

Instructor: Professor Kathy Takayama
Office Hours: Tue, 9:00-10:30 AM Pac, or by appt (see Slack for latest updates)
Office Hours
Zoom Link: <https://usc.zoom.us/j/94064513047?pwd=cytxVElyUHJ2OFFWTjRqRVdIKzI2Zz09>
Contact: Prefer Slack: Post public questions on Class Channel;
Send private messages via DM [@Kathy Takayama](#), or via email
Kathy.Takayama@marshall.usc.edu

Course Description

How do organizations such as financial institutions, health care providers, manufacturing plants, and tech companies meet customer needs and stay consistent with their goals and values? How do organizations make trade-off decisions with respect to quality, cost, and time? Operations Management provides tools and methods to answer these questions systematically in the global business world.

Operations managers are primarily concerned with the design, procurement, production, and delivery of goods and services. They are responsible for planning, designing, operating, controlling and improving the various procurement, production, storage, and shipping processes involved, from the time the product or service is designed until customer delivery occurs. The challenge for operations managers is to produce goods and services and deliver them in an efficient manner according to the business strategy of their company. Typically, this involves balancing the trade-offs between satisfying customer demand, on-time delivery, lower costs, and higher quality.

Course Learning Goals

In this course, you will learn the fundamentals of Operations Management, enhance your managerial insight and intuition, and improve your business decisions.

The focus of this course is on the Marshall Undergraduate Learning Goals (see pp. 17-18 of the syllabus for a complete description) of “understanding key business areas” and “developing critical thinking skills,” while also supporting the goal of “being effective communicators.” Upon successful completion of this course, students will be able to:

- Goal 1: Describe the spectrum of operations management activities in a business, and the types of decisions made by operations managers.
- Goal 2: Utilize a variety of tools and techniques effectively to compete successfully in the marketplace, including:
 - Business Process Management.
 - Waiting Line Management.
 - ~~Optimization.~~

- Decision Making when faced with uncertainty
 - Revenue Management.
 - Inventory and Supply Chain Management.
- Goal 3: Predict, anticipate, and take into account how operations management interfaces with other functional areas such as strategy, accounting, finance, human resources, and marketing.
 - Goal 4: Demonstrate critical thinking skills to assess trade-offs in process design, capacity allocation, inventory levels, and customer service.
 - ~~Goal 5: Apply optimization tools and techniques to practical problems; for example, use the Excel Solver to formulate and solve a linear optimization problem.~~
 - Goal 6: Apply critical thinking and problem-solving and make real-time decisions on capacity, quoted lead-times, work-in-process levels, contracts, and inventory.
 - Goal 7: Make operational decisions taking into account the global nature of supply chains (via an experiential learning simulation), the interplay between levels of the supply chain and their locations, and its implications for pricing, competition and customer service.

Materials

For most of the class, lecture notes and materials on BrightSpace will be sufficient. You may choose to purchase a copy of the custom BUAD 311 textbook or access pertinent chapters from ARES at no cost (see below).

- *BUAD 311 Operations Management*: Custom-made textbook available in eBook format at <https://create.mheducation.com/shop/>, ISBN: 9781308430478. (*This is optional, \$88*)
- Four relevant chapters from the text are available for free on ARES. To access these chapters. See Slack for details on how to access the BUAD 311 materials on Ares.

Prerequisites and/or Recommended Preparation

Co-requisite: BUAD 310 or BUAD 312 or EE 364 or MATH 407

Course Notes

USC is making a change in our online learning platform, and we are now using Brightspace and Slack

How to Log In to Brightspace:

To access Brightspace today, follow these steps:

1. Go to <https://brightspace.usc.edu/d2l/login> to login. You can also find Brightspace on my.usc.edu
2. Enter your USC Net ID to access
3. Begin navigating through Brightspace

I also encourage you to download the mobile app, Brightspace Pulse, available in both the [Apple App Store](#) and [Google Play](#).

What to Expect

Brightspace provides an enhanced learning experience with detailed class progress reports. With Brightspace, you can easily see all assignment due dates in one place. Upon opening Brightspace, you will find the following: **20242 BUAD-311:Operations Management**. We will use this course to complete work for this course throughout the semester.

Support Resources

Do you want to learn more about Brightspace? Check out training and resources in the [Brightspace Student Tutorials](#). For office hour support, [please sign up here](#). Find technical support information below:

Student Guides: [Brightspace Student Guides](#)

Brightspace Technical Support Line: 888-895-2812

Brightspace Email Support: usc@d2l.com

ASSIGNMENTS AND GRADING DETAIL

Participation	8%
Write-ups (2 cases)	4%
Simulation	2%
Quizzes (best 2 out of 3)	20%
Midterm	33%
Final Exam	33%

Final grades represent how you perform in the class relative to other students. The average grade for this class is expected to average about 3.30. Two items are considered when assigning final grades:

- Your average weighted score as a percentage of the available points for all assignments (the points you receive divided by the number of points possible).
- Your ranking among all students in the class

Class Attendance & Participation

The Summer 2024 session is **online only via Zoom** (link TBD). You must login using Single Sign-On (SSO) to avoid the waiting room. If you have not used Zoom previously, see [Zoom Meetings](#). Students are expected to attend all class sessions in their enrolled section.

