

COURSE INFORMATION

Course title:	Process Fundamentals	Credits:	1.5
Course code:	BASC 500	Class location:	Virtual
Session, term, period:	2021 W2	Class times:	
Section(s):		Pre-requisites:	
Course duration:	January 2022	Co-requisites:	
Division:	Operations and Logistics		
Program:	IMBA		

INSTRUCTOR INFORMATION

Instructor:	Tim Huh	Office location:	Virtual
Phone:	(604) 822-0410	Office hours:	By appointment
Email:	Tim.huh@sauder.ubc.ca		

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. Topics include: Process analysis, queuing systems, and quality management.

COURSE FORMAT

We will use Zoom to have our classes during the scheduled class times.

LEARNING OBJECTIVES

Upon completion of the course, students will be able to:

- Map processes.
- Perform capacity analysis and identify bottlenecks.
- Understand Little's Law and the relationship between throughput, flow time and in-process inventory.
- Understand and quantify the impact of uncertainty on process performance
- Be able to articulate the key principles of quality management.
- Be able to apply the above concepts and tools to specific case.

ASSESSMENTS

Summary

Component	Weight
Content Quizzes	10%
Case Quizzes/Assignments	25%
Test	50%
Class participation	15%
Total	<u>100%</u>

Details of Assessments

Content Quizzes (Individual)

There will be a number of online quizzes designed to ensure that you have studied and learned certain 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.

Case Assignment (Individual or Group)

There will be a number of assignments based on cases and other materials. You will work on some of these assignments individually, and on others assignments, you will work as a group not exceeding 5 members. You are required to acknowledge any book or person you have consulted. The objective in these assignments is to ensure that you have put in honest effort to prepare the case, to ensure that students have given sufficient thoughts to the question and have considered relevant issues.

Test

Detailed instruction will be given in class.

Participation

The participation grade is based on the instructor's evaluation of the quality of each student's progress and contribution during the semester. Please carefully read all assigned materials, make a serious attempt to complete exercises and answer assigned questions, and be ready and willing to actively engage in the classroom learning experiences. Students may be asked to explain concepts in class. The implicit assumption is that we all have something to contribute to the collective learning experience each day, and we all want to benefit from it. Coming prepared will maximize the benefits for everyone. Class participation will be evaluated based on each student's comments and contributions to the class discussions. The instructor will record data on class participation. "Good" participation is that which enhances group learning; it could be a question, an observation, a shared experience, and answer to a question or a relevant news clipping. "Bad" participation is any activity, verbal or non-verbal, which disrupts the class discussions and negatively affects the learning for other students in class.

Note on Re-Grading

If you feel that your performance has been under-evaluated, please resubmit your work, along with a written statement directly to the course instructor within three business days after receiving your grades, explaining clearly why you feel that your grade should be adjusted. In order to prevent "cherry-picking", the course instructor will re-grade your entire assignment/exam, which may possibly lower your grade. If you are not satisfied with the regrading, please feel free to talk to the instructor in person.

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.

LEARNING MATERIALS

Required Reading Material(s):

- Course package
- Additional readings may be posted on the Canvas course site.

Recommended Reading Materials:

- Gerard Cachon and Christian Terwiesch, *Matching Supply with Demand: An Introduction to Operations Management*.

COURSE-SPECIFIC POLICIES AND RESOURCES

Missed or late assignments, and regrading of assessments

Late submissions will not be accepted and will receive a grade of zero.

Academic Concessions

If extenuating circumstances arise, please contact the RHL Graduate School program office as early as reasonably possible, and submit an [Academic Concession Request & Declaration Form](#) <https://webforms.sauder.ubc.ca/academic-concession-rhlee>. If an academic concession is granted during the course, the student will be provided options by RHL, or by the instructor in consultation with RHL, per [UBC's policy on Academic Concession](#).

POLICIES APPLICABLE TO COURSES IN THE ROBERT H. LEE GRADUATE SCHOOL

Attendance

Excepting extenuating circumstances, students are expected to attend 100% of their scheduled class hours. Absent students limit their own academic potential, and that of their classmates, and cause unnecessary disruption to the learning environment. Students missing more than 20% of the total scheduled class hours for a course (including classes held during the add/drop period) without having received an academic concession will be withdrawn from that course. Withdrawals, depending on timing, could result in a "W" or an "F" standing on the transcript.

Punctuality

Students are expected to arrive for classes and activities on time and fully prepared to engage. Late arrivals may be refused entry at the discretion of the instructor or activity lead. Students arriving later than halfway through a scheduled class will be treated as absent for that class.

Electronic Devices

During online lectures, students are not permitted to use any electronic devices other than the primary one used for attending the online lecture (e.g. laptop or desktop). Only Zoom should be open during the online lecture unless an instructor advises the use of another for an in-class activity. Feedback from students indicates that personal devices is the number one distraction from effective learning and participation in the online learning environment.

Citation Style

Please use the American Psychological Association (APA) reference style to cite your sources.

