USCMarshall
School of Business

DSO 520 – Logistics Management Section 372-16221D
Syllabus – Summer 2024
3 Units
The class meets online every Thursday, scheduled between 5 PM – 9 PM PST

Instructor:	*Das Dasgupta, Ph.D.*
Office:	*Online*
Office Hours:	*By appointment*
Phone:	*(714) 814-2547*
Email:	*tdasgupt@marshall.usc.edu*
TA:	*TBD*

COURSE DESCRIPTION

Logistics Management provides a practical management perspective of the following areas of logistics: planning, optimization, distribution, transportation, order fulfillment, warehouse management, IT systems, third-party logistics, and the future of logistics. The course is designed only for MSGSCM students with little or no previous coursework or professional experience in logistics.

We will conduct working sessions, analytical case discussions, lectures, and student team projects. You must form a team of 4 to 6 students to work on group assignments.

Prerequisites and/or Recommended Preparation:

Open to MSGCSM students only as part of their core curriculum. Please note that this is a quant-heavy course. Sharpen your pencils and review your Supply Chain Analytics tools. As such, a good working knowledge of Excel Spreadsheets is required. We also recommend using a student version of the 'Analytic Solver' Add-In for Excel published by Frontline Systems.

COURSE OBJECTIVES

Upon successful completion of this course, students will be able to:

1. Apply the analytic model-based approach for solving logistics problems
2. Reinforce the importance of using total supply chain costs in all analyses
3. Apply techniques for measuring and managing supply chain uncertainty
4. Apply Optimization techniques such as Network Optimization for Logistics Operations.

COURSE MATERIALS

Digital Course Reader:
The course reader is available at the HBSP site, which can be found here:
https://hbsp.harvard.edu/import/1154925

It has the following material highlighted in yellow below:

Cases:
1. Strategic Planning at UPS
2. The Wheels Group - *Evolution of a Third-Party Logistics (3PL) Service Provider*
3. Warehousing Strategy at Voxwagen Group Canada (VGCA)
4. Marico: Distribution Network Optimization
5. US Foods - driving post-pandemic success?

Articles
1. Logistics as Strategy (this will be uploaded in Blackboard)
2. HBS Note on the US Freight and Transportation Industry
3. Optimization-based Procurement for Transportation Services (to be uploaded on Blackboard)
4. The Link between a Firm's Profitability, Outbound Logistics Performance, and its performance measurement framework (Digital Chapter 7 from HBP's *"Supply Chain planning: Practical Frameworks for Superior Performance", 2nd Edition*) by Matthew Liberatore and Tan Miller
5. How Wal-Mart Canada Uses Blockchain to solve supply chain challenges
6. Engineering your way out of the Global Chip Shortage
7. Global Supply Chain in a post-pandemic world
8. How the war in Ukraine is further disrupting Global Supply Chains
9. It is time to rethink your Global Logistics

Some recommended reference books (not required)

1. **The Definitive Guide to Transportation**: Principles, Strategies, and Decisions for the EffectiveFlow of Goods and Services by Thomas J. Goldsby; Deepak Iyengar; Shashank Rao. Publisher:Pearson.

2. **Contemporary Logistics**, 11th edition, by Paul R. Murphy; A. Michael Knemeyer. Publisher:Prentice Hall

GRADING

The grading breakdown is as follows:

Grading Category	Weight
Midterm	20%
Final	20%
Project (Real Company, from other courses, or Kaggle Data Set)	20%
Team Case study write-ups	15%
Homework Problem sets	20%
Live Participation /Discussion Groups/ Lecture-Video summaries	5%

MIDTERM EXAM

It counts for 20% of your course grade. A combination of quantitative problems and some qualitative insights willbe tested in a take-home exam setting, with 4 hours to complete the work.

FINAL EXAM

It counts for 20% of your course grade. The final exam will be a 4-hour long take-home exam (open book/notes)and conceptually cumulative, but the emphasis will be on the subjects covered after the mid-term exam.

Exceptions on Exam: If extenuating circumstances prevent you from taking an exam during the allocated time, you must discuss the reason with me before the exam. You will not be given a make-up exam unless you obtain permission from me in advance. In addition, you must be able to document the extenuating circumstance. If you miss the exam due to a medical emergency that can be documented and verified,then a make-up exam will be given. Otherwise, a grade of zero will be given for the missed exam.