Your participation score is based primarily on two items.

- First, your contributions during the live lectures including, but not limited to responding to Poll Everywhere polls, thoughtfully responding to the instructor's prompts (including chats, polls, breakout rooms, etc.); asking questions; answering other students' questions; and sharing personal or professional experiences related to course content.
- The second contribution to your participation grade is your engagement on Slack, which is our primary method of communication for this course.

- If you are new to Slack, see [Slack](#) (install the Slack App on your phone and laptop). Find our class Slack channel, (channel name TBD, but something like #summer24_buad311_14922) by going to <http://usc.slack.com> and selecting the USC Marshall Workspace.
- Our class channel will appear just before classes begin; you will be automatically enrolled in our section channel.
- Earn asynchronous participation (approximately half of your participation grade) by acknowledging at least one post each week with a “Thumbs Up” emoji (only required once per week – feel free to use other emojis throughout the week), as well as contributing appropriate comments and posts with relevant articles or videos. Complete by Friday each week for it to count.
- Occasionally, there will be different ways to earn participation for the week, for example during the *first week of class, participation is based on updating your profile photo and adding your favorite emoji on the “Welcome” post.*
- BUAD 311 involves several simulation games, particularly in the second half of the course. Your performance on these simulation games will be included when computing your participation grade. If required, there will be internationally timed simulations.

EBeer Game

We will be playing the EBeer game, which is based on a board game simulation developed at MIT. You will be required to purchase a game code for \$12 to participate in the simulation. Through this game you will learn about system dynamics in the context of a supply chain. Four team members each take a different position on a simple linear supply chain: retailer, wholesaler, distributor, and factory, with a goal to minimize inventory and backlog costs.

Because this is an interactive simulation, you must be present to participate (and to earn participation points). Details on how to register for the game will be provided during the second half of the semester.

Case Write-ups

There will be two write-ups for the course, one for each of the two cases. Each contributes 1% to the course grade. Write-ups are short essays in response to posted discussion questions and are graded PASS or FAIL based on completion and accuracy. Students are permitted and encouraged to discuss with others their ideas for completing assignments, including using AI tools such as ChatGPT as an additional study partner; however, once a student begins writing the deliverable, all work must be individual and independent and your own. Students may not seek help from anyone outside the class, including but not limited to former students of this course, friends and family, tutors, and online forums. Students may consult course materials and web resources. Students may not post anything related to the assignments online. Failure to abide by the above guidelines may constitute a case of suspected plagiarism or cheating, which will be reported and investigated. For more information about unauthorized collaboration visit <https://libraries.usc.edu/tutorial/academic-dishonesty> or https://lib-php.usc.edu/tutorials/academic-dishonesty/story_html5.html

Write-ups are to be submitted on GradeScope. We will review the GradeScope assignment submission process prior to the deadline for submitting the first case. All assignments and test must be submitted prior to the deadline; instructors or TAs are not responsible for individual technical difficulties related to GradeScope assignment submission. Late case submissions will be penalized 50%.

Quizzes

There are three quizzes, of which the best two will count towards the course grade for 10% each. Quizzes are not cumulative. Quizzes are meant to help keep you “on track” with the course material. To help you prepare, approximately a week before each quiz a short set of quiz questions and answers (not solutions) will be distributed. You are free to work in groups on these questions (and encouraged to do so), but you cannot ask the TA, peer tutors or instructors for help with them.

Quizzes are 25 minutes and will be available as an online test over a 48-hour period. On the day of the quiz in class, one of the questions will be randomly selected from the quiz preparation materials, with slightly different numbers and small modifications. If you have done the quiz preparation questions diligently, the quiz will be very easy for you. Quizzes are open books / open notes (crib-sheets recommended). Each student should bring a stand-alone calculator capable of power and square root operations. Once the quiz begins, collaboration of any sort with any other person or accessing anything on the Internet is *strictly prohibited* and will result in an “F” in the course grade. Any suspicion of cheating will be reported and investigated by USC. Please see the “Academic Integrity and Conduct” section below for further details.

Solutions to the quizzes will be distributed only after all sections have taken the quiz, at which point you are free to meet with the TA, peer tutors or instructor for help with the questions.

