

School of Civil and Environmental Engineering  
Term 2, 2020  
**CVEN9051 Masters Practice  
Project B**

**COURSE DETAILS**

<b>Units of Credit</b>	<b>6</b>	
<b>Contact hours</b>	4 hours per week	
<b>Class</b>	Friday, 14:00 – 16:00	Online (Bb Collaborate Ultra)
<b>Workshop</b>	Friday, 12:00 – 14:00 OR Friday, 16:00 – 18:00	Online (Bb Collaborate Ultra)
<b>Course Coordinator and Lecturer</b>	Divya J Nair email: divya.nair@unsw.edu.au office: H20, Level 1, Room 103	
<b>Lecturer</b>	Mandi Thran email: m.thran@unsw.edu.au office: H20, Level 3, Room 313	

**INFORMATION ABOUT THE COURSE**

This course is available to students in the Masters of Engineering 8621 program specialising in Civil or Environmental Engineering. CVEN9051 forms the second part of the Coursework Thesis program, and is completed in the term after the completion of CVEN9050 Thesis A. In preparing your thesis topic in Thesis B for CVEN9051 you are able to select and nominate a Civil and/or Environmental Engineering topic that is of significant interest to you. Your topic may be associated with core elements such as Structural Design, Water and Hydraulics, Geotechnical Engineering, Transportation, Construction or Sustainability. Within Thesis B there are also project management elements that engineering professionals would be required to address and these elements will be incorporated as part of the Thesis B submission. This will enable all students to develop understanding of how their work impacts upon others and will allow them to identify the key communication pathways that are required to be addressed in the development of engineering solutions being offered. Consider the utility of your thesis topic in terms of your future career, either by re-inforcing and presenting your skills in a chosen field, or by experiencing and developing capabilities in a new area.

**The Thesis B theme topic for 2020 will be improving the movement of people within and through the Parramatta CBD using Light Rail.**

Your thesis is a requirement for your degree, however it also presents an opportunity to explore areas of interest and demonstrate expertise when advancing in your profession

As the course will involve several submissions throughout the term, Thesis B will be completed incrementally with guidance provided at each stage. Included in the lecture schedule will be several Guest Lecture slots who will add further knowledge and skills for students which will be needed

## HANDBOOK DESCRIPTION

See link to virtual handbook

<https://www.handbook.unsw.edu.au/undergraduate/courses/2020/CVEN9051/>

## OBJECTIVES

The objective of this course is to provide students the opportunity to complete a project task that they might be expected to complete in their professional employment from one of the key Civil Engineering disciplines offered under Thesis B. Students will be required to complete their work individually but partake in discussion groups and a Workshop Presentation outline of their topic. Thesis B will build on the skills developed in thesis A and include these attributes:

- An in-depth engagement with the relevant disciplinary knowledge in its inter-disciplinary context
- Capacity for analytical and critical thinking and for creative problem solving
- Ability to engage independent and reflective learning
- A respect for ethical practice and social responsibility
- Advocacy, negotiation and communication skills
- Leadership and member roles in group-related professional engineering project completion
- Ability to incorporate related social, political, environmental and economic issues within technical engineering-based solution options to community sensitive projects
- Undertake and execute a self-contained applied research report which may be understood and used by others with a technical background in the same discipline area as the topic

## TEACHING STRATEGIES

The teaching strategies that will be used and their rationale. Give some suggested approaches to learning in the course. (An example of the approaches to learning are)

<b>Private Study</b>	<ul style="list-style-type: none"><li>• Review lecture material and textbook</li><li>• Do set problems and assignments</li><li>• Join Moodle discussions of problems</li><li>• Reflect on class problems and assignments</li><li>• Download materials from Moodle</li><li>• Keep up with notices and find out marks via Moodle</li></ul>
<b>Lectures</b>	<ul style="list-style-type: none"><li>• Find out what you must learn</li><li>• Engage with guest lecturer presentations</li><li>• Hear announcements on course changes</li></ul>
<b>Workshops</b>	<ul style="list-style-type: none"><li>• Be guided by Demonstrators</li><li>• Participate in group discussions and co-learning</li><li>• Ask questions and clarify understanding</li><li>• Follow Demonstrator guidance in preparing Thesis B submission elements</li><li>• Meet the timely submission requirements required by your Demonstrator</li></ul>
<b>Assessments</b>	<ul style="list-style-type: none"><li>• Demonstrate your knowledge and skills</li><li>• Demonstrate higher understanding, critical thinking and problem solving</li><li>• Demonstrate presentation and reporting skills to a professional level</li></ul>
<b>Laboratory Work</b>	<ul style="list-style-type: none"><li>• Unlikely to be applicable to Thesis B</li></ul>

