



ISOM2700 Operations Management Spring 2025 (L4, L5, and L6)

Department of Information Systems, Business Statistics and
Operations Management

COURSE: ISOM2700 Operations Management (3-0-0:3)
Production and service operations viewed from the strategic, tactical and operational levels: capacity planning, process selection, impact of technology, location and layout, material and resource requirements, scheduling and quality control. Exclusion: ISOM2720 and IELM4100

Spring 2025

L4: Mon & Wed 10:30 – 11:50AM, 6573

L5: Mon & Wed 9:00 – 10:20AM, 6573

L6: Mon & Wed 12:00 – 13:20PM, 6573

Location: Room 6573, Academic Building, Floor 6, Near Lift 29, 30

INSTRUCTOR: Prof. Yiwen Shen (yiwenshen@ust.hk)
Office: LSK-4067; Phone: 2358-7581
Office hours: Tues 5PM to 6PM or by appointment, LSK-4067 and Zoom

TEACHING ASSISTANT: Stacy Deng (imsdeng@ust.hk)
Office: LSK-4065; Phone: 2358-8746
Office hour: By appointment

TEXTS: Learning materials available on Canvas.
Recommended textbook (optional): Matching Supply with Demand by Cachon and Terwiesch

GRADING POLICY: Final course grade will be determined by the following criteria and maximum point distribution:

Participation (5 out of 7)	5
Homework (2)	10
Online quizzes (best 3 of 4)	15
Midterm exam	30
Final exam	40
Total	100

Participation:

- Total seven attendance will be recorded. Each attendance will be given one point. You are allowed to miss two of them for personal reasons (not recommended).

Homework:

- Total two homework will be assigned. The homework should be submitted before **23:59PM Sunday** of the weeks noted in the syllabus.
- Partial credits will be given based on solution steps.
- Late submission is not allowed.
- The homework solution will be posted in the following week.

Quizzes: Start from Week 3.

- Each online quiz consists of 10 multiple choice questions.
- Once you start the quiz, the timer will start automatically and you must complete it within the time limit.
- The quiz for the week will be released on **Monday morning**. You must complete the quiz by the due time (**23:59 on Sunday**) each week, as noted in the syllabus.
- No makeup quiz will be given. The quiz for the week will be waived only if you have a valid reason, such as medical emergency.

Exam: The midterm covers only part A of the course while the final exam covers only part B. The mid-term (resp. final) exam consists of 40 (resp. 45) multiple choice questions. The midterm will last 1 hour and 40 minutes, and the final exam will last two hours. 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 in advance, you will have to take a 3-hour, 75-question comprehensive final exam instead.

Regrading policy: Regrading request must be submitted within three days after the post of grade. The regrading will be based on the entirety of the homework/exam.

**COURSE GRADE
DISTRIBUTION:**

In determining the final course grade, your instructor will combine the two sessions and consider the recommended grade distribution at HKUST.

**INTENDED
LEARNING
OUTCOMES:**

This course is designed in such a way that, after completing it, you will 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]

The numbers at the end of each learning goal correspond to those learning goals and objectives for the BBA-OM Program. For details, please visit our department web site at <http://www.bm.ust.hk/isom/>.

**TEACHING
APPROACH**

The instructor will cover all required contents as well as some optional topics in class. The lecture slides will be distributed before each class via Canvas. Additional reading materials and other learning resources are also posted on Canvas. Students are expected to learn the core concepts from concrete business problems, manage necessary quantitative skills, and apply the managerial insights in other relevant settings. Students should complete on-line learning tasks each week and are encouraged to ask questions during the instructor-led, face-to-face session or Zoom meeting.

**ACADEMIC
INTEGRITY:**

Students at HKUST are expected to observe the Academic Honor Code at all times. Zero tolerance is shown to those who are caught cheating on any form of assessment and a zero mark will be given. In particular, any act of cheating on exam will automatically result in an F grade for this course.

Proposed Timeline of Class

Part A: Managing Business Process Flow	
Week 1 Feb 3 Feb 5	Introduction to OM (Session 1) Process analysis <ul style="list-style-type: none">■ A process view of organization (Session 2)■ Little's Law and flow time analysis (Session 2)
Week 2 Feb 10 Feb 12 Add/Drop: Feb 15	Bottleneck analysis <ul style="list-style-type: none">■ Bottleneck and throughput analysis (Session 3) OM and Finance <ul style="list-style-type: none">■ Inventory turnover analysis, ROIC tree (Session 4)■ Basic statistics concepts (Session 4)
Week 3 Feb 17 Feb 19	Managing uncertainty in service system <ul style="list-style-type: none">■ Basics of queueing system (Session 5) Managing uncertainty in service system <ul style="list-style-type: none">■ M/M/s queueing systems (Session 6)
Feb 23	Online Quiz 1 Due (11:59pm Sunday): cover Sessions 2, 3, 4
Week 4 Feb 24 Feb 26	Queueing System <ul style="list-style-type: none">■ Simulation method (Session 7) Quality Management <ul style="list-style-type: none">■ Variability in quality (Session 8)■ Capability analysis (Session 8)
Week 5 March 3 March 5	Quality management <ul style="list-style-type: none">■ Conformance analysis (Session 9)■ Acceptance sampling (Session 9) Capacity planning <ul style="list-style-type: none">■ Decision tree method and EVPI (Session 10)
March 9	Online Quiz 2 Due: cover Sessions 5, 6, 7, 8

Week 6 March 10 March 12	Capacity planning and resource allocation <ul style="list-style-type: none"> ■ Linear programming technique (Session 11) ■ Linear programming techniques (Session 12)
March 16	Homework 1 Due
Week 7 March 17	Mid-term review for Part A (Session 13)
Week 7: Mid-term exam, 40 multiple-choice questions Time: March 21 8PM – 9:40PM , Location: TBC	
Part B: Matching Supply and Demand	
Week 8 March 26 March 31	Forecasting <ul style="list-style-type: none"> ■ Qualitative and quantitative approaches (Session 14) ■ Time series forecasting models (Session 14) Inventory management <ul style="list-style-type: none"> ■ Introduction to inventory management (Session 15) ■ Economic order quantity (EOQ) model (Session 15)
Week 9 April 7 April 9	Inventory management <ul style="list-style-type: none"> ■ Newsvendor model and applications (Sessions 16, 17)
April 13	Online Quiz 3 Due: cover Sessions 14, 15
Week 10 April 14 April 16	Revenue Management <ul style="list-style-type: none"> ■ Capacity-based revenue management (Session 18) ■ Price-based revenue management (Session 19)
Week 11 April 23 April 28	Supply Chain Management <ul style="list-style-type: none"> ■ Introduction and win strategies (Session 20) ■ Incentive conflict: risk-sharing strategies (Session 21)
April 27	Online Quiz 4 Due: cover Sessions 16, 17, 18
Week 12 April 30 May 7	<ul style="list-style-type: none"> ■ Pricing in supply chain (Session 22) ■ Intro to Behavioral OM (optional) Final review for Part B (Session 23)
May 11	Homework 2 Due
Final exam (for part B only, 50 multiple-choice questions, 2 hours, except for those who need to take the 80-question comprehensive exam for 3 hours)	

The instructor may make changes to the above syllabus depending on the progress of class.