Midterm and Final Exam

There is a midterm exam and a final exam; the final exam is *non-cumulative*. All exams are closed books. Each student may bring two letter-sized (8.5”x11”) double-sided crib sheets for each exam. Each student should also have a stand-alone calculator capable of power and square root operations. During tests, you may not use a calculator that has access to the Internet; you may not use your SmartPhone as a calculator. Students may not share the same crib sheets or calculators during a test. Collaboration of any sort on exams is strictly prohibited and will result in an “F” in the course grade. Any suspicion of cheating will be reported and investigated by USC. Please see the “Academic Integrity and Conduct” section below for further details.

The final examination will take place on **Monday, July 29, 2024**, 12:00 PM PDT. According to the USC Office of Academic Records and Registrar, “*No student in a course with a final examination is permitted to omit the final examination or take the final examination prior to its scheduled date, and no instructor is authorized to permit a student to do so. No student is allowed to re-take a final examination or do extra work in a course after the semester has ended for purposes of improving his or her grade.*”

Students must attend the midterm and final at the indicated times and dates, in their enrolled sections. If you foresee a conflict, you must contact the instructor within the first three weeks of the semester to explore alternative options, to be determined by the entire 311 teaching team. No rescheduling of exams will be allowed after the first three weeks of class. The only exception is a “documented medical emergency,” for which the student must provide all of the following documentation by the time of the exam: (1) A signed doctor’s note, with the name and phone number of the medical professional verifying the medical emergency; (2) An email from the student’s Marshall advisor; (3) An email from a USC Support and Advocacy advisor (see “Support Systems” below). For all other reasons of missing a quiz or an exam, including travels for non-emergencies, interviews, adverse traffic conditions, or forgetfulness about exam time, the student will not be allowed to reschedule, and missing a quiz or an exam will result in a zero for the quiz or the exam.

MARSHALL GUIDELINES AND USC POLICIES

Add/Drop Process

Most Marshall classes are open enrollment (R-clearance) through the Drop/Add deadline. If there is an open seat, you can add the class using Web Registration. If the class is full, you will need to continue checking Web Registration or the Schedule of Classes (classes.usc.edu) to see if a space becomes available. Students who do not attend the first two class sessions (for classes that meet twice per week) or the first class meeting (for classes that meet once per week) may be dropped from the course. There are no formal wait lists for Marshall undergraduate courses, and professors cannot add students or increase the course capacity. If all sections of the course are full, you can add your name to an interest list by contacting the Office of Undergraduate Advising & Student Affairs (213) 740-0690; if new seats or sections are added, students on the interest list will be notified.

Per the [USC Schedule of Classes](#) the last day to add this class or drop this course without a mark of “W” (and receive a refund) is Thursday, **May 30, 2024**. The last day to change pass/no pass to a letter grade, or to drop this course without a mark of “W”, is Wednesday, **June 18, 2024**. The last day to drop (with a “W”) is Tuesday, **July 16, 2024**.

Recorded Lectures

Zoom lectures will be automatically recorded and available for currently enrolled students on BrightSpace. Pursuant to the USC Student Handbook (<https://policy.usc.edu/studenthandbook/>, page 57), students may not record a university class without the express permission of the instructor and announcement to the class. In addition, students may not distribute or use notes or recordings based on USC classes or lectures without the express permission of the instructor for purposes other than personal or class-related group study by individuals registered for the class. This restriction on unauthorized use applies to all information that is distributed or displayed for use in relationship to the class. Violation of this policy may subject an individual or entity to university discipline and/or legal proceedings.

Class Conduct/Netiquette

Professionalism will be expected at all times. Because the university classroom is a place designed for the free exchange of ideas, we must show respect for one another in all circumstances. We will show respect for one another by exhibiting patience, courtesy, and professionalism in our exchanges. Appropriate language and restraint from verbal attacks upon those whose perspectives differ from your own is a requirement. Courtesy and kindness are the norm for those who participate in my class.

Synchronous Sessions

Students are expected to attend all class sessions in their enrolled section. For students whose class time falls between 7am-10pm their local time, they must actively participate in all synchronous (live) sessions via computer or laptop, with a webcam and headset/speakers. You are expected to be in a location with a reliable internet connection and without distractions. Your participation score is based on your contributions to the lectures including, but not limited to thoughtfully responding to the instructor's prompts, engaging in class discussions, and offering relevant comments.

If you cannot attend the synchronous sessions because the class does not fall between 7am to 10pm in your time zone, you need to contact your instructor as early as possible via Slack DM, sharing the time our class occurs in your time zone. You will be added to an additional Slack Channel where you will get more details on how you can earn a participation score.

As outlined in the student handbook, there are specific expectations of a student attending class online. When attending, present and act appropriate as if you were in a physical classroom.

Please do:

- Attend class from a quiet area, free of distractions.
- Dress respectfully. Video conference business meetings are and will be the norm, so practice your professional telepresence.
- If you use a virtual background, please keep it respectfully professional
- Display both your first and last name during video conferencing and Synchronous class meetings.
- Respectfully minimize distractions by muting and or turning video off when moving around
- Engage in appropriate tone and language with instructors or classmates
- Disagree respectfully
- Respectfully pay attention to classmates
- Login to Zoom using SSO (to avoid the professor having to let you in from the Waiting Room); if you are unable to avoid the Waiting Room after the first week, your inability to follow directions will be reflected in your participation score.

