

Course Syllabus of ISOM 2700 Operations Management (L1, L2, and L3) 2026-27 FALL

COURSE DESCRIPTION	What is Operations Management? Think about your favorite bubble tea. Someone had to source the tea leaves and tapioca, figure out how many cups to prepare for the afternoon rush, decide how many staff to schedule, keep ingredients fresh in storage, and design the ordering process so you're not stuck in line for 30 minutes. That's operations management in action. More formally, operations management (OM) is the art and science of designing, analyzing, and improving the entire process that turns inputs into value for customers — spanning procurement, production, distribution, warehousing, and retailing. Every product you buy and every service you use has been shaped by countless operational decisions. The goal is to do all of this better, faster, and cheaper than competitors — in other words, to turn good execution into a real competitive advantage. Whether it's Amazon delivering a package to your door overnight, a hospital deciding how many nurses to staff, or Starbucks keeping thousands of stores running smoothly, OM is the invisible engine behind organizations that actually work. Master it, and you'll understand how the world around you truly operates — a skill valued in consulting, tech, finance, supply chain, and entrepreneurship alike. About ISOM 2700 This course is designed as a face-to-face learning experience. Each week, you are expected to review the learning materials on Canvas before class, so that our sessions can be student-centered and instructor-led — focused on discussion, problem-solving, and applying concepts rather than passive lecturing. Come prepared, and you'll get far more out of every session. You are encouraged to use AI tools appropriately to enhance your learning — for example, to clarify concepts, test your understanding, or explore real-world cases. Used wisely, AI can be a powerful study partner. However, AI can also make mistakes and mislead you, so you must be able to critically evaluate its output. This is precisely why genuine learning remains essential — only by mastering the material yourself can you tell when AI is right, when it is wrong, and when to trust your own judgment.
CLASS SCHEDULE	(L1) Tuesday and Thursday, 12:00 PM – 01:20 PM, Rm 2464 (L2) Tuesday and Thursday, 10:30 AM – 11:50 AM, Rm 2464 (L3) Tuesday and Thursday, 09:00 AM – 10:20 AM, Rm 2464

INSTRUCTOR	Prof. Guodong Lyu (呂國棟) Office hours: Tuesday 4:00 p.m. – 5:00 p.m. ○ <i>Additional office hours to be announced before exams</i> ○ LSK 4035 Email: imlyu@ust.hk								
TEACHING ASSISTANT	Mr. VAISHNAVI Navalgund Office hours: By Appointment ○ LSK 4065 Email: imvaish@ust.hk								
TEXTBOOKS (optional)	Cachon and Terwiesch, “Matching Supply with Demand”, 5th Edition, International Edition, McGraw-Hill. Jacobs and Chase, “Operations and Supply Chain Management: The Core”, 6th Edition, International Edition, McGraw-Hill.								
ASSESSMENT AND GRADING	Final course grade will be determined by the following criteria: <table data-bbox="555 969 1315 1142"> <tr> <td>Assignment</td> <td>10%</td> </tr> <tr> <td>Midterm Exam</td> <td>40%</td> </tr> <tr> <td>Final Exam</td> <td>50%</td> </tr> <tr> <td>Total</td> <td>100%</td> </tr> </table> Note: (1) Assignment: There will be a total of 4 individual (online) assignments. Each assignment consists of only multiple choice questions with the same format as on the exam. (2) Exam: The midterm covers only first half of the course while the final exam covers only the second half. Each exam lasts 2 hours. Both exams are closed book and closed notes. No makeup will be given for the midterm exam. If you miss the midterm exam for a valid reason that is approved by the instructor, you will have to take a 3-hour comprehensive final exam instead. More information will be available in due course. According to the University's course grading guideline, we follow a criterion-referenced assessment rule for grading. (3) Re-grading Policy: 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 individual assignments or exams, a request to have the grade reevaluated may be submitted. In the event that you would like to request a 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. We will re-grade your examination in its entirety.	Assignment	10%	Midterm Exam	40%	Final Exam	50%	Total	100%
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ACADEMIC INTEGRITY	Students at HKUST are expected to observe the Academic Honor Code at all times (see https://registry.hkust.edu.hk/resource-library/academic-honor-code-and-academic-integrity). Zero tolerance is shown to those who are caught cheating on any homework or exam.
INTENDED LEARNING OUTCOMES (ILOs)	This course is designed to provide a foundation for understanding the operations of a firm in the big data and AI era. Our objective by the end of the course is to provide you with the analytical skills and managerial insights necessary to critically analyze a firm's operations decisions and practices. Such knowledge is important for careers in a variety of areas, including general management, entrepreneurship, investment banking, business analytics, venture capital, and consulting, where AI is increasingly shaping operational paradigms. Upon completion of this course, you are expected to: 1) Describe the design and delivery of product/service in different organizations, and evaluate the systems for measurement and improvement of operations. 2) Identify and describe operations management as one of the core business functions. 3) Integrate operations management with other business functions to support a coherent corporate strategy and articulate contributions to the well-being of an organization. 4) Determine how operation management decisions impact other business functions. 5) Identify a wide range of contemporary and pervasive global business issues, as well as cultural and technology advancement that impact the management of operations. 6) Apply a range of appropriate quantitative and qualitative methods and AI tools to solve business problems in which the management of operations is a critical issue. 7) Discuss the role of operations management in sustainability and social responsibility.
TEACHING APPROACH	The general teaching approach is student-centered, instructor-led, face-to-face lecturing, case discussions, as well as problem solving in the classroom. Lecture notes, additional reading articles, and learning resources are posted on Canvas. For many topics, we will start with a business case with concrete numbers and clearly defined questions that are often of managerial relevance. Then we provide rigorous analysis or using Excel spreadsheet and AI tools to solve the problem and discuss managerial insights based on the analysis.
ATTENDANCE & CLASSROOM ETIQUETTE	Your attendance is expected for every class session. Please notify the professor in advance if you have to miss a class due to a legitimate reason. When you attend, you will be expected to conduct yourself professionally and respectfully during class, which means being attentive and considerate of others in the class. This means refraining from the use of cell phones, generating loud noise, etc. during class.

