(Revised August 13, 2023)

OM 380: Supply Chain Analytics
#05160 TTH 9:30 AM - 10:45 AM in RRH 4.402

FALL 2023

Professors	Rayan Bagchi	Genaro Gutierrez
Office Hours	T 4-5 pm (on Zoom), W 4-5 pm (on Zoom), and by appointment (on Zoom)	Th 9:00 – 10:30 a (on Zoom)
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Course Description and Modality

Operations Management (OM) is the management of activities governing the flow and transformation of resources from initial suppliers to ultimate consumers to make goods and services available at the right time, place, price, and condition in the most profitable and cost-effective manner. Supply Chain Management (SCM) has evolved as an extension of Operations Management (OM), the extension being an explicit consideration of issues involving the relationships between a firm and its suppliers and customers. In this course, we will consider analytics applied to important problems found in the management of supply chains. We strongly believe that supply chain analytics professionals must have a strong grounding in OM so that they can have both the confidence and credibility to collaborate fruitfully with other business professionals. The first half of the course introduces the context for application of analytics in supply chain management. The second half of the course addresses use of analytics in supply chain management.

This course will be delivered entirely in in-person, in-class format.

Course Objectives

The objective of this course is to provide you with an understanding of operations management and the role that analytics can play in improving supply chain performance. By the end of the course, you should be "literate" in the following aspects of operations management: process analysis, lean production, demand forecasting, inventory management, and aggregate planning as well as have developed an ability to use some analytical tools and conceptual frameworks to guide your thinking about operations in supply chains. It is important to realize that much of operations management consists of the *systematic* design, operation, control and improvement of business processes. Accordingly, you should leave this course able to:

- Understand operations and supply chain management terminology and metrics;
- Analyze key business processes;
- Understand the inevitable tradeoffs in making choices;
- Be able to combine historic demand data with contextual business and economic variables for the preparation of demand forecasts;
- Be able to use historical and contextual data to prepare supply chain demand forecasts, and be able to compare the effectiveness of each approach in specific business contexts;
- Understand the differences between the types of demand forecasts used for different supply chain management processes, and be able to apply the appropriate forecasting methodologies to obtain each type of forecast; and

- Understand the costs and benefits of shaping demand and be able to combine advertising, pricing and other interventions in the data-driven optimization of production and distribution decisions in supply chains.

The course is a mixture of case analysis, individual (skill-development) problem sets, group homework assignments, a group project, and two midterm examinations. The perspective adopted in case analysis ranges from that of the operational consultant to that of the general manager – usually in the course of analyzing the same case. In class, please have a calculator ready to help with arithmetic.

Materials

The primary readings for the class are in **a readings packet, denoted by RP** in the detailed course outline and available from the University Coop. Additionally, there are two books, one optional and one required, described below.

- *Matching Supply with Demand* by Cachon, G. and Terwiesch, C. (4e, McGraw-Hill). This **optional** textbook (electronic version or hard copy) is available from the University Coop. Use this book, if you like, as a supplementary resource. The relevant sections of this text, denoted by C&T, are indicated in the detailed course outline.
- *Forecasting: principles and practice* (FPP) by Hyndman, R. J. and Athanasopoulos, G., OTexts, Third Edition, 2020. This **required** textbook is available in electronic form for free at **https://otexts.org/fpp3/.** This book will be referred to as "FPP" throughout the rest of this document.

Longhorn Textbook Access

The required readings packet for this class is available through the Longhorn Textbook Access (LTA) program, a collaboration between UT Austin, The University Co-op and textbook publishers to significantly reduce the cost of digital course materials for students. You can access your required materials through the "My Textbooks" tab in Canvas. You are automatically opted into the program but can easily opt-out (and back in) via Canvas through the 12th class day. If you remain opted-in at the end of the add/drop period (12th class day fall/spring, 4th class day summer sessions), you will receive a bill through your "What I Owe" page. If you do not pay your bill by the specified deadline, you will lose access to the course materials and your charge will be removed. More information about the LTA program is available at universitycoop.com/longhorn-textbook-access.

Class Slides

Class slides will be available on Canvas at least 48 hours prior to class meeting. Slides populated with numbers we derive during class will be available on Canvas after the class meeting.

