

Supply Chain Analytics 52:620:326:01

Syllabus, 2023 Spring

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Office Hours:	By appointment
Class meetings:	CCC-NCR – Tuesday/Thursday 11:10am-12:30pm

Required Text or eText

Supply Chain Management: Strategy, Planning, and Operation (7th), by Chopra and Meindl
ISBN-13: 9780134731889
Publisher: Pearson Publishing

Required Software and Materials

- **Microsoft Excel and Excel Add-in's (Solver, Data Analysis)**
- **Calculator (graphing or scientific)** – Cellphones will not be allowed during the Midterm or Final exams.

I COURSE GOALS AND OBJECTIVES

Supply Chain Analytics (SCA) and Supply Chain Management (SCM) are concerned with the economical use of inputs (human, capital, and material) in a transformation process that results in goods or services. It involves decision making on how to best design and operate a Supply Chain. Any organization that transforms inputs into outputs is amenable to SCA/SCM concepts. In this course, we will emphasize both the quantitative and the managerial aspects of SCM problems. The managerial emphasis takes the form of economic analysis of these alternatives, including statements of criteria, information, requirements, and mathematical aids for solutions. Successful students in this class should be able to: Identify problems and recognize opportunities for improving the efficiency and effectiveness of processes in organizations; structure and solve problems using models commonly found in SCA/SCM; effectively communicate the problem, process, and solutions to others.

By the end of the course, you should be able to:

1. Identify the basic foundations of Supply Chain Management
2. Analyze supply chain performance metrics (financial and operational)
3. Analyze design specifications of supply chains
4. Analyze transportation, transshipment, facility and warehouse location problems and solve them using optimization techniques
5. Implement simple and advanced time series methodology to forecast demand and evaluate the result.
6. Evaluate inventory planning policies
7. Evaluate supply chain planning strategies.

II COURSE DESIGN

IMPORTANT: This is an on-campus course that uses technology as part of the learning experience. The use of Canvas will be used as the online platform for doing homework assignments and quizzes. It will also be used for class announcements and communication.

Class activities will include some or all of the following: videos, class discussion, lecture, exams, quizzes, and class and group exercises. In order for you to maximize your learning experience, you will need to prepare by reading the assigned material and completing assigned. Lectures will cover the textbook material, and is intended to introduce you to the principles, theories, concepts, and techniques, but not to substitute your independent study of the assigned material.

Please note that the lectures and outlines will not be sufficient to perform well on assessments (homework, quizzes and exams), you will need to read and understand the material in your etext. The exams will require in-depth knowledge of the assigned material in your etext and other readings.

III STUDENT EVALUATION

Summary of Assessment Points and Grading Scale

Student grades for this course will be calculated as follows:

Group PowerPoint Presentation	10%
Homework	20%
Quizzes	20%
Midterm Exam	25%
Final Exam	25%
Total	100 pts

Grading will be based on a 100-point scale, and final grades will be determined using the following scale:

Letter Grade	Points Range	Definition	Numerical Equivalent
A	90-100	Outstanding	4.0
B+	85-89	Very Good	3.5
B	80-84	Good	3.0
C+	75-80	Satisfactory	2.5
C	70-74	Acceptable	2.0
D	60-69	Poor	1.0
F	Below 60	Failing	0.0

IV ASSIGNMENTS

Late submissions of assignments (excluding the Midterm Exam, Final Exam and Group Assignment) are subject to a 10% per day penalty for Days 1 and 2. Beyond Day 2, a 0% will be given for the assignment. For the Midterm Exam, Final Exam and Group Assignment, if not completed a 0% will be given for the assignment. For the Group Assignment if not completed and presented on the due dates noted in the course outline all members of the group will receive a 0%.

Group PowerPoint Presentation (10% of grade)

This is a group presentation. In week 3, the professor will divide the class into groups and issue an organization for students to research in the area of supply chain management. The presentation is to be done in MS PowerPoint (No Exceptions) and is to be presented to the rest of the class on the date scheduled in the course outline. One member from each group will submit their PPT by the due date noted in the course syllabus. A hard copy is to be provided to the professor at least one class before the scheduled presentation as well as the main research articles used for its basis.

Each presentation should be around 10 pages (slides) in length with a maximum of 15 slides, excluding attachments. Fancy binders, etc. are not necessary.

Each PowerPoint must include the following information:

1. Cover Page – Title of study, student names, due date.
2. Introduction – Include the background information on the organization and a description of the problems that the organization has encountered.
3. Analysis – The student should address the pertinent areas of consideration. Analyze these considerations and determine their relative importance. Investigate all the possibilities of how the Supply Chain Process methods were used by the organization under study. The analysis must be supported by appropriate references.

4. Conclusions and Recommendations - Draw conclusions from your analysis based on the principles of Supply Chain Process methods. Develop recommendations as if you were a supply chain analyst.

5. Each presentation should last ~15 mins. The presentations will be graded on level of research, correctness, clarity, content, and smoothness.

Homework (20% of grade)

Homework will include the material covered in the text/etext, lectures, PowerPoints, and Videos. Canvas will be used for all homework assignments. Students are reminded to adhere to the university's academic integrity policy. Any violations to academic integrity policy may result in receiving a failure for the course.

Quizzes (20% of grade)

The quizzes will include the material covered in the text/etext, lectures, PowerPoints, and Videos. Canvas will be used for each of the quizzes. Students are reminded to adhere to the university's academic integrity policy. Any violations to academic integrity policy may result in receiving a failure for the course.

Exams (50% of grade)

There are 2 Exams (Midterm and Final Exam). The exams will include the material covered in the text/etext, lectures, PowerPoints, and Videos. The exams will be held in class and scheduled for the entire class period. Students are reminded to adhere to the university's academic integrity policy. Any violations to academic integrity policy may result in receiving a failure for the exam and/or the course.

