

SUPPLY CHAIN ANALYTIC (53:716:550:90:08532)

Term: Spring 2025

Instructor: Dr. Mamnoon Jamil

Online Asynchronous MBA Course

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Online Class: From 01/21/2025 to 05/14/2025 using Canvas

Canvas: <https://rutgers.instructure.com/courses/345657>

Course Type: This course will be delivered online. Most of the instruction will be done asynchronously.

Course Description: This course illustrates how the field of analytics can be applied to optimally manage supply chains. Students learn to apply data driven decision making methodology to the field of Supply Chain management. Topics will encompass all portions of a supply chain including sourcing, procuring, buying, making, moving and selling. Topics will include designing & planning supply chains, inventory management, and supply chain disruptions, risk & integration.

Learning Goals/Objectives:

1. Identify the basic foundations of Supply Chain Management
2. Evaluate various Inventory Management Models
3. Understand the Supply Options used in Sales and Operations Planning (S&OP)
4. Apply Linear Programming (including transportation method) to S&OP problems
5. Calculate the Critical Supply Chain Performance Measures
6. Understand the Considerations firms make when deciding which processes to Outsource
7. Identify the Factors affecting Location Choices within a Supply Chain Logistic Network
8. Understand how firms mitigate Operational, Financial, & Security Risk in a supply chain

Required Textbook: Operations Management: Processes and Supply Chains, 13th Edition, Krajewski and Malhotra, ISBN: 13: 978-0-13-686063-1, Pearson, 2022

Course Requirements:

1. **Homework:** Homework problems from relevant chapters will be assigned after the topics are taught. Homework will be collected to make sure that all problems have been attempted at a minimum. To gain a more thorough understanding of the lecture material, it is imperative that students work through problems at the end of each relevant chapter in addition to the assigned homework problems.

In every chapter, you will be asked to submit your solutions to problems from the back of the textbook chapters. You need to look into "Problem" section (after "Discussion Questions")

section) of the textbook. In the "Problem" section, scroll down and find the problems assigned.

Submitted files of the solutions (to the problems) should be provided by Word, or Excel, or PDF, or a common image format (.jpg, .gif, .png). I would like to see your work and follow the logic you used to solve each problem.

2. Exams: There will be two non-cumulative exams that are designed to test your understanding of the facts and concepts of the course. Exam 1 and Exam 2 will be conducted online. You will be able to use calculator and computer software to answer the questions. The materials you can refer to will be explicitly specified before each exam. For each exam, students are allowed to use one letter size page (8.5" x 11") of notes (front and back). The exam dates, grading and other aspects of grading will be covered below. Smart phone cannot be used as calculator.

Exam Make-Up Policy: If, for a university-approved reason, you cannot take an exam at the scheduled time you must give the professor written notice in advance so that other arrangement can be made. If the situation does not allow for advance notification (for example, emergency hospitalization), contact the professor as soon as possible after a missed exam. **Any student who missed the exam without prior approval of the instructor or a compelling reason will receive a zero grade for that exam.** The professor reserves the right to request written documentation to support your absence (such as a doctor's note or military orders).

3. Case Report/Presentation: You have been assigned to a group of 2 or 3 students. Each group will present a case from the list of the Harvard Business School Publishing cases (enclosed at the end) and will be responsible for working on analyzing the case.

Each group is responsible for creating a PowerPoint presentation, which should be uploaded on Canvas.

- Each Group has its own Group Space in Canvas, for required discussions and meetings (Access this space from the Groups icon in the red menu at the far left of your Canvas screen). You can communicate directly with your partners in your Group Space.
- Each student should purchase the case from <https://hbsp.harvard.edu/import/1257057>
- Note: First you must create a free account (if you don't have one already) to get the course discount; each case should cost only \$4.95
- Individually, read case and review the embedded questions throughout the case.
- Work together with your group to complete the PowerPoint presentation.
- Your Case # is same as Your Group #.
 - In your course on Canvas, please go to "People", then go to "Case Reports / Presentations", then go to "Groups" to find out your Case # and Partners.
 - From "Overview Module 8" of Module 8 section, you can find the case (the case # and Group # are the same).

- You can also find the case (the case # and Group # are the same) in the syllabus.

For Case PowerPoint Presentation, each case report should cover:

- Introduction/ Overview of the company, i.e., company background (or industry background) depending on the case ----- some cases are not for any company
- Case Background
- Problems, Issues, questions (if any), or Pain Points discussed in the case
- Answers to the questions in the case (if applicable)
- Options to resolve or mitigate the problems, issues, or pain points with pros & cons
- SWOT Analysis (if applicable)
- Solution Methodology (if applicable)
- Best or Optimal option and/or solution with justification (or reasonings)
 - Group Recommendations / Conclusion with reasoning
- Acknowledgements / References / Appendix (if applicable)
- Speaker's Note with the PowerPoint (converted to PDF file), or separately in Word document
- Optional: Cases are few years old. If you can get the recent data from Annual Reports, Publications or through search engines, please try to incorporate if you can.
 - You may produce a solution which is different from the solution the case provided (if any) ---- that's perfectly alright.
 - If so, please provide the justification with the information, and include the source in the Appendix

Overall, the presentation/case report will be evaluated on the following dimensions: (a) Case synopsis, (b) Accurate and direct answers to the questions / issues in the case, (c) Ability to involve the rest of the class in the case discussion (if applicable), (d) Ability to respond to questions (if any).

