(Revised June 4, 2020)	**OM f335: OPERATIONS MANAGEMENT**	**Summer 2020**
#71537 MTWTH 12:00–1:45 PM		

Instructor: Rayan Bagchi
Office Hours: MTWTH 2–2:30 PM and by appointment (June 7 – July 9)
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Course Web Page: Canvas

COURSE DESCRIPTION

Operations Management (OM), best viewed as process management, involves the systematic planning, design, operation, control, and improvement of businesses processes. Managing operations is vital to every organization, for it is only through the effective and efficient performance of work to be done that an organization can be successful in the long run. This is certainly true today when we see that significant competitive advantages accrue to those firms that manage their operations well, as exemplified by Southwest, Exxon, Amazon, Wal-Mart, Toyota, and so forth.

The course is conceptually structured in three interweaving modules. In one, we introduce the basic vocabulary of OM. We consider process analysis, process design, and process control in the context of both manufacturing and service operations. In another, we look at several critical OM issues: inventory management, project management, supply chain management, and management of waiting lines. Finally, in another, we seek ways to improve the overall competitiveness of a firm by exploring some strategic aspects of OM like lean operations (Toyota) and focused operations (Southwest).

COURSE PREREQUISITES

Credit or registration for Business Administration 324 or 324H and credit or registration for Statistics 309 or 309H.

COURSE LEARNING OBJECTIVES

At the end of this course, you should have gained an improved understanding of:

- how every organization uses processes to transform inputs into goods and services
- the importance of careful design, operation, and improvement of business processes

and acquired the skills to

- analyze any manufacturing or service process to uncover improvement opportunities

TEACHING/LEARNING METHODOLOGY

This course is a mixture of lectures, case discussions and problem solving. In class, have a calculator ready to help with arithmetic. **The readings for the class consist of a readings packet (which has all the cases) denoted by RP in the detailed course outline and available from Harvard Business School Publishing (**https://hbsp.harvard.edu/import/728537**), and one required book** (described below) **available from the University Coop**:

Matching Supply with Demand (Fourth Edition, McGraw-Hill) by Cachon and Terwiesch. (This is as close to a textbook as we have in this course. We shall use this book largely as a reference. Please read the assigned sections of this text, denoted by C&T in the detailed course outline, somewhat lightly at first. Go back for a re-read as you deem useful after we discuss the topic in class.

A packet of overheads (slides) is available on Canvas (Modules/Class Slides). You must have the appropriate overheads for each class starting with Session 1 (Thursday, June 4). You may want to print hard copies of the slides for use during class.

CLASS PREPARATION In preparing for each class session, you must complete the mandatory readings before class. Suggested questions to help you prepare for case discussions are provided in the syllabus. You must have the case/exercise listed for that session handy for ready consultation. Doing these two things constitutes your credentials as a class participant. Neglect one and you are but a mere spectator in class. Learning Operations is not a spectator sport.

Please let me know if there is anything I can do to make this class better for you.

PERFORMANCE EVALUATION

The final grade in this class will be based on your demonstrated performance as follows:

Attendance	0-30%
Midterm Exam (Thursday, June 25: 12:00-2:15 PM)	30%
Final Exam: During July 10-11, time to be confirmed by the Registrar's Office.	40-70%
Total	100%

For every class session you attend in full, up to a maximum of twenty sessions out of twenty-one sessions this term, you will earn 1.5% for attendance. If you attend sixteen sessions then you will earn 24% for attendance and your final exam will account for 46% of your course grade. In other words, attendance and final exam together will account for 70% of your course grade. In addition, I shall assign a bonus amounting to up to 5% of course grade. The bonus will depend solely on my very subjective evaluation of your class contribution – a measure of how actively you are engaged in class, your preparedness for class, and your contribution to the learning of others.

Plus and minus grades will be used for the final class grade. The BBA Program recommended grade point average for this course is 3.2-3.4.

Exams Exams will be administered via Canvas. It is recommended that both exams be closed-book and closed-notes. However, you may bring a self-prepared 3"x5" two-sided notes card to each exam.

Homework: Individual and Group, Practice Problems, and Solutions (Available on Canvas) The purpose of these **not-to-be submitted or graded** "assignments" is to reinforce learning and provide feedback. Do not defeat this purpose by consulting solutions (available on Canvas) before you take a crack at the assignment yourself. You are welcome to work with others on these assignments. Indeed, group homework assignments are particularly suited to collaboration. Do these assignments on a timely basis to keep up with the course content.

McCombs Classroom Professionalism Policy

- **Students arrive on time.** On time arrival shows respect for both fellow students and faculty and it enhances learning by reducing avoidable distractions.
- **Students are prepared for each class.** Unprepared students cannot contribute to the overall learning process. This affects not only the individual, but their peers who count on them, as well.

