UNSW Course Outline

CVEN3101 Engineering Operations and Control - 2024

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General Course Information

Course Code : CVEN3101
Year : 2024
Term : Term 3
Teaching Period : T3
Is a multi-term course? : No
Faculty : Faculty of Engineering
Academic Unit : School of Civil and Environmental Engineering
Delivery Mode : In Person
Delivery Format : Standard
Delivery Location : Kensington
Campus : Sydney
Study Level : Undergraduate
Units of Credit : 6

Useful Links

Handbook Class Timetable

Course Details & Outcomes

Course Description

This course is an introduction to the general principles of the organisation and control of engineering operations. The course covers project management and organisation, project scheduling and control, engineering economics, procurement and contract management, cost

estimation, construction safety and quality management, and engineering ethics and risk.

Course Aims

The aim of this course is to introduce students to management theory, and to develop students understanding of the importance and application of management functions to the successful performance of engineering projects and engineering works. The course achieves this through a combination of lecture presentations, workshop classes and assessment exercises that are designed to
introduce students to general management principles and enable them to critically reflect on how
these principles are employed in the real world.

Course Learning Outcomes

Course Learning Outcomes
CLO1 : Define engineering and management work
CLO2 : Discuss the elements of economics and financial management and risk management
CLO3 : Apply project management tools such as: Gantt chart and CPM charts
CLO4 : Analyse practical considerations when managing construction projects
CLO5 : Characterise the key aspects of project management including time, cost, safety and quality
CLO6 : Articulate the role of ethics in engineering professionalism

Course Learning Outcomes	Assessment Item
CLO1 : Define engineering and management work	• Assignment • Mid-Term Exam
CLO2 : Discuss the elements of economics and financial management and risk management	• Mid-Term Exam
CLO3 : Apply project management tools such as: Gantt chart and CPM charts	• Mid-Term Exam
CLO4 : Analyse practical considerations when managing construction projects	• Final Exam
CLO5 : Characterise the key aspects of project management including time, cost, safety and quality	• Assignment • Final Exam
CLO6 : Articulate the role of ethics in engineering professionalism	• Assignment • Final Exam

Learning and Teaching Technologies

Moodle - Learning Management System

Learning and Teaching in this course

See each module in the course.

Assessments

Assessment Structure

Assessment Item	Weight	Relevant Dates
Assignment Assessment Format: Individual	40%	Start Date: Check Moodle Due Date: Check Moodle
Mid-Term Exam Assessment Format: Individual	25%	Start Date: Check Moodle Due Date: Not Applicable
Final Exam Assessment Format: Individual	35%	Start Date: Check final exams timetable when released Due Date: Not Applicable

Assessment Details

Assignment

Assessment Overview

Each student will nominate a construction project (Part A) and prepare an Engineering Report (Part B) on the project management, safety, quality, and ethics issues. The students are encouraged to contact the teaching team as they prepare their assignments for feedback before final submission.

Course Learning Outcomes

- CLO1 : Define engineering and management work
- CLO5 : Characterise the key aspects of project management including time, cost, safety and quality
- CLO6 : Articulate the role of ethics in engineering professionalism

Assessment Length

3000 words

Submission notes

A 5% penalty applies per day for late submissions.

Assignment submission Turnitin type

This assignment is submitted through Turnitin and students can see Turnitin similarity reports.

Generative AI Permission Level

Planning/Design Assistance

You are permitted to use generative AI tools, software or services to generate initial ideas, structures, or outlines. However, you must develop or edit those ideas to such a significant extent that what is submitted is your own work, i.e., what is generated by the tool, software or service should not be a part of your final submission. You should keep copies of your iterations to show your Course Authority if there is any uncertainty about the originality of your work.
If your Convenor has concerns that your answer contains passages of AI-generated text or media that have not been sufficiently modified you may be asked to explain your work, but we recognise that you are permitted to use AI generated text and media as a starting point and some traces may remain. If you are unable to satisfactorily demonstrate your understanding of your submission you may be referred to UNSW Conduct & Integrity Office for investigation for academic misconduct and possible penalties.
For more information on Generative AI and permitted use please see here.

Mid-Term Exam

Assessment Overview

The Mid-term Examination is open-book, and students can access all formulas and supplementary data necessary to complete calculation questions. This Examination will be based on the lecture and workshop materials, including Week 1 to Week 4. The answers to questions will be discussed in the class feedback to students.

