ISOM 2700: Intro. to Operations Management

Section L1

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Course Description & Objectives

Operations is one of the major functions in an organization, concerned with the transformation of inputs (e.g., raw material, labor, capital, and information) into outputs (goods and services). Operations management is an area of management concerned with analyzing and improving the transformation process. This course will give an overview of main topics in operations management, providing students with the managerial tools needed to analyze and improve organization's business processes efficiently and effectively. The lessons from this course are important for careers in a variety of business sectors, including entrepreneurship, finance, and marketing.

Course Schedule and Venues

- Section L1: Mon & Wed 10:30 AM - 11:50 AM (LSK1009)

Textbooks (optional)

- Cachon and Terwiesch, "Matching Supply with Demand", 4th Edition, International Edition, McGraw-Hill

- Jacobs and Chase, "Operations and Supply Chain Management: The Core", 5th Edition, International Edition, McGraw-Hill

Intended Learning Outcomes (ILOs)

By the end of this course, students should be able to:

1. Describe the design and delivery of product/service in different organizations and evaluate the systems for measurement and improvement of operations. [1,4]
2. Identify and select crucial variables and measurements in decision modeling. [1]

3. Identify and describe operations management as one of the core business functions. [3]
4. Integrate operations management with other business functions to support a coherent corporate strategy. [3]
5. Determine how operation management decisions impact other business functions. [3]
6. Identify a wide range of contemporary and pervasive global business issues, as well as cultural and technology advancement that impact the management of operations. [4, 6]
7. Apply a range of appropriate quantitative and qualitative methods and tools to solve business problems in which the management of operations is a critical issue. [4,7]
8. Discuss the role of operations management in sustainability and social responsibility. [8]

Grading Policy

- This course will be assessed using criterion-referencing and grades will not be assigned using a curve. Detailed rubrics for each assignment are provided below, outlining the criteria used for evaluation.

  - A: 90-100%
  - B: 80-90%
  - C: 70-80%
  - D: 60-70%
  - F: 60% and below

- The grade will count the assessments using the following proportions:

After-class quizzes	20%
Midterm exam	40%
Final exam	40%
Total	**100%**

- Both exams are offline/closed book/closed notes. Basic formula sheet will be provided by the instructor.

- The final exam is not cumulative; that is, it only covers the course material after the midterm exam.

- No makeup exam for the midterm exam will be given. If you miss the midterm exam for a valid and verifiable reason approved by the instructor in advance, you may take a *cumulative* final exam (covering entire course) and the weight of the mid-term will be added to the final exam. Otherwise, a zero mark will be assigned as your mid-term grade.

- There will be six after-class quizzes (on canvas) throughout the course, each with equal weight. The lowest grade will be dropped.

- Practice problem sets will be provided throughout the course to help students improve their understanding of course material. The practice problems are not counted toward the final grade, so there is no need to submit solutions to the practice problems, although it is highly encouraged to solve the problems individually.

- Re-grading policy: The process of assigning the grades is intended to be one of unbiased evaluation. Students are encouraged to respect the integrity and authority of the professor's grading system and are discouraged from pursuing arbitrary challenges to it. If you believe an inadvertent error has been made in the grading of exams, a request re-grading may be submitted. In the event that you would like to request to re-grade:

  - Email the TA and *me* within **3 days** of receiving your grade, including a brief written statement of why you believe that an error in grading has been made. Last requests will not be entertained.

  - I will re-grade your assessment/examination **in its entirety**. That is, I will re-grade **all the items** in your assessment/examination.

Policy on Generative AI

Students are permitted to utilize generative artificial intelligence (AI) tools to support their learning and coursework in this class. However, the use of AI is strictly prohibited during after-class quizzes and exams.

Academic Integrity

Students at HKUST are expected to observe the Academic Honor Code at all times (see http://rpghandbook.ust.hk/student-conduct-and-academic-integrity#honor for more information). Zero tolerance is shown to those who are caught cheating on exam. In addition to receiving a zero mark on the exam involved, the final course grade will appear on your record with an X, to show that the grade resulted from cheating. This X grade will stay with your record until graduation. If you receive another X grade, you will be dismissed from HKUST.

Course Outline

The schedule is tentative and subject to change. The learning goals below should be viewed as the key concepts you should grasp after each session, and also as a study guide before each exam, and at the end of the semester.

Module	Date	Contents
	Feb 2	Introduction to OM
Process Analysis	Feb 4	Fundamentals of Process Analysis
	Feb 9	Application: The Goal
Quality Management	Feb 11	Statistical Process Control I
	Feb 16	Statistical Process Control II
	Feb 23	Six Sigma
Resource Management	Feb 25	Decision Tree Method
	Mar 2	Resource Allocation via Linear Programming
	Mar 4	Linear Programming with Excel Solver (Laptop in Class)
Service Management	Mar 9	Basics of Service Management
	Mar 11	Simple Queueing Models (M/M/s)
	Mar 16	General Queueing Models
	Mar 18	Simulating Service Systems (Laptop in Class)
	Mar 23	Midterm Exam Review Session
	TBD	Midterm Exam (Tentative)
	Mar 25	Midterm Break
Inventory Management	Mar 30	Newsvendor Problem
	Apr 1	Economic Order Quantity (EOQ)
	Apr 13	Applications of Inventory Models
Demand & Revenue Management	Apr 15	Forecasting Methods
	Apr 20	Capacity-based Revenue Management
	Apr 22	Price-based Revenue Management
Supply Chain Management	Apr 27	Bullwhip Effects
	Apr 29	Supply Chain Coordination
Best Practices in OM	May 4	TBD
	May 6	Final Exam Review Session