
COURSE DESCRIPTION

An organization's ultimate success depends on how efficiently and effectively it executes its strategic goals. This requires a detailed understanding of the processes used to produce and deliver goods and/or services to customers. This course will provide students with the managerial tools needed to understand and articulate the impact of an organization's business processes, and the ability to analyze and continuously improve these business processes. The skills that students will develop in this course are relevant for all business students.

LEARNING OBJECTIVES

Students will be able to:

- Understand the basics of business processes
- Recognize key drivers for inventory and supply chain systems
- Use and build simple quantitative tools for modeling tradeoffs in a setting with multiple objectives
- Identify how to improve the operational efficiency of a business system
- Communicate the impact of operational decisions on other functional areas of an organization

COURSE CONTENT

- Process analysis
- Queuing systems
- Inventory management
- Supply chain management

COURSE MATERIALS & REQUIREMENTS

Required Reading Materials:

- Class notes and other materials posted on the course site or handed out in class
- Course package (see the course site for more information)

Recommended Reading Materials: G. Cachon and C. Terwiesch, *Matching Supply with Demand: An Introduction to Operations Management*, any edition. McGraw-Hill.

Additional readings will be posted on the course site.

COURSE INFORMATION**Division:** Operations and Logistics**Term/period:** Jan-Apr 2025**Instructor:** Mahesh Nagarajan and Tim Huh**Graduate TA:** Zack Zhu**Office hours:** By appointment**Class meeting times:***This is a flexible learning course. See below for the detailed class schedule.**Some of these dates may change; any change will be announced.***Course site:** Canvas (canvas.ubc.ca)

ASSESSMENT SUMMARY

- Content Quizzes: 20%
- Case Quizzes: 10%
- Case Assignment: 15%
- Test: 50%
- Class participation: 5%

ASSESSMENT**Readings**

There will be a number of required readings for the course. Each student should complete these readings.

Content Quizzes

There will be a number of online quizzes designed to ensure that you have studied and learned the online components of the course content. For numerical answers, carry out the decimals to report your answer up to 4 decimal places. Do not use fractions. No late submissions will be accepted.

Case Quizzes

There will be a number of assignments based on cases and other materials. The objective in these assignments is to ensure that you have put in an honest effort to prepare the case, to ensure that students have given sufficient thoughts to the question and have considered relevant issues. No late submissions will be accepted.

Case Assignment

See below.

Problem Sets

In addition, the instructors will routinely assign homework problems that are related to lectures and other course content. These problems reinforce the concepts of the course material or possibly enrich your understanding of the subject beyond the immediate scope of the course. These problems are designed to aid your individual study, and they are ***not to be handed in***. Having attempted or completed these problems in a timely manner, however, will enhance the quality of your in-class participation and also your understanding of the course content.

Test

Final exam details to be announced later.

Electronic Submission

*In this course, all the submissions will be handled electronically (unless specified otherwise). We will also use **canvas** to handle all electronic submissions. Special Note: In case of a **joint** submission, submit it from the account of **one student only** while clearly listing the names of all contributors in the front page.*

SCHEDULE**Learning Sessions (Formats)**

There are three types of learning sessions.

- **"In-Class" Sessions:** These sessions are physically held in a classroom, where the instructor and students will engage in lectures and discussions. Students are expected to attend every "in-class" session. Note that these sessions will not be recorded since we may use copyrighted materials that are prohibited to be posted.
- **Flex Sessions:** These are self-study sessions in which students learn the course material at their own pace via reading, video, etc. These flex sessions are often accompanied by an online quiz.
- **Optional Help Sessions:** These sessions are physically held in a classroom. They are typically led by a graduate teaching assistant, who will go over key concepts and examples at a slower pace. These sessions are meant to be rudimentary, and attendance is *optional*. Note that these sessions will not be recorded since we may use copyrighted materials that are prohibited to be posted.

Date	Class Topics	Format	Due (See course outline for exact details)
Jan 09	No Class		
Jan 16	Benihana case and Introduction	In-class #1 [Tim]	Case Quiz: Benihana Case (Optional)
Jan 23	Basics of Process (1)	Flex Optional Help Session [Graduate TA]	Content Quiz: Process (1)
Tues, Jan 25	Kristen's Cookie case	In-class #2 [Tim]	Case Quiz: Kristen's Cookie Case
Jan 30	Basics of Process (2)	Flex Optional Help Session [Graduate TA]	Content Quiz: Process (2)
Feb 6	Shouldice case	In-class #3 [Tim]	Case Quiz: Shouldice Case
Feb 13	No Class		
Feb 20	No Class		
Feb 27	Queuing Model and waiting-time analysis	In-class #4 [Mahesh]	Content Quiz: Queuing
Mar 6	Inventory Model with Deterministic Demand	Flex Optional Help Session [Graduate TA]	Content Quiz: Inventory with Deterministic Demand
Mar 13	Inventory Model with Uncertain Demand (Bose Mini Case)	Flex Optional Help Session [Graduate TA]	Content Quiz: Inventory with Uncertain Demand
Mar 20	In-class Supply Chain Game (Bring your computer)	In-class #5 [Graduate TA]	
Mar 27	Supply chain: Introduction	Flex Optional Help Session [Graduate TA]	
Apr 3	Demand Uncertainty and Pooling strategies	In-class #6 [Mahesh]	
Tues Apr 8	Barilla Case	In-class #7 [Mahesh]	Barilla Case Write-up
TBA	Test		