Please do not:

- Engage in a simultaneous activity (e.g., using a telephone, reading a book, knitting)

- Interact with persons who are not part of the class
- Leave frequently or not be on camera for extended periods of time
- Have other persons in view of the camera
- Behave in an overtly inattentive manner (looking distracted, not participating)

Asynchronous Activities – Slack and emails

Some Netiquette Rules:

- Engage in appropriate tone and language with instructors or classmates
- Disagree respectfully
- Do not use more than one punctuation mark, this is also considered aggressive!!!!
- Begin communications with a professional salutation (Examples: Dr. Name; Ms. Name; Hello Professor Name; Good afternoon, Mr. Name). Starting without a salutation or a simple "Hey" is not appropriate.
- When sending an email, please include a detailed subject line. Additionally, make sure you reference the course number and section (Ex. BUAD311-14914) in the message and sign the mail with your name.
- Use proper grammar, spelling, punctuation, and capitalization. Text messaging language is not acceptable. You are practicing for your role as a business leader.
- Re-Read, think, and edit your message before you click "Send/Submit/Post.". As a check, consider whether you would be comfortable with your email or post or text being widely distributed on the Internet.
- In Slack, you can edit or delete by resting your cursor on your thread and clicking on the three dots.

USC Statement on Academic Conduct and Support Systems

Open Expression and Respect for All

An important goal of the educational experience at USC Marshall is to be exposed to and discuss diverse, thought-provoking, and sometimes controversial ideas that challenge one's beliefs. In this course we will support the values articulated in the USC Marshall "[Open Expression Statement](#)."

USC Statement on Academic Conduct and Support Systems

Academic Integrity:

The University of Southern California is a learning community committed to developing successful scholars and researchers dedicated to the pursuit of knowledge and the dissemination of ideas. Academic misconduct, which includes any act of dishonesty in the production or submission of academic work, comprises the integrity of the person who commits the act and can impugn the perceived integrity of the entire university community. It stands in opposition to the university's mission to research, educate, and contribute productively to our community and the world.

All students are expected to submit assignments that represent their own original work,

and that have been prepared specifically for the course or section for which they have been submitted. You may not submit work written by others or “recycle” work prepared for other courses without obtaining written permission from the instructor(s).

Other violations of academic integrity include, but are not limited to, cheating, plagiarism, fabrication (e.g., falsifying data), collusion, knowingly assisting others in acts of academic dishonesty, and any act that gains or is intended to gain an unfair academic advantage.

AI Policy: In this course, I encourage you to use artificial intelligence (AI)-powered programs to help you with assignments that indicate the permitted use of AI. You should also be aware that AI text generation tools may present incorrect information, biased responses, and incomplete analyses; thus they are not yet prepared to produce text that meets the standards of this course. To adhere to our university values, you must cite any AI-generated material (e.g., text, images, etc.) included or referenced in your work and provide the prompts used to generate the content. Using an AI tool to generate content without proper attribution will be treated as plagiarism and reported to the Office of Academic Integrity. Please review the instructions in each assignment for more details on how and when to use AI Generators for your submissions. You may use AI to brainstorm the Case Study assignments, just as you would brainstorm with your study group. **You may NOT use AI on Quizzes, the Midterm, or the Final.**

The impact of academic dishonesty is far-reaching and is considered a serious offense against the university. All incidences of academic misconduct will be reported to the Office of Academic Integrity and could result in outcomes such as failure on the assignment, failure in the course, suspension, or even expulsion from the university.

For more information about academic integrity see [the student handbook](#) or the [Office of Academic Integrity’s website](#), and university policies on [Research and Scholarship Misconduct](#).

Please ask your instructor if you are unsure what constitutes unauthorized assistance on an exam or assignment, or what information requires citation and/or attribution.

Students and Disability Accommodations:

USC welcomes students with disabilities into all of the University’s educational programs. The Office of Student Accessibility Services (OSAS) is responsible for the determination of appropriate accommodations for students who encounter disability-related barriers. Once a student has completed the OSAS process (registration, initial appointment, and submitted documentation) and accommodations are determined to be reasonable and appropriate, a Letter of Accommodation (LOA) will be available to generate for each course. The LOA must be given to each course instructor by the student and followed up with a discussion. This should be done as early in the semester as possible as accommodations are not retroactive. More information can be found at osas.usc.edu. You may contact OSAS at (213) 740-0776 or via email at osasfrontdesk@usc.edu.

Support Systems:

[Counseling and Mental Health](#) - (213) 740-9355 – 24/7 on call

Free and confidential mental health treatment for students, including short-term psychotherapy, group counseling, stress fitness workshops, and crisis intervention.

