

NATIONAL UNIVERSITY OF SINGAPORE
School of Business
Department of Decision Sciences

DSC3201 Supply Chain Management

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Course Objectives

This module builds on DSC2006 Ops Management, is companion to DSC3202 Purchasing & Materials Management, DSC3203 Service Operations Management, DSC3218 Physical Distribution Management, and prepares for continuation into DSC4211 Seminars in Ops & Supply Chain Management and Field Service Projects. Our objectives of this course are to allow the students to:

- Develop a systematic framework for analyzing the behavior of large and complex supply chain networks.
- Understand the relationship and motivations of suppliers and distributors to ensure supplies of raw materials and markets for finished goods.
- Discover the state of the art technologies and approaches that reduce production, inventory and transportation costs as well as supply lead time.
- Integrate production and inventory control methods in multi-plant distribution strategies.

- Understand supply chain sourcing, tax planning, and trade management issues in global supply chain Management.
- Leverage Information Technology & SCM Systems
- Understand export controls, sanctions and ethical laws
- Understand sustainable and green supply chains, economic & political trends in Asia

Prerequisites

Knowledge of basic calculus, elementary probability and the Normal Distribution.

Syllabus

Fierce competition in today's global markets has forced manufacturing enterprises to invest heavily in logistics systems. In such systems, items are produced at one or more factories, shipped to warehouses for intermediate storage, and then shipped to retailers. Consequently, to reduce cost and improve service levels, logistics strategies must account for the interactions of the various levels in the supply chain. This, together with the changes in communications and transportation technologies, e.g., mobile communication and overnight delivery, has motivated continuous evolution in logistics systems. In recognition of these developments, the program offers a course on the design and management of the supply chain. In this course we review state of the art planning models and practical tools for inventory control, distribution management and multi-plant coordination.

In particular we address issues such as:

- Optimal design of the logistics network.
- Adequate safety stock levels and the risk pooling concept.
- Cost effective distribution strategies.
- Strategic alliances and Outsourcing.
- The effect of e-business on supply chain strategy
- Supply chain integration and coordination
- Integrate production and inventory control methods in multi-plant distribution strategies.
- Supply chain sourcing, tax planning, and trade management in global supply chain Management.
- Information Technology & SCM Systems
- Export controls, sanctions and ethical laws
- Sustainable and green supply chains, economic & political trends in Asia

Main Text

Designing and Managing the Supply Chain: Concepts Strategies and Case Studies, Simchi-Levi, Kaminsky and Simchi-Levi, 2007, Third Edition, Irwin/McGraw-Hill.

Logistics & Supply Chain Management, Martin Christopher, 4th ed. / 2011

Reference Text

Essentials of Supply Chain Management, Michael H. Hugos, 2011, Third Edition, Wiley

Supply Chain Management: Strategy, Planning, and Operation, Sunil Chopra and Peter Meindl, 2012, Fifth Edition, Pearson.

Evaluation

Group Project Term Paper and Research Poster/Memo	30%
Final Exam	40%
Individual Homework	20%
Class Participation	10%

Schedule

Week 1 Introduction to SCM (Alex and Mabel)

Week 2 Inventory Management and Risk Pooling (Mabel)

Week 3 Inventory Management and Supply Chain Coordination (Mabel)

Week 4 Beer Game and Value of Information (Mabel)

Week 5 Supply Chain Integration (Mabel)

Week 6 Coordinated product and supply chain design (Mabel)

Week 7 Supply Chain Sourcing (Alex)

Week 8 Introduction to Global Supply Chain Management plus Global Trade Management (Alex)

Week 9 Leveraging Information Technology & SCM Systems (Alex)

Week 10 Tax Planning (Alex)

Week 11 Export Controls, Sanctions and Ethical laws (Alex)

Week 12 Sustainable and Green Supply Chains, Economic & Political Trends in Asia (Alex)

Week 13 Global Logistics and Risk Management (Mabel)

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