TEAM ASSIGNMENTS – CASE STUDY WRITE-UPS

Your team assignments will be worth 15% of your grade. These are answers to the questions for the cases thatare given at the end of the cases. These case answers need to be uploaded in Blackboard Assignments ***prior*** to the session when they will be discussed. Case study answers are evaluated on how they are logical, structured, data-driven, and quantitatively analyzed.

HOMEWORK PROBLEM SETS

Homework is worth 20% of your course grade. After most of the sessions, we will assign you homework to test your learning and to help you retain the concepts. They will be due before the following session. Work on them yourself without collaborating with others and submit them individually on Blackboard. This will also help you prepare for the quant-heavy exams.

LIVE PARTICIPATION / DISCUSSION GROUP ACTIVITY / or LECTURE SUMMARIES

I strongly encourage live, camera-on, interactive sessions. The more we share, the more we learn together. We will also create Discussion Groups on Blackboard for you to share and participate in discussions that count toward your participation. If you must miss a live session or cannot attend due to a big difference in time zones, you will need to email me three facts discussed in the class that are not in the session slides after watching the video after class. This category counts for 5% of your grade

COURSE PROJECT

The course project is 20% of your course grade. Within this project, a broad study of the end-to-end logistics process of a firm would be 50% of the grade. The other 50% would be a quantitative deep dive into selected Logistics problems. You will demonstrate the application of multiple tools covered in the course, develop data-driven, synthesized actionable insights, and make recommendations if possible.

To avoid any last-moment haste, try to reach out to any company that owns Logistics / Transportation / Warehousing operations or uses them from third-party logistics service providers. Send the questions below to them (after filling out what you already know from researching them in their annual reports, which can be downloaded free from their websites or by extensive internet search using ChatGPT). If you use a company from another course where you have worked with them, you need to email me the course project submission for that course as soon as possible. Finally, if you cannot find any company through your team network or affiliation, download data sets from Kaggle and get my approval on what you will do with it.

PART A of Project:
Thoroughly research the firm you have chosen to evaluate to ensure that the following questions can be addressed in your presentation.

1. What is the firm's overall strategy and mission? Who are their closest competitors? Who are their customers?   (Please make this a brief executive overview, not a history lesson!)
2. Why did you choose the firm?
3. How does logistics management fit into the firm's overall strategy?
4. How are the firm's Logistics operations differentiating them/adding value?
5. How does the product flow through the pipelines? Who are the players? Make sure to draw a neat and detailed Process Flow Diagram.
6. Any evidence of segmentation on logistics service offerings?
7. Any evidence of partnership/strategic alliances in the firm's logistics operations? Does the firm outsource any of its activities?
8. What technologies does your firm use to make logistics operations more effective (i.e. RFID, bar-coding, satellite tracking, etc.)? How are these technologies utilized to make the supply chain more efficient and effective?
9. How does the firm utilize e-business? Does its website enable business-to-business e-commerce? How do industrial customers use it?

PART B of Project:
*Deep dive into selected Logistics problems where you will **_apply models learned in the class, collect data, apply the models, analyze the data, come up with synthesized insights,_** and, if possible, make recommendations.*

- What could the firm do better within their Logistics Operations and decision-making in your assessment(only if relevant)? Show your analysis using data, tools, and techniques you picked up from class.
- Try to integrate key ideas from the textbook and readings into your presentations when possible (i.e., apply what you have learned)

- A copy of the **PowerPoint presentation** is due at the beginning of class on the group presentation day. In addition, please attach and submit a bibliography that contains a minimum of 10 credible references to give me an idea of your sources and the level of research that you have done for your presentation. You should make every effort to integrate these references into your presentation to back up your statements. <u>Also upload any Spreadsheets or Python/R programs you have used, along with the data sets.</u>

- Groups will present their projects in the very last session. Presentations – should be approximately 10 minutes for each team, followed by a 2 minutes Question and Answer session. The team presentation is worth 20% of your total grade on the project. Please do not hesitate to consult me if you have any questions.

- **Key tip**: Don't wait till the last minute! Practice presenting within given time limits.

<u>THE IMPORTANCE OF COURSE EVALUATIONS</u>
The student course evaluations are valuable. This course is continuously improved based on feedback from students and instructor observations. Please make sure you fill this out with your input.