[988 Suicide and Crisis Lifeline](#) - 988 for both calls and text messages – 24/7 on call

The 988 Suicide and Crisis Lifeline (formerly known as the National Suicide Prevention Lifeline) provides free and confidential emotional support to people in suicidal crisis or emotional distress 24 hours a day, 7 days a week, across the United States. The Lifeline is comprised of a national network of over 200 local crisis centers, combining custom local care and resources with national standards and best practices. The new, shorter phone number makes it easier for people to remember and access mental health crisis services (though the previous 1 (800) 273-8255 number will continue to function indefinitely) and represents a continued commitment to those in crisis.

[Relationship and Sexual Violence Prevention Services \(RSVP\)](#) - (213) 740-9355(WELL) – 24/7 on call

Free and confidential therapy services, workshops, and training for situations related to gender- and power-based harm (including sexual assault, intimate partner violence, and stalking).

[Office for Equity, Equal Opportunity, and Title IX \(EEO-TIX\)](#) - (213) 740-5086

Information about how to get help or help someone affected by harassment or discrimination, rights of protected classes, reporting options, and additional resources for students, faculty, staff, visitors, and applicants.

[Reporting Incidents of Bias or Harassment](#) - (213) 740-5086 or (213) 821-8298

Avenue to report incidents of bias, hate crimes, and microaggressions to the Office for Equity, Equal Opportunity, and Title for appropriate investigation, supportive measures, and response.

[The Office of Student Accessibility Services \(OSAS\)](#) - (213) 740-0776

OSAS ensures equal access for students with disabilities through providing academic accommodations and auxiliary aids in accordance with federal laws and university policy.

[USC Campus Support and Intervention](#) - (213) 740-0411

Assists students and families in resolving complex personal, financial, and academic issues adversely affecting their success as a student.

[Diversity, Equity and Inclusion](#) - (213) 740-2101

Information on events, programs and training, the Provost's Diversity and Inclusion Council, Diversity Liaisons for each academic school, chronology, participation, and various resources for students.

[USC Emergency](#) - UPC: (213) 740-4321, HSC: (323) 442-1000 – 24/7 on call

Emergency assistance and avenue to report a crime. Latest updates regarding safety,

including ways in which instruction will be continued if an officially declared emergency makes travel to campus infeasible.

[USC Department of Public Safety](#) - UPC: (213) 740-6000, HSC: (323) 442-1200 – 24/7 on call

Non-emergency assistance or information.

[Office of the Ombuds](#) - (213) 821-9556 (UPC) / (323-442-0382 (HSC)

A safe and confidential place to share your USC-related issues with a University Ombuds who will work with you to explore options or paths to manage your concern.

[Occupational Therapy Faculty Practice](#) - (323) 442-2850 or otfp@med.usc.edu

Confidential Lifestyle Redesign services for USC students to support health promoting habits and routines that enhance quality of life and academic performance.

SUMMER 2024 COURSE CALENDAR

Session	Date	Session Topic(s)	Quizzes and Assignments
1	W 5/15	Introduction and Overview, Intro to Process Measures	
2	M 5/20	Process Analysis	
3	W 5/22	Kristen's Cookie Company	Case write-up (due before class on 5/24, using GradeScope)
<i>Mon, 5/27/23 (No Class) Memorial Day – Watch recording of Waiting Line Mgmt</i>			
4	W 5/29	More on Process Analysis	
5	M 6/3	Little's Law	
6	W 6/5	Waiting Line Management and Queueing Theory	Quiz 1 (Quiz preparation questions will be distributed by Wed, 5/29)
7	M 6/10	Agile, Lean, Six-Sigma	
8	W 6/12	Midterm Review	
9	M 6/17	Midterm (online, during class)	Drop Deadline, 6/18
<i>Wed, 6/19/23 (No Class)</i>			
10	M 6/24	Decision Tree	
11	W 6/26	Revenue Management	
12	M 7/1	Inventory Management: EOQ	
13	W 7/3	Inventory Management: NV	Quiz 2 (Quiz preparation questions will be distributed by Wed, 6/26)
<i>7/4/23 - 7/5/23 (No Class) Independence Day</i>			
14	M 7/8	Inventory Management: ROP-Q	
15	W 7/10	Inv Mgmt Recap/Intro to SC	
16	M 7/15	EBeer Game	Quiz 3 (Quiz preparation questions will be distributed by Mon, 7/8)
17	W 7/17	Forecasting	
18	M 7/22	Zara	Case write-up (Check Slack for the due date)
19	W 7/24	Final Review	
Final	M 7/29	Final Exam (online, during class)	

Session 1 – Introduction and Overview

Question: What is Operations Management (OM)? Why Operations Management?

Outline: You and your classmates will discover that OM defines business competitiveness and study of OM prepares you to become business leaders and entrepreneurs by qualitatively and quantitatively assessing trade-offs.

