



COURSE DETAILS

Units of Credit 6
Contact hours 5 hours per week
Lecture

20:00 online

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Off campus office

INFORMATION ABOUT THE COURSE

Pre-requisites: CVEN2101 and CVEN3101

HANDBOOK DESCRIPTION

This course involves students working on a hands-on infrastructure project. Projects will involve infrastructure such as buildings, bridges, water supply and drainage, and historical structures. Within a nominated project, students are expected to develop, design, estimate, plan, construct, and manage the processes. The emphasis in the course is on the students learning by doing and having a hands-on approach. Students take theory learned in other courses and apply it in practice. Students are expected to think for themselves, deal with situations that they have not come across before, and think in a practical and professional way. Each time the course is offered, it will be based on a different project so that students will need to solve new problems and address novel issues.

<https://www.handbook.unsw.edu.au/undergraduate/courses/2020/CVEN4106/>

OBJECTIVES

The objectives of the course are:

- < Understanding the development Cycle of Projects
- < Be able to carry out Feasibility Studies for Projects
- < Understanding the various approvals required for Projects in NSW
- < Basic understanding of Law, Planning and Risk as they relate to Engineering Projects
- < Understanding the Sensitivity Analyses for Projects

- ◁ Basic understanding of Architectural and Aesthetic concepts for Projects
- ◁ Understanding Project Viability and Factors contributing to it
- ◁ Understanding the Sales and Delivery process for Projects

In addition, the course aims to foster:

- ◁ Capacity for analytical thinking and for creative problem solving;
- ◁ Ability to engage independent and reflective learning;
- ◁ Develop the skills for collaborative and multi-disciplinary work by working effectively in small teams;
- ◁ Information literacy; and
- ◁ Skills for effective communication

These objective and course aims will be achieved using:

- ◁ Lectures and assigned readings;
- ◁ Workshops; and
- ◁ Assessment Tasks (which includes a Final Examination)

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 | <ul style="list-style-type: none"> ◁ Review lecture material and textbook ◁ Do set problems and assignments ◁ Join Moodle discussions of problems ◁ Reflect on class problems and assignments ◁ Download materials from Moodle ◁ Keep up with notices and find out marks via Moodle |
| Lectures | <ul style="list-style-type: none"> ◁ Find out what you must learn ◁ See methods that are not in the textbook ◁ Follow worked examples ◁ Hear announcements on course changes |
| Workshops | <ul style="list-style-type: none"> ◁ Be guided by Demonstrators ◁ Practice solving set problems ◁ Ask questions |
| Assessments | <ul style="list-style-type: none"> ◁ Demonstrate your knowledge and skills ◁ Demonstrate higher understanding and problem solving |

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:

| Learning Outcome | | EA Stage 1 Competencies |
|------------------|---|-----------------------------------|
| 1. | <i>Develop an understanding of the basic concepts.</i> | <i>PE1.1, PE1.2, PE1.6</i> |
| 2. | <i>Communicate effectively both written and verbally.</i> | <i>PE3.1, PE3.2, PE3.5</i> |
| 3. | <i>By the conclusion of the course, the students will be able to understand the lifecycle of Project.</i> | <i>PE2.2, PE2.3, PE3.3, PE3.5</i> |

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

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| COURSE PROGRAM |
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Term 3 2020

| Date | Topic |
|--------------------------------|--|
| 14/09/2020 (Week 1) | Subject Overview and Conceptualisation Phase |
| 21/09/2020 (Week 2) | Feasibility Phase and Selection of Project Options |
| 28/09/2020 (Week 3) | Approval Phase |
| 06/10/2020 (Week 4) | Project Procurement |
| 12/10/2020 (Week 5) | Post-Project Phase |
| 19/10/2020 (Week 6) | Non- |

ASSESSMENT OVERVIEW

RELEVANT RESOURCES

◁ There are no set textbooks for this court

DATES TO NOTE

Appendix A: Engineers Australia (EA) Competencies

Stage 1 Competencies for Professional Engineers

| | Program Intended Learning Outcomes |
|--|---|
| PE1: Knowledge and Skill Base | 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 |
| PE2: Engineering Application Ability | 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 |
| PE3: Professional and Personal Attributes | 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 |