BIA-674 Supply Chain Analytics

Stevens Institute of Technology School of Business
Summer 2022

Instructor: Dr. Alkis Vazacopoulos
Course Schedule: Monday-Sunday
Contact Info: avazacop@stevens.edu | (201) 256 -7323
Virtual Office Hours: Mondays 7:00-8:00 p.m. EST
Virtual session URL: Go to the "Zoom" tab on the left-hand navigation bar to access live virtual sessions.
Prerequisite(s): None
Corequisite(s): None
Cross-listed with: None
Credit hours:3

COURSE DESCRIPTION

Supply Chain Management introduces the tactical and strategic issues surrounding the design and operation of supply chains, to develop supply chain analytical skills for solving real-life problems. Topics covered include: supplier analytics, capacity planning, demand-supply matching, sales and operations planning, location analysis and network management, inventory management and sourcing.

STUDENT LEARNING OUTCOMES

After successful completion of this course, students will be able to…

- Assess the goals for the supply chain to interpret the impact of supply chain decisions on the success of a global company.
- Determine the major drivers of supply chain performance and calculate key metrics that track the performance of the supply chain.
- Develop analytic methodologies to extract knowledge and business intelligence from the dynamic information about future
- demand, available production capacity, and sources of supply.
- Develop models and utilize optimization methods for facility location, network design decisions, transportation optimization, aggregate planning, inventory optimization using Excel Solver and Decision Analysis tools.
- Construct actionable business decisions using retail sales data, value product availability, and make pricing and inventory decisions.
- Assess opportunities using procurement and vendor data, perform spend analysis and make sourcing decisions.

- Assess risk in the supply chain and develop methodologies to reduce risk by using simulation and scenario-based modeling.

COURSE FORMAT AND STRUCTURE

This course is fully online. To access the course, please visit stevens.edu/canvas . For more information about course access or support, contact the Technology Resource and Assistance Center (TRAC) by calling 201-216-5500.

Course Logistics

In this section, you want to explain course logistics that will make the course run smoothly. You may want to clarify when the course week starts and when assignments are due. Indicate a naming convention for assignment filenames, if you wish. If you require students to submit assignments written in a particular style, mention it here (i.e., APA or MLA). For example:

- You are encouraged to "mentally enroll" in this course as if it occurred on Mondays [Or whatever day of the week you have chosen]. In other words, our weeks will run from Monday to Sunday. I will post information (online activities, discussion starters, etc.) for the upcoming week by Sunday evening so that when you log in on Monday, you can begin the new week.
- When assignments are due, they are due by 10:00 am EST on the due date listed in the course schedule.
- Deadlines are an unavoidable part of being a professional, and this course is no exception. Course requirements must be completed and posted or submitted on or before the specified due date and delivery time deadline. Due dates and delivery time deadlines are in Eastern Time (as used in Hoboken, NJ). Please note that students living in distant time zones or overseas must comply with this course time and due date deadline policy. Avoid any inclination to procrastinate. Due dates have been established for each assignment to encourage you to stay on schedule
- Assignments received 1-6 days late will have 20% of the total points deducted
- ; assignments received more than one week late will receive 0 points. [this should align with what your late policy states]
- An assignment file should be appended by your username, such as "assignment1_kim53.doc". This makes it easier for me to manage assignment files you download to my computer.

Instructor's Online Hours

I will be available via email and respond as soon as I am available (generally within 24-48). For the online discussions, I will check in at least three times per week. Keep in mind that it is not possible for me to respond to every single posting every week (nor is it pedagogically appropriate), but I will be sure to respond to various postings and students each week and attempt to assure equality in terms of responses to students. Furthermore, there is a specific discussion forum that you can use to ensure that you have my attention – to ask questions or to call my attention to a particular discussion you are engaged in that you would like me to take a look at. If you feel you are being neglected in any way, please contact me. When emailing me, please place in the subject line the course number/section and the topic of the email (i.e., XXX 240 – Assignment 2 Question). This will help me tremendously in locating your emails quicker when I scan the hundreds of emails that seem to make it into my box each day.*

Virtual Office Hours

Virtual Office Hours are a synchronous session (through Zoom or Blackboard Collaborate) to discuss questions related to weekly readings and/or assignments. Office hours will be held Monday evenings from 7:00-8:00 pm EST. To connect to the weekly session, go to the Canvas Zoom link.