Learning Outcomes: By the end of this session, students should be able to

- Define and identify Operations Management problems in real-world situations
- Articulate the importance of OM to business competitiveness, leadership, and entrepreneurship
- Construct and interpret business processes using process flow diagrams
- Describe the potential trade-offs in make-to-stock and make-to-order processes

Session 2 – Process Analysis

Question: How do process flows link to the profits? How do we quantify the performance?

Outline: You will learn that the flow of customers or products into and out of a system determines process measures and ultimately the bottom line.

Learning Outcomes: By the end of this session, students should be able to

- Calculate key performance measures of a process, including capacity, flow rate, and utilization rate
- Define flow time and work-in-process
- Identify the bottleneck that governs the capacity of a process

Session 3 – Kristen's Cookie Company

Question: What is the makeup of a small cookie business? How do we determine capacity?

Outline: Through this case, you will gain a better understanding of the business profitability through business process analysis; you will evaluate key performance measures under different sales mixes, and recognize the impact of the bottleneck on price and profit.

Learning Outcomes: Through this case, students should be able to

- Conduct business process analysis to assess business profitability
- Evaluate key performance measures under different sales mixes
- Quantify the impact of the bottleneck on price and profit

Session 4 – More on Process Analysis

Question: Is it possible to improve utilization rate and capacity at the same time?

Outline: You will study strategies to meet seasonal demand and how flexible resources help increase system capacity and utilization rate at the same time. Through several examples, we will also solidify our understanding of calculating metrics such as capacity.

Learning Outcomes: By the end of this session, students should be able to

- Describe strategies for meeting seasonal demand and the impact of variability/seasonality on capacity requirement
- Utilize flexible resources to increase system capacity and utilization rate at the same time
- Calculate performance measures in the presence of multiple products and yield losses

Session 5 – Little’s Law

Question: What is Little’s Law? How can it shed insight onto business process performance?

Outline: There is an important relationship among key performance indicators of a process. You will learn the powerful formula to help you better understand the performance of the business processes.

Learning Outcomes: By the end of this session, students should be able to

- Link various performance measures using Little’s Law
- Articulate related business insights
- Apply the formula in various environments

Sessions 6 – Waiting Line Management & Queuing Theory

Question: What principles can support us in understanding and managing waiting lines?

Outline: We wait. Understanding *waiting* as a phenomenon enables us to create schedules, monitor inventory, analyze service, and determine a cost-effective balance for optimal performance and revenues. In this class, you will build a core understanding of three important factors pertaining to the performance of the waiting lines.

Learning Outcomes: By the end of this session, students should be able to

- Define characteristics of a waiting line queueing system
- Explain the effects of variability, utilization rate, and risk pooling on waiting line performance
- Describe the psychology of waiting lines

Question: How can mathematical calculations support optimal performance and revenues?

Outline: You will be able to translate real life waiting into variables for use in formulae and mathematical calculations to determine waiting line performance.

Learning Outcomes: By the end of this session, students should be able to

- Formulate the quantitative impact of various factors on waiting time
- Apply the formulae to calculate the waiting time of real-life waiting systems
- Explain waiting lines principles using the formulae

Session 7 – Midterm 1 Review

Session 8 – Midterm Exam

Session 9 – Watch recording on Bonus sessions: Agile, Lean, and Six Sigma

Session 10 – Decision Trees

Question: How can we optimize our decision in an uncertain world? What is a Decision Tree?

Outline: The Decision Tree is a schematic model used to manage uncertainty by clearly identifying alternative choices. You will learn how to construct a decision tree—its nodes and branches—and solve for the optimal decision.

Learning Outcomes: By the end of this session, students should be able to

- Use decision trees to express alternative choices and to manage uncertainty
- Describe differences between the three types of nodes in a decision tree
- Solve decision tree problems

Session 11 – Revenue Management: Introduction and Pricing

Question: What is Revenue Management? How does it help business to increase profit? How to set prices?

Outline: You will understand the key concepts of revenue management. In this lesson, you will use an online platform to understand how to use consumer valuation information to set prices.

Learning Outcomes: By the end of this session, students should be able to

- Learn how to set prices based on customer valuation information
- Employ an analytical approach to make pricing decisions.

Session 12 – Intro to Inventory Management (recording due to holiday)

Question: Why carry inventory? How can we minimize costs?

Session 13 – Inventory Management: EOQ and Newsvendor Model

Question: Given constant demand, how can we minimize inventory costs?

Outline: Inventory is essential for business activities though it can be costly. You will examine the trade-offs between economies of scale and inventory cost and learn how to find the right amount of inventory using the economic order quantity (EOQ) formula.

Learning Outcomes: By the end of this session, students should be able to

- Describe the different purposes for keeping inventory
- Explain the trade-offs between economies of scale and inventory cost in a basic inventory problem
- Optimize the amount of inventory using the economic order quantity (EOQ) formula
- Define inventory turns, a key performance measure

Question: Why carry inventory? How to ensure customer satisfaction with minimum inventory?