Details of the above policies and other RHL Policies are available at:

<http://www.calendar.ubc.ca/vancouver/index.cfm?tree=12,199,506,1625>

UNIVERSITY POLICIES AND RESOURCES

UBC provides resources to support student learning and to maintain healthy lifestyles but recognizes that sometimes crises arise and so there are additional resources to access including those for survivors of sexual violence. UBC values respect for the person and ideas of all members of the academic community. Harassment and discrimination are not tolerated nor is suppression of academic freedom. UBC provides appropriate accommodation for students with disabilities and for religious observances. UBC values academic honesty and students are expected to acknowledge the ideas generated by others and to uphold the highest academic standards in all of their actions. Details of the policies and how to

access support are available on the UBC Senate website at <https://senate.ubc.ca/policies-resources-support-student-success>.

Academic Integrity

The academic enterprise is founded on honesty, civility, and integrity. As members of this enterprise, all students are expected to know, understand, and follow the codes of conduct regarding academic integrity. At the most basic level, this means submitting only original work done by you and acknowledging all sources of information or ideas and attributing them to others as required. This also means you should not cheat, copy, or mislead others about what is your work. Violations of academic integrity (i.e., misconduct) lead to the breakdown of the academic enterprise, and therefore serious consequences arise and harsh sanctions are imposed. For example, incidences of plagiarism or cheating may result in a mark of zero on the assignment or exam and more serious consequences may apply if the matter is referred to the President's Advisory Committee on Student Discipline. Careful records are kept in order to monitor and prevent recurrences.

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ACKNOWLEDGEMENT

UBC's Point Grey Campus is located on the traditional, ancestral, and unceded territory of the xwməθkwəyəm (Musqueam) people, who for millennia have passed on their culture, history, and traditions from one generation to the next on this site.

COURSE SCHEDULE

(Subject to change with class consultation)

Class	Date (Shanghai Time)	Topic	Assessments due (Shanghai Time)
Pre-Class Activity	On or Before Dec 31	Basics of Process (1)	Content Quiz #1: Dec 31 @ 11:59PM
		Basics of Process (2)	Content Quiz #2: Dec 31 @ 11:59PM
		Process and Variability	Content Quiz #3: Dec 31 @ 11:59PM
Class #1	Jan 8 @ 8AM – 1PM	Introduction; Review: Kristen’s Cookie Company Case	Case Assignment (individual): Jan 6 @ 11:59PM
		Process Analysis: National Cranberry Cooperative Case	Case Assignment (group): Jan 6 @ 11:59PM
		Products and Process: Shouldice Case	
Class #2	Jan 9 @ 8AM – 1PM	Process and Variety: Manzana Case	Case Assignment (group): Jan 6 @ 11:59PM
		Business Analytics; E-commerce and Platform Business: SF Express Case	
		Toyota Production System: Toyota Motor Manufacturing, U.S.A. Inc Case	Case Assignment (individual): Jan 6 @ 11:59PM
Class #3	Jan 15 @ 8AM – 1PM	Toyota Case (Continued)	Case Assignment (group): Jan 13 @ 11:59PM
		Quality Management: Alcoa Case	Read the case before the final exam
		Operations & Strategy: Benihana Case	Case Assignment (individual): Jan 13 @ 11:59PM
Test	TBD		

Pre-Class Activity #1

- [VIDEO] Watch “Process Mapping”
- [VIDEO] Watch “Capacity Analysis and Bottleneck”
- [CONTENT QUIZ] Basics of Process (1) (Due **Dec 31 @ 11:59PM**)

Pre-Class Activity #2

- [VIDEO] Watch “Utilization and Inventory”
- [VIDEO] Watch “Little’s Law”
- [VIDEO] Watch “Capacity Analysis with Multiple Products”
- [CONTENT QUIZ] Basics of Process (2) (Due **Dec 31 @ 11:59PM**)

Pre-Class Activity #3

- [VIDEO] Watch “Variability in Process”
- [VIDEO] Watch “Single-Server Queues”
- [VIDEO] Watch “Single-Server Queue with an Example” (Optional)
- [CONTENT QUIZ] Queuing Models (Due **Dec 31 @ 11:59PM**)

In Preparation for Class 1 (Due **Jan 6 @ 11:59PM)**

- [CASE ASSIGNMENT-Individual] Kristen’s Cookie Company Case
 - Read the case, and answer questions online.
- [CASE ASSIGNMENT-Group] National Cranberry Cooperative Case.

Answer the following questions (2 pages; 12-point font with 1.5-line spacing)

- Assumptions:
 - Based on a typical busy day, there are 16,700 bbl delivered at a constant rate over the 12-hr period (7am to 7pm)
 - Wet berries are 70% of all berries
 - Holding bins 17-24 are dedicated to wet berries
 - Capacity of each dumper is 600 bbl/hr
 - Drivers are paid \$10/hr. Rates for other employees are given in the case
- Questions:
 1. How does the current process at receiving plant 1 work? Draw a process flow diagram.
 2. What is the capacity rate of the plant? Please state any assumptions you are making about how wet and dry flow are allocated to the separator.
 3. Assuming that processing starts at 7am on a "busy" day, present the situation during such a day. More specifically, show how the amount of cranberries in the holding bin changes over time throughout the day. Also show how the amount of cranberries in the trucks (i.e. trucks that are unable to dump their contents because the holding bins are full) change over time.