COMMUNICATION

This class will use Canvas (https://canvas.utexas.edu/) to post syllabus and schedule, to make important announcements (e.g. changes to syllabus or schedule), and to post assignments and grades. All essential information will be on the Canvas website for this course. Please check the site for this course regularly.

We are best contacted via email at Uttarayan.Bagchi@mccombs.utexas.edu and genaro@austin.utexas.edu. **Please do not message us via Canvas**. If you email us, please put OM 380 in the subject line.

Course Requirements and Grading

Your grade in the course will be determined as follows:

Class Contribution	10%
Group Homework (4)	10%
Group Report (4)	10%
Individual Assignments (3)	20%
Group Assignment (1)	5%
First Midterm Exam (3:30-6:30 PM, Friday, October 6 in GSB 3.130)	25%
Second Midterm Exam (Nov. 16)	20%
Total	100%

This course uses the following distribution as a guideline for establishing course letter grades:
A (4.0) 25%, A- (3.67) 20%, B+ (3.33) 15%, B (3.0) 35%, B- or below (2.67) 5%.

Description of Requirements

Attendance: Class attendance is expected and cannot be recommended too highly. But for any illness, students should stay home if they are sick or contagious, not only to stop the spread, but also to promote their personal wellness. Populated Class Slides (not class notes but numerical calculations) will be posted on Canvas after class (before the end of day). If you miss a session: consult these slides, get notes from a classmate and then follow up with the instructor as you deem helpful. Please display a name card while in class.

***Class Contribution*:** We expect that you will be prepared to discuss any cases/readings that have been assigned for that particular class session. At a minimum, we expect that you will devote your full attention to the class. But ideally, we would like you to be active in your engagement by asking good questions and making appropriate comments, observations, etc.

***Assignments*:** During the first half of the semester, there will be 4 group homework assignments and 4 group report assignments. The purpose of these assignments is to be prepared for class, to reinforce learning and provide feedback. Do not defeat this purpose by consulting solutions that are the work of others. Please form your own group with 4-5 members and turn in your assignment as a single pdf document on Canvas prior to the beginning of the class session in which the assignment is due. Note: only one submission from your group and no late submission. Assignment solutions will be posted on Canvas.

During the second half of the semester there will be 3 individual skill-building assignments and 1 group assignment. Each of these assignments serves one of two purposes. Either it is intended to provide an opportunity to use one of the analytical frameworks from class, or it is intended to help you to prepare for a class discussion of a case. Some credit is always awarded for evidence of effort.

***Exams*:** There will be two midterm exams. The first is scheduled for Friday, October 6, 3:30-6:30 p.m., and the second is scheduled for Thursday, November 16, 9:30-10:45 a.m.

McCombs Classroom Professionalism Policy

The highest professional standards are expected of all members of the McCombs community. The collective class reputation and the value of the Texas MSBA experience hinges on this. **You should treat the Texas MSBA classroom as you would a corporate boardroom.** Faculty are expected to be professional and prepared to deliver value for each and every class session. Students are expected to be professional in all respects.

The Texas MSBA classroom experience is enhanced when:

- **Students arrive on time.** On time arrival ensures that classes are able to start and finish at the scheduled time. On time arrival shows respect for both fellow students and faculty and it enhances learning by reducing avoidable distractions.