Online Etiquette Guidelines

Your instructor and fellow students wish to foster a safe online learning environment. No matter how different or controversial they may be perceived, all opinions and experiences must be respected in the tolerant spirit of academic discourse. You are encouraged to comment, question, or critique an idea, but you cannot attack an individual. Our differences, some of which are outlined in the University's inclusion statement below, will add richness to this learning experience. Please consider that sarcasm and humor can be misconstrued in online interactions and generate unintended disruptions. Working as a community of learners, we can build a polite and respectful course ambiance. Please read the Netiquette rules for this course:

- Do not dominate any discussion. Allow other students to join in the discussion.
- Do not use offensive language. Present ideas appropriately.
- Be cautious in using Internet language. For example, do not capitalize all letters since this suggests shouting.
- Avoid using vernacular and/or slang language as it could lead to misinterpretation.
- Keep an "open-mind" and be willing to express even your minority opinion.
- Think and edit before you push the "Send" button.
- Do not hesitate to ask for feedback.

TENTATIVE COURSE SCHEDULE

Module	Topic(s)	Readings	Graded Activities
Module 0	Course Introduction	Syllabus	N/A
Module 1	Understanding the Supply Chain	Chapters 1 & 2	Collaborative Annotation Interactive Video Quiz 1 Homework 1 Live Session Participation
Module 2	Supply Chain Drivers and Metrics & Designing the Supply Chain Network	Chapter 3	Collaborative Annotation Interactive Video Quiz 2 Homework 2 Live Session Participation
Module 3	Network Design and Supply Chain	Chapter 5	Collaborative Annotation Interactive Video Quiz 3 Homework 3 Live Session Participation
Module 4	Designing Global Supply Chain Networks	Chapter 6	Collaborative Annotation Interactive Video Quiz 4 Homework 4 Live Session Participation
Module 5	Demand Forecasting in a Supply Chain	Chapter 7	Collaborative Annotation Interactive Video Quiz 5 Homework 5 Live Session Participation
Module 6	Aggregate Planning in a Supply Chain	Chapter 8	Collaborative Annotation Interactive Video Quiz 6 Homework 6 Live Session Participation
Module 7	Sales and Operations Planning in a Supply Chain	Chapters 9 & 10	Collaborative Annotation Interactive Video Midterm Live Session Participation
Module 8	The Role of Cycle Inventory in a Supply Chain	Chapter 11	Collaborative Annotation Interactive Video Quiz 8 Homework 8 Live Session Participation
Module 9	Managing Uncertainty In a Supply Chain	Chapters 12 & 13	Collaborative Annotation Interactive Video Quiz 9 Homework 9 Course Project Part 1 Live Session Participation
Module 10	Retail Analytics	Retail Analytics Papers	Collaborative Annotation Interactive Video Homework 10 Course Project Part 2 Live Session Participation

Module 11	Transportation in a Supply Chain	Chapter 14	Collaborative Annotation Interactive Video Quiz 11 Homework 11 Course Project Part 3 Live Session Participation
Module 12	Sourcing Decision in a Supply Chain	Chapter 15	Collaborative Annotation Interactive Video Quiz 12 Homework 112 Course Project Part 4 Live Session Participation
Module 13	Pricing and Revenue Management in a Supply Chain	Chapter 16	Homework 13 Course Project Part 5 Final Exam Live Session Participation

COURSE MATERIALS

Chopra, S. (2019). *Supply chain management: Strategy, planning, and operation* (7th ed.). Boston, MA: Pearson. ISBN-13: 9780134731889

Access and Purchase the Coursepack link

COURSE REQUIREMENTS

As you move through the topics in each module, you will be asked to read, listen to, and watch a variety of media. You'll also be regularly prompted to actively evaluate your knowledge as you're building it. The components in each module are designed to be completed sequentially.

