prepare Draft for Component 1	Work on literature review and consult with supervisor.	
6		Work on literature review and consult with supervisor.	
7	Submit Component 1 – Statement of problem and literature review	Hand report to Supervisor Consult Investigation and Methodology with supervisor.	Component 1 Due – hand in to your supervisor
8	Receive review of Component 1 from supervisor	Consult Investigation and Methodology with supervisor.	
		Expand on literature review and prepare draft project	

9		skeleton. Consult Investigation and Methodology with supervisor.	
10	Prepare Draft Component 2 Prepare Seminar	Consult Investigation and Methodology with supervisor.	
11	Prepare Draft Component 2 Prepare Seminar	Consult Investigation and Methodology with supervisor.	Component 3 – date/time of seminars to be confirmed by Honours Coordinator
12	Submit Component 2 – Research Report	Review Draft, expand on contents and finalise component 2	Component 2 Due – hand in to your supervisor
13	Receive review of Component 2 from supervisor	Confirm satisfactory assessment of CVEN4032 by your supervisors and ensure that supervisor has returned the results to the subject coordinator.	