# BA 544 – Winter 2008

# ERP - SUPPLY CHAIN AND LOGISTIC MANAGEMENT

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Leave messages on phone.
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**ASSIGNMENT SCHEDULE - CLICK HERE**

Homework submitted via email must have the subject of HOMEWORK.

## Course Description

A study of integrated enterprise-wide supply chain management and logistics. Topics include integrating forecasting system design, inventory management, distribution requirements planning, supply chain management, purchasing and supplier/vendor networks, logistics, transportation networks, and E-operations. Integrated enterprise-wide computer-based systems and network optimization are studied relative to both production and service operations. Prerequisite: BA 519 or consent of instructor.

**Textbook:** Sunil Chopra, Northwestern University, Peter Meindl, I2Technologies, Supply Chain Management: Strategy, Planning and Operations, 3rd/e, Prentice Hall Publishing, 2007.

Textbook website: http://vig.prenhall.com/catalog/academic/product/0,1144,0131730428,00.html

Course Website: http://forecast.umkc.edu/
follow the links to BA544 after clicking on Prof. DeLurgio's Courses and Resources.

Link to EXCEL programs from the Authors either at the author's site or at
http://forecast.umkc.edu/ftppub/ba544/xls/

I2 Technologies Website: http://www.i2.com

## Summary

This course studies supply chain design, planning, and operation. It develops the strategic role of the supply chain, key managerial concepts in supply chain management, and the tools and techniques for supply chain design and planning. The strategic importance of good supply chain management in all types of organizations is studied in this class. That is, there are commonalties in the design and operation of supply chains that are applicable to nearly all types of organizations. In addition, this course helps students visualize how good supply chain design and management can be a competitive advantage for an organization, also developed is an understanding of how weaknesses in supply chain design and management can be detrimental to an organization.

The course stresses the managerial context in which SCM tools are used and the methods for improving firm performance. The course uses MS Excel to implement many Supply Chain methodologies. Also, it discusses the use of e-commerce and information technology in achieving state of the art supply chain management and e-operations. Several cases are integrated throughout the semester as applications and experiential skill building exercises.

# Course Outline

**I. BUILDING A STRATEGIC FRAMEWORK TO ANALYZE SUPPLY CHAINS.**

1. Understanding the Supply Chain.
2. Supply Chain Performance: Achieving Strategic Fit & Scope.
3. Supply Chain Drivers and Obstacles.

**II. DESIGNING THE SUPPLY CHAIN NETWORK**

4. Designing the Distribution Network in a Supply Chain.
5. Network Design in a Supply Chain.
6. Network Design in an Uncertain Environment.

**III. PLANNING DEMAND AND SUPPLY IN A SUPPLY CHAIN.**

7. Demand Forecasting in a Supply Chain.
8. Aggregate Planning in the Supply Chain.
9. Planning Supply and Demand in the Supply Chain: Managing Predictable Variability.

**IV. PLANNING AND MANAGING INVENTORIES IN A SUPPLY CHAIN.**

10. Managing Economies of Scale in the Supply Chain: Cycle Inventory.
11. Managing Uncertainty in a Supply Chain: Safety Inventory.
12. Determining Optimal Level of Product Availability.

**V. DESIGNING AND PLANNING TRANSPORTATION NETWORKS**

13. Transportation in the Supply Chain.

**VI. MANAGING CROSS-FUNCTIONAL DRIVERS IN A SUPPLY CHAIN**

14. Sourcing Decisions in a Supply Chain.
15. Pricing and Revenue Management in the Supply Chain.
16. Information Technology and the Supply Chain.
17. Coordination in the Supply Chain..

## Course Requirements:

Your course grade will be determined from a midterm, written and oral research project of your choosing, and daily homework. The following formula will be used in determining a student's course grade:

| | | |
|---|---|---|
| **I** | **MIDTERM TEST** | **30%** |
| **II** | **HOMEWORK** | **30%** |
| **III** | **RESEARCH PROJECT** | **30%** |
| | **ORAL PRESENTATION** | **10%** |

## Homework Assignments

Homework will be collected regularly during the semester. Past experiences have shown this to be very necessary. Most assignments will be graded on a scale of A to F. Your final percentage will be your total number of points received divided by the total possible. **Computational homework assignments are expected to be done in MS-EXCEL.** Homework should be completed in a professional manner, for example, suitable for presentation to your employer. The substance and form of your homework will be graded.

Homework is due at the beginning of the class period. It should be typed. **In addition, your name, date, assignment number, and chapter number are to appear in the upper right hand corner of the first page of the homework assignment.** Finally, homework pages should be secured properly with either a staple or paper clip. Your homework should not be simply answers, but should include the original question preceding the answer - in this way you will be better able to study from and understand your homework assignment.

