

Master of Science in Management (MSM) Program



MSMG 60320
Process Analytics
SPRING 2024

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Class Time: Cohort A: Mon, Wed | 11:00 am - 12:15 pm
Cohort B: Mon, Wed | 1:00 pm - 2:15 pm
Dates: January 17 through February 26

Office Hours: Mon, Wed | 2:15 pm – 3:15 pm
Office Location: MCOB 355

COURSE OVERVIEW

This course provides an overview of supply chain and operations management. Supply chain management can be defined as “the design and management of flows of products, information, and funds throughout the supply chain” (Sanders, 2012: 3)¹. There are multiple parts of this definition that are relevant for our class.

First, all companies (e.g., manufacturing, service, for-profit, not-for-profit, etc.) need materials to operate. Service companies such as spas and salons, for example, need products (e.g., hair dye, styling products, etc.) in order to service customers. Similarly, the flow of products (e.g., raw materials, work-in-process inventory, etc.) is vital to manufacturing firms that use these inputs to produce finished goods. In other words, effective inventory management is essential for all types of firms and thus we’ll spend a bit of time during the semester talking about inventory, how a firm’s inventory needs change depending on its environment, and how firms can optimize their inventory management strategy.

Second, providing high-quality products and services to consumers is essential for all companies. During this semester, we’ll discuss various approaches, such as total quality management, lean, and Six Sigma, companies use to reduce process variability and to enhance the quality of their products and/or services. We’ll also discuss quality failures and how companies should handle these situations to minimize the impact on their operations. Supply chains are complex networks that involve multiple entities (e.g., suppliers, manufacturers, wholesales/distributors, retailers, and end

¹ Sanders, N.R. 2012. *Supply Chain Management: A Global Perspective*. 1st ed. Wiley.

consumers) and thus quality failures can have a cascading effect on various stakeholders.

Third, companies manage a plethora of different projects within the supply chain, which can include anything from new product/service development to building multi-billion dollar manufacturing plants. These projects require a high degree of coordination between supply chain partners. As such, throughout this semester we'll talk about project management tools firms employ to help keep their projects stay on-time and within budget.

LEARNING OBJECTIVES

At the completion of this course, successful students should be able to:

1. To analyze business processes and understand how to make them more efficient and effective
2. To understand the fundamental aspects of inventory management as well as various inventory management methods that impact the performance of manufacturing and service firms
3. To develop skills in capacity planning and learn how firms can leverage postponement to eliminate bottlenecks and minimize throughput times
4. To understand how to use various project management tools
5. To improve your ability to communicate your ideas verbally in front of an audience

PREREQUISITES

For Master of Science in Management (MSM) students only.

MATERIALS

- There is no required textbook.
- Recommended Textbook:
 - Operations Management, by Krajewski, Malhotra, and Ritzman, 12th Edition, ISBN: 9780134741062. (Any edition is fine)
 - Managing Business Process Flows, by Anupindi, Chopra, Deshmukh, Van Mieghem, Zemel, 3rd Edition, ISBN: 0136036376. (Any edition is fine)
- Discussion Article Packet: This packet contains articles that provide real world examples of the topics we will be covering in class. Please read them prior to class, as we will reference them as part of our discussions. You can find it at Canvas > Files > Discussion Article Packet.

COURSE POLICIES

Attendance, Engagement, and Professionalism:

To understand the material, it's critical that we all attend classes. Some questions on the exams will cover material that is not contained in the assigned readings and course slides. Some questions will require you to draw on your experience with the in-class activities.

“Differences in opinion, background, and skills provide an opportunity for intellectual growth. In this course, we are committed to creating a community that is inclusive of diversity in its manifestations, including race, ethnicity, socioeconomic status, gender, gender identity, sexual orientation, religion, disability, place of origin, and political affiliation. We all benefit from being aware of and welcoming these differences.”

-Source: *What Inclusive Teachers Do*

Absence from Class:

For excused absences planned in advance, the student must provide notification no less than one week prior to the planned absence; for unplanned absences resulting from injury or illness, the student must provide the professor appropriate verification from a health services provider no later than two business days after the period of absence concludes. The lectures will be neither recorded nor broadcasted, i.e., no Zoom class. If the student misses a class, regardless of the reason, the student is responsible for any assignments due that day and the material covered in class.

Exam Conflicts:

Make-up exams are not allowed without an officially excused absence provided through the appropriate Notre Dame resource. Please contact me as soon as possible (or have a friend or family member contact me) in the event of a medical or family emergency.

Academic Integrity:

**“As a member of the Notre Dame community,
I will not participate in or tolerate academic dishonesty.”**

Please familiarize yourself with the updated *Academic Code of Honor* and uphold your commitment to academic integrity, which is consistent with our collective mission. All assignments are to be completed individually, except for the group project. Discussing exam questions or sharing exam information with other students (past, present, and future) is strictly prohibited.

Be sure to cite all sources in your assignments. Plagiarism, even when committed inadvertently, is not tolerated and will be penalized per university policy. For additional information about plagiarism, please reference <https://www.plagiarism.org/article/what-is-plagiarism>.

Please do not discuss information with students in later sections prior to their class time that would detract from the learning experience, such as cases and in-class activities.

Campus Resources:

Everyone has the right to take the course without undue hardship deriving from conditions such as physical or learning disabilities. Any student who has a documented condition and is registered with Sara Bea Accessibility Services should speak with me as soon as possible regarding accommodations. Students who are not registered should contact the Sara Bea Accessibility Services (supportandcare.nd.edu).