Important Notifications

Students with Disabilities

Students with disabilities may request appropriate academic accommodations from the Division of Diversity and Community Engagement, Services for Students with Disabilities, 512-471-6259, http://diversity.utexas.edu/disability/.

Diversity and Inclusion

It is my intent that students from all diverse backgrounds and perspectives be well served by this course, that students' learning needs be addressed and that the diversity that students bring to this class can be comfortably expressed and be viewed as a resource, strength and benefit to all students. Please come to me at any time with any concerns.

Religious Holy Days

By UT Austin policy, you must notify me of your pending absence at least fourteen days prior to the date of observance of a religious holy day. If you must miss a class, an examination, a work assignment, or a project in order to observe a religious holy day, you will be given an opportunity to complete the missed work within a reasonable time after the absence.

Policy on Scholastic Dishonesty

The McCombs School of Business has no tolerance for acts of scholastic dishonesty. The responsibilities of both students and faculty with regard to scholastic dishonesty are described in detail in the BBA Program's Statement on Scholastic Dishonesty at http://my.mccombs.utexas.edu/BBA/Code-of-Ethics. By teaching this course, I have agreed to observe all faculty responsibilities described there. By enrolling in this class, you have agreed to observe all student responsibilities described there. If the application of the Statement on Scholastic Dishonesty to this class or its assignments is unclear in any way, it is your responsibility to ask me for clarification. Students who violate University rules on scholastic dishonesty are subject to disciplinary penalties, including the possibility of failure in the course and/or dismissal from the University. Since dishonesty harms the individual, all students, the integrity of the University, and the value of our academic brand, policies on scholastic dishonesty will be strictly enforced. You should refer to the Student Conduct and Academic Integrity website at http://deanofstudents.utexas.edu/conduct/ to access the official University policies and procedures on scholastic dishonesty as well as further elaboration on what constitutes scholastic dishonesty.

OM f335: DETAILED COURSE OUTLINE

SESSION 1 (TH, June 4) **COURSE INTRODUCTION; INTRODUCTORY PROCESS ANALYSIS**

Mandatory Readings:
1. Course Syllabus (on Canvas)
2. Chapter 1 of C&T
3. Chapter 2 of C&T (through section 2.3)
4. Kristen's Cookie Company (A) (in RP)

Case: KRISTEN'S COOKIE COMPANY (A)

Case Preparation Questions:

1. We shall start with the 'Key Questions to Answer before You Launch the Business' in class. You do not need to answer them before coming to class. But give them some thought.

SESSION 2 (M, June 8) **PROCESS ANALYSIS (cont. ..)**

Mandatory Readings: **1. Kristen's Cookie Company (A) (in RP)**

Optional Readings:
1. Chapter 2 of C&T
2. Chapter 3 of C&T

Case: KRISTEN'S COOKIE COMPANY (A) (contin. ..)

Case Preparation Questions:

1. What happens if you are trying to do this by yourself without a roommate?

SESSION 3 (T, June 9) **PROCESS ANALYSIS (cont. ..)**

Mandatory Readings: **1. Kristen's Cookie Company (A) (in RP)**

Optional Readings:
1. Chapter 2 of C&T
2. Chapter 3 of C&T

Case: KRISTEN'S COOKIE COMPANY (A) (contin. ..)

SESSION 4 (W, June 10) **PROCESS DESIGN ISSUES: LAYOUT & UTILIZATION**

Mandatory Readings: **1. Texas Automobile License Renewal (on Canvas)**

Preparation: Read the License Renewal Exercise carefully and bring it to class.

SESSION 5 (TH, June 11) **INVENTORY BUILDUP**

Mandatory Readings: **1. "Capacity" (on Canvas) – Fishing fleet and cannery exercise**

Preparation: Read the Fishing fleet and cannery exercise carefully and bring it to class.

SESSION 6 (M, June 15) **ANALYSIS, DESIGN, & INVENTORY**

Mandatory Readings: **1. Benihana of Tokyo (in RP)**

Case : BENIHANA OF TOKYO

Case Preparation Questions:

1. Compare the operating figures of a typical restaurant with those of Benihana based on the following factors: food and beverage costs, payroll, and rent. Why are costs lower at Benihana?

SESSION 7 (T, June 16) **ANALYSIS, DESIGN, & INVENTORY (contin. ..)**

Mandatory Readings: **1. Benihana of Tokyo (in RP)**

Optional Readings:
1. Chapter 2, section 2.5 of C&T
2. Chapter 5, section 5.6 of C&T

Case Preparation Questions:
1. Why should Benihana's inventory costs be lower?
2. How does limited variety result in lower cycle and safety stocks?

