The Hong Kong University of Science and Technology
Department of Information Systems, Business Statistics and Operations Management
Spring 2020 ISOM 3730

Name of course: Quality and Process Management

Number of credits: 4 credits

Prerequisites: There is no prerequisite except that students should be experienced in basic statistics (as covered in ISOM 2500)

Class meetings:	L1	Wed 9:00 – 10:20 am	Rm 5620 (or via Zoom)
	L2	Tue 3:00 – 4:20 pm	Rm 5620 (or via Zoom)
Tutorials:	T1	Mon 1:30 – 2:20 pm	LSK 1007 (or via Zoom)

Note: Tutorials are tentatively scheduled on 16, 23, 30 March, 20, 27 April.

Instructor: Dr. Ki Ling Cheung Office – LSK 4021
Phone: 23587737 Email: imcheung@ust.hk
Office hours: Mon, Wed 10:30 to 11:30 am or by appointment
(Zoom meeting ID: 806 675 0866)

Teaching assistant: Angel So Office – LSK 4049C
Phone: 23585728 Email: imso@ust.hk
Office hours: Mon 10:30am – 12:30pm or by appointment
(Zoom meeting ID: 303-211-0127)

Course objective:
The objective of the course is to provide a systematic survey on the theory and implementations of quality control and management activities for different industries (mainly manufacturing and service). The concepts and methodologies of quality management can be implemented by the students in their future careers.

Blending Learning:
Quality and process management is a very practical and "hands-on" course, in the sense that each topic that we cover can be readily applied to solve some kind of real problems for companies. So there are ample applications and opportunities for learning in class from this problem solving point of view. In addition, some topics are more like engineering involving mathematics and statistics, while other are managerial and involves no mathematics at all. Because of such characteristics, the teaching approach is integrative and interactive in nature, with exercises, case discussion, simulation games and project presentation involved in class. This course will enhance your learning experience by adopting a new blended learning approach.

Our goal of using a blended approach is to leverage the best aspects of both face-to-face and online learning for your benefit. Instead of using classroom time for presentation of materials that you can easily learn on your own, we will use the class time to engage you in more in-depth discussions and deepen your understanding of the topics through cases and games. You will further enhance your understanding in certain topics by completing a group projects. Students are required to follow the weekly online video schedule. Class meetings are opportunities for the students to apply what they have learned and to interact with their peers and instructors. Weekly class meetings are entirely participatory-based, to encourage student engagement with an experiential learning approach. During weekly class meetings, students can engage in games, simulations, case studies, exercises, and a mix of these activities. Through this approach, the instructor is in a better position to evaluate the participation of students in case discussion based on the frequency and relevancy of their responses.

Zoom:
Unless we are able to revert to classroom lecture mode before May, all in-class meetings will be replaced by Zoom. Zoom is an easy-to-use, web-based conferencing tool on Microsoft Windows and Mac desktop client, as well as mobiles. Users may choose to record session, collaborate on projects and share screens under a single platform. For details, please see: https://itsc.ust.hk/services/general-it-services/communication-collaboration/zoom-meeting

Intended learning outcomes:
At the end of this course, students should be able to:
1. Identify and analyze some of the most important problems in quality management in different industries; (ILO 1, 4)
2. Create quality management solutions that have been used in practices; (ILO 1, 4)
3. Apply a strategic quality management perspective to different companies. (ILO 1, 4)

This course also provides students with the opportunities to develop their abilities to:
4. Work effectively in a team and lead a team; (ILO 5)
5. Work with other functions in making quality improvement; (ILO 3)
6. Communicate effectively in oral English in assigned task contexts. (ILO 2)

Projects:
You are expected to organize a team of 4 members. Please sign up on canvas (People > Project group) by the end of the first four weeks of semester. During the semester your team will conduct two projects. Each project is about a company's quality problem. One of them is a simulation game. For the other one you have to provide analysis and recommendations for the company. A 15-minute presentation should be delivered.

Examinations:
All quiz and exam are open book/notes. The quiz will be held on April 6. The final exam covers everything taught after the quiz.

Assessment Scheme: Your course grade is determined by

Class Participation	1%	2 points
On-line Quiz	4%	8 points
Simulation Game	5%	10 points
Final project	15 %	30 points
Quiz	30 %	60 points
Final exam	45 %	90 points
Total	100%	200 points

Earning participation points: Your in-class participation will earn you the participation points.

Earning online quiz points: For online learning using the Canvas platform, you are required to complete the quizzes at the end of each learning module. Each correct answer worths 0.5 point. A maximum of 8 points can be earned during the semester. Week 1 and Week 2 quizzes are practice quizzes and will not be counted towards your course grade.

Textbook: S. Thomas Foster, "*Managing Quality Integrating the Supply Chain*", sixth edition, Thomson (2017). The textbook is *required* rather than optional, and is available at the University bookstore.