It is the policy and practice of Notre Dame to provide reasonable accommodations for students with properly documented conditions. Students who have questions about Sara Bea Accessibility Services or who have, or think they may have, a relevant condition are invited to contact Sara Bea Accessibility Services for a confidential discussion in the Sara Bea Accessibility Services (sarabeacenter@nd.edu) or by phone at 574-631-7157. Because the University's Academic Accommodations Processes generally require students to request accommodations well in advance of the dates when they are needed, students who believe they may need an accommodation for this course are encouraged to contact Sara Bea Accessibility Services at their earliest opportunity. Additional information about Sara Bea Accessibility Services and the process for requesting accommodations can be found online (supportandcare.nd.edu).

Title IX makes it clear that violence and harassment based on sex and gender are Civil Rights offenses. If you or someone that you know has been harassed or assaulted, you can find important resources [here](#).

If you or someone you know could benefit from the services offered by the University Counseling Center, please call 574-631-7336.

Late Assignments:

As in the business world, work must be received on time in order to receive full credit. If you are late on an assignment, your grade on that assignment will be reduced by 25%, and 25% for each additional day it is late. You are always welcome to hand in an assignment before its due date if you know that you will be busy as the due date approaches.

Grading Policy:

The MSM program observes a grading policy such that the grade point average (GPA) for each class taken as a whole must be **no lower than 3.30 and no higher than 3.60 for MSM classes**. This policy will be observed in this class.

Changes to Syllabus:

This course syllabus is a general plan for the course; deviations by the instructor may be necessary. Changes will always be communicated.

GRADING

The following components will be used to determine your final course grade:

Deliverable	Weight
Professionalism and Participation	5%
In-Class Exercises	10%
Homework	15%
Midterm Exam (Monday, February 5)	30%
Final Exam (TBD)	40%
	100%

All grades will be calculated and communicated through Canvas.

1. Professionalism and Participation

Your class participation grade is based upon your contribution to class discussion, the insights reflected in your responses to classroom questions. To prepare for class, you should fully complete the required assignments prior to each session. You should strive to be an active participant during class and contribute to the quality of the discussion. While participating, you should be professional and respectful to your classmates and the instructor. Please note that the frequency of your interventions in class is not a key criterion for effective class contribution.

2. In-Class Exercises

When there are in-class exercise activities, you are required to complete the materials and to submit to Canvas in a timely manner.

3. Homework

Each assignment will be posted to **Canvas** and is due **at the beginning** of class on its due date. Although you may work with other students, you must **individually** write-up your own solution and **submit it to Canvas**. Please make sure that your submission is successful. No credit will be given to unsuccessful or incomplete submissions.

4. Exams

There are two closed-book exams: Midterm and Final exams. Each exam will contain a combination of multiple-choice questions and solving problems that are designed to test your knowledge of concepts and terminology covered in class.

- The only electronic device that may be used during the exam is a calculator. Other electronic devices (e.g., iPad, laptops, etc.) will not be allowed.
- Students are allowed to bring one letter-size summary sheet for their reference. While the sheet can be written using electronic devices, it must be printed out on paper.

- I do not distribute exams and thus taking the exam questions or sharing information about the exam outside of the room are a violation of the honor code and strictly prohibited.

Course Calendar

To the extent possible, the attached Course Calendar will be followed. The calendar may be altered in order to enhance student learning opportunities or as events dictate.

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MSMG 60320 Process Analytics Course Calendar

Date	Topic	Discussion Article and In-Class Exercises	Homework
Jan 17	<ul style="list-style-type: none"> • Course Syllabus and Class Overview • Introduction to OM and SCM 		
Jan 22	<ul style="list-style-type: none"> • Process Analysis – Part 1 • Process Design and Evaluation 	<ul style="list-style-type: none"> • How NFL jersey sales thrived during a bad year for the league 	
Jan 24	<ul style="list-style-type: none"> • Process Analysis – Part 2 • Application of Flowchart and ToC 	<ul style="list-style-type: none"> • Another shortage! Beer, soda makers struggle with aluminum can supply, plan to limit niche drinks • Hershey to acquire facility to manufacture face masks • In-Class Exercise: IITA 	
Jan 39	<ul style="list-style-type: none"> • Process Analysis – Part 3 • Waiting Lines 	<ul style="list-style-type: none"> • The Southwest Secret • Airlines Create Rush Hours, Crowds and Full Flights 	
Jan 31	<ul style="list-style-type: none"> • Lean Systems 	<ul style="list-style-type: none"> • Medical Record Mix-Ups a Common Problem, Study Finds • In Lieu of Money, Toyota Donates Efficiency to NY Charity 	Homework 1 due
Feb 5	Midterm Exam		
Feb 7	<ul style="list-style-type: none"> • Project Management • 	<ul style="list-style-type: none"> • How Pfizer Delivered a Covid Vaccine in Record Time: Crazy Deadlines, a Pushy CEO • In-Class Exercise: CPM and PERT 	
Feb 12	<ul style="list-style-type: none"> • Inventory Management – Part 1 • Economic Order Quantity 	<ul style="list-style-type: none"> • Restaurant menus are getting smaller. Here's what some big chains are dropping 	Homework 2 due
Feb 14	<ul style="list-style-type: none"> • Inventory Management – Part 2 • Continuous Review System 	<ul style="list-style-type: none"> • True Value Retools Hardware Supply Chain 	

Feb 19	<ul style="list-style-type: none">• Inventory Management – Part 3• News Vendor Model	<ul style="list-style-type: none">• Leicester City's Success a Big Missed Opportunity for Local Retailers	
Feb 21	<ul style="list-style-type: none">• Supply Chain Strategy• Topic	<ul style="list-style-type: none">• It's only \$4.99. But Costco's rotisserie chicken comes at a huge price• Fast Fashion: How a Zara Coat Went from Design to Fifth Avenue in 25 Days	Homework 3 due
Feb 26	<ul style="list-style-type: none">• Final Exam Review		
TBD		Final Exam	