SESSION 8 (W, June 17) **ANALYSIS, DESIGN, & INVENTORY (contin. ..)**
Mandatory Readings: **1. Benihana of Tokyo (in RP)**
Case : BENIHANA OF TOKYO
Case Preparation Questions:
1. What design choices facilitate dining in less than an hour?
2. Assuming 120 seats in the dining area, 48 seats in the bar, and a target process time of 60 minutes in the dining area, what target process time is implied for a customer in the bar?
3. What is the Benihana concept?

SESSION 9 (TH, June 18) **PROJECT MANAGEMENT**
Mandatory Readings: **1. Chapter 12 of C&T (through section 12.5)**

SESSION 10 (M, June 22) **PROJECT MANAGEMENT (contin. ..)**
Mandatory Readings: **1. Chapter 12 of C&T (section 12.7)**

SESSION 11 (T, June 23) **PROJECT MANAGEMENT (contin. ..)**
Mandatory Readings: **1. Chapter 12 of C&T (section 12.6)**

SESSION 12 (W, June 24) **Review for EXAM 1**

SESSION 13 (TH, June 25) **Midterm Exam (12-2:15 PM)**

SESSION 14 (M, June 29) **MANAGEMENT OF WAITING LINES**
Mandatory Readings: **1. Manzana Insurance – Fruitvale Branch (in RP)**
2. Chapter 9 of C&T (through section 9.5)
Case: MANZANA INSURANCE – FRUITVALE BRANCH
Case Preparation Questions:
1. What is the major competitive threat faced by Fruitvale?
2. It is commonly believed at Fruitvale that RUNs are the most profitable jobs? Is this belief justified?
3. What bottlenecks are revealed by the utilization analysis shown in the Table below? You have to understand where the numbers in the Table come from (*from the case*).
4. Consider how TAT (turnaround time) is calculated (page 6 and Exhibit 3). Does this TAT reflect Fruitvale's actual turnaround time? Why or why not?

MANZANA INSURANCE - Utilization Analysis (1991, 120 days, 450 minutes per day)

Service Time Means: (From Exhibit 4)	RUNs	RAPs	RAINs	RERUNs	Average Policy
DC	68.5 mins.	50.0	43.5	28.0	40.97
UT	43.6	38.0	22.6	18.7	28.4[1]
RT	75.5	64.7	65.5	75.5	70.39
PW	71.0	#N/A	54.0	50.1	54.78
Arrivals (Total): (From Exhibit 7)	350	1798	451	2081	4680
Arrivals Percentage: (From Exhibit 7)					
Territory 1	46.3	42.3	43.5	30.6	
Territory 2	28.6	28.5	27.7	40.3	
Territory 3	25.1	29.2	28.8	29.1	
(Total)	100	100	100	100	
Utilizations (%):	RUNs	RAPs	RAINs	RERUNs	Total
DC (4)	11.1[2]	41.6	9.1	27.0	88.8
UT1	13.1	53.5	8.2	22.1	96.9
UT2	08.1	36.1	5.2	29.0	78.4
UT3	07.1	36.9	5.4	21.0	70.4
RT (8)	06.1	26.9	6.8	36.4	76.2
PW (5)	09.2	07.1[3]	9.0	38.6	63.9

[1] [(43.6)(350)+(38.0)(1798)+(22.6)(451)+(18.7)(2081)]/4680 = 28.4;
[2] [{(68.5)(350)}/{(4)(120)(450)}] = 0.111; [3] 15% RAPs turned into RUNs

SESSION 15 (T, June 30) **MANAGEMENT OF WAITING LINES (cont. ..)**
Mandatory Readings: **1. Manzana Insurance – Fruitvale Branch (in RP)**
2. Chapter 9 of C&T
Case: MANZANA INSURANCE – FRUITVALE BRANCH (cont. ..)

SESSION 16 (W, July 1) **MANAGEMENT OF WAITING LINES (cont. ..**
Mandatory Readings: **1. Manzana Insurance – Fruitvale Branch (in RP)**
2. Chapter 9 of C&T
Case: MANZANA INSURANCE – FRUITVALE BRANCH (cont. ..)
Case Preparation Questions:
1. Make a few recommendations to improve Fruitvale's performance.

SESSION 17 (TH, July 2) **SUPPLY CHAIN MANAGEMENT**
Mandatory Readings: **1. Sport Obermeyer, Ltd. (in RP)**
2. Chapter 19 of C&T (through section 19.2)
Case: SPORT OBERMEYER, LTD.
Case Preparation Questions:
1. How would you characterize the role played by Sport Obermeyer in this global supply chain? The role played by Obersport? What are the critical capabilities of Sport Obermeyer? Of Obersport?

2. Understand that an item could be ordered in November and again after the Las Vegas show. However, capacity constraints limit Wally's options. Wally wants your help with the sample problem (page 8) and refers you to Exhibit 10. Consider the Isis and Entice styles (Exhibit 10). Which one of these two styles is more risky for ordering in November, and why?
3. How many Electra parkas should you order?

