



**UNSW**  
AUSTRALIA

# Course outline

Semester 1 2017

Never Stand Still

Engineering

Mechanical and Manufacturing Engineering

## **GSOE9820**

# **Engineering Project Management**

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# 1. Staff contact details

## Contact details and consultation times for course convenor

Name: Mr Corey Martin  
Office: Ainsworth Building (J17), Room 507  
Email: [corey.martin@unsw.edu.au](mailto:corey.martin@unsw.edu.au)

Consultation concerning this course is available immediately after the classes. Face-to-face consultation outside this time is available by appointment only.

## Contact details and consultation times for additional lecturers/demonstrators/lab staff

Name: Ms Sandra Cowan  
Email: [sandra.cowan@unsw.edu.au](mailto:sandra.cowan@unsw.edu.au)

Name: Mr Lars Moller  
Email: [lars.moller@unsw.edu.au](mailto:lars.moller@unsw.edu.au)

# 2. Course details

## Credit Points

This is a 6 unit-of-credit (UoC) course, and involves 2-3 hours per week (h/w) of face-to-face contact.

The UNSW website states “The normal workload expectations of a student are approximately 25 hours per semester for each UoC, including class contact hours, other learning activities, preparation and time spent on all assessable work. Thus, for a full-time enrolled student, the normal workload, averaged across the 16 weeks of teaching, study and examination periods, is about 37.5 hours per week.”

This means that you should aim to spend about 6-9 h/w on this course. The additional time should be spent in making sure that you understand the lecture material, completing the set assignments, further reading, and revising for any examinations.

## Contact hours

|                       | Day   | Time  | Location                           |
|-----------------------|---|-------|------------------------------------|
| <b>Lectures</b>       | Wednesday<br>(Commence in week 1)   | 6-9pm | Ainsworth Building G03 (K-J17-G03) |
| <b>Demonstrations</b> | Are provided in the form of Web-based activities and require you to work in project teams over the duration of the semester.<br>(Commence in week 2 of semester). |       |                                    |

## Summary of the course

This course will introduce to you the fundamental principles of project management in an engineering context, enabling you to become a successful project manager.

## Aims of the course

This course takes an integrated approach to managing projects, exploring both technical and managerial challenges. It emphasises not only individual project implementation, but also provides a strategic perspective of how to manage projects at the program and portfolio levels.

The course will provide you with a powerful set of tools to improve your ability to plan, implement and manage activities to accomplish specific organisational objectives in often complex and challenging work environments.

The Project Management Standards (e.g. PMBOK) are also included in the course in order to comprehensively identify the critical knowledge areas that project managers must understand if they are to become successful managers. The course is also a pathway for Project Management Institute (PMI) certification since both the contents of the course, terminologies used and exposure to several real world cases will support your preparations.

## Student 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.               | Know what a project is as well as understand the role and responsibilities of a project manager | PE1.1, 1.3, 1.6<br>PE2.4<br>PE3.1            |
| 2.               | Be able to create project plans, schedules and budgets  | PE1.1, 1.2, 1.3, 1.5<br>PE2.1, 2.2, 2.3, 2.4 |
| 3.               | Be able to select and use the appropriate tools to aid in managing a project                    | PE2.1, 2.2, 2.3, 2.4                         |
| 4.               | Be able to select and develop appropriate management styles to successfully complete a project. | PE3.1, 3.2, 3.3, 3.4, 3.5, 3.6               |

### 3. Teaching strategies

Lectures in the course are designed to cover the terminology and core concepts and theories in Project Management to help you develop a range of skills, such as managing project teams, project schedules, budgets as well as being aware of strategic topics, different environments, cultures and ethics of projects and community issues. They do not simply reiterate the texts but build on the lecture topics using examples taken directly from industry to show how the theory is applied in practice and the details of when, where and how it should be applied.

Web-based activities are designed to provide you with the opportunity to put your learning into practice and allow you to strengthen your understanding of key concepts.

