

# FINOPMGT 497S Supply Chain Management

*Department of Finance and Operations Management*

*Isenberg School of Management, UMass, Amherst*

Spring 2010

**INSTRUCTOR:** Ahmed Ghoniem (SOM 317, e-mail: aghoniem@som.umass.edu, Phone: 5-3927)

**Office Hours:** Tuesdays and Thursdays 11:00am-12:30pm.

**COURSE DESCRIPTION:** Integrated supply chain constitutes a core firm competency, spanning most business functions required to deliver products and services to consumers at the right time, in the right amounts, at attractive prices, and with satisfactory quality characteristics. Advances in information technology facilitate continued improvement in supply chain infrastructure and operations efficiency. This course will introduce fundamental concepts in supply chain management along with basic quantitative tools to model, optimize, and analyze strategic, tactical, and operational decisions that arise in supply chains.

**PREREQUISITES:** 347 and 353.

**TEXT:** Shapiro, J. F. *Modeling the Supply Chain* Duxbury, Thomson Brooks/Cole, 2007.

**PREREQUISITE:** The course draws upon fundamentals that are covered in core courses in operations management and management science such as inventory planning, aggregate planning, capacity management, and linear programming.

**NOTES:**

- We will use AMPL/CPLEX to implement mathematical programs. The (restricted) student version is available at <http://ampl.com/>. Make sure you download it during the first week of class.
- You are expected to adhere to the University policy on academic honesty. You must complete all assignments and exams independently.
- Special testing needs should be requested two weeks prior to an exam.

**SPARK ONLINE COURSE TOOL:** This course will make use of SPARK as an online course tool. Course materials, such as solutions to homework problems, lecture handouts, and other course-related materials will be available on the course site. You will need your NetID (OIT Account user name) and password to access SPARK courses.

<https://spark.oit.umass.edu>

GRADE: Midterm Exam 20%; Final Exam 20%; Homework 40%; Term Paper and Presentation 20%.

EXAMS (40% of grade): There will be two exams, each of which will be closed book, closed notes, in-class exams. You will be given advance notice of when each exam will be held. You may bring to the exam one  $8.5 \times 11$  sheet with formulas and notes written on it.

HOMEWORK (40% of grade): Homework will consist of questions from the text and supplementary assignments. Each homework assignment is due, in class, on the assigned due date. Please complete all homework on  $8.5 \times 11$  sheets of paper that are stapled together. Use only single sides. Each question/problem should begin on a new page. The work should be neat and clear.

TERM PAPER (20% of grade): The term paper and presentation will be done in teams. We will discuss in class the process by which teams will be composed and topics will be assigned. Each team will survey a topic in supply chain management such as:

1. Green logistics;
2. Energy SCM;
3. Humanitarian SCM;
4. Blood SCM;
5. Food SCM;
6. Automotive SCM;
7. Military SCM;
8. Lean supply chains;
9. E-commerce and supply chain management.

As a team, you are required to jointly write a survey on the topic you are assigned (no more than 8 pages). Your report should discuss the scope of the topic, its significance, special features that characterize it, challenges it poses, modeling frameworks that have been developed to analyze it, and prominent cases and studies that are relevant to the subject matter. **All references should be properly cited.** Reports are due **May 4, 2010**. Team presentations will take place at the end of April following a schedule that will be announced during the semester.

## TENTATIVE SCHEDULE

Readings and assignments will be specified in class. The schedule for the class is summarized in the table on the next page.

<b>Dates</b>	<b>Topic</b>	<b>Chapters</b>
01/19-01/21	Introduction to SCM	Chapter 1
01/26	IT in SCM	Chapter 2
01/28-02/9	Linear Programming and AMPL for SCM	Chapter 3
02/11-02/18	Mixed-Integer Programming for SCM	Chapter 4
02/23-02/25	Case Studies and Revision	
3/2	MIDTERM EXAM	
3/4-3/11	Strategic and Tactical SCM (BMW Case)	Chapter 8
3/23-4/1	Operational SCM (Kellogg Case)	Chapter 9
4/5-4/20	Inventory Planning	Chapter 10
4/22-4/29	Class Presentations	
5/4	Revision/Preparation of Final Exam	
	FINAL EXAM	

Table 1: Tentative course outline