Outline: Inventory is a necessary evil especially when you face demand uncertainty. You will examine the trade-offs and apply marginal analysis to solve the problem optimally. You will also be able to establish an inventory policy when both economies of scale and demand uncertainty are present.

Learning Outcomes: By the end of this session, students should be able to Identify the elements and trade-offs of a basic inventory problem

- Apply marginal analysis to optimize inventory decisions in the face of demand uncertainty
- Explain the risk pooling effect in inventory systems
- Derive the (ROP, Q) inventory policy when both economies of scale and demand uncertainty are present

Session 14 – Inventory Management: Continuous Review with ROP-Q Model

Question: We establish and analyze an inventory policy when both economies of scale and demand uncertainty are present.

Learning Outcomes: By the end of this session, students should be able to

- Explain the risk pooling effect in inventory systems in a dynamic manner.
- Derive the (ROP, Q) inventory policy when both economies of scale and demand uncertainty are present
- Understand the tradeoffs between uncertainty, delay, and inventory decisions.

Session 15 and 16: Intro to Supply Chains and Supply Chain Dynamics – EBeer Game

Question: What are upstream and downstream in Supply Chains? What types of businesses are typical Supply Chain partners? What is the “bull-whip” effect? How do our decisions influence others’ decision?

Learning Outcomes: The success of a company relies on its upstream supplier and downstream distribution partners. Incentive and information are two crucial factors in decision making. You will play the root beer game to experience the information distortion in a supply chain.

- Understand the structure of supply chains
- Experience the bull-whip effect via the beer game
- Understand this common business phenomenon
- Learn how to combat the bull-whip effect

Session 17 – Introduction to Forecasting

Question: How do we plan without seeing the future? What makes a good forecast?

Outline: Anticipating the future is no easy task. From astrologers to business managers, we try as best we can to use science and mathematics to demystify the unknown for optimal decision-making. Finance, marketing, as well as production and service, rely on forecasting to make both long-term and short-term management decisions. You will learn the basic methods to forecasting, become skilled at calculating measurement error, and understand the trade-offs between responsiveness and stability in parametric selection. You will also learn the basics of Supply chain management

Learning Outcomes: By the these sessions, students should be able to

Describe the importance of forecasting for long-term and short-term decisions in finance, marketing, production and service

- Explain basic concepts and components of forecasting
- Measure the forecast error of a forecast method
- Apply the simple moving average model and the exponential smoothing method
- Assess the trade-offs between responsiveness and stability in parametric selection

Session 18 – Zara

Question: Have you been to a Zara store? How does Zara manage its inventory and supply chain?

Outline: The fashion business is demanding on inventory management because leftovers get significant markdowns. You will study and understand Zara’s supply chain structure

and its inventory policy and examine how its operation strategy aligns with its business strategy.

Learning Outcomes: Through this case, students should be able to

- Describe the importance of inventory management in the fashion business, in light of significant markdowns for leftover inventory
- Analyze Zara's supply chain structure and its inventory policy
- Explain how Zara's operation strategy aligns with its business strategy

Session 19 – *Final Review*

Final exam: Monday, July 29, 2024 12:00 noon PDT

Contribution of BUAD311 Operations Management to Student Achievement of Marshall's Six Undergraduate Program Learning Goals

#	Marshall Program Learning Goal Description	Degree of Emphasis	BUAD311 Course Learning Goals that Support This Marshall Undergraduate Goal
1	Our graduates will understand types of markets and key business areas and their interaction to effectively manage different types of enterprises. Specifically, students will:	High	BUAD311 Course Objectives 1-7 support Goal 1
1.1	Demonstrate foundational knowledge of core business disciplines, including business analytics and business economics.		1. Understand interfaces with other functional areas 2. Analyze trade-offs in decision-making 3. Understand the global nature of supply chain
1.2	Understand the interrelationships between functional areas of business so as to develop a general perspective on business management.		1. Understand interfaces with other functional areas 2. Analyze trade-offs in decision-making 3. Understand the global nature of supply chain 6. Apply operations management tools/techniques 7. Formulate a linear program for optimal product-mix
1.3	Apply theories, models, and frameworks to analyze relevant markets (e.g. product, capital, commodity, and factor and labor markets).		2. Analyze trade-offs in decision-making 3. Understand the global nature of supply chain 4. Learn waiting line and revenue management 5. Apply process analysis and capacity management skills to manage a factory in real-time 6. Apply operations management tools/techniques 7. Formulate a linear program for optimal product-mix
1.4	Show the ability to utilize technologies (e.g., spreadsheets, databases, software) relevant to contemporary business practices.		6. Apply operations management tools/techniques 7. Formulate a linear program for optimal product-mix
2	Our graduates will develop a global business perspective. They will understand how local, regional, and international markets, and economic, social and cultural issues impact business decisions so as to anticipate new opportunities in any marketplace	Low	BUAD311 Course Learning Goals 1, 2, 3, 5, and 6 support Marshall Goal 2
2.1	Understand how local, regional and global markets interact and are impacted by economic, social and cultural factors.		1. Understand interfaces with other functional areas 3. Understand the global nature of supply chain
2.2	Understand that stakeholders, stakeholder interests, business environments (legal, regulatory, competitor) and business practices vary across regions of the world.		1. Understand interfaces with other functional areas 2. Analyze trade-offs in decision-making 3. Understand the global nature of supply chain 5. Apply process analysis and capacity management skills to manage a factory in real-time 6. Apply operations management tools/techniques
3	Our graduates will demonstrate critical thinking skills so as to become future-oriented decision makers, problem solvers and innovators. Specifically, students will:	High	BUAD311 Course Learning Goals 1-7 support Marshall Goal 3
3.1	Understand the concepts of critical thinking, entrepreneurial thinking and creative thinking as drivers of innovative ideas.		1. Understand interfaces with other functional areas 2. Analyze trade-offs in decision-making 3. Understand the global nature of supply chain 4. Learn waiting line and revenue management 5. Apply process analysis and capacity management skills to manage a factory in real-time 6. Apply operations management tools/techniques 7. Formulate a linear program for optimal product-mix