### 4. Course schedule

| Date      | Topics  | Suggested Readings |
|-----------|---|--------------------|
| 01-Mar-17 | Introduction to modern project management                                       | Ch. 1              |
| 08-Mar-17 | Organisational strategy and project selection                                   | Ch. 2              |
| 15-Mar-17 | Defining the project  | Ch. 4              |
| 22-Mar-17 | Dynamic Teams, Organisational structure and culture                             | Ch. 3, 11          |
| 29-Mar-17 | Estimating project times and costs  | Ch. 5              |
| 05-Apr-17 | Developing a project plan   | Ch. 6              |
| 12-Apr-17 | Scheduling resources and costs  | Ch. 8              |
| 19-Apr-17 | MID-SEMESTER BREAK (No Classes)   |                    |
| 26-Apr-17 | Reducing project duration & Progress and Performance Measurement and Evaluation | Ch. 9, 13          |
| 03-May-17 | Managing risk   | Ch. 7              |
| 10-May-17 | Effective leadership  | Ch. 10             |
| 17-May-17 | Outsourcing and Introduction to Agile Project Management                        | Ch. 12, 17         |
| 24-May-17 | Project closure   | Ch. 14             |
| 31-May-17 | No class scheduled  |                    |

## 5. Assessment

### Assessment overview

| Assessment                | Length  | Weight | Learning outcomes assessed | Assessment criteria                                     | Due date and submission requirements                | Deadline for absolute fail                          | Marks returned                |
|---------------------------|---------|--------|----------------------------|---|---|---|-------------------------------|
| Web-based activities (x4) | N/A     | 60%    | 1, 2, 3 and 4              | Refer to Web-based activities marking criteria (page 6) | Refer to schedule for web-based activities (page 6) | Refer to schedule for web-based activities (page 6) | Two weeks after submission    |
| Quiz                      | 45 mins | 5%     | 1, 2 and 3                 | Lecture material from weeks 1-5.                        | Online, during week 6                               | N/A   | One week after submission     |
| Final exam                | 2 hours | 35%    | 1, 2 and 3                 | All course content from weeks 1-13 inclusive.           | Exam period, date TBA                               | N/A   | Upon release of final results |

#### *Web-Based activities*

The purpose of the web-based activities is to provide students with the opportunity to consolidate and apply the materials covered in the lectures; therefore you are strongly advised to cover lecture/support materials regularly every week of the session.

These activities will be facilitated and assessed through individual and team discussions. Web-based participation marks will be assessed on your individual contributions to online discussions, exercises and other learning activities via UNSW Moodle.

There will be several web-based groups. Each of you will be randomly assigned to one of these web-based groups by the end of Week 2. You will be notified of your web-based facilitator name and contact details through UNSW Moodle.

#### *Submission of web-based activities*

Web-based projects commence in week 2 and are made available on Moodle during the semester. Each project is due 1 hour before class (i.e. 5pm) on the date specified in Table 1.

| ACTIVITIES | Release Date (@ 9pm) | Due Date (@ 5pm) | Deadline for absolute fail (@5pm) |
|------------|----------------------|------------------|-----------------------------------|
| Project 1  | 08-Mar               | 22-Mar           | 24-Mar                            |
| Project 2  | 22-Mar               | 05-Apr           | 07-Apr                            |
| Project 3  | 26-Apr               | 10-May           | 12-May                            |
| Project 4* | 10-May               | 31-May           | 02-Jun                            |

Table 1 - Schedule for web-based activities

\* It will be a requirement for students to purchase individually a copy of a Harvard Business Review case study for Project 4 (estimated at USD \$4). Details of the actual case study will be provided on Moodle before the project is released.

## *Marking Criteria used for Web-based activities*

1. Participation
  - a. Discuss team member's posts
  - b. Put your thoughts forward
  - c. Work to plan
  - d. Be early, rather than late
  
2. Content of Posts
  - a. Quality posts
  - b. Correct answers
  - c. 'Outside of Box' thinking
  - d. Presentation
  - e. Proper English. I.e., no slang, etc.
  
3. Final Report
  - a. Correct answers
  - b. Presentation
  - c. On time
  
4. Project Management Skills
  - a. Early start
  - b. Provide structured plan
  - c. Follow up on deadlines
  - d. Responses to posts
  - e. Leadership
  
5. Team member skills
  - a. Respond to PM's plan and requests
  - b. Provide answers and discussion
  - c. Interaction. Give feedback on posts
  - d. Provide quality work, not quantity

## **Assignments**

### *Presentation*

All submissions are expected to be neat and clearly set out. Your results are the pinnacle of all your hard work and should be treated with due respect. Presenting results clearly gives the marker the best chance of understanding your method; even if the numerical results are incorrect.

### *Submission*

Late submissions will be penalised 5 marks per calendar day (including weekends). An extension may only be granted in exceptional circumstances. Where an assessment task is worth less than 20% of the total course mark and you have a compelling reason for being unable to submit your work on time, you must seek approval for an extension from the

course convenor **before the due date**. Special consideration for assessment tasks of 20% or greater must be processed through [student.unsw.edu.au/special-consideration](http://student.unsw.edu.au/special-consideration).

