

IE 714 Quantitative Models for Supply Chain Management (6 credits)

Spring 2009

Instructor	Jayendran Venkateswaran, < jayendran@iitb.ac.in >
Class hours	Slot 12, Mon and Thu: 5.05pm to 6.30pm
Class room	ME bldg, Rm 208
Office hours	Tue: 3.30pm to 4:30pm or by appointment
Course website	[Access via Moodle]

Course Contents

This course will focus on a range of quantitative techniques (modeling, computation and analysis) that support decision making in supply chain management (SCM). The emphasis will be on the theory of SCM. A few case studies will be also used to highlight the practical aspects of SCM.

At the end of the course, a student is expected to:

- Understand the quantitative techniques in supply chain management.
- Apply various quantitative techniques/ tools to aid managerial decision making.

The following broad topics (under deterministic and stochastic settings) will be covered:

(i) Decisions in supply chain management, (ii) Designing SC networks, (iii) Demand forecasting and aggregate planning, (iv) Inventory management (v) Sourcing and transportation, (vi) Coordination and role of information in supply chains

Prerequisite

IE 601 and IE 611 or equivalent or Instructor's permission.

Basic knowledge of optimization (formulation & techniques), and probabilistic models is required.

Though not essential, basic knowledge of manufacturing systems and inventory control would be useful.

References

Class notes shall be the primary reading material. The references below will be quite useful in expanding your understanding of the subject.

1. Sunil Chopra, and Peter Meindl, 2006, *Supply Chain Management – Strategy, Planning and Operation*, 3rd edition, Prentice Hall
2. Sridhar Tayur, Ram Ganeshan and Michael Magazine, 1998, *Quantitative Models for Supply Chain Management*, Kluwer Academic /Springer.
3. Raghuram, G. and N. Rangaraj, 2000, *Logistics and Supply Chain Management: Cases and Concepts*, Macmillan, New Delhi.
4. Simchi-Levi, D., P. Kaminski and E. Simchi-Levi, 2003, *Designing and Managing the Supply Chain: Concepts, Strategies and Case Studies*, 2nd Edition, Irwin, McGraw-Hill.
5. Shapiro, J., 2001, *Modelling the Supply Chain*, Duxbury Thomson Learning.
6. Current literature (journal articles).

Grading

15%	Assignments/ Class participation	27%	Midterm Exam
18%	Group assignments/ Presentation	40%	Final Exam

Those who wish to audit the course must perform satisfactorily to obtain CC grade in the course and maintain attendance.

NOTE

Cheating, copying and plagiarism is not allowed in assignments, quizzes, exams etc. Detection of such practices will result in the appropriate penalties as prescribed by the Institute. Please make sure that whatever you submit under your name is your own work.