

GSOE9820

Engineering Project Management

Term 3, 2022



Course Overview

Staff Contact Details

Convenors

| Name | Email | Availability | Location | Phone |
|---------|--|--|--|-------|
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Lecturers

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Demonstrators

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School Contact Information

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Course Details

Units of Credit 6

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.

Course Aims

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 the contents of the course, terminologies used and exposure to several real-world cases will support your preparations.

Course Learning Outcomes

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

| Learning Outcome | EA Stage 1 Competencies |
|---|-------------------------|
| 1. Translate from organisational strategy into project deliverables | PE1.5, PE2.4 |
| 2. Formulate project scope | PE1.5, PE2.4 |
| 3. Select and apply project management methods | PE1.3, PE2.1, PE2.2 |
| 4. Integrate and justify project plans | PE3.6, PE2.3 |
| 5. Evaluate progress and interpret success in projects | PE3.4, PE3.2 |

Teaching Strategies

The online lectures are designed to give students maximum flexibility in when and how they undertake their learning in the course. The course will 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. The lectures and assessment tasks have been developed to 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.

Additional Course Information

The course, and the Course Learning Outcomes (CLO) listed above, are structured according to [Bloom's](#)

[Taxonomy of Educational Objectives](#), from the most basic to instill Knowledge, moving on to Understanding it, then Applying it and Analysing results, and finally the most challenging which are to Synthesise new knowledge and learn to Evaluate information for ourselves. Thus CLO 1-3 are more basic, while CLO 4 and 5 are the most challenging.

The course aims to always provide students with Knowledge and Understanding, before asking students to carry out something more complex like Analysis or Evaluation. Different assignments deal with different kinds of Educational Objectives, such that for example individual quizzes are used to assess Knowledge, while a team assignment assess the integration of a project plan (which is a kind of Synthesis).

To achieve high marks in the course students must succeed at all the different kinds of these educational objectives, from the basic ones to the most challenging.

The course is a possible pathway for Project Management Institute (PMI) certification since the contents of the course, terminologies used and exposure to several real-world cases will support your preparations. It also provides an opportunity to be considered as a future course demonstrator, who are selected from students in the cohort who achieve a high level of all-round success.

Assessment

| Assessment task | Weight | Due Date | Course Learning Outcomes Assessed |
|-------------------------------------|--------|------------------------|-----------------------------------|
| 1. Project Management Plan | 50% | Week 3, Week 7 | 1, 2, 3, 4 |
| 2. Individual Knowledge Examination | 20% | Scheduled in exam time | 1, 2, 3, 4 |
| 3. Team Quiz | 10% | Week 8 | 1, 2, 3, 4 |
| 4. Interview | 20% | Week 9, Week 10 | 4, 5 |

Assessment 1: Project Management Plan

Assessment length: Approx. 20 pages

Submission notes: via Moodle

Due date: Week 3, Week 7

This assessment requires students to work together to complete a Engineering Project Management Plan (PMP) in two parts:

- Part 1 is an individual assignment (5%).
- Part 2 is group assignment (40%). Grades in the group assignment part are individually scaled based on contribution to the team, as verified by the team demonstrator. Students work in groups of 4-6.

In week 6, there is an individual progress check presentation (5%) during the meetings with demonstrators. Students need to show and summarise the work they have completed for PMP in one minute.

This assignment is submitted through Turnitin and students do not see Turnitin similarity reports.

Assessment criteria

Assessment is by a grading rubric which reflects the course learning outcomes.

Additional details

Late submissions will attract a penalty of 20% absolute reduction in marks per calendar day, and therefore have zero marks five days after the deadline.

Assessment 2: Individual Knowledge Examination

Assessment length: n/a

Submission notes: Moodle Quiz

Due date: Scheduled in exam time

Marks returned: Feedback is not returned.

The examination evaluates knowledge of the complete course. The examination is individual

work, containing multiple choice questions.

This is not a Turnitin assignment

Assessment criteria

The exam is assessed by right/wrong answers and late completion is not possible, unless approved special consideration.

Assessment 3: Team Quiz

Submission notes: Moodle quiz

Due date: Week 8

Marks returned: Marks are returned immediately and late submissions are not possible.

This assessment is Team Based Learning (TBL). All team members must be present online at the scheduled time and communicate with each other to take part in the activities with their group and to gain marks.

This is not a Turnitin assignment

Additional details

Further, ungraded quizzes are carried out throughout the course, and can be completed at any time.

Assessment 4: Interview

Start date: Weeks 9-10, outside class time

Submission notes: Online interview

Due date: Week 9, Week 10

Each student will be interviewed by an academic staff member or demonstrator and asked to discuss their group assignment in terms of achieving integration in their project planning and the definition of project success.

This is not a Turnitin assignment

Assessment criteria

Grading is by a rubric that reflects the learning outcomes.

Additional details

Rescheduling the interview time after its initial selection is not possible except in exceptional circumstances and by approval of the course convener. No-shows in the interview will receive zero marks for the interview.