COURSE OUTLINE AND ASSIGNMENTS

	Topics/ Daily Activities	Readings	Deliverables with Due Dates
Week 1 **5/16**	Logistics Strategy & How to Measure its Effectiveness	Pre-read the article "Logistics – essential to strategy" on Blackboard	
Week 2 **5/23**	The Logistics Product	HBR Article – It's time to rethink your Global Logistics	
Week 3 **5/30**	The Logistics Players	HBS Note on the US Freight & Transportation Industry	**Case 1** Team soln on "Strategic Planning at UPS" (3%) **HW 1** (Individual) due (5%)
Week 4 **6/6**	Warehouse Mgmt	HBR article – Engineering your way out of the Global Chip Shortage	**Case 2** Team soln of The Wheels Group (3%)
Week 5 **6/13**	Location Execution Planning	Superior Medical Equipment	**Case 3** Team soln of Warehousing at Voxwagen (3%) **HW2** (Individual) due (5%)
Week 6 **6/20**	**MIDTERM TEST (20%)**		
Week 7 **6/27**	Transportation Planning	HBR Article – Global Supply Chain in a post-pandemic World	**Case 4** US Foods – driving post-pandemic success? (3%)
7/4	**4ᵗʰ of July Holiday**		
Week 8 **7/11**	Network Design & Optimization	HBR Article – How the war in Ukraine is further disrupting the global supply chains	**HW 3** (Individual) due (5%)
Week 9 **7/18**	Logistics & Technology – the Road Ahead	HBR Chapter – The Link Between a Firm's Profitability, Outbound Logistics Performance, and Its Measurement Framework	**Case 5** Team soln of Marico: Distribution Optimization (3%) **HW 4** (Individual) due (5%)
Week 10 **7/25**		**Project Presentations**	
Week 11 **8/1**		**Final Exam (20%)**	**Project Write-ups Due (20%)**

SESSION PLAN

Discussion Questions to be prepared for class:

1. What is Logistics as a discipline and how is it related to Supply Chain Management?
2. What is the relationship of Logistics with Operations, Marketing, and other functions of an organization?
3. What are some approaches to analyzing Logistics systems?

Discussion Questions from pre-reading "Logistics – Essential to Strategy"

1. What are the reasons behind the rebirth of interest in logistics to develop a competitive advantage?
2. What are some common elements of successful logistics-oriented strategies?
3. What are the ways of factoring logistics into strategy formulation?

Session 2 – LOGISTICS PRODUCT

Discussion Questions to be prepared for class:

1. How do the features of the product you make affect logistics decisions?
2. How is the packaging of a product so important in Logistics?
3. How is material handling done in Logistics?

Session 3 – LOGISTICS PLAYERS

Discussion Questions to be prepared for class:

1. What are the functions of Logistics and who are the players?
2. What are some key characteristics of US Domestic Logistics?
3. What are some key characteristics of International Logistics?

- **HW 1 due (PRODUCT) – individual assignment, upload in Blackboard prior to class**
- **Turn in prior to class (UPS- Case 1) - your team responses to the following questions only (and nothing else):**

1. What is your evaluation of UPS's 1997 scenario planning exercise? Its Horizon 2017 planning exercise? How do the two efforts compare?
2. What are the key elements of UPS's approach to strategic planning? In particular, what is your evaluation of:
   * the UPS charter?
   * the Centennial Plan?
   * the Strategy Roadmap?

Session 4– LOGISTICS STORAGE – WAREHOUSE MANAGEMENT

Discussion Questions to be prepared for class

1. What are the operational characteristics of Warehouses and Distribution Centers?
2. What are some leading practices in managing Warehouses and DCs?
3. What is Cross-Docking?

- **Turn in prior to class (Wheels Group - Case 2) - your team responses to the following questions:**

1. Are the revenue growth estimates reasonable for each alternative? Would either of the alternatives enable the Wheels Group to achieve its revenue targets?
2. What are the advantages and disadvantages associated with pursuing each alternative?

Session 5 – LOGISTICS LOCATION PLANNING

Discussion Questions to be prepared for class

1. What are the driving forces behind location planning in logistics? How would you determine the number of facilities you should have?
2. What models work well for single-facility locations?
3. Weighted Checklists for retail/service location

- **Individual HW 2 (STORAGE) due before class in Blackboard**
- **Turn in prior to class (Voxwagen - Case 3): your team responses to the following questions:**

1. As Kym Meisner, what are warehousing capacity requirements for the next five years? Does the Toronto PDC have enough capacity based on projected demand?
2. Is expansion required? If so, which option for expansion makes the most sense operationally and financially?
3. What contingencies would you put in place if actual sales fell short of the forecast?

