COURSE DETAILS

Units of Credit 6
Contact hours 4 hours per week
Class Monday, 14:00 – 16:00 On-line
Workshop Monday, 12:00 – 14:00 On-line or Room/s: TBA (see Moodle)
Monday, 16:00 – 18:00 On-line or Room/s: TBA (see Moodle)

Course Coordinator and Lecturer Mr Robert Holdom
email: robert.holdom@unsw.edu.au
office: CE211
phone: 02 9385 7773

INFORMATION ABOUT THE COURSE

This course is available to all Civil Engineering, Environmental Engineering and Surveying students who are completing their final year of study in their four year undergraduate degree. CVEN4050 forms the first part of the Coursework Thesis program, with CVEN4051 Thesis B, following this course in a later term. The intention with this course is to bring focus to the student about what they need to prepare for themselves to become ready for employment. The Thesis A topic is presented to the student as it would be in industry and each student is required to prepare an individual Thesis submission by way of an Engineering Report that contains all of the elements required within the Assessment Overview.

The selected topic for Term 1, 2022 is focused on Façade and Fire Design issues (including Wind Design).

As the course will involve several submissions throughout the term, Thesis A will be completed incrementally. The final submission of Thesis A will be as a single volume.

Prerequisite: 132 UOCs needed to enrol in this course.
Excluded: CVEN4032, CVEN4033, CVEN4040, CVEN4041, CVEN4951, CVEN4952, CVEN4953.
HANDBOOK DESCRIPTION

This course is the first of two parts and is undertaken before CVEN4051 Thesis B, usually in the proceeding term. The Thesis involves formulating the designs for and solution to open-ended civil and/or environmental engineering problems. The problems will be drawn from industry and will be multi-disciplinary involving application of material learnt throughout the undergraduate program and will require creative thought. The course will include the preparation of relevant professional documents. Part A involves the formulation of a project plan, project brief and documents and involves review of various literature.

https://www.handbook.unsw.edu.au/undergraduate/courses/2022/CVEN4050/

OBJECTIVES

List the objectives of the course.

Link the objectives with the program outcome attributes and the assessment strategies for this course. In other words, how do the assessment strategies assist in achieving these objectives, and how do the objectives contribute to achievement of program outcome attributes?

List of programme 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
- Information literacy
- Skills for collaborative and multi-disciplinary work
- A respect for ethical practice and social responsibility
- Skills for effective communication

TEACHING STRATEGIES

The teaching strategies that will be used and their rationale:

| Private Study                      | Review lecture material and design manual  |
|                                   | Do set problems and assignments           |
|                                   | Reflect on class problems and assignments |
|                                   | Download materials from Moodle            |
|                                   | Keep up with notices and find out marks via Moodle |
| Lectures                         | Find out what you must learn              |
|                                  | See methods that are not in the textbook  |
|                                  | Follow worked examples                    |
|                                  | Hear announcements on course changes      |
| Workshops                        | Be guided by Demonstrators                |
|                                  | Practice solving set problems             |
|                                  | Ask and answer questions                  |
| Assessments                      | Demonstrate your knowledge and skills     |
|                                  | Demonstrate higher understanding and problem solving |
|                                  | Demonstrate presentation and documented reporting skills |
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.

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

<table>
<thead>
<tr>
<th>Learning Outcome</th>
<th>EA Stage 1 Competencies</th>
</tr>
</thead>
<tbody>
<tr>
<td>1. Apply the concepts in the analysis and construction methods used in the</td>
<td>PE1.1, PE1.2, PE1.3, PE1.5, PE2.2, PE2.3</td>
</tr>
<tr>
<td>placement of a different building Façades.</td>
<td></td>
</tr>
<tr>
<td>2. Apply the concepts used in nominating and selecting materials for the</td>
<td>PE1.1, PE1.2, PE1.3, PE1.5, PE2.2, PE2.3</td>
</tr>
<tr>
<td>construction for the control of fire in buildings and engineering structures.</td>
<td></td>
</tr>
<tr>
<td>3. Be able to pass critique on existing structures concerning façade and fire</td>
<td>PE2.1, PE3.1, PE3.2, PE3.5, PE3.6</td>
</tr>
<tr>
<td>related matters.</td>
<td></td>
</tr>
<tr>
<td>4. Communicate the design concepts, actual designs and critiques through</td>
<td>PE3.2, PE3.3, PE3.4, PE3.5, PE3.6</td>
</tr>
<tr>
<td>presentations and in written form, to industry expected standard.</td>
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</tr>
</tbody>
</table>

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

COURSE PROGRAM

In commencing CVEN4050 Thesis A in Term 1 2022, the lectures for Facade and Fire will be presented by Mr Robert Holdom.