Attendance Requirements

Students are strongly encouraged to attend all classes and review lecture recordings.

Team Based Learning (TBL) activities are graded group activities that take place during scheduled class time and in some meetings with demonstrators. Students who do not appear (or do not take part at all) will not receive marks for the TBL activities, unless their absence has been agreed in advance with their group and their demonstrator.

Course Schedule

[View class timetable](#)

Timetable

| Date | Type | Content |
|-------------------------------------|-----------------|---|
| Week 1: 12 September - 16 September | Lecture | Course Overview |
| | Lecture | Introduction to Project Management, Project Scope |
| | Homework | Students select project topic. |
| Week 2: 19 September - 23 September | Lecture | WBS, Project Charter |
| Week 3: 26 September - 30 September | Lecture | Design Thinking |
| | Online Activity | Moodle individual and group quiz |
| | Assessment | Project Management Plan: via Moodle |
| Week 4: 3 October - 7 October | Lecture | Theory of Change, Program Logic Model |
| Week 5: 10 October - 14 October | Lecture | Estimating, Scheduling, Risk Management, Budgeting, HR Planning |
| Week 6: 17 October - 21 October | Workshop | PMP integration |
| Week 7: 24 October - 28 October | Lecture | Project Controls, Case Study |
| | Online Activity | Moodle individual and group quiz |
| | Assessment | Project Management Plan: via Moodle |
| Week 8: 31 October - 4 November | Group Activity | Project Controls Application Exercise (TBL) |
| | Assessment | Team Quiz: Moodle quiz |
| Week 9: 7 November - 11 November | Lecture | Successful stories of project management |
| | Workshop | Interview Preparation |

| | | |
|---------------------------------------|------------|-----------------------------|
| | Homework | Submit PMP changes |
| | Assessment | Interview: Online interview |
| Week 10: 14 November - 18 November | Workshop | Practice quiz |
| | Assessment | Interview: Online interview |

Resources

Prescribed Resources

Textbook

Project Management Institute, issuing body. A Guide to the Project Management Body of Knowledge (PMBOK Guide) : and, Agile Practice Guide. Sixth edition. Newtown Square, Pennsylvania: Project Management Institute, 2017.

Recommended Resources

Additional instructional videos

Linked-in Learning accessed through

UNSW: <https://www.myit.unsw.edu.au/services/staff/educational-technology/linkedin-learning>

Course Evaluation and Development

Feedback on the course is gathered periodically using various means, including the UNSW myExperience process, feedback surveys used through the course, and the School's Student/Staff meetings. Your feedback is taken seriously, and continual improvements are made to the course taking into account such feedback.

Changes made this term to improve online education and assessments

- Improved grading rubrics
- Simpler PMP assignment (3 reduced to 2 steps)
- More controlled grading and questions for interview
- Improved project descriptions according to transparent assessment design.

Successful aspects of the course that have been kept:

- Practical assignment planning a realistic project
- TBL workshop
- Large demonstrator team and many opportunities for personalized support
- Excellence in guest lecturers and panelists

Submission of Assessment Tasks

The School has developed a guideline to help you when submitting a course assignment.

We encourage you to retain a copy of every assignment submitted for assessment for your own record either in hardcopy or electronic form.

All assessments must have an assessment cover sheet attached.

Course completion

Course completion requires submission of all assessment items. Failure to submit all assessment items may result in the award of an Unsatisfactory Failure (UF) grade for the Course unless special consideration has been submitted and approved.

Late Submission of an Assignment

Full marks for an assessment are only possible when an assessment is received by the due date. 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. 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 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, or
- Online quizzes where answers are released to students on completion, or Professional assessment tasks, where the intention is to create an authentic assessment that has an absolute submission date, or Pass/Fail assessment tasks.

We understand that at times you may not be able to submit an assignment on time, and the School will accommodate any fair and reasonable extension. We would recommend you review the UNSW Special Consideration guidelines – see section below.

Special Consideration

You can apply for special consideration through [The Nucleus Student Hub](#) when illness or other circumstances interfere with your assessment performance. Sickness, misadventure or other circumstances beyond your control may:

- Prevent you from completing a course requirement
- Keep you from attending an assessable activity
- Stop you submitting assessable work for a course
- Significantly affect your performance in assessable work, be it a formal end-of-semester

examination, a class test, a laboratory test, a seminar presentation or any other form of assessment

We ask that you please contact the Course Convenor immediately once you have completed the special consideration application, no later than one week from submission.

More details on special consideration can be found at: www.student.unsw.edu.au/special-consideration

Student Support

The University and the Faculty provide a wide range of support services for students, including:

- Library training and support services - www.library.unsw.edu.au
- UNSW Learning Centre - www.lc.unsw.edu.au
- Counselling support - www.counselling.unsw.edu.au

Equitable Learning Services aims to provide all students with a free and confidential service that provides practical support to ensure that your health condition doesn't adversely affect your studies. <https://student.unsw.edu.au/els>

Academic Honesty and Plagiarism

Your lecturer and the University will expect your submitted assignments are truly your own work. UNSW has very clear guidelines on what plagiarism is and how to avoid it. Plagiarism is using the words or ideas of others and presenting them 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. The University has adopted an educative approach to plagiarism and has developed a range of resources to support students. All the details on plagiarism, including some useful resources, can be found at www.student.unsw.edu.au/plagiarism.

