

OPRE 6366 Supply Chain Management - Syllabus

Course Information

- Course number - section: OPRE 6366 - 501
- Course title - term: Supply Chain Management - Fall 2010

Professor and Teaching Assistant Contact Information

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Lecture hours: 7-9:45 pm on W at SOM2.904.
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- Teaching Assistant: Tao Li , txl071000@utdallas.edu , SOM3.407.
Office hours: 5-7 pm on W at SOM3.407.

Course Pre-requisites and Related Courses

- Pre-requisites: OPRE 6302 and exposure to probability, or consent of the instructor.
Knowledge of equation solving, derivatives and integrals of polynomials, expectation, variance, covariance, probability distributions. Familiarity with linear and integer programming formulations. Read MBA math review 1-2 under the “Supplements” section of the course web site.
- Math refresher: UTD has a math refresher course that can help you remember what you learnt in a calculus course. The math refresher should always be available online; to test whether you need this course, see <http://som.utdallas.edu/somResources/eLearning/eLearningCurrent/math.php>.
- Related courses:
 - OPRE 6363: *Inventory Management* by Prof. Holly Lutze in Springs.
 - OPRE 6368: *Supply Chain Software* by Gene Deluke in Summers.
 - OPRE 6370: *Logistics and Distribution* by Prof. Ehad Sabri in Falls.
 - OPRE 6371: *Purchasing and Sourcing Management* by James Hogan in Springs.
 - OPRE 6364: *QC: Lean Six Sigma* by Prof. Divakar Rajamani in Springs.
 - OPRE 6377: *Demand and Revenue Management* by Prof. Metin Çakanyıldırım in Falls.
 - OPRE 6366 Online: *Supply Chain Management* by Prof. Metin Çakanyıldırım in Springs.

Course Description

This course explores the key issues associated with the design and management of industrial Supply Chains (SC). SC are concerned with the efficient integration of suppliers, factories, warehouses and stores so that products are distributed to customers in the right quantity and at the right time. One of the primary objectives of SC management is to minimize the total supply chain cost subject to various service requirements.

Course Objectives

Students will

- be able to describe and explain fundamentals of SC,
- be able to derive and compute optimal policies/variables, performance measures such as costs/profits,
- be aware of SC practices.

Required Textbooks and Materials

- Textbook: Supply Chain Management: Strategy, Planning and Operation. By Sunil Chopra and Peter Meindl. Fourth edition published by Prentice-Hall, Inc., 2010. The 1. edition is HF 5415.13.C533 at the library.
- Cases: “Aviation Spare Parts Supply Chain Management Optimisation at Cathay Pacific Airways Limited”, HBS case #HKU820-PDF-ENG, Benjamin Yen, Karen Lee, Jonathan Pelosi, publication date Feb 24, 09; “Sport Obermeyer Ltd.”, HBS case #695022, Janice H. Hammond, Ananth Raman, publication date Aug 15, 06; “Wal-Mart Stores in 2003”, HBS case #9704430, Pankaj Ghemawat, Stephen P. Bradley, Ken Mark, publication date Jan 30, 04.
Cathay Pacific and Obermeyer case will be used as a class discussion tool and parts of it may be assigned as a homework. A case report will be written for the Wal-Mart case.
- Linear/Integer Programming Notes: Students are expected to know how to formulate a linear/integer program. This subject is discussed in OPRE 6302. To refresh that discussion and see more formulation examples, students are advised to study the “Formulation”, “Transportation” (pp. 1-4) and “Location” course notes under the “Supplements” section of the course web site.

Suggested Course Material

- Textbooks for other Supply Chain Management cores:
 - For some sections of the OPRE 6302 Operations Management: Matching supply with demand. By Gérard Cachon and Christian Terwiesch. 1. edition published by McGraw-Hill, 2006. ISBN 0-07-291899-3.
 - For OPRE 6370 Logistics and Distribution: Business Logistics Management. By Ronald H. Ballou. Published by Prentice-Hall, Inc., 1998. HD38.5.B45 at the Library.
 - For OPRE 6363 Inventory Management: Inventory Management and Production Planning and Scheduling. By Edward Silver, David Pyke & Rein Peterson. 3. edition published by John Wiley & Sons, 1998.
- Supplementary books:
 - Very similar to our textbook but more qualitative: Designing and managing the supply chain: concepts, strategies, and case studies. By David Simchi-Levi, Philip Kaminsky and Edith Simchi-Levi. 1. edition published by McGraw-Hill, 2000. HF5415.7.S425 at the Library.
 - For linear programming type modelling and finance focus: Modeling the supply chain. By Jeremy F. Shapiro. 1. edition published by Pacific Grove, 2001. TS161.S485 at the Library.
 - E-business focus: eDistribution. By Barry Lawrence, Daniel Jennings and Brian Reynolds. 1. edition published by Thomson, 2003. ISBN 0-324-12171-7.
 - Conceptual logistics focus: The Management of Business Logistics. By John Coyle, Edward Bardi and John Langley. 1. edition published by Thomson, 2003. ISBN 0-324-00751-5.
 - Service focus: Service Operations Management. By Richard Metters, Kathryn King-Metters and Madeline Pullman. 1. edition published by Thomson, 2003. ISBN 0-324-13556-4.
 - Supply chain design and management: Strategic and tactical perspectives. By Manish Govil and Jean-Marie Proth. 1. edition published by Academic Press, 2002. ISBN 0-12-294151-9. HD38.5.G68 at the library.
 - For purchasing and contracting focus: Purchasing and supply chain management. By Robert Monczka, Robert Trent and Robert Handfield. 2. edition published by South-Western, 2002. ISBN 0-324-02315-4. Also see Purchasing and Supply Management by Michiel Leenders, Fraser Johnson, Anna Flynn and Harold Fearon. 13. edition published by McGraw-Hill, 2006. ISBN 0-07-287379-5.
- See “SCM News and articles” under the “Supplements” section of the course web site.