V COURSE COMMUNICATION

The syllabus is the course's overriding document, meaning that if there are any conflicts with other forms of communication (Canvas, etc) the syllabus is to be referenced as having the correct information (unless otherwise noted by the professor).

All updates or changes to the syllabus and other important communications will be posted on the course website at <http://Canvas.rutgers.edu>. Developed materials will be made available on the website as well.

Please go to <http://Canvas.rutgers.edu> as soon as possible after the beginning of the semester and ensure that you are able to access the course. If you are properly registered for the course, this class should appear on your Canvas-Rutgers homepage after you have logged in (using your assigned username and password).

Email communication should be sent from your Rutgers University email address. You will need to check your Rutgers University email regularly. This will ensure that messages that I send to the class through the system will be forwarded to your email address rather than waiting in the Canvas mailbox for the next time you log in.

VI ATTENDANCE

Students are required to attend class, as such students are not to miss more than 5 classes. It will be at the instructor's discretion whether to issue a failure for the course for those students who miss more than 5 classes.

VII ACADEMIC INTEGRITY

Any act of dishonesty in any of the students work constitutes academic misconduct. Violations of the Student Code of Conduct are considered serious infractions of student behavior and subject to penalties relative to the level of the matter. Academic integrity matters are handled directly by the academic units. Non-academic matters are handled by the Associate Chancellor for Student Affairs. Student Policies, including the Student Code of Conduct, procedures and definitions, can be found at:

<http://studentconduct.rutgers.edu/university-code-of-student-conduct>

In all cases, you are responsible for preparing and entering your own work and properly referencing the work of others. Cheating, plagiarism, and other types of misconduct are not acceptable. Penalties can include expulsion from the University. For the policy on Academic Integrity please see: <http://academicintegrity.rutgers.edu/policy-on-academic-integrity>.

VIII DISABILITY STATEMENT

Students requiring accommodation should visit the website <http://learn.camden.rutgers.edu/disability/disabilities.html>, or contact the Camden campus Disability Coordinator (email: disabilityservices@camden.rutgers.edu). Please let me know whether you require any individual needs to support your efforts in the class.

IX INCLEMENT WEATHER CLOSING HOTLINE

The School of Business will announce closing through the message bar on its website: <http://camden-sbc.rutgers.edu/>.

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52:620:326:01 Supply Chain Analytics Course Calendar – Spring 2023

Due dates imply deadline of 11:59 p.m. All times are Eastern Standard.

Module	Readings	Assignments / Assessments	Due Dates
1	Chap 1, 2 Lecture, PowerPoint	Set-Up MyLab Canvas: Chap 1: Understanding the Supply Chain Chap 2: Achieving Strategic Fit in a Supply Chain	Sunday 1/22/23
2	Chap 3 Lecture, PowerPoint	Canvas: Chap 3: Supply Chain Drivers and Metrics	Sunday 1/29/23
3	Chap 4 Lecture, PowerPoint	Canvas: Chap 4: Designing Distribution Networks and Applications to Omni-Channel Retailing Quiz 1 (Chap 1-4) Opens Monday at 00:00am and closes Sunday at 11:59pm	Sunday 2/5/23
4	Chap 5 Lecture, PowerPoint	Canvas: Chap 5: Network Design in the Supply Chain	Sunday 2/12/23
5	Chap 6 Lecture, PowerPoint	Canvas: Chap 6: Designing Global Supply Chain Networks	Sunday 2/19/23
6	Chap 7 Lecture, PowerPoint	Canvas: Chap 7: Demand Forecasting in a Supply Chain	Sunday 2/26/23
7	Chap 8 Lecture, PowerPoint	Canvas: Chap 8: Aggregate Planning in a Supply Chain Quiz 2 (Chap 5-8) Opens Monday at 00:00am and closes Sunday at 11:59pm In-Class Midterm (Chap 1-8) In-Class Thu 3/2/23	Sunday 3/5/23 Midterm Thursday 3/2/23
8	Chap 9, 10	Canvas: Chap 9: Sales and Operations Planning in a	Friday 3/10/23

	Lecture, PowerPoint	Supply Chain Chap 10: Coordination in a Supply Chain	
		Spring Recess (Mar 11 - Mar 19)	
9	Chap 11 Lecture, PowerPoint	Canvas: Chap 11: Managing Economies of Scale in a Supply Chain Cycle Inventory	Sunday 3/26/23
10	Chap 12 Lecture, PowerPoint	Canvas: Chap 12: Managing Uncertainty in a Supply Chain Safety Inventory Quiz 3 (Chap 9-12) Opens Monday at 00:00am and closes Sunday at 11:59pm	Sunday 4/2/23
11	Chap 13 Lecture, PowerPoint	Canvas: Chap 13: Linking Product Availability to Profits	Sunday 4/9/23
12	Chap 14 Lecture, PowerPoint	Canvas: Chap 14: Transportation in a Supply Chain Supply Chain Analytics PowerPoint Submission for next week's group presentation	Sunday 4/16/23
13	Chap 15 Lecture, PowerPoint	Canvas: Chap 15: Sourcing Decisions in a Supply Chain In-Class Group Presentation (Thu)	Sunday 4/23/23
14	Chap 16, 17 Lecture, PowerPoint	Canvas: Chap 16: Pricing and Revenue Management in a Supply Chain Chap 17: Sustainability and the Supply Chain Quiz 4 (Chap 13-17) Opens Monday at 00:00am and closes Sunday at 11:59pm	Sunday 4/30/23
		Reading Day(s)	Tue-Wed 5/2/23- 5/3/23

15	Lecture, PowerPoint	In-Class Final Exam (Chap 9-17), In Class	TBD
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