## EXPECTED LEARNING OUTCOMES

*This course is designed to address the learning outcomes below and the corresponding Engineers Australia Stage 1*

**Competency Standards for Professional Engineers as shown. The full list of Stage 1 Competency Standards may be found in Appendix A.**

**Example:**

After successfully completing this course, you should be able to:

<b>Learning Outcome</b>	<b>EA Stage 1 Competencies</b>
1. Undertake and execute self-contained applied research report.	PE1.4, PE3.2, PE3.5
2. Ability to engage independent and reflective learning.	PE3.1, PE3.2, PE3.3, PE3.4
3. In-depth engagement with the relevant disciplinary knowledge in its inter-disciplinary context.	PE1.3, PE2.3
4. Develop the skills to locate, evaluate, and critically reflect upon specialist body of knowledge related to the thesis topic (Information Literacy and Scholarly Inquiry)	PE1.3, PE1.4, PE3.4
5. Demonstrate oral and written communication in professional and lay domains.	PE1.5, PE3.2, PE3.3
6. Apply scientific and engineering methods to solve an engineering problem.	PE2.1
7. Ability to incorporate related social, political, environmental and economic issues within technical engineering-based solution options to community sensitive projects.	PE1.5, PE1.6, PE2.1, PE2.4, PE3.1, PE3.4
8. Develop the capacity for analytical and critical thinking and for creative problem solving in an engineering context	PE1.2, PE2.2, PE2.3, PE2.4

For each hour of contact it is expected that you will put in at least 1.5 hours of private study.

**COURSE PROGRAM**

A table of lectures and workshops or practical class topics for each week, indicating the name of lecturer involved (where multiple lecturers teaching in course), online activities, such as discussion forums, and relevant readings from textbook and other reference material identified for the course.

**Term 2 2020**

<b>Date</b>	<b>Topic</b>	<b>Lecture Content</b>	<b>Demonstration Content</b>
01/06/2020 (Week 1)	Course Introduction and Project Outline. (Divya Nair)	Outline of Thesis B assessment tasks and deadlines, review project guidelines.	Introduction Commence Assessment Task 1
08/06/2020 (Week 2)	Outline of Parramatta Precinct (Divya Nair)	Transport Modes Feasibility Studies and their Review	Student to define their individual topics
15/06/2020 (Week 3)	Literature Review and Report Writing (Mandi Thran)	Supply and Demand Development Construction Operations Community and Social Economics	Discussion on Assessment Task 1, Students to continue with topic
22/06/2020 (Week 4)	Engineering Economics (Guest & Divya Nair)	Access and Transport Corridors	Discussion on Assessment Task 2, Students to continue with topic
29/06/2020 (Week 5)	Integrated Transport Operations (Guest & Divya Nair)		Discussion on Assessment Task 2, Students to continue with topic

06/07/2020 (Week 6)		<i>Flexibility week for all courses (non-teaching)</i>	
13/07/2020 (Week 7)	Project Discussion (Mandi Thran)	Detailed material on selected topics Communications Plan	Discussion on Assessment Task 3 and 4, Students to continue with topic
20/07/2020 (Week 8)	Project Discussion (Mandi Thran)	Detailed material on selected topics Expectation for Final Report	Discussion on Assessment Task 3 and 4, Students to continue with topic
27/07/2020 (Week 9)	Project Discussion (Mandi Thran)	Detailed material on selected topics Project Presentation	Discussion on Assessment Task 3- Presentation
03/08/2020 (Week 10)	Guest Lecture Course Conclusion (Divya Nair/ Mandi Thran and Demonstrators)	Thesis B wrap-up	Course Wrap-up

## ASSESSMENT

Overall rationale for assessment components and their association with course objectives.

There will be NO formal examination for Thesis B. Instead, the final mark and grade for this course will be determined based on the aggregated scores from each of the four (4) assessment tasks.

- *Assessment Task 1 (5%) - Proposal/Problem Statement*
- *Assessment Task 2 (20%) - Literature Review*
- *Assessment Task 3 (20%) – Presentation and Peer Marking*
- *Assessment Task 4 (55%) – Abstract and Final Report*

The assessments for Thesis A are staged so that there are periodic assessments for different stages of the project. The staged approach provides students with summative feedback in order to improve and refine techniques and performance throughout the course.

Details of each assessment component, the marks assigned to it, the criteria by which marks will be assigned, and the dates of submission are set out below.