When homework is collected and you want to submit it via email, assure that the subject of the email is HOMEWORK. IT MUST SAY HOMEWORK or it may get lost. SUBJECT: HOMEWORK. Also, be sure to include your name in the email and any attachments. Homework and all email with attachments should be sent to delurgios@gmail.com

This document will be modified slightly as the semester progresses. However, the main source of homework assignments and requirements will be updated regularly and can be found at: http://forecast.umkc.edu/ftppub/ba544/assignmentsscm.htm

## Attendance

Class attendance will be taken regularly. It may be used directly in the computation of your grade. Students who did not regularly attend in the past, have done very poorly in the class. You may miss 6 classes without great concern on my part. More than 6 absences may result in a one-letter grade reduction in your course grade unless you contact me first and we work out a resolution of the attendance problem.

## Research Projects

You are to undertake a research project of importance to you and your career. An acceptable research project should include a good bibliography and 25 typewritten pages of discussion. You are encouraged to submit your paper for regional and national competition in the American Production and Inventory Control Society (APICS) student awards program. This program provides cash awards and national exposure. Participation by graduate students is greatly encouraged. In the last 14 years, 12 students from this class have won local, regional, and national APICS awards.

http://www.apics.org/Education/ERFoundation/Competitions/

For a copy of the paper requirements of the Donald W. Fogarty Paper awards program go to the following url (this assumes that you have Adobe capabilities to view pdf files):

http://www.apics.org/NR/rdonlyres/199CA989-D834-4C8E-AD16-E842A8005806/0/DWFcompetitionmanual.pdf

**The deadline for student submissions to local APICS chapters is May 15 of each year. (Competition cycle runs May 15 through October 31.)**

| | Regional Level | Society Level |
|---|---|---|
| 1st Place | $250 | $1500 |
| 2nd Place | $200 | $1000 |
| 3rd Place | $100 | $ 750 |

## Tests

Obviously, those who have kept up with the homework assignments should find the test relatively easier than those who have not. Test questions will be based on homework assignments and readings as highlighted in lectures.

## Grade Calculation

The following percentage breakpoints will be used to determine your course letter grade as well as a letter grade on each test.

```
Grade on Test / Letter Grade
95 - 100 A
90 - 94 A-
88 - 89 B+
84 - 87 B
80 - 83 B-
75 - 79 C+
69 - 74 C
65 - 68 C-
55 - 65 D
< 55 F

FOUR POINT GRADING SYSTEM FOR HOMEWORK AND RESEARCH PROJECTS

LETTER GRADE / PERCENTAGE GRADE

     A+ 100
     A   96
     A-  90
     B+  89
     B   86
     B-  82
     C+  77
     C   72
     C-  67
     D   59
     F   40
```

| PERIOD | DATE | TENTATIVE TOPICS AND READINGS | ASSIGNMENTS |
|---|---|---|---|
| 1 | JAN 14 | Introduction To Course | |
| 2 | JAN 16 | Understanding the Supply Chain. | **CHAP 1** |
| 3 | JAN 23 | Supply Chain Performance: Achieving Strategic Fit & Scope. | **CHAP 2** |
| 4 | JAN 28 | Supply Chain Drivers and Obstacles. | **CHAP 3** |
| 5 | JAN 30 | Designing the Distribution Network in a Supply Chain<br>**One to two page proposal of Research Project Due** | **CHAP 4** |
| 6 | FEB 4 | Network Design in a Supply Chain | **CHAP 5** |
| 7 | FEB 6 | Network Design in a Supply Chain | **CHAP 5** |
| 8 | FEB 11 | Network Design in an Uncertain Environment | **CHAP 6** |
| 9 | FEB 13 | Demand Forecasting in a Supply Chain.<br>**Abstract and Progress Report on Research Project Due** | **CHAP 7** |
| 10 | FEB 18 | Demand Forecasting in a Supply Chain. | **CHAP 7** |
| 11 | FEB 20 | Aggregate Planning in the Supply Chain. | **CHAP 8** |
| 12 | FEB 25 | Aggregate Planning in the Supply Chain. | **CHAP 8** |
| 13 | FEB 27 | Planning Supply and Demand in the Supply Chain: Managing Predictable Variability<br>**Detailed Outline of Research Project Due**. | **CHAP 9** |
| 14 | MAR 3 | Managing Economies of Scale in the Supply Chain: Cycle Inventory. | **CHAP 10** |
| 15 | MAR 5 | Managing Economies of Scale in the Supply Chain: Cycle Inventory. | **CHAP 10** |
| 16 | MAR 10 | Managing Uncertainty in a Supply Chain: Safety Inventory. | **CHAP 11** |
| 17 | MAR 12 | Managing Uncertainty in a Supply Chain: Safety Inventory.<br>**Progress Report on Research Project Due** | **CHAP 11** |
| 18 | MAR 17 | Determining Optimal Level of Product Availability. | **CHAP 12** |
| 19 | MAR 19 | Determining Optimal Level of Product Availability. | **CHAP 12** |