Guest Lecturers may be sought to present throughout the term to deliver topics that may assist students in the preparation of Thesis A or develop other skills to prepare students entering the profession.

The Workshops are scheduled in two 2-hour time-slots and it is a mandatory requirement that students attend their selected Workshop that is either preceding the lecture or following the lecture. Each Workshop has been programmed for nominally 18 students, and students may be further subdivided into subgroups of 4 or 5 in each Workshop. Whilst students are required to make individual submissions for their thesis assessment task components, much of the learning within the Workshops will be under the direction of the Demonstrator and the subgroups will become self-directing in their learning – which requires your weekly regular commitment and participation in your allocated Workshop.

It is a course requirement that every subgroup team will spend at least 20 minutes each week speaking with their Demonstrator who will provide guidance and direction to students on the requirements in completing Thesis A.

Term 1 2022
<table>
<thead>
<tr>
<th>Date</th>
<th>Topic and Lecture Content</th>
<th>Demonstration Content</th>
</tr>
</thead>
<tbody>
<tr>
<td>14/02/2022</td>
<td><strong>Course Introduction</strong>&lt;br&gt;Introduction to building facades&lt;br&gt;Outline of Thesis A requirements&lt;br&gt;Your employment – preparing your Resume</td>
<td>Workshop finalisation&lt;br&gt;Commence Assessment Task 1</td>
</tr>
<tr>
<td>21/02/2022</td>
<td>(Week 2) Weatherproofing structures and cladding systems&lt;br&gt;Construction overview</td>
<td>Continue with Assessment Task 1</td>
</tr>
<tr>
<td>28/02/2022</td>
<td>(Week 3) Glass and aluminium systems&lt;br&gt;Testing and quality control issues</td>
<td>Submit Assessment Task 1a&lt;br&gt;Continue with Assessment Task 1b</td>
</tr>
<tr>
<td>07/03/2022</td>
<td>(Week 4) Managing façade defects&lt;br&gt;Energy and environment issues</td>
<td>Submit Assessment Task 1b&lt;br&gt;Commence Assessment Task 2</td>
</tr>
<tr>
<td>14/03/2022</td>
<td>(Week 5) Fire Engineering and its professional requirements&lt;br&gt;Integrated engineering design and construction</td>
<td>Continue with Assessment Task 2&lt;br&gt;Commence Assessment Task 3</td>
</tr>
<tr>
<td>21/03/2022</td>
<td>(Week 6) <strong>Flexibility Week – No class</strong></td>
<td>Submit Assessment Task 2&lt;br&gt;Continue with Assessment Task 3</td>
</tr>
<tr>
<td>28/03/2022</td>
<td>(Week 7) Standards of practice</td>
<td>Continue with Assessment Task 3</td>
</tr>
<tr>
<td>04/04/2022</td>
<td>(Week 8) Integrated Façade and Fire design</td>
<td>Submit Assessment Task 3&lt;br&gt;Commence Assessment Task 4</td>
</tr>
<tr>
<td>11/04/2022</td>
<td>(Week 9) Integrated Façade and Fire design continued</td>
<td>Continue with Assessment Task 4</td>
</tr>
<tr>
<td>18/04/2022</td>
<td>(Week 10) <strong>Easter Monday Public Holiday – No class</strong></td>
<td>Submit Assessment Task 4</td>
</tr>
</tbody>
</table>

**ASSESSMENT**

The final grade for your Thesis A is based on the sum of the scores from each of the assessment tasks. All items in the Assessment Tasks must be passed at a minimum grade of 50% of the marks allocated for each item. The elements within those submission parts once compiled will be your completed Thesis A document. You will not be required to submit a printed copy of your compiled Thesis A, however, you should be considering doing the same so that you can take the document to an employment/job interview. Your Final Mark for Thesis A, will be aggregated total of all Thesis A assessment task items.