Assignments & Grading Policy

- Classes start on Aug 25 and end on Dec 1. Students are advised to attend the classes.
- Grading
 - 5% for Class attendance and contribution to discussion.
 - 25% * Homeworks: There will be 5-6 homeworks. You may discuss homework problems with others, but you must write up by yourself with the full understanding of what you write. Students handing in identical assignments will be violating university regulations and will not receive credit! Late homeworks are not allowed unless you negotiate with the TA at least one day in advance. Your minimum homework grade will be dropped from consideration.
 - 25% * Quiz 1: October 13.
 - 20% * Case report: November 24.
 - 25% * Quiz 2: December 1.
- During the quizzes, any note/printed material can be used but not computers or communication devices.
- Overall grades will be curved by considering the current class average and previous class averages. Class averages over 2001-2005 are available on the course web page.
- Students who score less than 50% of the quiz grade must schedule an appointment with the instructor to discuss the possible ways to improve their performance.
- In this course, you will be given +/- minus grades. For example, you may get an A- or B+ grade. Students earn a grade in this course by mastering the course material. Students are not graded based on any type of need, amount of effort, family, personal circumstances, or their previous record in other courses.

UTD Resources

- Practice Lecture Series: We expect to host 1-2 lectures in class. They will be on Supply Chain Management Practice and be given by practitioners from Dallas area companies. The lectures are sponsored by C4ISN (Center for Intelligent Supply Networks) of SOM. For more info: <http://mgmt.utdallas.edu/c4isn>. Lecture dates will be announced later on the course web site.
- International Center for Decision and Risk Analysis (ICDRiA) performs interdisciplinary research and develops cooperation in risk management and decision-making by exchanging knowledge and experience among academia, industry, and public agencies. For more info: <http://som.utdallas.edu/icdria>.
- E-Access to Journals via UTD Library: Library electronically subscribes to many journals such as Harvard Business Review, Management Science, which are of interest. To access such a journal go to the UTD Library web page. Click on "E-Journals". You will see an alphabetical list of journals. Click on "H" for "H"arvard Business Review. You will see that HBR is listed 15-20 from the top among the journals starting with letter "H". Click on HBR link, you will be transferred to EBSCO web site which keeps the journal. To access from a non-UTD computer, you need UTD ID and password. Please respect the copyright laws.
- Career Center: The SOM Career Center (<http://som.utdallas.edu/somResources/somCareerCenter>) provides the following services: Career Counseling, Resume Assistance, Interview Assistance, Job Search Assistance, Career Resource Library, Web Resume Database, On Campus Recruiting, Active Internship Program.

Web Pages/Groups

SCM-MS degree unofficial web page is utdallas.edu/~metin/SCM/scm-ms.html. UTDSCM Google Group web page is <http://groups.google.com/group/utdscm>. UTD SCM community communicates via a facebook personality named Utd Scm – become its friend to join the community. The course web page can be reached via utdallas.edu/~metin/teaching.html with the password

TENTATIVE COURSE TIMELINE ¹

1. Week - Aug25.

INTRODUCTION

- (a) Ch1: Introduction.
- (b) Ch2: Achieving a Strategic Fit.

2. Week - Sep01.

- (a) Ch3: SCM Metrics/Drivers and Obstacles.
- (b) *Case study: 7-Eleven Japan*. Read pp. 66-72 of the textbook.

3. Week - Sep08.

SC NETWORKS

- (a) Ch4: Distribution network in a SC.
- (b) Ch5: Network design.

4. Week - Sep15.

- (a) Ch6: Network design in an uncertain environment.
- (b) Ch13: Briefly Transportation — for more take OPRE 6370.

5. Week - Sep22.

AGGREGATE PLANNING

- (a) Ch7: Briefly Forecasting — for more take OPRE 6363 or OPRE 6377.
- (b) Ch8: Aggregate planning.

6. Week - Sep29.

- (a) Ch9: Planning Supply and Demand.
- (b) *Case study: Consumer Electronics (CE) Supply Chain*. Read CE slides on the web page.

7. Week - Oct06.

SC INVENTORIES

- (a) Ch10: Inventory planning with known demand.

8. Week - Oct13.

Quiz 1.

9. Week - Oct20.

- (a) Ch11: Inventory planning with uncertain demand — for more take OPRE 6363.

10. Week - Oct27.

- (a) Ch12: Product availability with uncertain demand.
- (b) *Case study: Cathay Pacific Spare Parts*. Prepare the case.

11. Week - Nov03.

- (a) Ch14: Sourcing and contracts in SC — for more take OPRE 6371.

12. Week - Nov10.

OTHER ISSUES

- (a) New product/model introduction.
- (b) *Case study: Sport Obermeyer Ltd*. Prepare the case.

13. Week - Nov17.

- (a) Ch17: Coordination in a SC. Value of and distortion of information: Bullwhip effect.

14. Week - Nov24.

- (a) Green Supply Chains.
- (b) Global Supply Chains.

15. Week - Dec01:

Quiz 2.

¹Lecture Notes on Introduction, Networks, Aggregate Planning, Inventory and Contracts are on the course web site.