In Preparation for Class 2 (Due **Jan 6 @ 11:59PM)**

- [CASE ASSIGNMENT-Group] Manzana Case
Answer the following questions (1 page; 12-point font with 1.5-line spacing):
 1. How is the Fruitvale Branch doing?
 2. Why is TAT important?

3. If there is no other request to process at the Fruitvale Branch, how long would it take to process a RUN request?
- [CASE ASSIGNMENT-Individual] Toyota Motor Manufacturing, U.S.A. Inc Case
 - Read the case, and answer questions online.

Class 1 (Jan 8 @ 8AM – 1PM)

- Part 1: Kristen’s Cookie Company Case
- Part 2: National Cranberry Cooperative Case
- Part 3: Shouldice Case

The purpose of our analysis is to determine the capacity, throughput, and resource utilization of the current and the future Shouldice Hospital. Make the following assumptions about current operations at Shouldice:

- There are no weekend (Saturday and Sunday) operations.
- The hospital admits patients 30 patients per day on Sunday, Monday, Tuesday, Wednesday, and Thursday.
- Each patient spends three full days in the hospital, and the surgery takes on the second day.
- Each surgeon can operate on four patients per day, and there are 12 surgeons who work at Shouldice hospital.
- Each operation takes one hour in the operating room, and each of the five operating rooms can be used from 7:30 am till 3:30 pm.
- The Shouldice Hospital has 90 beds, and is committed to a three-day process.
- All the other resources have sufficient capacity.

Consider the following questions (Not to be handed in):

1. What is so special about Shouldice compared to a typical hospital?
2. What is the capacity rate of the hospital and what is the average bed utilization? How many patients will be in the hospital during each day of the week?
3. The surgeons and other hospital unions reject the idea of having Saturday operations. The vice president is determined to increase the throughput rate by 20% without changing the Shouldice practice (i.e., each surgeon still operates on four patients per day; each operation still takes one hour; operating rooms can be used from 7:30 am till 3:30 pm; the hospital committed to three-day process).
 - a) Does any capacity need to be added to the hospital? If so, what resources need to be added?
 - b) Suggest a plan to increase the throughput rate of the hospital by 20% while maintaining five-day operations and adding as few additional resources as possible (remember healthcare resources are expensive!).

Class 2 (Jan 9 @ 8AM – 1PM)

- Part 1: Manzana Case
- Part 2: SF Case

Questions to consider (Not to be handed in):

1. Is the e-commerce industry an attractive industry for SF Express to enter? What motivates SF Express to enter this industry?
2. What are the pros and cons of launching Heike stores as a way to enter the e-commerce industry for SF Express?

3. What should SF Express do next to grow its e-commerce business?
- Part 3: Toyota Motor Manufacturing, U.S.A. Inc Case (Part 1)

In Preparation for Class 3

- [CASE ASSIGNMENT-Group] Toyota Motor Manufacturing, U.S.A. Inc Case (Due Jan 13 @ 11:59PM)

Answer each of the following questions on one *Powerpoint slide* (total 4 slides). Include the names of all students on each slide.

1. As Doug Friesen, what would you do to address the seat problem? Where would you focus your attention and solution efforts?
 2. Where, if at all, does the routine for handling defective seats deviate from the principles of the Toyota Production System?
 3. What options exist? What would you recommend? Why?
 4. What is the real problem facing Doug Friesen?
- [CASE ASSIGNMENT-Individual] Benihana Case (Due Jan 13 @ 11:59PM)
 - Read the case, and answer questions online.

Class 3 (Jan 15 @ 8AM – 1PM)

- Part 1: Toyota Motor Manufacturing, U.S.A. Inc Case (Part 2)
- Part 2: Alcoa Case
- Part 3: Benihana Case

After Class 3 (Due before the exam)

- Read the Alcoa Case.
Consider the following questions.
 1. What are the key elements in Mission Valley's approach to improving safety? What explains the pattern of improvements the plant has experienced? How effective has the approach been?
 2. What are the major opportunities for improving safety at Mission Valley over the next two years? What are the major obstacles to that improvement?
 3. What is your evaluation of Linda Merton's plan for 1992? What changes, if any, would you recommend? In your analysis, take into consideration which actions or conditions could be affected by capital investments versus behavioral issues.
 4. What position should Merton advocate, if any, in the 9:00am meeting with Tevens and Harris? Should Harris fire Stepancik?
- [READING] Read "Decoding the DNA of the Toyota Production System"

Test: Jan 23 @ 9AM-11AM