Your Assessment Task submissions will be marked by your Workshop Demonstrator and separately by another marker. This is to maintain quality standards across the course and within each Workshop.

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.]

Whilst not applicable to students completing CVEN4050 Thesis A, please note: Supplementary Examinations for Term 1, 2022 will be held on Monday 23rd – Friday 27th May (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

As outlined in the Assessment Overview, there is no provision being allowed for late submissions in Thesis A. Students should consider that this course operates as does business, in that SET DEADLINES have to be met. You are thereby advised to plan and use your time wisely in preparing your work in meeting the deadlines.
## ASSESSMENT OVERVIEW

<table>
<thead>
<tr>
<th>Item</th>
<th>Length</th>
<th>Weighting</th>
<th>Learning outcomes assessed</th>
<th>Assessment Criteria</th>
<th>Due date and submission requirements</th>
<th>Deadline for absolute fail</th>
<th>Marks returned</th>
</tr>
</thead>
</table>
| 1. Façade Engineering  
a. Site Inspection Report  
b. Site Inspection Report | Appendix submission  
Appendix submission | 1%  
9% | 1, 2, 3 & 4 | Separate submissions for each of: 1a & 1b. These submissions will be appendices within Thesis A. | Before 1700h  
10 March 2022  
Upload to Moodle  
Before 1700h  
17 March 2022  
Upload to Moodle | There are no extensions on any of these elements, so the posted due dates are final. | Week 4  
Week 6 |
| 2. Fire Engineering  
Site Inspection Report | Appendix submission | 20% + 10% of 4.  
10% | 1, 2, 3 & 4 | Single submission for Item 2. This submission will be an appendix within Thesis A. | Before 1700h  
24 March 2022  
Upload to Moodle | | Week 8 |
| 3. Design Report  
Façade & Fire (including wind design) | Appendix calculations | 20% + 10% of 4.  
10% | | Single submission for Item 3. This submission will be an appendix within Thesis A. | Before 1700h  
07 April 2022  
Upload to Moodle | | Week 10 |
| 4. Thesis Submission Documents  
Final Thesis A Document | Item 2  
Item 3  
8 pages, plus Appendix provisions | 50% total:  
10%  
10%  
30% | 1, 2, 3 & 4 | Marked when Item 2 is submitted  
Marked when Item 3 is submitted  
The Thesis A document is to be presented as an *Engineering Report* and will be marked accordingly:  
Executive Summary: 10%  
Presentation/ content: 10%  
Writing/ reference quality: 10% | 10 March 2022  
24 March 2022  
Before 17:00h  
21 April 2022  
Upload to Moodle | | Week 8  
Week 10  
Post course |
RELEVANT RESOURCES

There are no prescribed texts for Thesis A

The lecturer will provide you with prescribed readings for each lecture topic and:

- You are required to conduct your own Literature research in completing CVEN4050 Thesis A. This should be discussed with the UNSW library staff as to how you can undertake independent research and find your resources.
- Independent seek new material by reviewing 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

- Key Staff to Contact for Academic Advice (log in with your zID and password):
  https://intranet.civeng.unsw.edu.au/key-staff-to-contact-during-your-studies-at-unsw
- Key UNSW Dates - https://www.student.unsw.edu.au/dates eg. Census Date, exam dates, last day to drop a course without academic/financial liability etc.
- CVEN Student Intranet (log in with your zID and password):
  https://intranet.civeng.unsw.edu.au/student-intranet
- Student Life at CVEN, including Student Societies: https://www.unsw.edu.au/engineering/civil-and-environmental-engineering/student-life
- Special Consideration: https://student.unsw.edu.au/special-consideration
- General and Program-Specific Questions: The Nucleus: Student Hub Home (unsw.edu.au)
- Refer to Academic Advising: https://app.acuityscheduling.com/schedule.php?owner=19024765
### Program Intended Learning Outcomes

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