In addition to videos and readings, here are a few types of learning activities you'll encounter.

- **Practice Activities:** In each module, you will encounter discussion boards, examples, and solutions. These ungraded activities provide you with an opportunity to check your understanding of the module learning objectives.
- **Homework:** To help reinforce the material covered in the module, a homework exercise will be assigned to you each week. Homework will involve formulating and solving a small but practically relevant homework problem from the textbook.
- **Quizzes:** Each module will culminate in an auto-graded Canvas graded quiz. The quizzes help you determine the achievement of the module learning objectives. You will be given two attempts to complete the quiz.
- **Live Participation:** Live sessions are scheduled in each module. In some sessions, you will work collaboratively with your classmates to solve a problem. In others, you'll review module topics.
- **Midterm:** The midterm exam will assess your learning from Modules 1–7.
- **Final:** The final exam will assess your learning from Modules 8–13.
- **Project (Phase 1, 2, 3):** You will be required to read a case study and answer the questions using the principles learned throughout the course. The deliverables are a paper, an executive summary, and your files.
- **Office Hours:** Use this time to ask your instructor about any concepts you are struggling with, difficulties with assignments, or simply share something relevant to the class you encountered this week.

TECHNOLOGY REQUIREMENTS

Baseline technical skills necessary for online courses
- Basic computer and web-browsing skills
- Navigating Canvas

Technology skills necessary for this specific course
- Live web conferencing using Zoom
- Recording a slide presentation with audio narration
- Recording, editing, and uploading video via Kaltura or Quicktime

Required Equipment
- Computer: current Mac (OS X) or PC (Windows 7+) with high-speed internet connection
- Webcam: built-in or external webcam, fully installed
- Microphone: built-in laptop or tablet mic or external microphone

Required Software
- Microsoft Word
- Microsoft Excel
- Microsoft PowerPoint
- Tableau

GRADING PROCEDURES

Grades will be based on:

Homework	20%
Interactive Video (PlayPosit)	5%
Collaborative Annotation (Hypothes.is)	5%
Quizzes	10%
Midterm Exam	15%
Course Project (Parts 1-5)	20%
Final Exam	15%
Live Session Participation	10%

Grading Scale

The scale for grades is: A >92; A- 92~90; B+ 89~85; B 84~80; B- 79~75; C+ 74~70; C 69~65; C- 64~60; F<60

Late Policy

Late homework submissions or final project submissions will be subject to a 20% deduction.

Graduate Student Code of Academic Integrity
All Stevens graduate students promise to be fully truthful and avoid dishonesty, fraud, misrepresentation, and deceit of any type in relation to their academic work. A student's submission of work for academic credit indicates that the work is the student's own. All outside assistance must be acknowledged. Any student who violates this code or who knowingly assists another student in violating this code shall be subject to discipline.

All graduate students are bound to the Graduate Student Code of Academic Integrity by enrollment in graduate coursework at Stevens. It is the responsibility of each graduate student to understand and adhere to the Graduate Student Code of Academic Integrity. More information including types of violations, the process for handling perceived violations, and types of sanctions can be found at www.stevens.edu/provost/graduate-academics.

EXAM CONDITIONS
The following procedures apply to the module quizzes, midterm, and final exam for this course. As the instructor, I reserve the right to modify any conditions set forth below by printing revised Exam Conditions on the quiz or exam.
1. Students may use the following materials during quizzes and/or exams. Any materials that are not mentioned in the list below are not permitted.
2. Students are/are not allowed to work with or talk to other students during quizzes and/or exams.

