



GSOE9810

**PRODUCT AND PROCESS QUALITY IN
ENGINEERING**

1. Staff contact details

Contact details and consultation times for course convenor

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Contact hours

Day

2.	State how an organisation can improve its processes and integrate its several functions through the best use of quality engineering.	PE1.3, PE1.5
3.	Be able to determine whether a process is capable of producing a product or service to specifications	PE1.2, PE1.3
4.	Be able to integrate very popular topics like total quality management, Six-Sigma, and Benchmarking into organisations.	PE1.6, PE2.2, PE3.4

Today's organisations are evermore focused on improving supply chain performance. Key to this improvement is quality management. Therefore, quality engineering in product and process design continues to be an evolving, interesting and challenging topic. It has moved from beyond an emphasis on management of quality to a focus on the quality of managing, operating and integrating the design, manufacturing, delivery, marketing, information, customer service and financial areas throughout an organisation's quality value chain including the entire supply chain.

Therefore, a wide variety of concepts and tools of analysis will be covered and you will be interacting with other students in the lectures and demonstration sessions, either online or face-to-face, sometimes in teams or individually. You become more engaged in the learning process if you can see the relevance of your studies to professional, disciplinary and/or personal contexts, and the relevance is shown in the lectures, face-to-face and web-based contents by way of examples drawn from different industries.

Several case discussions will take place in lectures and face-to-face demonstrations as well as through UNSW Moodle page. These aim to give several opportunities to each of you to interact, exchange ideas, knowledge and experiences with the facilitators and other students through:

- reading from a wide range of cases studies and synthesise a range of perspectives,
- reflecting on your own experience and knowledge in the light of new learning,
- exchanging views and challenge each other's thinking in structured learning environment,
- analysing case studies and relate learnings to your own context working collaboratively on a hypothetical project.

Lectures, demonstration sessions and assessments in the course are designed to cover the core knowledge areas in Quality Engineering. They do not simply reiterate the texts, but build on the lecture to provide examples and case studies.

task completions and project roleplaying will take place. Since each of you may have come from a different professional and academic background, your experiences are drawn on to illustrate various aspects of cases covered, and this helps to increase motivation and engagement.

A team of around three to four students in UNSW Moodle will be set and each team will be assigned to two case assignments. Lecturers will provide you with feedback and discussion on the assignment, and to understand the concepts and problems in greater depth.

Date	Lecture Content (Webster Theatre B) 18:00-19:30	Suggested Readings	Demonstration Session (Webster Theatre B) 19:30-21:00
Week 1 Thu 27/07/17	Perspectives and scope of Quality Engineering and Issue analysis	Chapter 1 and Lecture notes	Assignment I discussion and Team forming instruction
Week 2 Thu 03/08/17	Quality Theory and KFS analysis	Chapter 2 and Lecture notes	FedEx case study
Week 3 Thu 10/08/17	Global Supply Chain Quality, Quality Standards	Chapter 3 and 8 and Lecture notes	Aston Martin case study
Week 4 Thu 17/08/17	Strategic Quality Planning	Chapter 4 and Lecture notes	Ames Rubber case study
Week 5 Thu 24/08/17	Design Theory	Lecture notes only	Axiomatic Design and VDI-2221 case study
Week 6 Thu 31/08/17	Voice of the Customer and Voice of the Market	Chapter 5,6, 7 and Lecture notes	Assignment I support

Week 7 Thu 7/09/17	Acceptance Sampling	Chapter 9, Lecture notes and Supplement online material *	Assignment II discussion Questions on Acceptance Sampling
Week 8 Thu 14/09/17	Tools of Quality	Chapter 10 and Lecture notes	Questions on Basic 7 and New 7 Tools
Week 9 Thu 21/09/17	Statistical Process Control I	Chapter 11 and Lecture notes	Questions on variable control charts
Week 10 Thu 5/10/17	Statistical Process Control II	Chapter 12 and Lecture notes	Questions on attribute control charts and capability analysis
Week 11 Thu 12/10/17	Six-Sigma Management and Tools	Chapter 13 and Lecture notes	Six-Sigma tool in Minitab 17
Week 12 Thu 19/10/17	Wrap-up session and Exam Revision, I	Lecture notes	Assignment II support and exam revision
Week 13 Thu 26/10/17	Exam Revision II	Lecture notes	Exam revision

[*http://wps.prenhall.com/wps/media/objects/14746/15100872/M09_FOST7982_05_SE_Appendix.pdf](http://wps.prenhall.com/wps/media/objects/14746/15100872/M09_FOST7982_05_SE_Appendix.pdf)

Assessment overview

Assessment	Length	Weight	Learning outcomes assessed	Assessment criteria	Due date and submission requirements	Deadline for absolute fail	Marks returned
Online Quiz	30 minutes	10%	1, 2 and 4	Material from week 1 to 3 (inclusive)	Friday Week 4 18/08/17	N/A	Immediately after the quiz is closed
Group assignment 1	2000 words	15%	1, 2,3 and 4	Material from week 1 to week 6 (inclusive)	Friday Week 7 08/09/17 5pm on Moodle	Three weeks after submission	Three weeks after submission
Group assignment 2	2000 words	25%	1, 2,3 and 4	All material from week 1 to week 11 (inclusive)	Friday Week 13 27/10/17 5pm on Moodle	Upon release of final results	Upon release of final results

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Final exam

Assignments

The assignments will be posted on Moodle or handed out in class, and a reminder announcement will be made about due dates for the assignments. The assignments support the learning outcomes by incorporating an appropriate mix of activities such as issue analysis, fact-based data analysis that support the design of appropriate solutions and strategies. The assignments also support collaborative team work and integration of different ideas and components into an overall coherent quality management strategy.

The following criteria will be used to grade assignments:

Examinations

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

It is your responsibility to ensure that your calculator is of an approved make and model, and to obtain an "Approved" sticker for it

You can find a limited number of the prescribed textbook from the UNSW library. You may browse for the location and availability of the textbook via: <https://www.library.unsw.edu.au/>

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 introducing the peer evaluation system that aims to provide peer feedback support and ensure fair workload distribution.

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

(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

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

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](#)
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Stage 1 Competencies for Professional Engineers

	Program Intended Learning Outcomes
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