It is always worth submitting late assessment tasks when possible. Completion of the work, even late, may be taken into account in cases of special consideration.

Where there is no special consideration granted, the 'deadline for absolute fail' in the table above indicates the time after which a submitted assignment will not be marked, and will achieve a score of zero for the purpose of determining overall grade in the course.

### *Marking*

Marking guidelines for assignment submissions will be provided at the same time as assignment details to assist with meeting assessable requirements. Submissions will be marked according to the marking guidelines provided.

### **Examinations**

There will be a single, two (2) hour examination at the end of the semester.

The final examination assesses all materials covered throughout the semester to meet the course learning outcomes.

You must be available for all tests and examinations. Final examinations for each course are held during the University examination periods, which are June for Semester 1 and November for Semester 2.

Provisional Examination timetables are generally published on myUNSW in May for Semester 1 and September for Semester 2

For further information on exams, please see the [Exams](#) section on the intranet.

### *Calculators*

You will need to provide your own calculator, of a make and model approved by UNSW, for the examinations. The list of approved calculators is shown at [student.unsw.edu.au/exam-approved-calculators-and-computers](http://student.unsw.edu.au/exam-approved-calculators-and-computers)

It is your responsibility to ensure that your calculator is of an approved make and model, and to obtain an "Approved" sticker for it from the School Office or the Engineering Student Centre prior to the examination. Calculators not bearing an "Approved" sticker will not be allowed into the examination room.

### **Special consideration and supplementary assessment**

For details of applying for special consideration and conditions for the award of supplementary assessment, see the School [intranet](#), and the information on UNSW's [Special Consideration page](#).



## 6. Expected resources for students

### Textbook (Required)

Gray C.F. and Larson E.W. Project Management, 6<sup>th</sup> edition, McGraw Hill International edition, 2014. ISBN: 9781743071809

Students are also required to purchase individually a copy of a Harvard Business Review case study for Project 4 (estimated at USD \$4). Details of the actual case study will be provided on Moodle.

### Additional materials provided in UNSW Moodle

This course uses UNSW Moodle (<http://moodle.telt.unsw.edu.au>).

Items found on UNSW Moodle include:

- Web-based activities;
- Copies of weekly lectures;
- Class announcements.

### Recommended Internet sites

There are many websites giving lectures, papers and data on project management in general. A useful reference site is <http://www.pmi.org>

### Other Resources

If you wish to explore any of the lecture topics in more depth, then other resources are available and assistance may be obtained from the UNSW Library. One starting point for assistance is: <https://www.library.unsw.edu.au/>

## 7. Course evaluation and development

Feedback on the course is gathered periodically using various means, including the UNSW myExperience process, informal discussion in the final class for the course, and the School's Student/Staff meetings. Your feedback is taken seriously, and continual improvements are made to the course based, in part, on such feedback.

In this course, recent improvements resulting from student feedback include the provision of more detailed explanations on how to successfully complete the web-based activities.

## 8. Academic honesty and plagiarism

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: [student.unsw.edu.au/plagiarism](http://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.

If plagiarism is found in your work when you are in first year, your lecturer will offer you assistance to improve your academic skills. They may ask you to look at some online resources, attend the Learning Centre, or sometimes resubmit your work with the problem fixed. However more serious instances in first year, such as stealing another student's work or paying someone to do your work, may be investigated under the Student Misconduct Procedures.

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) even suspension from the university. The Student Misconduct Procedures are available here:

[www.gs.unsw.edu.au/policy/documents/studentmisconductprocedures.pdf](http://www.gs.unsw.edu.au/policy/documents/studentmisconductprocedures.pdf)

Further information on School policy and procedures in the event of plagiarism is available on the [intranet](#).

## 9. Administrative matters

All students are expected to read and be familiar with School guidelines and policies, available on the intranet. In particular, students should be familiar with the following:

- [Attendance, Participation and Class Etiquette](#)
- [UNSW Email Address](#)
- [Computing Facilities](#)
- [Assessment Matters](#) (including guidelines for assignments, exams and special consideration)
- [Academic Honesty and Plagiarism](#)
- [Student Equity and Disabilities Unit](#)
- [Health and Safety](#)
- [Student Support Services](#)

*C. Martin  
3rd February 2017*

# 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   |