Material	Permitted?	
	Yes	No
Handwritten Notes	Yes	
Typed Notes	Yes	
Textbooks	Yes	
Readings	Yes	
Other (specify)	None	

Proctorio

This course will use Proctorio, a remote proctoring solution designed to protect the integrity of this course's assessments. Proctorio is a trusted remote proctoring provider because of its commitment to student privacy. Proctorio uses Single Sign-On through our LMS and only approved institution individuals, including me as your instructor, will have access to your exam data. Proctorio only runs during your exam as a browser extension. Before getting started on your first exam, make sure to follow the instructions in Proctorio's Quick Start Test Taker Guide for how to install and use the extension. To verify your computer system meets the requirements and everything is installed correctly, take the practice quiz. This will ensure that everything will run smoothly on the day of the exam.

LEARNING ACCOMMODATIONS

Stevens Institute of Technology is dedicated to providing appropriate accommodations to students with documented disabilities. The Office of Disability Services (ODS) works with undergraduate and graduate students with learning disabilities, attention deficit-hyperactivity disorders, physical disabilities, sensory impairments, psychiatric disorders, and other such disabilities in order to help students achieve their academic and personal potential. They facilitate equal access to the educational programs and opportunities offered at Stevens and coordinate reasonable accommodations for eligible students. These services are designed to encourage independence and self-advocacy with support from the ODS staff. The ODS staff will facilitate the provision of accommodations on a case-by-case basis.

For more information about Disability Services and the process to receive accommodations, visit https://www.stevens.edu/office-disability-services. If you have any questions please contact: Phillip Gehman, the Director of Disability Services Coordinator at Stevens Institute of Technology at pgehman@stevens.edu or by phone 201-216-3748.

Disability Services Confidentiality Policy

Student Disability Files are kept separate from academic files and are stored in a secure location within the Office of Disability Services. The Family Educational Rights Privacy Act (FERPA, 20 U.S.C. 1232g; 34CFR, Part 99) regulates disclosure of disability documentation and records maintained by Stevens Disability Services. According to this act, prior written consent by the student is required before our Disability Services office may release disability documentation or records to anyone. An exception is made in unusual circumstances, such as the case of health and safety emergencies.

INCLUSIVITY

Name and Pronoun Usage

As this course includes group work and class discussion, it is vitally important for us to create an educational environment of inclusion and mutual respect. This includes the ability for all students to have their chosen gender pronoun(s) and chosen name affirmed. If the class roster does not align with your name and/or pronouns, please inform the instructor of the necessary changes.

Inclusion Statement

Stevens Institute of Technology believes that diversity and inclusiveness are essential to excellence in academic discourse and innovation. In this class, the perspective of people of all races, ethnicities, gender expressions and gender identities, religions, sexual orientations, disabilities, socioeconomic backgrounds, and nationalities will be respected and viewed as a resource and benefit throughout the semester. Suggestions to further diversify class materials and assignments are encouraged. If any course meetings conflict with your religious events, please do not hesitate to reach out to your instructor to make alternative arrangements.

You are expected to treat your instructor and all other participants in the course with courtesy and respect. Disrespectful conduct and harassing statements will not be tolerated and may result in disciplinary actions.

MENTAL HEALTH RESOURCES

Part of being successful in the classroom involves a focus on your whole self, including your mental health. While you are at Stevens, there are many resources to promote and support

mental health. The Office of Counseling and Psychological Services (CAPS) offers free and confidential services to all enrolled students who are struggling to cope with personal issues (e.g., difficulty adjusting to college or trouble managing stress) or psychological difficulties (e.g., anxiety and depression). Appointments are can be made by phone (201-216-5177).

EMERGENCY INFORMATION

In the event of an urgent or emergent concern about the safety of yourself or someone else in the Stevens community, please immediately call the Stevens Campus Police at 201-216-5105 or on their emergency line at 201-216-3911. These phone lines are staffed 24/7, year round. For students who do not reside near the campus and require emergency support, please contact your local emergency response providers at 911 or via your local police precinct. Other 24/7 national resources for students dealing with mental health crises include the National Suicide Prevention Lifeline (1-800-273-8255) and the Crisis Text Line (text "Home" to 741-741). If you are concerned about the wellbeing of another Stevens student, and the matter is *not* urgent or time sensitive, please email the CARE Team at care@stevens.edu. A member of the CARE Team will respond to your concern as soon as possible.