The Hong Kong University of Science and Technology
Department of Information Systems, Business Statistics and Operations Management
Fall 2021   ISOM 3730

Name of Course: Quality and Process Management

Number of Credits: 3 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	Room 5620 (Or via Zoom)
L2	Fri 9:00 – 10:20 am	Room 5620 (Or via Zoom)

Instructor: Dr. Ki Ling Cheung   Office – LSK 4021
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Office hours: Wed 10:30 to 11:30 am or by appointment
(Zoom meeting ID: 806 675 0866)

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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:
All in-class meetings will be conducted on 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 have to organize a team of 4 members. Please sign up on canvas (People > Project group) by the end of the first month of semester. There are two final projects. Each project is about a company's quality problem. One of them is Benihaha simulation game. For the other one, a case about Uber, you have to provide analysis and recommendations for the company. A 15-minute presentation should be delivered.

Free-Riding Exclusion Policy:

Free-riding occurs when a group member relies on other group members to complete group tasks, and does not contribute to group work. If you feel that a member of your group is a free-rider, please report to your TA. A group member will receive a zero once when the free-riding case is confirmed.

Examinations:

All quiz and exam are open book/notes. The quiz will be held on October 18. The final exam covers everything taught after the quiz.

Assessment Scheme: Your course grade is determined by

Class Attendance	2.5%	5 points
On-line Quiz	5%	10 points
Final Project	15 %	30 points
Quiz	32.5 %	65 points
Final exam	45 %	90 points
Total	100%	200 points

Earning attendance points: Attendance is required from week 3 onwards. 1 point per class. A maximum of 5 points can be earned during the semester. If you are attending class online, you are expected to turn on your camera for the entire class time. Solely joining the zoom meeting without showing your face, or leaving your seat for very long time, will not earn you attendance points. Virtual background is allowed.

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 10 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, hardcopies and eBook are available at the University bookstore. Students can purchase the eBook directly via the Campus bookstore website: https://cas.ust.hk/cas/login?service=https%3A%2F%2Flogin.psft.ust.hk%2Fcas%2Flogin%3Fclient_name%3D%2522CAS%2BPSFT%2522. It will require students to login with their student account in order to process further. They can search with the ISBN (Print: 9781292154213 or eBook: 9781292154275)

Cases and Lecture Notes:

Please visit canvas for downloading cases and lecture notes. Five 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
5. Uber: Applying Machine Learning to Improve the Customer Pickup Experience (For final project)

There is one online simulation game (Quality Analytics Simulation Game). In addition, 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

	Week	L1	L2	Topic
Module 1: Definitions and Measurements of Quality	1	1 Sept	3 Sept	**In-class: Course Introduction** Online: History of Quality Management and What is Quality? Reading: Pages 25-29, 51
	2	8 Sept	10 Sept	In-class: Samsung Electronics Case Online: Graphical Tools and Quality Cost Reading: Pages 112-116, 264-281
	3	15 Sept	17 Sept	In-class: Quality Cost and Fishbone Diagram Exercises Online: Statistical Process Control Reading: Pages 302-317, 322-324
Module 2: Statistical Quality Control	4	Holiday	24 Sept	In-class: Quality Analytics Simulation Game (Bring laptop computer) Online: Statistical Process Control, Process Capability Analysis and Six Sigma Reading: Pages 326-331, 339-348, 362-366
	5	29 Sept	Holiday	
	6	6 Oct	8 Oct	In-class: Quality Wireless Case Online: Acceptance Sampling
	7	13 Oct	15 Oct	In-class: Process Capability Analysis and Six Sigma Exercises Online: Economics of Acceptance Sampling Reading: Pages 252-258
Module 3: Total Quality Management and Final Project	8	20 Oct	22 Oct	**No class (Quiz on 18 Oct, 7-8pm)** Online: 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
	9	27 Oct	29 Oct	In-class: Din Tai Fung Case and Economics of Acceptance Sampling Exercises Online: Quality Function Deployment Reading: Pages 180-189
	10	3 Nov	5 Nov	In-class: Quality Function Deployment Exercises Online: Service Quality and Gap Analysis Reading: Pages 29-30, 135-137, 207-218
	11	10 Nov	12 Nov	In-class: Final Project Presentation Online: Comtec Case
	12	17 Nov	19 Nov	In-class: Final Project Presentation Online: Body Scans and Bottlenecks Case
	13	24 Nov	26 Nov	In-class: Q&A Review for Final Exam

Caveat: The instructor may modify the syllabus if deemed necessary.