

Course Outline

Course Code	: DOS4715
Course Title	: Lean Principles for Operational Excellence
Class Date	: From 14/1/2024 To 19/4/2024
Semester	: Semester 2, Academic Year 4
Faculty	: Prof Goh Thong Ngee, PhD
Department	: Analytics & Operations
Email	: isegohtn@nus.edu.sg
URL	: https://cde.nus.edu.sg/isem/about-us/faculty-members/
Telephone	: 65164484

Overview

In the competitive business world today and tomorrow, organizations stand or fall, ultimately, on the degree of excellence in Operations Management. In this course, a collection of useful ideas and methodologies generally referred to as "Lean" is presented with reference to value, quality and productivity in the course of generation of goods and services in a globalized environment. Emphasis is on the strategic thinking and implementation of techniques that are generic in nature, i.e. not specific to any product groups or types of service. There is no pre-requisite for this course, and there is no formal final examination; the student's grade is made up of group assignments and continuous assessments of which details will be given in due course. The instructor is Prof Goh Thong Ngee, recipient of IEEE "Educator of the Year Award", ASQ Eugene Grant Medal, ANQ Ishikawa-Kano Gold Medal, and former Board Member of the Singapore National Productivity Board.

Course Objectives

The course will introduce the principal concepts and techniques of "Lean" and more generally in the wider context of "Lean Six Sigma". Related management ideas and tools will also be introduced. The principles and potential of Six Sigma – which mostly did not exist in the classical teachings of Quality and Productivity "gurus" such as Juran and Deming – will be explained in detail and with practical examples, "future-proofing" so to speak, Business Administration students in a VUCA (volatile, uncertain, complex and ambiguous) environment. The discussion is generic, i.e. not confined to any particular type of business or industry, and essential analytical techniques will be introduced but not at the expert level. Active class participation is expected of the students; for those who have an interest in becoming "Lean Six Sigma" professionals (e.g. "Six Sigma Green Belts", "Six Sigma Black Belts", etc.) this module will provide a much-needed foundation including the essential communication capability both internally and externally.

Assessment

Assessment Components	Weightage
Class participation	10%
Group assignments	20%
Mid-term assessment	30%
Project (Group report and presentation)	40%
Total (No additional "Final Examination")	100%

Pre-requisite: Nil

Outline and Tentative Schedule

[The class will meet for three hours per week: tentatively one three-hour session with a break].

Lesson/ Week	Session
1	Course introduction. Overview: requirements; course references
2	Classical management principles for quality and productivity
3	Approaches to operational excellence: internal and external perspectives
4	Six Sigma as an integrated framework for excellence: strategic phrases
5	Lean: personnel and organisation levels; implementation
6	Lean Six Sigma project selection and decision analysis
	<i>UNIVERSITY RECESS</i>
7	Conceptual models for Operational excellence, Productivity and Quality
8	Group Project presentation, critique, and learning (PCL) – Part I
9	Group Project PCL – Part II
10	Foundation of quantitative approaches and techniques
11	Quantitative tools for practical studies
12	Operational changes and innovation
13	Leadership strategies; overall review

Academic Honesty & Plagiarism

Academic integrity and honesty is essential for the pursuit and acquisition of knowledge. The University and School expect every student to uphold academic integrity & honesty at all times. Academic dishonesty is any misrepresentation with the intent to deceive, or failure to acknowledge the source, or falsification of information, or inaccuracy of statements, or cheating at examinations/tests, or inappropriate use of resources.

Plagiarism is 'the practice of taking someone else's work or ideas and passing them off as one's own' (The New Oxford Dictionary of English). The University and School will not condone plagiarism. Students should adopt this rule - You have the obligation to make clear to the assessor which is your own work, and which is the work of others. Otherwise, your assessor is entitled to assume that everything being presented for assessment is being presented as entirely your own work. This is a minimum standard. In case of any doubts, you should consult your instructor.

Additional guidance is available at:

- [Administrative Policies](#)
- <http://www.nus.edu.sg/registrar/administrative-policies-procedures/acceptance-record#NUSCodeofStudentConduct>
- <http://nus.edu.sg/osa/resources/code-of-student-conduct>