



ISOM2700 Operations Management Spring 2021

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

ISOM2700 L1 to L4 are designated as a blended learning course and you are expected to review the learning materials on Canvas before attending the instructor-led, Zoom meeting according to the class schedule every week. Please access via Canvas > Zoom Meeting during the class time for live streaming and recording of class videos.

Spring 2021

L1: 04:30-05:50PM Wednesday

L2: 01:30-02:50PM Wednesday

L3: 09:00-10:20AM Wednesday

L4: 12:00-01:20PM Wednesday

INSTRUCTOR:

Prof. Ronald Lau (rlau@ust.hk)

Office: LSK-4081; Phone: 2358-8348

Office hours: Zoom meeting during regular class time or by appointment

**TEACHING
ASSISTANT:**

Athena Chau (imachau@ust.hk) and Jing Jia (imjing@ust.hk)

Office: LSK-4065; Phone: 2358-8746

TEXTS:

No required textbook; learning materials are available on Canvas

**GRADING
POLICY:**

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

Online quizzes (6)	20
Midterm exam	40
Final exam	<u>40</u>
Total	100

Quizzes: For week 3 to week 12 only.

- Each online quiz consists of 10 questions. You are allowed to use the course materials and your own notes.
- Once you start the quiz, the timer will start automatically and you must complete it within the time limit of 60 minutes.
- The quiz for the week will be released on Sunday, the first day of the week. You must complete the quiz by the end of the week, 11:59PM on Saturday.
- 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. Each exam consists of 50 multiple choice questions and lasts 2 hours each. 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, 80-question comprehensive final exam instead. All exams are done online and you are allowed to use the learning materials and your own notes prepared before the exam. No searching for

answers using the Internet during the exam. More information will be available in due course.

COURSE GRADE DISTRIBUTION:

In determining the final course grade, your instructor will consider the grade distribution of all ISOM 2700 classes taught by other instructors and the recommended grade distribution at HKUST, i.e.,

A	10% - 20%
B	25% - 40%
C	35% - 45%
D	5% - 10%
F	0% - 5%

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:

This is a blended learning course. Most lectures and solved problems are delivered in video format on Canvas. Additional reading materials and other learning resources are also posted on Canvas. Students are expected to complete all on-line learning activities each week and are encouraged to ask questions during Zoom meeting each week.

ACADEMIC INTEGRITY:

Students at HKUST are expected to observe the Academic Honor Codes 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.

Part A: Managing Business Process Flow

	Introduction <i>(Please watch the recorded class lecture)</i>
Week 1 February 3	Process analysis <ul style="list-style-type: none">■ Little's Law and flow time analysis
Week 2 February 10	Flow rate and process capacity <ul style="list-style-type: none">■ Bottleneck and throughput improvement
Week 3 February 17 <i>February 20</i>	Capacity planning and management decision making techniques <ul style="list-style-type: none">■ Decision tree method and expected value of perfect information■ Cost concepts for strategic planning decisions <i>Online quiz – 1</i> <i>(All online quizzes are due by 11:59pm, Saturday, at the end of the week)</i>
Week 4 February 24 <i>February 27</i>	Resource optimization decisions <ul style="list-style-type: none">■ Linear programming technique■ Product mix problems <i>Online quiz – 2</i>
Week 5 March 3 <i>March 6</i>	Managing waiting lines <ul style="list-style-type: none">■ Psychology of waiting■ Waiting line models and simulation■ Queue configuration problems <i>Online quiz – 3</i>
Week 6 March 10	Managing process performance variability <ul style="list-style-type: none">■ Quality management■ Acceptance sampling plan■ Statistical process control■ Process capability and six sigma quality
<i>Week 7: Mid-term exam, March 17, 7:00-9:00PM</i>	

Part B: Synchronizing Supply and Demand

Week 8 March 24	Demand management and forecasting <ul style="list-style-type: none">■ Qualitative and quantitative approaches■ Basic time series forecasting models■ Forecasting errors
Week 9 April 7 <i>April 10</i>	Inventory management <ul style="list-style-type: none">■ Inventory classification and cycle counting■ Basic inventory models: Order quantity and reorder point■ Safety stock and service level <i>Online quiz – 4</i>
Week 10 April 14 <i>April 17</i>	Managing supply for short life cycle products <ul style="list-style-type: none">■ Newsvendor model and applications <i>Online quiz – 5</i>
Week 11 April 21 <i>April 24</i>	Revenue management <ul style="list-style-type: none">■ Revenue management with capacity controls■ Overbooking, protection level, and dynamic pricing <i>Online quiz – 6</i>
Week 12 April 28	Supply chain management <ul style="list-style-type: none">■ Bullwhip effect and supply chain coordination
Week 13 May 5	Best practices of lean synchronization <ul style="list-style-type: none">■ Guiding principles and work practices■ Major elements of just-in-time system
<i>Final exam (for Part B only, 50 questions, 2 hours, except for those who need to take the 80-question comprehensive exam for 3 hours)</i>	