Students who perform poorly in any of the Assessment Tasks outlined in the Assessment Overview are recommended to discuss their progress firstly with their assigned Demonstrator or with the Lecturer at the first available opportunity (within a week) during the term on receipt of that poor performance. [Note: The Lecturer reserves the right to adjust the final scores by scaling if agreed by the Head of School.]

Supplementary Examinations for Term 2 2020 will be held on Monday 7th September – Friday 11th September (inclusive) should you be required to sit one. You are required to be available during these dates. Please do not to make any personal or travel arrangements during this period.

## PENALTIES

Penalties for late submissions should also be included here. For example, late work will be penalised at the rate of 10% per day after the due time and date have expired.

ASSESSMENT OVERVIEW
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The tables below are a guideline only. If you wish to create your own template, this is fine, however you must include all of the criteria below.

Item	Length	Weighting	Learning outcomes assessed	Assessment Criteria (this needs to explicitly describe what students are expected to demonstrate in the task)	Due date and submission requirements	Marks returned
<b>1. Proposal / Problem Statement</b>	Individual project statement (1 page)	5%	1, 2, 3	Initial submission and allocation of your chosen project, include why you are attempting to solve/investigate it and what your approach will be. Marks based on quality of writing and the robustness of the plan.	15 <sup>th</sup> June, Monday, 9AM (Week 3)	During Week 3 Workshop
<b>2. Literature Review</b>	Individual report (maximum 10 pages)	20%	1,2 3,4	Critical evaluation of key literature in your chosen topic. Your literature review should synthesize the available knowledge of your topic while identifying key research gaps.	13 <sup>th</sup> July, Monday 9AM (Week 7)	24 <sup>th</sup> July, Friday (Week 8)
<b>3. Presentation and Peer Marking</b>	Presentation (15 mins)	15% 5%	1,2,5	Oral presentation of your research topic to your instructors and peers.	31 <sup>st</sup> July, Friday (Week 9)	7 <sup>th</sup> July, Friday (Week 10)
<b>4. Abstract and Final Report</b>	Abstract (1 page) Individual report (maximum 30 pages)	5% 50%	6,7,8	Formal written report containing an abstract, executive summary, introduction, literature review, methods, key findings, conclusions, and recommendations.	10 <sup>th</sup> August, Monday 9AM (Week 11)	21 <sup>st</sup> August, Friday

## RELEVANT RESOURCES

- Textbook details, including title, author(s), publisher, edition, year of publication, ISBN and availability (in bookshop, UNSW Library, Open Reserve).
- List of required and suggested additional readings and availability (in bookshop, UNSW Library, Open Reserve).
- Additional materials provided on Moodle.
- Recommended Internet sites.

## DATES TO NOTE

Refer to MyUNSW for Important Dates available at:

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

## PLAGIARISM

Beware! An assignment 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:

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

## ACADEMIC ADVICE

For information about:

- Notes on assessments and plagiarism;
- Special Considerations: [student.unsw.edu.au/special-consideration](https://student.unsw.edu.au/special-consideration);
- General and Program-specific questions: [The Nucleus: Student Hub](#)
- Year Managers and Grievance Officer of Teaching and Learning Committee, and
- CEVSOC/SURVSOC/CEPCA

Refer to Academic Advice on the School website available at:

<https://www.engineering.unsw.edu.au/civil-engineering/student-resources/policies-procedures-and-forms/academic-advice>

## Appendix A: Engineers Australia (EA) Competencies

### Stage 1 Competencies for Professional Engineers

	<b>Program Intended Learning Outcomes</b>
<b>PE1: Knowledge and Skill Base</b>	PE1.1 Comprehensive, theory-based understanding of underpinning fundamentals
	PE1.2 Conceptual understanding of underpinning maths, analysis, statistics, computing
	PE1.3 In-depth understanding of specialist bodies of knowledge
	PE1.4 Discernment of knowledge development and research directions
	PE1.5 Knowledge of engineering design practice
	PE1.6 Understanding of scope, principles, norms, accountabilities of sustainable engineering practice
<b>PE2: Engineering Application Ability</b>	PE2.1 Application of established engineering methods to complex problem solving
	PE2.2 Fluent application of engineering techniques, tools and resources
	PE2.3 Application of systematic engineering synthesis and design processes
	PE2.4 Application of systematic approaches to the conduct and management of engineering projects
<b>PE3: Professional and Personal Attributes</b>	PE3.1 Ethical conduct and professional accountability
	PE3.2 Effective oral and written communication (professional and lay domains)
	PE3.3 Creative, innovative and pro-active demeanour
	PE3.4 Professional use and management of information
	PE3.5 Orderly management of self, and professional conduct
	PE3.6 Effective team membership and team leadership