Course Learning Outcomes

- CLO1 : Define engineering and management work
- CLO2 : Discuss the elements of economics and financial management and risk management
- CLO3 : Apply project management tools such as: Gantt chart and CPM charts

Assessment Length

90 minutes

Assignment submission Turnitin type

This is not a Turnitin assignment

Hurdle rules

You must score 40% in the combined mid- and final examinations to pass the course.

You must submit at least 6 out of 8 reflective journals before the specified due date to pass the course.

Generative AI Permission Level

Not Applicable

Generative AI is not considered to be of assistance to you in completing this assessment. If you do use generative AI in completing this assessment, you should attribute its use.
For more information on Generative AI and permitted use please see here.

Final Exam

Assessment Overview

The Final Examination is open-book, and students can access all formulas and supplementary data necessary to complete calculation questions. This Examination will be based on the lecture and workshop materials, including Week 5 to Week 10

Course Learning Outcomes

- CLO4 : Analyse practical considerations when managing construction projects
- CLO5 : Characterise the key aspects of project management including time, cost, safety and quality
- CLO6 : Articulate the role of ethics in engineering professionalism

Assessment Length

2 hours

Assignment submission Turnitin type

This is not a Turnitin assignment

Hurdle rules

You must score 40% in the combined mid- and final examinations to pass the course.

You must submit at least 6 out of 8 reflective journals before the specified due date to pass the course.

Generative AI Permission Level

Not Applicable

Generative AI is not considered to be of assistance to you in completing this assessment. If you do use generative AI in completing this assessment, you should attribute its use.
For more information on Generative AI and permitted use please see here.

General Assessment Information

Grading Basis

Standard

Requirements to pass course

You need to score 40% in the combined mid- and final examinations.

You need to submit at least 6 out of 8 reflective journals before the specified due date.

Course Schedule

Teaching Week/Module	Activity Type	Content
Week 1 : 9 September - 15 September	Lecture	Course Introduction Introduction to Project Management
	Workshop	Introduction to Project Management
Week 2 : 16 September - 22 September	Lecture	Introduction to Project Management
	Workshop	Introduction to Project Management
Week 3 : 23 September - 29 September	Lecture	Project Scheduling
	Workshop	Project Scheduling
	Assessment	Assessment 1 - Assignment Part A
Week 4 : 30 September - 6 October	Lecture	Engineering Economics
	Workshop	Engineering Economics
Week 5 : 7 October - 13 October	Lecture	Contract Management
	Workshop	Contract Management
	Assessment	Assessment 2 - Mid-Term Examination
Week 6 : 14 October - 20 October	Other	Teaching Break
	Other	Teaching Break
Week 7 : 21 October - 27 October	Lecture	Conceptual Cost Estimation
	Workshop	Conceptual Cost Estimation
Week 8 : 28 October - 3 November	Lecture	Earthwork and Foundation Cost Estimation
	Workshop	Earthwork and Foundation Cost Estimation
Week 9 : 4 November - 10 November	Lecture	Construction Safety and Quality Management
	Workshop	Construction Safety and Quality Management
Week 10 : 11 November - 17 November	Lecture	Engineering Ethics and Risks
	Workshop	Engineering Ethics and Risks
	Assessment	Assesssment 1 - Assignment Part B

Attendance Requirements

Undergraduate students must attend at least 80% of the workshop/lab in which they are enrolled for the duration of the session.

You must submit at least 6 out of 8 reflective journals before the specified due date to pass the course.

Course Resources

Prescribed Resources

See the reading material for each module in the course.

Recommended Resources

See the supplementary material for each module in the course

Staff Details

Position	Name	Email	Location	Phone	Availability	Equitable Learning Services Contact	Primary Contact
Convenor	Mohsen Kalantari		H20, 205		3 - 4 PM on Thursdays	No	Yes

Other Useful Information

Academic Information

I. Special consideration and supplementary assessment

If you have experienced an illness or misadventure beyond your control that will interfere with your assessment performance, you are eligible to apply for Special Consideration prior to, or within 3 working days of, submitting an assessment or sitting an exam.

Please note that UNSW has a Fit to Sit rule, which means that if you sit an exam, you are declaring yourself fit enough to do so and cannot later apply for Special Consideration.

For details of applying for Special Consideration and conditions for the award of supplementary assessment, please see the information on UNSW's Special Consideration page.