Harvard Business School Cases (Purchase Online from HBSP):

Please note that the case number for your group is the same as your group number. For example, if your group# is 8, then your case# is 8 [Moderna (A)] in the following Harvard Business School case-list below:

1. Dell: Roadmap of a Digital Supply Chain Transformation, Product #: W24797-PDF-ENG
2. Supply Chain Hubs in Global Humanitarian Logistics, Product #: IN1316-PDF-ENG

3. Tetra Pak: A Digitally Enabled Supply Chain as a Competitive Advantage, Product #: IMD960-PDF-ENG
4. Customer-Centric Design with Artificial Intelligence: Commonwealth Bank, Product #:622065-PDF-ENG
5. Dell: Upcycling Ocean Plastics Through Supply Chain Innovation, Product #: W91C21-PDF-ENG
6. Han Solar and the Green Supply Chain, Product #: B5723-PDF-ENG
7. JOANN: Joannalytics Inventory Allocation Tool, Product #: 621055-PDF-ENG
8. Moderna (A), Product #: 621032-PDF-ENG
9. New Balance Athletic Shoe, Inc. (Abridged), Product #: 613006-PDF-ENG
10. ProGlove Smart Gloves: Let's Save Four Million Dollars A Day!, Product #: SMU056-PDF-ENG
11. Pernod Ricard: Uncorking Digital Transformation, Product #: 624095-PDF-ENG
12. PMI: DISRUPTING THE TOBACCO INDUSTRY, Product #: IM1109-PDF-ENG
13. The Evolving Semiconductor Industry: Post-COVID Challenges for Automakers, Product #: IMB993-PDF-ENG

All the above material can be purchased online from the Harvard Business School Publishing website: <https://hbsp.harvard.edu/import/1257057>

If you have any problem, please contact Harvard Business School Publishing 24/7:

U.S./Canada: (800) 545 7685

E-mail: custserv@hbsp.harvard.edu

Text (Chat): (800) 545 7685

Peer Evaluation

Note that there will be *Peer Evaluations of every member* in each group at the end of the semester to enable the professor to properly assess every student's participation and contribution in the case presentation / report.

Course Materials:

Course Materials (PowerPoints and Class Notes) can be obtained via Canvas. You are strongly encouraged to access this course via Canvas several times a week.

4. Evaluation Policy:

		<u>Grading Policy</u>	<u>Grade</u>
Homework	15%		
Exam I	35%	[90% - 100%]	A
Exam II	35%	[85% - 90%)	B+
Case Report / Presentation	15%	[80% - 85%)	B
Total	100%	[73% - 80%)	C+
		[65% - 73%)	C
		[0% - 65%)	F

This course requires a strong commitment of your time and effort. A key component to your successful completion of this course is to keep up with the material.

Listed below are the **Tentative** topics to be covered for each week. Although the Exams dates are fixed, there may be occasional updates/changes on the topics to be covered.

Day	Topic	Readings (HW)
01/21/25 to 02/04/25	Inventory Management (HW Problems: 9, 11, 13, 16, 22, 32)	Chapter 9
02/05/25 to 02/11/25	Special Inventory Models (HW Problems: 2, 8, 212)	Supplement C
02/12/25 to 02/25/25 to	Operations Planning and Scheduling (HW Problems: 2, 3, 5, 9)	Chapter 10
02/26/25 to 03/06/25	Linear Programming (HW Problems: 2, 6, 8)	Supplement D
03/08/25 to 03/14/25	Exam I (Chapters 9 & 10, and Supplements C & D)	
03/24/25 to 04/03/25	Supply Chain Design (HW Problems: 2, 3, 6, 7)	Chapter 12
04/04/25 to 04/17/25	Supply Chain Logistics Networks (HW Problems: 2, 4, 8, 16)	Chapter 13
04/18/25 to 05/01/25	Supply Chain Integration (HW Problems: 1, 4, 5, 11)	Chapter 14
05/02/25 to 05/05/25	Case Report Submission / Presentation (with Speakers' Notes)	
05/06/25 to 05/07/25	Reading Days	
05/08/25 to 05/14/25	Exam 2 (Chapters 12, 13 and 14)	

Notes

1. The material and chapters listed above may be modified during the session to best suit the needs and pace of the course.
2. It is very important that the prescribed reading and homework problems be done prior to the next class. These exercises are supposed to give you good practice.
3. The examination dates are provided for planning purposes. These dates may be changed depending on the course progress.

COMMUNICATION

If you have questions during the weekdays, email is the best way to get in touch with me. I usually respond within few hours during the weekdays via the weekdays via email.

Rutgers Email: USE YOUR RUTGERS EMAIL ADDRESS

All communications to students will be done using the Rutgers email address provided to you. Please forward your Rutgers email to your personal email if necessary.

Not checking your Rutgers email is not an excuse for missing any communications.

Canvas:

Posted will be the Syllabus, PowerPoint slides, Claas Notes, etc. To access this system, go to <http://canvas.rutgers.edu> log in, and click on the course in the dashboard.

Key Spring 2025 Dates :

Spring 2025 classes begin	Tuesday, January 21
Last day to drop classes w/o “W”	Thursday, January 30
Last day to add classes	Thursday, January 30
Spring recess	Saturday, March 15 – Sunday, March 23
Last day to withdraw from an individual class with a “W”	Monday, April 21
Regular classes end	Monday, May 5
Reading day	Tuesday, May 6 and Wednesday, May 7
Final exam period	Thursday, May 8 – Wednesday, May 14