Cases and lecture notes:
Please visit canvas for downloading cases and lecture notes. Four cases are used in this course.
1. Samsung Electronics: Analyzing Qualitative Complaint Data
2. Din Tai Fung: The Art of Dumpling
3. Comtec Electronics (A)

4. Body Scans and Bottlenecks: Optimizing Hospital CT Process Flows

There are also two online simulation games; and one article will be used for discussion:
Parasuraman, A. "*Finding Service Gaps in the Age of e-Commerce*," IESE Insight, Issue 17, Second Quarter 2013, pp. 30-37.

Laptop Policy: Your laptop should only be used for class activities such as working on an in-class simulation, taking notes, or referring to a spreadsheet. You should not conduct any non-class activities such as social networking or web surfing in class, and turn off your smartphone.

Course Schedule for Lecture 1

Module 1:	Definitions and Measurements of Quality
Feb 19	In-class: Course Introduction
	Online: History of Quality Management and What is Quality? Reading: Pages 25-29, 51
Feb 26	In-class: Samsung Electronics Case
	Online: Graphical Tools and Quality Cost Reading: Pages 112-116, 264-281
Mar 4	In-class: Quality Cost and Fishbone Diagram Exercises
	Online: Statistical Process Control Reading: Pages 302-317, 322-324
Module 2:	Statistical Quality Control
Mar 11	In-class: Quality Wireless Case
	Online: Statistical Process Control Reading: Pages 339-348
Mar 18	In-class: Quality Simulation Game (Bring Notebook Computer)
	Online: Process Capability Analysis and Six Sigma Reading: Pages 326-331, 362-366
Mar 25	In-class: Process Capability Analysis and Six Sigma Exercises
	Online: Acceptance Sampling Reading: Pages 252-258
Apr 1	In-class: No Class
	Online: Economics of Acceptance Sampling and Quality Theory Reading: *Leading Contributors to Quality Theory: W. Edwards Deming* Pages 51-56 *Leading Contributors to Quality Theory: Kaoru Ishikawa* Pages 60-61 *Viewing Quality Theory from a Contingency Perspective* Pages 67-71
Apr 6	Quiz from 1:30 to 2:30 pm
Module 3:	Total Quality Management
Apr 8	In-class: Din Tai Fung Case and Economics of Acceptance Sampling Exercises

Online: Comtec Case and Quality Function Deployment
Reading: Pages 180-189

Apr 15 In-class: Quality Function Deployment Exercises

Online: Service Quality and Gap Analysis
Reading: Pages 29-30, 135-137, 207-218

Module 4: Quality Management Projects

Apr 22 In-class: Benihana Simulation Game (Bring Notebook Computer)

Online: Reliability
Reading: Pages 349-353

Apr 29 In-class: Armarium Case Presentation

Online: Body Scans and Bottlenecks Case

May 6 In-class: Armarium Case Presentation

May 13 In-class: Final Review

Course Schedule for Lecture 2

Module 1: Definitions and Measurements of Quality
Feb 25 In-class: Course Introduction

Online: History of Quality Management and What is Quality?
Reading: Pages 25-29, 51

Mar 3 In-class: Samsung Electronics Case

Online: Graphical Tools and Quality Cost
Reading: Pages 112-116, 264-281

Mar 10 In-class: Quality Cost and Fishbone Diagram Exercises

Online: Statistical Process Control
Reading: Pages 302-317, 322-324

Module 2: Statistical Quality Control
Mar 17 In-class: Quality Wireless Case

Online: Statistical Process Control
Reading: Pages 339-348

Mar 24 In-class: Quality Simulation Game (Bring Notebook Computer)

Online: Process Capability Analysis and Six Sigma
Reading: Pages 326-331, 362-366

Mar 31	In-class: Process Capability Analysis and Six Sigma Exercises Online: Acceptance Sampling Reading: Pages 252-258
Apr 6	Quiz from 1:30 to 2:30 pm
Apr 7	In-class: No Class Online: Economics of Acceptance Sampling and Quality Theory Reading: *Leading Contributors to Quality Theory: W. Edwards Deming* Pages 51-56 *Leading Contributors to Quality Theory: Kaoru Ishikawa* Pages 60-61 *Viewing Quality Theory from a Contingency Perspective* Pages 67-71
Module 3:	Total Quality Management
Apr 14	In-class: Din Tai Fung Case and Economics of Acceptance Sampling Exercises Online: Comtec Case and Quality Function Deployment Reading: Pages 180-189
Apr 21	In-class: Quality Function Deployment Exercises Online: Service Quality and Gap Analysis Reading: Pages 29-30, 135-137, 207-218
Module 4:	Quality Management Projects
Apr 28	In-class: Benihana Simulation Game (Bring Notebook Computer) Online: Reliability Reading: Pages 349-353
May 5	In-class: Armarium Case Presentation Online: Body Scans and Bottlenecks Case
May 12	In-class: Armarium Case Presentation
May 19	In-class: Final Review
Caveat	The instructor may modify the syllabus if deemed necessary.