- **Students display their name cards.** This permits fellow students and faculty to learn names, enhancing opportunities for community building and evaluation of in-class contributions.
- **Students are fully prepared for each class.** Lot of the learning in the Texas MSBA program takes place during classroom discussions. Students who are not prepared cannot contribute to the overall learning process. This affects not only the individual, but their peers who count on them, as well.
- **Students respect the views and opinions of their colleagues.** Disagreement and debate are encouraged. Intolerance for the views of others is unacceptable.
- **Students do not confuse the classroom for the cafeteria.** The classroom (boardroom) is not the place to eat your tacos, wraps, sweet potato fries, or otherwise set up for a picnic. Please plan accordingly. Recognizing that back-to-back classes sometimes take place over the lunch hour, energy bars and similar snacks are permitted. Please be respectful of your fellow students and faculty in your choices.
- **Students minimize unscheduled personal breaks.** The learning environment improves when disruptions are limited.
- **Phones are silenced and wireless devices are put away.** When students are surfing the web, responding to e-mail, instant messaging each other, and otherwise not devoting their full attention to the topic at hand they are doing themselves and their peers a major disservice. Those around them face additional distraction. Fellow students cannot benefit from the insights of the students who are not engaged. Faculty office hours are spent going over class material with students who chose not to pay attention, rather than truly adding value by helping students who want a better understanding of the material or want to explore the issues in more depth. Students with real needs may not be able to obtain adequate help if faculty time is spent repeating what was said in class. We've all heard the annoying ringing in the middle of a meeting. Not only is it not professional, it cuts off the flow of discussion when the search for the offender begins. When a true need to communicate with someone outside of class exists (e.g., for some medical need) please inform the professor prior to class.

Remember, you are competing for the best faculty McCombs has to offer. Your professionalism and activity in class contributes to your success in attracting the best faculty to this program.

Policies

Services for Students with Disabilities

This class respects and welcomes students of all backgrounds, identities, and abilities. If there are circumstances that make our learning environment and activities difficult, if you have medical information that you need to share with me, or if you need specific arrangements in case the building needs to be evacuated, please let me know. I am committed to creating an effective learning environment for all students, but I can only do so if you discuss your needs with me as early as possible. I promise to maintain the confidentiality of these discussions. If appropriate, also contact Services for Students with Disabilities, 512-471-6259 (voice) or (512) 410-6644 (video phone).

Policy on Scholastic Dishonesty

We have no tolerance for acts of academic dishonesty. Such acts damage the reputation of the school and the degree and demean the honest efforts of the majority of students. The minimum penalty for an act of academic dishonesty will be a zero for that assignment or exam.

As specific guidance for this course, you should consider the *writing* of all examinations to be an individual effort. Group *preparation* for examinations is acceptable and encouraged. For group assignments, only one submission per group is required and the work that you turn in must be the work of your group members only. **Please form your own group (4-5 members) immediately.**

Class Recording Privacy

Zoom recordings will not be provided to the class. If your Disability and Access (D&A) accommodation letter has the following: "Use of technology to audio record during class.", you must inform the instructor that you will record the class. Those recordings are reserved only for your educational purposes and are protected under

FERPA. The recordings are not to be shared. All other students are prohibited from recording the class. Violation of this restriction by a student could lead to Student Misconduct proceedings.

Sharing of Course Materials is Prohibited

No materials used in this class, including, but not limited to, lecture hand-outs, videos, assessments (quizzes, exams, papers, projects, homework assignments), in-class materials, review sheets, and additional problem sets, may be shared online or with anyone outside of the class without explicit, written permission of the instructor. Unauthorized sharing of materials promotes cheating. It is a violation of the University's Student Honor Code and an act of academic dishonesty. The University is well aware of the sites used for sharing materials, and any materials found on such sites that are associated with a specific student, or any suspected unauthorized sharing of materials, will be reported to Student Conduct and Academic Integrity in the Office of the Dean of Students. These reports can result in sanctions, including failure of the course.

Religious Holy Days

By UT Austin policy, you must notify me of your pending absence as far in advance as possible 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.

Behavior Concerns

If you have concerns about the safety or behavior of fellow students, TAs or Professors, call BCCAL (the Behavior Concerns and COVID-19 Advice Line): 512-232-5050. Your call can be anonymous. If something doesn't feel right – it probably isn't. Trust your instincts and share your concerns.

Title IX Reporting

Title IX is a federal law that protects against sex and gender-based discrimination, sexual harassment, sexual assault, sexual misconduct, dating/domestic violence and stalking at federally funded educational institutions. UT Austin is committed to fostering a learning and working environment free from discrimination in all its forms. When sexual misconduct occurs in our community, the university can:

1. Intervene to prevent harmful behavior from continuing or escalating.
2. Provide support and remedies to students and employees who have experienced harm or have become involved in a Title IX investigation.
3. Investigate and discipline violations of the university's relevant policies.

