



Australia's  
Global  
University

# School of Civil and Environmental Engineering

Term 2, 2020

## CVEN9702 Project Planning and Control

### COURSE DETAILS

<b>Units of Credit</b>	6
<b>Contact hours</b>	4 hours per week
<b>Class</b>	Wednesday, 12:00 pm – 2:00 pm    Online (Links will be provided in Moodle) Thursday, 2:00 pm – 4:00 pm        Online
<b>Course Coordinator and Lecturer</b>	Steven Davis email: s.davis@unsw.edu.au office: 208 Civil Engineering Building phone: +61 (2) 9385 5052

### INFORMATION ABOUT THE COURSE

This course teaches professional skills related to the planning and control of projects. In particular, projects that have the characteristics of Civil Engineering construction projects, namely: a large number of interrelated activities, substantial cost, a large number of workers, a variety of resources, etc. Within this framework the theory can be generally applied to a variety of types of projects. No knowledge of construction is required, although the examples used by the lecturer will tend to be from construction scenarios.

### HANDBOOK DESCRIPTION

<http://www.handbook.unsw.edu.au/postgraduate/courses/2020/CVEN9702.html>

### TEACHING STRATEGIES

<b>Online Lectures</b>	<ul style="list-style-type: none"> <li>Find out what you must learn</li> <li>Follow worked examples</li> <li>Hear announcements on course changes</li> <li>Lectures will be recorded and made available to students</li> </ul>
<b>Workshops</b>	<ul style="list-style-type: none"> <li>For most weeks example questions will be provided for you to work on.</li> <li>Solutions to these problems will be provided on Moodle.</li> <li>It is recommended that you work on the questions before looking at the solutions so that you can identify what parts of the question you find most difficult and would benefit most from practice.</li> </ul>
<b>Assessments (examinations and assignments)</b>	<ul style="list-style-type: none"> <li>Demonstrate your knowledge and skills</li> <li>Demonstrate higher understanding and problem solving</li> </ul>
<b>Private Study</b>	<ul style="list-style-type: none"> <li>Review lecture material</li> <li>Do set problems and assignments</li> <li>Join Moodle discussions of problems</li> <li>Reflect on class problems and assignments</li> <li>Keep up with notices and download materials from Moodle</li> <li>find out marks via Maple TA</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.

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

Learning Outcome	EA Stage 1 Competencies
1. Schedule the activities of a project allowing for logical and resource constraints	PE1.1, PE1.2, PE1.3, PE2.1, PE2.2, PE2.4
2. Determine the most efficient method of compressing a project	PE1.1, PE1.2, PE1.3, PE2.1, PE2.2, PE2.4
3. Use project management software for simple tasks	PE1.5, PE2.2, PE3.4
4. Deal with uncertainty in activity estimates	PE1.1, PE1.2, PE1.3, PE2.1, PE2.2
5. Use specialised techniques for repetitive projects	PE1.1, PE1.2, PE1.3, PE2.1, PE2.2, PE2.4
6. Apply project planning and control theory to real projects	PE1.5, PE2.1, PE2.2, PE2.3, PE2.4, PE3.4

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

## COURSE PROGRAM

### TERM 2, 2020

Week	Date	Topic	Online Quizzes	
1	3/6, 4/6	Planning	Given	Due
2	10/6, 11/6	Networks and Critical Path Method Overlapping Relationships	Web Quiz 1	
3	17/6, 18/6	Estimating		
4	25/6, 26/6	Resource Scheduling	Web Quiz 2	Web Quiz 1
5	1/7, 2/7	Project Compression		
6		No class (Flexibility Week)	Web Quiz 3	Web Quiz 2
7	15/7, 16/7	Linear Projects, Stochastic Methods: PERT		
8	22/7, 23/7	Stochastic Methods: PNET + Monte Carlo Simulation	Web Quiz 4	Web Quiz 3
9	29/7, 30/7	Monitoring and Reporting		
10	5/8, 6/8	Control, Contracts		Web Quiz 4

## ASSESSMENT

### Assignments:

#### Assessment Rationale and Criteria

A large portion of what you will learn in this course regards how to apply quantitative techniques to plan real projects. In order to assess your ability to understand these quantitative techniques and apply them to scheduling problems a series of assignments will be administered as online quizzes. They will enable you to get a better understanding of the detail involved in some of the tools used in planning and control procedures.

#### Accessing the Online Quizzes

Some quizzes will be administered through MapleTA, which can be found at <https://mapletap.telt.unsw.edu.au:8443/mapleta/login/login.do>. Other quizzes through Moodle.

The web based interface for the quizzes will be demonstrated during the lecture in week 2. Where a quiz has a more sophisticated user interface for particular questions a demonstration will be given during the lecture that the quiz is released and the assessment of that question will be explained.

The weighting for each quiz will be proportional to the number of points for the quiz displayed in Maple TA. They will not be all the same value.

Detailed feedback for each question will be provided through the same web based interface one week after the quiz is due.

### Due Dates and Late Penalties

Generally the quizzes will be due two weeks after the relevant material has been covered in the class. The actual week that each of the quizzes is released and is due can be found in the Course Program above. All online quizzes will be due at **1pm on the Thursday** in the week shown above in the Course Program.

There is no time limit other than the due date/time, you can print out the questions one day and type the answers into the computer on another day.

**If you need to submit your quiz late then type your answers into the “Late Submissions of Assignments” Moodle Forum.** No attachments unless a question asks for a picture. You will be penalised 10% per day late or part thereof based on the time of posting. No submissions will be accepted more than 1 week late.

### Exam:

In addition to the quantitative techniques mentioned above we will be covering a great deal of planning and control theory. Your ability to understand and apply this theory, as well as the quantitative techniques, will be assessed in an online open book exam, which will take 2 hours during the formal exam period. **Any topic covered in class can be covered in the exam.**

The Exam date is set by Exams Branch, and is confirmed in about Week 8 of session. You can access the time and date of the exam via MyUNSW.

The formal exam scripts will not be returned.

### Final Grade:

The final grade for this course will normally be based on the sum of the scores from each of the assessment tasks. However, not all topics will be assessed by the online quizzes, while all topics may potentially be assessed in the exam. Therefore to ensure that you have met the learning outcomes you must achieve a mark of at least 40% in the exam in order for the assignment marks will be included. The Final Examination is worth 60% of the Final Mark if the assignment marks are included and 100% if class work is not included. The assignments are worth 40% of the Final Mark if included.

For students who score over 40% in the final exam	For students who score under 40% in the final exam
1. Online quizzes 40%	1. Exam 100%
2. Exam 60%	

Note: The Coordinator or Lecturer reserves the right to adjust the final scores by scaling if agreed to by the Head of School.

### Supplementary Examinations:

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

**If you need to submit your quiz late then type your answers into the “Late Submissions of Assignments” Moodle Forum.** No attachments unless a question asks for a picture. You will be penalised 10% per day late or part thereof based on the time of posting. No submissions will be accepted more than 1 week late.

### TEXTBOOK

There is no prescribed textbook for this course.

### ADDITIONAL READINGS

There are numerous books in the library covering project scheduling. If you are having trouble following the lectures then it is recommended that you look at one of these.

## **DATES TO NOTE**

Refer to MyUNSW for Important Dates available at:

<https://my.unsw.edu.au/student/resources/KeyDates.html>

## **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**

(Formerly known as Common School Information)

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:

<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