Benihana case

- [\[Case Quiz\]](#) Assignment: Read Benihana of Tokyo case (Course Package), and answer the questions posted online. This assignment should be completed individually. **Due: Wed Jan 15 @ 11:59pm. (THIS ASSIGNMENT IS OPTIONAL, NOT FOR GRADING.)**
- **In-Class Session #1: see schedule**

Basics of Process (1)

- Watch the video and understand the following concepts: capacity, utilization, and bottleneck
- Read the Powerpoint slides
- [\[Content Quiz\]](#) Quiz: capacity, utilization and bottleneck (**Due: Mon Jan 27 @ 11:59pm**)
- [\[Reading\]](#) Read: *Managing Business Process Flows*, pp. 102-109 (Flow Rate and Capacity Analysis)
- **Suggested flex session completion: see schedule**
- **Optional Help Session by TA (class time): see schedule**

Kristen's Cookie case

- [\[Case Quiz\]](#) Assignment: Read Kristen's Cookie Company (A), and answer the questions posted online. This assignment should be completed individually. **Due: Mon Jan 27 @ 11:59pm.**
- **In-Class Session #2: see schedule**

Basics of Process (2)

- Watch the video and understand the following concepts: inventory, Little's law, etc.
- Read the Powerpoint slides
- [\[Content Quiz\]](#) Quiz: Little's Law (**Due: Wed Feb 5 @ 11:59pm**)
- [\[Reading\]](#) Read: *Managing Business Process Flows*, pp. 46-63 (Process Flow Measures)
- **Suggested flex session completion: see schedule**
- **Optional Help Session by TA (class time): see schedule**
- [\[ProblemSet\]](#) Problem set (not to be handed in): processes

Shouldice case

- [\[Case Quiz\]](#) Assignment: Read Shouldice Hospital - A Cut Above case, and answer the questions posted online. This assignment should be completed individually. **Due: Wed Feb 5 @ 11:59pm.**
- **In-Class Session #3: see schedule**

Queuing Model and waiting-time analysis

- Read the Powerpoint slides
- [\[Reading\]](#) Read: *Matching Supply with Demand* (Variability and Its Impact on Process Performance) 124-143

- **In-Class Session #4: see schedule**
- ☒ **Content Quiz** Quiz: Queuing models (**Due: Fri Feb 28 @ 11:59pm**)
- ☒ **ProblemSet** Problem set (not to be handed in): queuing

Inventory Model with Deterministic Demand: Economic Order Quantity

- Watch posted video material
- ☒ **Reading** Read "Fixed-Order Quantity Models" in chapter "Inventory Control" of *Operations and Supply Chain Management* (pages 377-381)
- Read the Powerpoint slides
- ☒ **Content Quiz** Quiz: Economic order quantity (**Due: Fri Mar 7 @ 11:59pm**)
- **Suggested flex session completion: see schedule**
- **Optional Help Session by TA (class time): see schedule**

Inventory Model with Demand Uncertainty: Newsvendor Model

- Watch posted video material
- ☒ **Reading** Read "Single-Period Inventory Model" in chapter "Inventory Control" of *Operations and Supply Chain Management* (pages 372-375)
- Read the Powerpoint slides
- ☒ **Content Quiz** Quiz: Newsvendor model (**Due: Fri Mar 14 @ 11:59pm**)
- **Suggested flex session completion: see schedule**
- **Optional Help Session by TA (class time): see schedule**

Supply chain: Overview

- **In-Class Session #5: see schedule**
- ☒ **Reading** Read: *Managing the Supply Chain: The Definite Guide for the Business Professional*, pp. 1-12 (Introduction)
- **Suggested flex session completion: see schedule**
- **Optional Help Session by TA (class time): see schedule**

Demand Uncertainty and Pooling strategies

- **In-Class Session #6: see schedule**
- ☒ **ProblemSet** Problem set (not to be handed in): inventory

Supply chain: Barilla case

- ☒ **Case Assignment** Assignment: Read Barilla SpA (A) case in the chapter "The Value of Information" of *Designing and Managing the Supply Chain*, and address the following questions pertaining to the JITD program in your write-up:
 1. Why was the JITD program created? What were the difficulties it tried to address?
 2. What were some barriers and conflicts that this program caused? Think of both internal and external issues (firm wide and Supply Chain wide). If you were a DC or a retailer, would you respond favorably to the JITD? Why not? What would it take to convince you?



3. Address the feasibility of the JITD, and analyze what it would take to implement the JITD program. Otherwise, if you think that this is a program doomed to fail, suggest some other recipes to address Barilla's problems.
 - (work as a group of at most 3; 5 pages; 12-point font with 1.5-line spacing; **Due: Mon Apr 7 @ 11:59pm**).
- **In-Class Session #7: see schedule**
- **[☒Reading]** Read: *Designing and Managing the Supply Chain*, pp. 101-104 (The Value of Information)

Test

- Date: TBA