All MERE students are required to complete a student declaration for academic integrity which is outlined in the assignment cover sheets. By signing this declaration, you agree that your work is your own original work.

If you need some additional support with your writing skills, please contact the Learning Centre or view some of the resources on their website: www.lc.unsw.edu.au. The Learning Centre is designed to help you improve your academic writing and communication skills. Some students use the Centre services because they are finding their assignments a challenge, others because they want to improve an already successful academic performance.

Academic Information

Course Results

For details on UNSW assessment policy, please visit: www.student.unsw.edu.au/assessment

In some instances your final course result may be withheld and not released on the UNSW planned date. This is indicated by a course grade result of either:

- LE – indicates you have not completed one or more items of assessment; or
- WD – indicates there is an issue with one or more assignment; or
- WC – which indicates you have applied for Special Consideration due to illness or misadventure and the course results have not been finalised.

In either event it would be your responsibility to contact the Course Convener as soon as practicable but no later than five (5) days after release of the course result. If you don't contact the convener on time, you may be required to re-submit an assignment or re-sit the final exam and may result in you failing the course. You would also have a NC (course not completed) mark on your transcript and would need to re-enroll in the course.

Studying a course in the School of Minerals and Energy Resources Engineering at UNSW

Report writing guide

The School has a [Report Writing Guide \(RWG\)](#) available. A copy of this is available on the course Moodle site.

Computing Resources and Internet Access Requirements

UNSW Minerals and Energy Resources Engineering provides blended learning using the on-line Moodle LMS (Learning Management System). Also see - Transitioning to Online Learning: www.covid19studyonline.unsw.edu.au

It is essential that you have access to a PC or notebook computer. Mobile devices such as smart phones and tablets may compliment learning, but access to a PC or notebook computer is also required. Note that some specialist engineering software is not available for Mac computers.

- Mining Engineering Students: OMB G48
- Petroleum Engineering Students: TETB LG34 & LG 35

It is recommended that you have regular internet access to participate in forum discussion and group work. To run Moodle most effectively, you should have:

- broadband connection (256 kbit/sec or faster)
- ability to view streaming video (high or low definition UNSW TV options)

More information about system requirements is available at www.student.unsw.edu.au/moodle-system-requirements

Accessing Course Materials Through Moodle

Course outlines, support materials are uploaded to Moodle, the university standard Learning Management System (**LMS**). In addition, on-line assignment submissions are made using the assignment dropbox facility provided in Moodle. All enrolled students are automatically included in Moodle for each course. To access these documents and other course resources, please visit: www.moodle.telt.unsw.edu.au

This course outline sets out 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 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 (as updated in Moodle), the description in the Course Outline/Moodle applies.

How We Contact You

At times, the School or your course convenors may need to contact you about your course or your enrolment. Your course convenors will use the email function within Moodle or we will contact you on your @student.unsw.edu.au email address.

We understand that you may have an existing email account and would prefer for your UNSW emails to be redirected to your preferred account. Please see instructions on how to redirect your UNSW emails: ["How can I forward my emails to another account?"](#)

How You Can Contact Us

We are always ready to assist you with your inquiries. To ensure your question is directed to the correct person, please use the email address below for:

- Enrolment or other admin questions regarding your program: <https://unswinsight.microsoftcrmportals.com/web-forms/>
- Course inquiries should be directed to the Course Convenor

Image Credit

Synergies in Sound 2016

CRICOS

CRICOS Provider Code: 00098G

Acknowledgement of Country

We acknowledge the Bedegal people who are the traditional custodians of the lands on which UNSW Kensington campus is located.

Appendix: Engineers Australia (EA) Professional Engineer Competency Standard

| Program Intended Learning Outcomes | |
|---|---|
| Knowledge and skill base | |
| PE1.1 Comprehensive, theory based understanding of the underpinning natural and physical sciences and the engineering fundamentals applicable to the engineering discipline | |
| PE1.2 Conceptual understanding of the mathematics, numerical analysis, statistics, and computer and information sciences which underpin the engineering discipline | |
| PE1.3 In-depth understanding of specialist bodies of knowledge within the engineering discipline | ✓ |
| PE1.4 Discernment of knowledge development and research directions within the engineering discipline | |
| PE1.5 Knowledge of engineering design practice and contextual factors impacting the engineering discipline | ✓ |
| PE1.6 Understanding of the scope, principles, norms, accountabilities and bounds of sustainable engineering practice in the specific discipline | |
| Engineering application ability | |
| PE2.1 Application of established engineering methods to complex engineering 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 | ✓ |
| Professional and personal attributes | |
| PE3.1 Ethical conduct and professional accountability | |
| PE3.2 Effective oral and written communication in 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 | ✓ |