OPRE 6366 Supply Chain Management - Syllabus

Course Information

- Course number - section: OPRE 6366 - 501
- Course title - term: Supply Chain Management - Fall 2006

Professor and Teaching Assistant Contact Information

- Professor: Metin Çakanyıldırım , metin@utdallas.edu , SM3.408.
  Lecture hours: 7-9:45 pm on Tu at SM2.901.
  Office hours: 4-6 pm on M and W at SM3.408.
- Teaching Assistant: Manoj U. Vanajakumari , muv031000@utdallas.edu , SM3.224.
  Office hours: 5-7 pm on Tu or by appointment.

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. Familarity with linear and integer programming formulations. Read MBA math review 1-2 under the "Supplements" section of the course web site.
- Related courses:
  - Fall: OPRE 6370 Logistics and Distribution by Prof. Ehap Sabri.
  - Spring: OPRE 6363 Inventory Control by Prof. Holly Lutze.
  - Summer: OPRE 6368 Industrial Applications in Supply Chains.
  - Summer: Supply Chain Software, under development.

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. Third edition published by Prentice-Hall, Inc., 2007. The 1. edition is HF 5415.13.C533 at the library.
- Cases: "Sport Obermeyer Ltd." (HBS case #695022) and "Wal-Mart Stores in 2003" (HBS case #9704430). 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: Inventory Management and Production Planning and Scheduling. By Edward Silver, David Pyke & Rein Peterson. 3. edition published by John Wiley & Sons, 1998.
  - For OPRE 6363 Inventory Management: Business Logistics Management. By Ronald H. Ballou. Published by Prentice-Hall, Inc., 1998. HD38.5.B45 at the Library.
- 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 22 and end on Nov 28. Students are advised to make every effort to attend the classes.
- Grading
  - 5% for Class attendance and contribution to discussion.
  - 30% * 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: October 17. communication devices.
  - 10% * Case report: November 15.
  - 30% * Final: November 28. Open books and notes.
- In the quiz and final, any book/note/printed material can be used but not computers or cellular 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.

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: UTD Library electronically subscribes to many journals such as Harvard Business Review, Management Science, which are of interest to SCM students/professionals. To access such a journal go to the UTD Library web page. Click on "E-Journals". You will see an alphabetical list of journals the library maintains electronically. 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 transfered to EBSCO web site which keeps the journal. Only accesses from computers on the UTD domain are allowed. Thus, you may need to download articles at UTD labs. But once you have the electronic version you can read / print it. Please respect the copyright laws.
- Career Center: The SOM Career Center 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. The SOM center is located on the second floor of SOM. The UTD career center is at utdallas.edu/student/career.

Course Web Page

Web page can be reached via utdallas.edu/∼metin/teaching.html with the password ..... .

TENTATIVE COURSE TIMELINE [1]

1. Week - Aug22. INTRODUCTION
   (a) Ch1: Introduction.
   (b) Ch2: Achieving a Strategic Fit.
2. Week - Aug29.
   (a) Ch3: SCM Metrics/Drivers and Obstacles.
   (b) Case study: 7-Eleven Japan: Read pp. 66-72 of the textbook.
3. Week - Sep5. SC NETWORKS
   (a) Ch4: Distribution network in a SC.
4. Week - Sep12.
   (a) Ch5 and Ch6: Network design in certain and uncertain environments.
5. Week - Sep19.
   (a) Ch13: Briefly Transportation — for more take OPRE 6370.
   (b) Case study: Consumer Electronics (CE) Supply Chain: Read CE slides on the web page.
6. Week - Sep26. AGGREGATE PLANNING
   (a) Ch7: Briefly Forecasting — for more take OPRE 6363.
   (b) Ch8: Aggregate planning.
7. Week - Oct03.
   (a) Ch9: Planning Supply and Demand.
8. Week - Oct10. SC INVENTORIES
   (a) Ch10: Inventory planning with known demand.
9. Week - Oct17. Quiz.
10. Week - Oct24.
    (a) Ch11: Inventory planning with uncertain demand.
11. Week - Oct31.
    (a) Ch12: Product availability with uncertain demand.
    (b) Ch14: Sourcing and contracts in SC.
12. Week - Nov07.
    (a) Ch17: Coordination in a SC.
    (b) Value of and distortion of information: Bullwhip effect
13. Week - Nov14. OTHER ISSUES
    (a) New product/model introduction: Sport Obermeyer Ltd. Prepare the case.
    (b) Ch17-18: Information Technology in a SC
14. Week - Nov21.
    (a) Green and Global Supply Chains.
15. Week - Nov28: Comprehensive Final.

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