II. Administrative matters and links

All students are expected to read and be familiar with UNSW guidelines and polices. In particular, students should be familiar with the following:

- Attendance
- UNSW Email Address
- Special Consideration
- Exams
- Approved Calculators
- Academic Honesty and Plagiarism
- Equitable Learning Services

III. Equity and diversity

Those students who have a disability that requires some adjustment in their teaching or learning environment are encouraged to discuss their study needs with the course convener prior to, or at the commencement of, their course, or with the Equity Officer (Disability) in the Equitable Learning Services. Issues to be discussed may include access to materials, signers or note-takers, the provision of services and additional exam and assessment arrangements. Early notification is essential to enable any necessary adjustments to be made.

IV. Professional Outcomes and Program Design

Students are able to review the relevant professional outcomes and program designs for their streams by going to the following link: https://www.unsw.edu.au/engineering/student-life/student-resources/program-design.

Note: This course outline sets out the description of classes at the date the Course Outline is published. The nature of classes may change during the Term after the Course Outline is published. Moodle or your primary learning management system (LMS) should be consulted for the up-to-date class descriptions. If there is any inconsistency in the description of activities between the University timetable and the Course Outline/Moodle/LMS, the description in the Course Outline/Moodle/LMS applies.

Academic Honesty and Plagarism

UNSW has an ongoing commitment to fostering a culture of learning informed by academic integrity. All UNSW students have a responsibility to adhere to this principle of academic integrity. Plagiarism undermines academic integrity and is not tolerated at UNSW. *Plagiarism at UNSW is defined as using the words or ideas of others and passing them off as your own.*

Plagiarism is a type of intellectual theft. It can take many forms, from deliberate cheating to accidentally copying from a source without acknowledgement. UNSW has produced a website

with a wealth of resources to support students to understand and avoid plagiarism, visit: student.unsw.edu.au/plagiarism. The Learning Centre assists students with understanding academic integrity and how not to plagiarise. They also hold workshops and can help students one-on-one.

You are also reminded that careful time management is an important part of study and one of the identified causes of plagiarism is poor time management. Students should allow sufficient time for research, drafting and the proper referencing of sources in preparing all assessment tasks.

Repeated plagiarism (even in first year), plagiarism after first year, or serious instances, may also be investigated under the Student Misconduct Procedures. The penalties under the procedures can include a reduction in marks, failing a course or for the most serious matters (like plagiarism in an honours thesis or contract cheating) even suspension from the university. The Student Misconduct Procedures are available here:

www.gs.unsw.edu.au/policy/documents/studentmisconductprocedures.pdf

Submission of Assessment Tasks

Work submitted late without an approved extension by the course coordinator or delegated authority is subject to a late penalty of five percent (5%) of the maximum mark possible for that assessment item, per calendar day.

The late penalty is applied per calendar day (including weekends and public holidays) that the assessment is overdue. There is no pro-rata of the late penalty for submissions made part way through a day. This is for all assessments where a penalty applies.

Work submitted after five days (120 hours) will not be accepted and a mark of zero will be awarded for that assessment item.

For some assessment items, a late penalty may not be appropriate. These will be clearly indicated in the course outline, and such assessments will receive a mark of zero if not completed by the specified date. Examples include:

- Weekly online tests or laboratory work worth a small proportion of the subject mark;
- Exams, peer feedback and team evaluation surveys;
- Online quizzes where answers are released to students on completion;
- Professional assessment tasks, where the intention is to create an authentic assessment that

has an absolute submission date; and,
- Pass/Fail assessment tasks.

Faculty-specific Information

Engineering Student Support Services – The Nucleus - enrolment, progression checks, clash requests, course issues or program-related queries

Engineering Industrial Training – Industrial training questions

UNSW Study Abroad – study abroad student enquiries (for inbound students)

UNSW Exchange – student exchange enquiries (for inbound students)

UNSW Future Students – potential student enquiries e.g. admissions, fees, programs, credit transfer

Phone

(+61 2) 9385 8500 – Nucleus Student Hub

(+61 2) 9385 7661 – Engineering Industrial Training

(+61 2) 9385 3179 – UNSW Study Abroad and UNSW Exchange (for inbound students)

School Contact Information

For assistance with enrolment, class registration, progression checks and other administrative matters, please see the Nucleus: Student Hub. They are located inside the Library – first right as you enter the main library entrance. You can also contact them via http://unsw.to/webforms or reserve a place in the face-to-face queue using the UniVerse app.

For course administration matters, please contact the Course Coordinator.

Questions about the this course should normally be asked during the scheduled class so that everyone can benefit from the answer and discussion.