Session 6 – Take Home Midterm

Session 7 – LOGISTICS Transportation Planning and Execution

Discussion Questions to be prepared for class

1. What is Transportation Planning?
2. How to understand Rate Structures?
3. How to make decisions on Mode Selection?

- **Come prepared to discuss <u>Superior medical </u>solutions using the COG method.**
- **<u>Case Study – US Foods</u> – driving post-pandemic success due before class.**
  - **Turn in *prior* to class your responses to the following questions:**
    1. How would you help Satriano continue executing his vision and strategy for the company in the face of escalating labor shortage?
    2. How would you recommend Satriano to further the company's cash-and-carry expansion?

Session 8 – LOGISTICS NETWORK Optimization

Discussion Questions to be prepared for class
1. What is the logistics 'network'?
2. What are some known models for optimizing the network?

- **HW 3 (Transportation Optimization) due before class.**

Session 9 – Logistics and Technology – the road ahead
Discussion Questions to be prepared for class

1. What are the traditional and current technology solutions for Logistics?
2. What is Blockchain and how would it affect Logistics solutions?

- **HW4 Due on Logistics Network Optimization before class**

- **Turn in *prior* to class Marico Distribution Optimization Case 5) – your team responses to the following questions:**

1. Should Arun choose 22 or 24 warehouses? Why? Show Excel Solver calculations and logic.

Session 10 – Projects presented online.

Session 11 – FINAL EXAM

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" (https://www.marshall.usc.edu/open-expression-statement).

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.

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.

Appendix I. MARSHALL GRADUATE PROGRAMS LEARNING GOALS

How DSO 520 Contributes to Marshall Graduate Program Learning Goals

Marshall Graduate Program Learning Goals	DSO 520 Objectives that support this goal	Assessment Method*
Learning Goal #1: Develop Personal Strengths. **Our graduates will develop a global and entrepreneurial mindset, lead with integrity, purpose, and ethical perspective, and draw value from diversity and inclusion.**		
1.1 Possess personal integrity and a commitment to an organization's purpose and core values.	Discussions in Class	Participation
1.2 Expand awareness with a global and entrepreneurial mindset, drawing value from diversity and inclusion.	Same	Same
1.3 Exhibit awareness of ethical dimensions and professional standards in decision-making.	Same	Same
Learning Goal #2: Gain Knowledge and Skills. **Our graduates will develop a deep understanding of the key functions of business enterprises and will be able to identify and take advantage of opportunities in a complex, uncertain, and dynamic business environment using critical and analytical thinking skills.**		
2.1 Gain knowledge of the key functions of business enterprises.	1-4	Exams, HW, Project
2.2 Acquire advanced skills to understand and analyze significant business opportunities, which can be complex, uncertain and dynamic.	1-4	Same
2.3 Use critical and analytical thinking to identify viable options that can create short-term and long-term value for organizations and their stakeholders.	1-4	Same
Learning Goal #3: Motivate and Build High-Performing Teams. **Our graduates will achieve results by fostering collaboration, communication, and adaptability on individual, team, and organizational levels.**		
3.1 Motivate and work with colleagues, partners, and other stakeholders to achieve organizational purposes.	Team Project	Course Project
3.2 Help build and sustain high-performing teams by infusing teams with a variety of perspectives, talents, and skills and aligning individual success with team success and with overall organizational success.	Same	Same
3.3 Foster collaboration, communication, and adaptability in helping organizations excel in a changing business landscape.	Same	Same

Appendix II

SAMPLE PEER EVALUATION FORM (IF I FEEL THIS IS NECESSARY)

Grades for individual student contributions to team projects are assigned by me, based on my observations of the team's working dynamics, my assessment of the team's project quality, and thoughtful consideration of the information provided through your peer evaluations.

Please identify your team and team members for the ____ Project(s) you worked on. Then, rate all your team members, *including yourself,* based on the **contributions** of each team member for the selected assignment according to the criteria listed below. On a scale of 0 – 2 with 0 indicating does not meet expectations, 1 meets and 2 exceeds expectations, rate each person on the five criteria. Lastly, add up the points for each person, with the maximum number of points for each person being 10. In the box below, describe the exact contributions of each team member, including yourself.

Team Members/ Assessment Criteria of Team Contributions	Team Member 1	Team Member 2	Team Member 3	Yourself
1. Role Performance				
2. Assists Team Members				
3. Listening and Discussing				
4. Research and Information Sharing				
5. Time Management				
Total				

Contribution details: