Course Description:
Supply chains have been around for as long as the business of production itself. What is new is their management. To elaborate, activities such as purchasing, warehousing, inventory control, and transport were once considered part of the “cost” of running a business. Now these activities come together as “Supply Chain Management”—a strategic function that has taken center stage on the CEO’s agenda. What explains the success of Walmart in retailing, Dell in the personal computer business, Zara in fashion, Toyota in automobile production, and Li & Fung in the trading business? Efficient and responsive Supply Chain Management.

There are several reasons for the growing influence of the supply chain on a company’s bottom line. First, businesses are doing less within their own organization, and relying more on their supply chain partners. This may be due to increased complexity, scale economy, or to focus on core competencies. Whatever the reason, the success of a firm is increasingly dependent on what happens outside its organizational boundaries. Second, supply chains are becoming longer and more complex. Stretched across several continents, spanned by road, rail, sea, air, and now, by data—the task of ensuring that all these things work together seamlessly is frustratingly difficult and requires constant attention. Third, Supply Chain Management is becoming more enveloping—it includes everything from buying raw materials to managing suppliers, warehousing, operating transport fleets, taking orders, collecting payments, repairing products, and even reverse logistics (the task of recycling unused and end-of-product-life-cycle items for a sustainable supply chain). Finally, supply chain disruption represents a significant danger for many firms and managing this risk is becoming a pressing issue. Ironically, as supply chains have become leaner this risk has only increased. The new “Just-In Time” converts are celebrating their lean international supply chains, unaware that a dock strike in California or an earthquake in Turkey can have a calamitous effect on their business.

The Supply Chain Management course will focus on how to coordinate and integrate various activities into a seamless process. The emphasis will be on managing material and information flows across different partners in the chain. The alignment of incentives, design and evaluation of contracts, and strategies to reduce and hedge uncertainties will receive significant attention.

Course Type: MBA Elective (2 sections), Full-term, 24 90-minute classes over 12 weeks
Text(s): readings will be provided in the course pack.

Optional Reference:

This course will explore:
- Key variables, control levers, and critical tradeoffs in supply chains
- The enabling role of data and analytics
- Matching supply chain strategies to market needs
- How to cope with uncertainties in supply chains
- Managing information flows for supply chains
- Diagnostics for supply chain performance
- Inventory/service tradeoffs
- Distribution strategies
- Sourcing and supplier management
- The role of intermediaries
- Supply chain flexibility
- Risks in the supply chain
- The digital supply chain (e.g., at Google)
- Pricing analytics and its relation to the supply chain

Grade Distribution:
- Class Participation 20%
- Assignments (Cases, Problem Sets) 30%
- Take-home Midterm Exam 15%
- Take-home Final Exam 35%

Course Policies:
- General
  - Electronic devices (laptops, phones) are not permitted during class, unless instructed to be used.
  - Punctual attendance is expected. The sharing of recordings of missed classes will only be considered under special circumstances (religion, illness, bereavement).
- Class Participation
  - Class discussion is an important part of the design of the course. Therefore your participation will be graded, and when necessary, people will be called on to add to the discussion. The quality of your participation in discussions will be judged based primarily on your ability to move the class discussion forward. The content, depth and relevance of comments to the discussion are important as well. So that we can accurately assess your participation, you should bring your name plate to class throughout the term.
- Grading of Assignments
Assignments consist of cases and problem sets. Some assignments must be submitted individually, while others are to be submitted as a group of 4–5. For individual assignments, discussion with others is permitted but the written submission must be prepared individually (and submissions which are deemed to be copied from others could be considered a case of academic dishonesty). For group assignments, discussion with other groups is not permitted.

- Assignments are due at the start of class and late assignments will not be accepted.

- Take-home Exams
  - Take-home exams must be submitted individually. Students are allowed to consult course readings, class notes, and existing information on the internet, but any form of communication or assistance from others (in or outside of the class) is strictly forbidden.
  - Class will be canceled on days the take-home exams are due, to allow students to use class time to complete the exam.

Course Outline:

Below is a representative course outline from a previous offering of the course, where each session represents a week (2 classes). We will cover largely the same material and cases, with possibly a couple of newly added cases (Supply Chain Transformation at Google, Fast Fashion Retailing). The exact schedule of assignments due and case questions asked is subject to change from the previous offering.
Session 1: Introduction, Matching Supply with Demand.

Class Plan:

1.1 Introduction
   The Growing Influence of Supply Chain Management

Course Outline

1.2 Variability and Risk in Supply Chains: The Newsvendor Model

Reading (optional):
   1. Growing influence of supply chain management, The Economist

Session 2: Manufacturer Retailer Chain; Supply Chain Diagnosis

Case: Sorenson Research Co.:

Prepare the following questions for discussion (nothing to turn in).

1. What are the problems Sorenson Research Company is faced with in December 1976? What are the causes of these problems? Analyze various elements of Sorenson's supply chain: distribution channel, incentive system, inventory positioning, stocking policy, reshipment policy, mode of transportation, accuracy and timeliness of information.

2. What are the overall objectives of Sorenson's supply chain? Does it achieve these objectives?

3. Consider Larry Harmer's plan to improve the system. Summarize the plan and analyze the effects of this plan on Sorenson's operations.

4. Suppose you are asked to propose a plan to help Sorenson Research decrease inventories and costs and improve customer service. Propose a plan and analyze the impact of your plan.

Session 3: Coordination in Independent Manufacturer Retailer Supply Chains; Linkage Between Inventory Management and Working Capital; Forecasting

Case: Northco
Prepare the following questions for discussion (nothing to turn in):

1. For Northco’s products, identify characteristics that are relevant for supply chain management.

2. What makes it difficult for Northco to match supply with demand? How should Michaels think about the costs of over and understocking? Identify the elements of over and understocking costs in this case.

3. What should Michaels do to mitigate the effect of working capital shortage?

4. Examine Northco’s forecasting process (look at the Exhibits 3-4 and the Appendix 1). How good is this forecast process? What modification would you suggest for a better forecast?

**Session 4: Centralized vs. Decentralized Chains; Supply Chain Intermediaries; Return Contracts.**

**Case: Massimo Menichetti** (nothing to turn in)

1. Analyze the Prato System. Does it work? Why does it work better than the integrated mill?

2. What is the role of an impannatori?

3. Compare the SPRINT project to CAD. What benefits do these IT tools bring? Should Massimo embrace them?

4. Do you know other industries that share similar characteristics as the decentralized textile production in the Prato region of Italy?

**Reading:***

1. Turning the Supply Chain into a Revenue Chain

**Group Assignment:**

Your group's answer to questions (b) and (c) of Concept Check 3 posted online.

**Session 5: Sourcing Policy and Buyer-Supplier Relationship; Continuous Review Inventory Models.**

**Bose Corporation: The JIT II Program (A):**

1. How do Bose's history, strategy, and sourcing policies affect supplier relations? Is Bose a good buyer?
2. Where is the buying and selling done in this context? Who are the people involved and what are their roles?
3. Should Bose participate in the JIT II program? Should G&F? What are the potential benefits and risks to each companies?
4. Should Bose vertically integrate into plastics? Why (why not)?
5. Should plants source their own components locally? Why (why not)?

Follow-up Reading:
Bose (B, C, D)

Group Assignment:

Concept Check 4 posted online.

**Session 6: Global Sourcing and Supplier Management**

**Case: Intercon Japan**

**Questions:**

1. How has Intercon Japan's supplier relationships performed relative to its American counterpart?
2. How do these relationships create value for Intercon Japan? That is, how do they function?
3. Can this style of relating translate to the U. S.?

**Reading:**


**Follow-up Reading: Supply Chain Challenges: Building Relationships**

Group Assignment:

Concept Check 5 posted online.

**Mid-Term Examination**
Session 7: Beer Game

Session 8: Tools for Managing Supply Chains; Continuous Review Model
Barilla SpA (A):

Questions:

1. Why are orders placed by Cortese with Pedrignano so much more variable than the demand faced by Cortese? How does this affect Barilla?

2. What actions can Barilla take to rectify the situation? Do you anticipate any problems?

3. What conflicts or barriers internal to Barilla does the JITD program create? What causes these conflicts? As Giorgio Maggiali, how would you deal with these conflicts?

4. As one of Barilla’s customers, what would your response to JITD be? Why?

5. In the environment in which Barilla operated in 1990, do you believe JITD (or a similar kind of program) would be feasible? Effective? If so, which customer would you target next? How would you convince them that the JITD program was worth trying? If not, what alternatives would you suggest to combat some of the difficulties that Barilla’s operating system faces?

Read:

The Bullwhip Effect in Supply Chains.

Group Assignment:

Concept Check #6

Session 9: Reengineering the Supply Chain; Value Chain Dissection

Barilla SpA (A) Questions:

1. Why are orders placed by Cortese with Pedrignano so much more variable than the demand faced by Cortese? How does this affect Barilla?

2. What actions can Barilla take to rectify the situation? Do you anticipate any problems?

3. What conflicts or barriers internal to Barilla does the JITD program create? What causes these conflicts? As Giorgio Maggiali, how would you deal with these conflicts?

4. As one of Barilla’s customers, what would your response to JITD be? Why?

5. In the environment in which Barilla operated in 1990, do you believe JITD (or a similar kind of program) would be feasible? Effective? If so, which customer
would you target next? How would you convince them that the JITD program was worth trying? If not, what alternatives would you suggest to combat some of the difficulties that Barilla's operating system faces?

Session 10: Role of IT in Supply Chain Integration; Virtual Integration; Value Chain Dissection

Readings:

- Fast, Global, and Entrepreneurial: Supply Chain Management, Hong Kong Style;
- The Power of Virtual Integration: An Interview with Michael Dell,

Concept Check #6 (Group Assignment Due on April 15)

Session 11: Vertical Integration; Globalization: Role of Supply Chains

Case Questions:

1. What is the future prospect of wind energy? How well is Suzlon placed compared to its competitors for the upside market potential?
2. What is Suzlon’s edge? How well can it maintain its competitive advantage going forward?
3. Compare Suzlon’s acquisition of Hansen Transmission to its acquisition of REpower.
4. What advantage Zara derives due to vertical integration?
5. What is the fundamental difference between the way vertical integration was pursued by Zara vs. Suzlon?
6. Compare Zara to Dell. What are the similarities and differences between their business models.
7. What challenges Zara faces going forward?

Session 12: Vertical Integration; Globalization: Role of Supply Chains

Lenzing Case Questions:

1. What are the costs and benefits of expansion at South Pacific Viscose?
2. How attractive is Indonesia as a site for rayon production? As a domestic market for rayon? As a leading exporter of rayon?
3. In 1978, how well is Lenzing doing? Would you want to invest in Lenzing? How has this changed by 1994?
4. If you were in Mike Dodd’s shoe, what would you advise Lenzing’s Board of Directors to do?

Andina Case Questions:

1. What does it take to succeed in the bottled drinks manufacturing and distribution business?
2. Evaluate the overall financial performance of Andina. Why are Chilean operations more profitable than operations in Brazil and Argentina?
3. Why do you think Andina expanded into Brazil and Argentina? Was this expansion a wise move? Should Andina divest its subsidiaries?
4. What is Andina trying to achieve with its information systems in general and the control panel in particular? Will it be successful?
5. How, if at all, is the control panel different from a balanced scorecard?
6. Evaluate the performance evaluation and compensation system at Andina.
7. What should Andina do to address the specific issues in each of the three countries raised in the “Control Panel in Action” section of the case?
8. What overall changes, if any, would you recommend to Andina about its:
   1. Control Panel
   2. Organization Structure
   3. Control System
   4. Operations

Final Examination