3.2	Critically analyze concepts, theories and processes by stating them in their own words, understanding key components, identifying assumptions, indicating how they are similar to and different from others and translating them to the real world.		<ol style="list-style-type: none"> 1. Understand interfaces with other functional areas 2. Analyze trade-offs in decision-making 4. Learn waiting line and revenue management 5 Apply process analysis and capacity management skills to manage a factory in real-time 6. Apply operations management tools/techniques 7. Formulate a linear program for optimal product-mix
3.3	Be effective at gathering, storing, and using qualitative and quantitative data and at using analytical tools and frameworks to understand and solve business problems.		<ol style="list-style-type: none"> 4. Learn waiting line and revenue management. 5 Apply process analysis and capacity management skills to manage a factory in real-time 6. Apply operations management tools/techniques 7. Formulate a linear program for optimal product-mix
3.4	Demonstrate the ability to anticipate, identify and solve business problems. They will be able to identify and assess central problems, identify and evaluate potential solutions, and translate a chosen solution to an implementation plan that considers future contingencies		<ol style="list-style-type: none"> 1. Understand interfaces with other functional areas. 2. Analyze trade-offs in decision-making 3. Understand the global nature of supply chain 4. Learn waiting line and revenue management. 5 Apply process analysis and capacity management skills to manage a factory in real-time 6. Apply operations management tools/techniques 7. Formulate a linear program for optimal product-mix
4	Our graduates will develop people and leadership skills to promote their effectiveness as <i>business managers and leaders</i>. Specifically, students will:	Mode rate	BUAD311 Course Learning Goals 1-6 support Marshall Goal 4
4.1	Recognize, understand, and analyze the motivations and behaviors of stakeholders inside and outside organizations (e.g., teams, departments, consumers, investors, auditors).		<ol style="list-style-type: none"> 1. Understand interfaces with other functional areas 2. Analyze trade-offs in decision-making 3. Understand the global nature of supply chain 4. Learn waiting line and revenue management
4.2	Recognize, understand and analyze the roles, responsibilities and behaviors of effective managers and leaders in diverse business contexts e.g., marketing, finance, accounting.		<ol style="list-style-type: none"> 1. Understand interfaces with other functional areas 6. Apply operations management tools/techniques
4.3	Understand factors that contribute to effective teamwork.		<ol style="list-style-type: none"> 5 Apply process analysis and capacity management skills to manage a factory in real-time 6. Apply operations management tools/techniques
5	Our graduates will demonstrate ethical reasoning skills, understand social, civic, and professional responsibilities and aspire to add value to society. Specifically, students will:	Low	BUAD311 Course Learning Goals 1 and 2 support Marshall Goal 5
5.1	Understand professional codes of conduct.		<ol style="list-style-type: none"> 1. Understand interfaces with other functional areas
5.2	Recognize ethical challenges in business situations and assess appropriate courses of action.		<ol style="list-style-type: none"> 1. Understand interfaces with other functional areas 2. Analyze trade-offs in decision-making
6	Our graduates will be effective communicators to facilitate information flow in organizational, social, and intercultural contexts. Specifically, students will:	Mode rate	BUAD311 Course Learning Goals 1 and 6 support Marshall Goal 6
6.1	Identify and assess diverse personal and organizational communication goals and audience information needs		<ol style="list-style-type: none"> 1. Understand interfaces with other functional areas 6. Apply operations management tools/techniques
6.2	Understand individual and group communications patterns and dynamics in organizations and other professional contexts		