



GSOE9810

**PRODUCT AND PROCESS QUALITY IN
ENGINEERING**



Summary of the course

This course will introduce you to the cornerstones of creating and sustaining an effective organisation by covering several quality engineering approaches, industrial cases, videos etc. Several topics as well as methods and tools for improved product and process design will be covered which are essential to take organisations into the next generation with significantly improved organisational effectiveness. Managing quality is considered critical in business and organizational governance and this includes all aspects of the engineering discipline, from analysis to design to implementation and improvement. GSOE9810 can therefore be considered an important and logical element of a graduate engineering degree or diploma.

Aims of the course

This course is designed to cover the core concepts and dynamic approaches in quality engineering field. They do not simply reiterate the textbooks, but build on the lecture topics using examples (many taken from several industries) to show you how successfully and unsuccessfully these approaches are applied in practice.

Demonstration sessions are designed to support your learning process with opportunities for more interaction as well as to enhance individual and team participation through discussion on problems, questions and cases.

The textbooks, notes, case studies and UNSW Moodle postings support the lectures and demonstration sessions but they are not intended to be a substitute for attending classes. You are expected to cover all the materials assigned for both lectures and demonstration sessions.

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.	State what an organisation needs to do to remain	PE2.1, PE2.2, PE2.4, PE3.4
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

3. Teaching strategies

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, and 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

4. Course schedule

Date	Lecture Content (Old Main Building - OMB149) 18:00-19:30	Suggested Readings	Demonstration Session (OMB149) 19:30-21:00
Week 1 Thu 28/07/16			

Record

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 having record of meetings for both major assignments so that student teams can keep track of their weekly progress. In addition, teams can flag team related issues earlier to avoid work contribution conflict toward the assignment due date.

8 Academic Integrity

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 The Learning Centre assists students with understanding

9. Administration

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](#)

*Erik van Voorthuysen and Ron Chan
July 2016*

Professional Engineers

	Program Intended Learning Outcomes
PE1: Knowledge and Skill Base	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