Faculty members and certain staff members are considered "Responsible Employees" or "Mandatory Reporters," which means that they are required to report violations of Title IX to the Title IX Coordinator. **I am a Responsible Employee and must report any Title IX-related incidents** that are disclosed in writing, discussion, or one-on-one. Before talking with me or with any faculty or staff member about a Title IX-related incident, be sure to ask whether they are a responsible employee. If you want to speak with someone for support or remedies without making an official report to the university, email advocate@austin.utexas.edu For more information about reporting options and resources, visit the Title IX Office or email titleix@austin.utexas.edu.

Campus Safety

The following are recommendations regarding emergency evacuation from the Office of Campus Safety and Security, 512-471-5767,

- Occupants of buildings on The University of Texas at Austin campus must evacuate buildings when a fire alarm is activated. Alarm activation or announcement requires exiting and assembling outside.
- Familiarize yourself with all exit doors of each classroom and building you may occupy. Remember that the nearest exit door may not be the one you used when entering the building.
- Students requiring assistance in evacuation shall inform their instructor in writing during the first week of class.
- In the event of an evacuation, follow the instruction of faculty or class instructors. Do not re-enter a building unless given instructions by the following: Austin Fire Department, The University of Texas at Austin Police Department, or Fire Prevention Services office.
- For more information, please visit emergency preparedness.

University Resources for Students

Disability and Access

The university is committed to creating an accessible and inclusive learning environment consistent with university policy and federal and state law. Please let me know if you experience any barriers to learning so I can work with you to ensure you have equal opportunity to participate fully in this course. If you are a student with a disability, or think you may have a disability, and need accommodations please contact Disability & Access (D&A). Please refer to the D&A website for more information: http://diversity.utexas.edu/disability/. If you are already registered with D&A, please deliver your Accommodation Letter to me as early as possible in the semester so we can discuss your approved accommodations and needs in this course.

Counseling and Mental Health Center

Do your best to maintain a healthy lifestyle this semester by eating well, exercising, avoiding drugs and alcohol, getting enough sleep and taking some time to relax. This will help you achieve your goals and cope with stress. All of us benefit from support during times of struggle. You are not alone. There are many helpful resources available on campus and an important part of the college experience is learning how to ask for help. Asking for support sooner rather than later is often helpful. If you or anyone you know experiences any academic stress, difficult life events, or feelings like anxiety or depression, we strongly encourage you to seek support. A Counselors in Academic Residence (CARE) Program is available in each college from the Counseling and Mental Health Center.

University Health Services (UHS)

Your physical health and wellness are a priority. University Health Services is an on-campus high-quality medical facility providing care to all UT students. Services offered by UHS include general medicine, urgent care, a 24/7 nurse advice line, gynecology, sports medicine, physical therapy, lab and radiology services, COVID-19 testing and vaccinations and much more. For additional information, visit https://healthyhorns.utexas.edu or call 512-471-4955.

Sanger Learning Center

Did you know that more than one-third of UT undergraduate students use the Sanger Learning Center each year to improve their academic performance? All students are welcome to take advantage of Sanger Center's classes and workshops, private learning specialist appointments, peer academic coaching, and tutoring for more than 70 courses in 15 different subject areas. For more information, please visit Sanger Learning Center or call 512-471-3614 (JES A332).

Student Emergency Services

UT's Student Emergency Services provides assistance, intervention, and referrals to support students navigating challenging or unexpected issues that impact their well-being and academic success. If you need to be absent from class due to a family emergency, medical or mental health concern, or academic difficulty due to crisis or an emergency situation, please register with Student Emergency Services. SES will verify your situation and notify your professors.

DETAILED COURSE OUTLINE

Note: RB = Rayan Bagchi; GG = Genaro Gutierrez.

	T, 8/22	**NO CLASS**
1-RB	**TH, 8/24**	**COURSE INTRODUCTION; PROCESS ANALYSIS**
	Cases	1. Electric Vehicle Supply Chain (on Canvas/Modules/Misc.) 2. Toyota's Disrupted Global Supply Chain (in RP)
	Case Preparation Questions: Q1. What is a supply chain? Q2. What is OEM (original equipment manufacturer)? Tier 1, Tier 2? Upstream/Downstream? Manufacturer/Wholesaler/Distributor/Retailer? Channels?	

	Q3. What issues must inform how Emma Peterson addresses her decision dilemmas? In other words, what do we know about the challenges of manufacturing electric vehicles? Q4. What are some of the unique attributes of TPS (Toyota Production System), and what are the implications for Toyota's supply chain? Q5. Toyota learned from the 2011 earthquake and tsunami. What changes did Toyota make to make its supply chain more resilient? Q6. How did automakers contribute to 'their global microchip shortage'? What could they have done differently?	
	Mandatory Preparation	1. Electric Vehicle Supply Chain (on Canvas/Modules/Misc.) 2. Toyota's Disrupted Global Supply Chain (in RP)
	Optional Reading	Chapters 1 and 2 of C&T
2-RB	**T, 8/29**	**PROCESS ANALYSIS**
	Case	Kristen's Cookie (in RP)
	Case Preparation Questions: 1. We shall start with the 'Key Questions to Answer before You Launch the Business' in class. Give them some thought. What happens if you try to do without the roommate?	
	Mandatory Preparation	Kristen's Cookie case (RP)
	Optional Reading	Chapters 1, 2, and 3 of C&T
3-RB	**TH, 8/31**	**TOYOTA PRODUCTION SYSTEM (TPS)**
	Case	Toyota Motor Manufacturing, USA (in RP)
	Case Preparation Questions: Q1. 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)? Q2. What is the capacity of the assembly line (cars per day; cars per week; and cars per year) assuming 100% line utilization? How many fewer cars are produced per shift if the run ratio is 95%? Or 85%? Q3. 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 throughput time? After subtracting the time a seat spends: traveling on TMM's overhead seat conveyor line (about 250 meters), waiting on TMM's staging line, traveling in the truck (about 30 minutes), and waiting on KFS's staging line, you get the time KFS has to assemble a seat. What is the time? Q4. "Of all TPS components perhaps the one receiving most notoriety has been workers' "ability" to stop the line." What is the cost of stopping the line for one cycle? For five minutes? For half-an-hour?	
	Mandatory Preparation	Toyota case (RP)
	Optional Reading	Chapter 8 of C&T
	Submit	GR-1
4-RB	**T, 9/5**	**PROCESS ANALYSIS**
	Case	Donner Company (in RP)
	Case Preparation Questions: Q1. How is Donner doing? What problems do you see? Q2. Why do these problems exist?	

	Q3. Trace an order as it moves from the originating customer to completion.	
	Mandatory Preparation	Donner Company case (RP)
	Optional Reading	Chapters 1, 2, and 3 of C&T
	Submit	GH-1
5-RB	**TH, 9/7**	**PROCESS ANALYSIS**
	Case	Donner Company (in RP)
	Case Preparation Questions (Donner): Q4. Draw an information flow diagram for Donner Q5. What specific actions do you recommend Plummer take to address these problems?	
	Mandatory Preparation	Donner Company case (RP)
	Optional Reading	Chapters 1, 2, and 3 of C&T
6-RB	**T, 9/12**	**GLOBAL SUPPLY CHAIN MANAGEMENT**
	Case	Sport Obermeyer Ltd. (in RP)
	Case Preparation Questions: 1. How would you characterize the roles played by Sport Obermeyer and Obersport in this global supply chain? What are the critical capabilities of Sport Obermeyer? Of Obersport? 2. Wally Obermeyer has hired you as a consultant to advise him on production planning decisions for the Obermeyer product line. As you know, one of the major challenges Wally faces each year is deciding which items to order in November, and which ones to defer till the Las Vegas show. 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? How many Electra parkas should you order?	
	Mandatory Preparation	Sport Obermeyer case (RP)
	Optional Reading	Chapters 14, 15, and 19 of C&T
	Submit	GH-2, GR-2
7-RB	**TH, 9/14**	**GLOBAL SUPPLY CHAIN MANAGEMENT**
	Case	Sport Obermeyer Ltd. (in RP)
	Case Preparation Questions: 3. A number of factors constrain Obermeyer's ability to produce so as to match supply demand. These include: (1) minimum production lot-size constraints; (2) limited reactive capacity in the sewing plants; (3) raw material lead times; and (4) the time at which retailer demand is made available to Obermeyer. How should Obermeyer address these factors so as to improve its ability to produce what the market wants? Specifically, how can Obermeyer increase its reactive capacity without necessarily hiring more people, working longer hours or buying new equipment?	
	Optional Reading	Chapters 14, 15, and 19 of C&T
8-RB	**T, 9/19**	**COORDINATION and CONTRACTS**
	Case	Cargo (in RP)
	Case Preparation Questions:	

	1. What do you think of Cargo's business model? Do you think they will succeed? What are the operational challenges faced by Cargo?	
	Mandatory Preparation	Cargo case (RP)
	Optional Reading	Chapter 14, 15, and 19 of C&T
	Submit	GH-3
9-RB	**TH 9/21**	**PRODUCT DESIGN, INVENTORY PLANNING**
	Case	HP: Network Printer Design (in RP)
	Case Preparation Questions: Q1. What value does the UPS option provide? How does this value vary during the product life cycle?	
	Mandatory Preparation	HP: Network Printer Design (RP)
	Recommended Reading	Chapters 9 and 10 of C&T
10-RB	**T, 9/26**	**COSTING ALTERNATIVES**
	Case	HP: Network Printer Design (in RP)
	Case Preparation Questions: Q1. How can you quantify the relative benefits of the UPS and non-UPS options? Q2. How should HP proceed concerning the universal power supply?	
	Submit	GH-4
11-RB	**TH, 9/28**	**OPERATIONAL EXCELLENCE**
	Case	Southwest Airline in Baltimore (in RP)
	Case Preparation Questions: Q1. What is Southwest (SWA) to you? Who are SWA's competitors? Q2. What are SWA's advantages relative to other airlines? What are its disadvantages? Q3. SWA's operations strategy has been likened to that of a flexible manufacturer. Explain. Q5. How does a fast turnaround impact SWA's bottom line? Q6. Evaluate the plane turnaround process at Baltimore (resource utilization, capacity, bottlenecks, information flows, etc.). Q7. Why is the operational performance at Baltimore eroding?	
	Mandatory Preparation	Southwest Airlines case (RP)
	Optional Reading	Chapter 6.4 in C&T (Analyzing Operations Based on Financial)
	Submit	GR-3
12-RB	**T, 10/3**	**HEALTH & SAFETY**
	Case	Workplace Safety at Alcoa (A) (in RP)
	Case Preparation Questions: Q1. What has been and needs to be the half-life of Mission Valley's safety improvement? Q2. As Paul O'Neil, how do you describe what has and has not worked at Mission Valley? Q3. What is your evaluation of Linda Merton's plan for 1992?	
	Mandatory Preparation	Alcoa case (RP)
	Submit	GR-4
	TH, 10/5	**NO CLASS**

FIRST MIDTERM EXAM	**(**3:30-6:30 PM, Friday, October 6 in GSB 3.130**)**	
13-GG	**T, 10/10**	**Intro. to Demand Forecasting Analytics**
	Preparation:	Read Ch. 1 & 2 in FPP
14-GG	**TH 10/12**	**Exponential Smoothing Forecast Models**
	Preparation:	Read Ch. 8.1 through 8.4 in FPP
15-GG	**T, 10/17**	**Exponential Smoothing Forecast Models**
	Preparation:	Read Ch. 8.5 through 8.7 in FPP
16-GG	**TH, 10/19**	**Introduction to ARIMA Modeling**
	Preparation:	Read Ch. 9.1 – 9.4 in FPP
17-GG	**T, 10/24**	**Non-Seasonal ARIMA Forecasting Models**
	Preparation:	Read Ch. 9.5 – 9.7 in FPP
	Due 10/24 before class	**Individual Assignment #1** (Submit through Canvas)
18-GG	**TH 10/26**	**Seasonal ARIMA Forecasting Models**
	Preparation:	Read Ch. 9.8 – 9.10 in FPP
19-GG	**T, 10/31**	**Dynamic Forecasting Models**
	Preparation:	Read Ch. 10.1 – 10.3 in FPP
20-GG	**TH, 11/2**	**Modeling Price Elasticity of Demand**
	Due 11/2 before class	Individual Assignment #2 (Submit through Canvas)
21-GG	**T, 11/7**	**Dynamic Forecasting Models: Stoch. and Deterministic Trends**
	Preparation:	Read Ch. 10.4 in FPP
22-GG	**TH, 11/9**	**Dynamic Forecasting Models: Dynamic Harmonic Regression**
		Read Ch. 10.5 in FPP
23-GG	**T, 11/14**	**Forecasting Effects of Price and Promotion**
	Case:	Marriott Rooms Forecasting
	Due 11/14 before class	Individual Assignment #3 (Submit through Canvas)
24-GG	**TH, 11/16**	**SECOND MIDTERM EXAM**
THANKSGIVING BREAK		

25-GG	**T, 11/28**	**Forecasting Demand using Regression Trees**
26-GG	**TH, 11/30**	**Forecasting POS Demand using X-Gradient-Boosting**
	Due 11/30 before class	Group Assignment (Submit through Canvas)

Fall 2023 OM 380.17 Supply Chain Analytics (#05160) RRH 4.402 TTH 9:30-10:45 AM

Session	Day	Date	Topic	Case / Other Info.	Assignments Due
	T	8/22	***NO CLASS***		
01-RB	TH	8/24	Course Introduction; Process Analysis	Toyota Global Chip Shortage; Electric Vehicle Supply Chain	
02-RB	T	8/29	Process Analysis	Kristen's Cookie	
03-RB	TH	8/31	Toyota Production System	Toyota Motor Manufacturing	GR-1
04-RB	T	9/05	Process Analysis	Donner Company	GH-1
05-RB	TH	9/07	Process Analysis	Donner Company	
06-RB	T	9/12	Global Supply Chain Management	Sport Obermeyer	GH-2, GR-2
07-RB	TH	9/14	Global Supply Chain Management	Sport Obermeyer	
08-RB	T	9/19	Coordination and Contracts	Cargo	GH-3
09-RB	TH	9/21	Product Design, Inventory Planning	HP: Network Printer Design	
10-RB	T	9/26	Costing Alternatives	HP: Network Printer Design	GH-4
11-RB	TH	9/28	Operational Excellence	Southwest	GR-3
12-RB	T	10/03	Health & Safety	Alcoa (A)	GR-4
	TH	10/05	***NO CLASS***		
	F	10/06	**FIRST MIDTERM EXAM (3:30-6:30 PM) IN GSB 3.130**		
13-GG	T	10/10	Intro. to Demand Forecasting Analytics	Ch. 1 & 2 in FPP	
14-GG	TH	10/12	Exponential Smoothing	Ch. 8.1 – 8.4 in FPP	
15-GG	T	10/17	Exponential Smoothing	Ch. 8.5 – 8.7 in FPP	
16-GG	TH	10/19	Introduction to ARIMA Modeling	Ch. 9.1 – 9.4 in FPP	IA-1
17-GG	T	10/24	Non-Seasonal ARIMA Forecasts	Ch. 9.5 – 9.7 in FPP	
18-GG	TH	10/26	Seasonal ARIMA Forecasts	Ch. 9.8 – 9.10 in FPP	
19-GG	T	10/31	Dynamic Demand Models	Ch. 10.1 – 10.3 in FPP	
20-GG	TH	11/02	Modeling Price Elasticity of Demand	Hand-out	IA-2
21-GG	T	11/07	Forecasting using Regression Trees	Article	
22-GG	TH	11/09	Fcst. POS Demand using XG-Boosting		
23-GG	T	11/14	Using Lagged Predictors in DF Models	Ch. 10.6 in FPP	IA-3
24-GG	TH	11/16	**SECOND MIDTERM EXAM**		
25-GG	T	11/28	Fcst. Effects of Price and Promotion	Marriott Rooms Forecasting	
26-GG	TH	11/30	Using Fourier Terms for Seasonality	Ch. 10.4 – 10.5 in FPP	GA

Note: RB = Rayan Bagchi; GG = Genaro Gutierrez