ISOM2700 Operations Management
Fall 2021 Sections L1 and L2

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

WF (Online via Zoom)
L1: 3-4:20pm
L2: 4:30-5:50pm

INSTRUCTOR:

Prof. Suri Gurumurthi (imsuri@ust.hk)
Office hours: WF 2-3pm

TEACHING ASSISTANT:

Ms. Athena Chau (imachau@ust.hk)
Office: LSK-4065; Phone: 2358-8543
Office hours: By Appointment

TEXTS:

Instructor provided booklet; learning materials are available on Canvas

GRADING POLICY:

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

Participation and Quizzes	20
Midterm exam	35
Final exam	45
Total	100

Participation: For week 3 to week 12 only.

- You can earn 1- 2 points per week for a variety of learning activities, including in-class discussion and in-class quizzes. Attendance will be recorded during the Wednesday class, and you must have your camera "turned on" to receive full credit. Attendance will not be taken during the Friday class, but I encourage attendance when class is in session always.

Exam: The midterm covers only part A of the course while the final exam covers only part B. No makeup will be given for the midterm exam as such; if you miss the midterm exam for a valid reason that is pre-approved by the instructor, you will have to take a 3-hour, 80-question comprehensive final exam instead. All exams are closed book, closed notes but a table of formulae will be provided with the exam. The exam will be conducted in-person students in HK, while it will be conducted online via Zoom for students who are out of HK for the term.

COURSE GRADE DISTRIBUTION:

In determining the final course grade, your instructor will consider the following grade distribution measured in points achieved overall.

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

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 the BBA-OM web site at http://bbaom.ust.hk/inquiry .

PEDAGOGY:

Most lectures and solved problems are posted on canvas for your advance reading. Additional reading materials and other learning resources such as external videos are also posted on Canvas. Students are expected to complete all reading activities online for each week before attending class. Students are encouraged to ask questions during the instructor-led, face-to-face class meetings.

ACADEMIC INTEGRITY:

Students at HKUST are expected to observe the Academic Honor Code at all times: http://ugadmin.ust.hk/integrity/
Zero tolerance is shown to those who are caught cheating on any form of assessment and a zero mark will be given. Any act of cheating on exam will automatically result in a XF grade for this course. This XF grade will stay with your record until graduation. If you receive another XF or X grade, you will be dismissed from the University. All written assignments will be screened by Turnitin for plagiarism and points will be deducted when the similarity index is considered high (e.g., more than 25%).

Part A: Managing Business Process Flow	
Week 1 September 1, 3	Operations Strategy ■ What is Operations Management? ■ Elements of Operations Strategy
Week 2 September 8, 10	Process Selection and Product Design ■ Different Process Types and Uses ■ Product Design Activities ■ Service Operations
Week 3 September 15, 17	Setting up Capacity and Related Optimization decisions ■ Decision tree method and value of perfect information ■ Linear programming technique ■ Product mix problems ■ **Canvas quiz due Sept 15th (5 to 7 questions)**
Week 4,5 September 24, 29	Process Flow Measures ■ Defining capacity in terms of flow ■ Batch versus unit processing examples ■ Economies of scale in processes ■ Cycle Time of a process ■ **Canvas quiz due Sept 24th (5 to 7 questions)**
Week 5,6 Oct 6, 8	Process Flow Measures ■ Little's Law ■ Bottleneck management ■ Impact of product mix on capacity ■ **Canvas quiz due Oct 6th (5 to 7 questions)**
Week 6,7 Oct 13,15	Managing waiting lines ■ Psychology of waiting ■ Waiting line models and simulation ■ Queue configuration problems ■ **Canvas quiz due Oct 13th (5 to 7 questions)**
Week of Oct 18th (Date and Time TBA): Mid-term exam (for part A only, 35-45 questions, 80 minutes) ***Exam will be administered in person for in-HK students.***	

Part B: Matching Supply and Demand	
Week 7 Oct 27,**29***	Demand management and forecasting ■ Qualitative and quantitative approaches ■ Basic time series forecasting models ■ Forecasting errors ■ **Canvas quiz due Oct 27th (5 to 7 questions)**
Week 8 Nov 3,**5***	Inventory management ■ Inventory classification and management needs ■ Basic inventory models: Order quantity and reorder point ■ Safety stock and service levels ■ **Canvas quiz due Nov 3rd (5 to 7 questions)**
Week 9 Nov 10, **12***	Managing supply for short life cycle products with uncertain demand ■ The newsvendor problem ■ Revenue management with capacity controls ■ Capacity Reservation, protection levels ■ **Canvas quiz due Nov 10th (5 to 7 questions)**
Week 10 Nov 17, **19***	Managing Quality ■ Quality management ■ Garvin's Dimensions of Product Quality ■ The Gap Model of Service Quality ■ Acceptance sampling plan ■ Statistical process control ■ Process capability and six sigma quality ■ **Canvas quiz due Nov 19th (5 to 7 questions)**
Week 11 Nov 24, **26***	Supply chain management and Lean Operations ■ Supply Chain Structure and Behavior ■ Supply Chain Coordination ■ Revenue management in supply chains
Week 12 Dec 1,3	Lean, Agile, and Sustainable Operations ■ Major elements of just-in-time and Kanban systems ■ Sustainability Case Examples **Final Exam Review**
Final exam (for part B only, 45 questions, 2 hours, except for those who need to take the 80-question comprehensive exam for 3 hours)	