COURSE OUTLINE

This course has the following seven modules, including process analysis, quality management, capacity management, service system, inventory management, revenue management, and supply chain management. The first four modules are covered by the first half of this course while the second half covers the remaining modules. Each module consists of several topics that are connected to some extent and share the common theme of the module.



Figure 1: Course Roadmap

The course is scheduled as follows:

Session	Date	Topic
1	Week 1 1 September (Tue)	Introduction to Operations Management
2	Week 1 3 September (Thu)	Process analysis ■ Little's Law and flow time analysis
3	Week 2 8 September (Tue)	Flow rate and process capacity ■ Bottleneck and throughput improvement
4	Week 2 10 September (Thu)	Monitoring a process using control charts ■ Natural variation and assignable variation ■ Process control charts
5	Week 3 15 September (Tue)	Quality management ■ Statistical process control ■ Process capability and six sigma quality <i>(Assignment 1 released)</i>

6	Week 3 17 September (Thu)	Capacity planning and decision making tools (I) ■ Decision tree method
7	Week 4 22 September (Tue)	Capacity planning and decision making tools (II) ■ Linear programming method
8	Week 4 24 September (Thu)	Solving optimization model using Excel ■ Problem formulation ■ Excel solver <i>(Please bring your laptop to class)</i>
9	Week 5 29 September (Tue)	Solving optimization model using AI tools ■ Using AI tools to solve problems <i>(Please bring your laptop to class)</i>
	Week 5 1 October (Thu)	<i>Public Holiday (No class)</i>
10	Week 6 6 October (Tue)	Coping with variability of service systems ■ Psychology of waiting ■ Introduction to queueing model
11	Week 6 8 October (Thu)	Queueing model ■ Waiting line models ■ Queue configuration problems <i>(Assignment 2 released)</i>
12	Week 7 13 October (Tue)	Simulating the service systems ■ Waiting line models and simulation
13	Week 7 15 October (Thu)	Mid-term review ■ Cover session 2 – session 12
14	Week 8 20 October (Tue)	Inventory Management ■ Purpose of holding inventory ■ Newsvendor model
	Week 8 22 October (Thu)	Extensive consulting for mid-term exam <i>(No class)</i>
Week 8: Mid-term exam, TBD		

15	Week 9 27 October (Tue)	EOQ model ■ Optimal order quantity
16	Week 9 29 October (Thu)	Variants of EOQ model ■ Impact of lead time ■ Impact of demand uncertainty <i>(Assignment 3 released)</i>
	Week 10 3 November (Tue)	Recess Session ■ Review the related probability topics
17	Week 10 5 November (Thu)	Demand Management and Forecasting ■ Qualitative forecasting methods
18	Week 11 10 November (Tue)	Capacity-based Revenue Management ■ Revenue management with capacity controls ■ Overbooking, protection level, and dynamic pricing
19	Week 11 12 November (Thu)	Price-based Revenue Management ■ Willingness to pay and consumer choice ■ Dynamic pricing
20	Week 12 17 November (Tue)	Managing Supply Chain ■ Introduction to supply chain management
21	Week 12 19 November (Thu)	Bullwhip Effect and Coordinating Supply Chain ■ Beer game and Bullwhip effect ■ Hedging operational risk via contracts <i>(Assignment 4 released)</i>
22	Week 13 24 November (Tue)	Advanced Topics in Supply Chain Network ■ Global Supply Chains ■ Matching
23	Week 13 26 November (Thu)	Final review ■ Cover session 14 – session 22
Final exam (2 hours, except for those who need to take the comprehensive exam for 3 hours)		