SESSION 18 (M, July 6) **SUPPLY CHAIN MANAGEMENT (contin. ..)**
Mandatory Readings: **1. Sport Obermeyer, Ltd. (in RP)**
2. Chapter 19 of C&T
Case: SPORT OBERMEYER, LTD. (contin. ..)
Case Preparation Questions:
1. Among factors that constrain Obermeyer's ability to match supply and demand are minimum production lot-size constraints, limited reactive capacity in the sewing plants, raw material lead times; and the time when retailer demand is made available to Obermeyer. How can Obermeyer increase its reactive capacity without hiring more people, working longer hours or buying new equipment?

SESSION 19 (T, July 7) **OPERATIONAL EXCELLENCE - SOUTHWEST**
Mandatory Readings: **1. Southwest Airlines in Baltimore (in RP)**
2. Chapter 6, section 6.4 of C&T
Case: SOUTHWEST AIRLINES IN BALTIMORE
Case Preparation Questions:
1. How does Southwest Airlines (SWA) compete? What are its advantages and disadvantages?
2. What is the financial and operational rationale for SWA's aggressive plane turnaround target?
3. The plane turnaround process requires coordination among twelve functional groups at SWA. Investigate the utilization of these functional groups.
4. Why is the operational performance at Baltimore eroding?

SESSION 20 (W, July 8) **TOYOTA PRODUCTION SYSTEM**
Mandatory Readings: **1. Toyota Motor Manufacturing, USA, Inc. (in RP)**
Optional Readings: 1. Chapter 8 of C&T (through section 8.4)
Case: TOYOTA MOTOR MANUFACTURING, USA, INC.
Case Preparation Questions:
1. The length of a station is 5.7 meters (Exhibit 6). Given that the cycle time is 57 seconds, what is the speed of the assembly line (in miles per hour)?
2. What is the capacity of the assembly line (cars per day; cars per week; and cars per year)?
3. This question is designed to estimate how much time KFS has to assemble a seat. Of the 353 stations, at least 314 (353 minus 39 in Groups 2 and 3 in Exhibit 6) are between the end of the paint line and the first seat installation station. What is the corresponding flow time? After subtracting the time a seat spends: traveling on TMM's overhead seat conveyor line (about 250 meters), traveling in the truck, and waiting on KFS's staging line, you get the time KFS has to assemble a seat. What is the time?
4. What is the cost of stopping the line for one cycle? For five minutes? For half-an-hour?
5. What can Doug do to address the seat quality problem?

SESSION 21 (TH, July 9) **CLOSING REMARKS; REVIEW**

FINAL EXAM: **July 10-11 (***Time to be confirmed when the final exam schedule comes out.*)

OM f335 OPERATIONS MANAGEMENT Summer 2020 Bagchi Course Outline (Revised June 4, 2020)

Session	Day	Date	Topic	Case/Exercise/Book	Assignment Following the Session
1	TH	6/04	Course Introduction; Introductory Process Analysis	Kristen's Cookie	
2	M	6/08	Process Analysis	Kristen's Cookie	GH-1
3	T	6/09	Process Analysis	Kristen's Cookie	IH-1, Practice Problem-1, Practice Problem-2
4	W	6/10	Process Design Issues	License Renewal	IH-2, GH-2
5	TH	6/11	Inventory Buildup	Fishing Fleet	IH-3, GH-3
6	M	6/15	Analysis, Design, & Inventory	Benihana of Tokyo	Practice Problem-3
7	T	6/16	Analysis, Design, & Inventory	Benihana of Tokyo	Practice Problem-4
8	W	6/17	Analysis, Design, & Inventory	Benihana of Tokyo	IH-4, Practice Problem-5,
9	TH	6/18	Project Management		IH-5
10	M	6/22	Project Management		IH-6
11	T	6/23	Project Management		GH-4
12	W	6/24	Review for EXAM 1		
13	TH	6/25	Midterm Exam, 12-2:15 pm		
14	M	6/29	Management of Waiting Lines	Manzana Insurance	
15	T	6/30	Management of Waiting Lines	Manzana Insurance	IH-7
16	W	7/01	Management of Waiting Lines	Manzana Insurance	GH-5, Practice Problems - Queueing
17	TH	7/02	Supply Chain Management	Sport Obermeyer	
18	M	7/06	Supply Chain Management	Sport Obermeyer	GH-6
19	T	7/07	Operational Excellence - Southwest	Southwest Airlines	
20	W	7/08	Toyota Production System	Toyota	
21	TH	7/09	Closing Remarks; Review		
FINAL EXAM: During July 10-11 (*Time to be confirmed when the final exam schedule comes out.*)					