| | | | |
|---|---|---|---|
| 20 | MAR 31 | MIDTERM EXAM | |
| 21 | APR 2 | Transportation in the Supply Chain.<br>**Progress Report on Research Project Due** | **CHAP 13** |
| 22 | APR 7 | Transportation in the Supply Chain. | **CHAP 13** |
| 23 | APR 9 | Sourcing Decisions in a Supply Chain | **CHAP 14** |
| 24 | APR 14 | Pricing and Revenue Management in the Supply. | **CHAP 15** |
| 25 | APR 16 | Information Technology and the Supply Chain.0such an | **CHAP 16** |
| 26 | APR 21 | Coordination in a Supply Chain. | **CHAP 17** |
| 27 | APR 23 | PRESENTATIONS | |
| 28 | APR 28 | PRESENTATIONS | |
| 29 | APR 30 | PRESENTATIONS | |
| 30 | MAY 5 | PRESENTATIONS AS FINAL EXAM<br>**Research Report Due** | **Monday, May 5th, 5:30 -7:45 p.m.** |
| | | | |

**Academic Calendar for UMKC: http://www.umkc.edu/registrar/acal.asp#ws2008**
**Final Exam Schedule:**
**http://www.umkc.edu/registrar/exam.asp#Spring_Semester_2008**

## POWERPOINT LECTURE NOTES

When assigned, you can find powerpoint lectures at http://forecast.umkc.edu/ftppub/ba544/

## WWW SITES OF IMPORTANCE TO SCM AND LOGISTICS

**UMKC Libraries Learn how to use this very early in the semester.**

The Council of Supply Chain Management Professionals, formerly the Council of Logistics Management.
The American Production and Inventory Control Society APICS
The National Association of Purchasing Management has become the Institute for Supply Management.

A Site about SCM Sites http://www.supplychainsites.com/
Supply Chain Management Review http://www.manufacturing.net/
Stanford Univ. Supply Chain Forum http://www.stanford.edu/group/scforum/
Forecasting and Supply Chain Management Site http://www.ibf.org/index.cfm
The Supply-Chain Council was formed in 1996-1997 as a grass roots initiative by forward thinking individuals representing companies including AMR Research , Bayer, Compaq Computer, Pittiglio Rabin Todd & McGrath (PRTM), Procter & Gamble, Lockheed Martin, Nortel, Rockwell Semiconductor, and Texas Instruments. http://www.supply-chain.org/cs/root/home
MY SAP SCM Site http://www.sap.com/solutions/scm/
PeopleSoft SCM Page http://www.peoplesoft.com/corp/en/ent_strat/articles/scm84.asp
KPMG now known as Bearingpoint
http://www.bearingpoint.com/solutions/supply_chain_management/supply_chain_strategy.html
Supply Chain Management Resource Web-page http://www.createcom.8m.com/
Logistics Systems International http://www.lsi.net.au/
**IBM Sites on SCM http://domino.research.ibm.com/odis/odis.nsf/pages/case.html**
Canadian Association of SCM http://www.sclcanada.org/
A Website Promoting the Organization, Achieving Supply Chain Excellence Through Technology - Appears to be a very good site.http://www.ascet.com/
Univ of Arkansas Site at Sam Walton School of Business http://scmr.uark.edu/
Commercial Supply Chain Software House http://www.logility.com/
Supply Chain Discussion Forum http://www.supplychaintoday.com/Discussion%20Forums.htm

**MISC. SUPPLY CHAIN MANAGEMENT SITES**

http://www.emeraldinsight.com/scm.htm
http://logistics.about.com/
http://supplychain.ittoolbox.com/
http://www.cio.com/
http://www.supplychaintoday.com/

## USING the OM WEBSITE

First note that this website is: http://forecast.umkc.edu there is no www in the address

To get access to the files at http://forecast.umkc.edu/ consider the following typical scenario. I assume you have IE or some other Internet GUI available to you. The following steps or screens will get you access to files:

**First Screen appears as http://forecast.umkc.edu/**

click on either Link to Prof. Steve DeLurgio's Courses and Resources - this is the preferred way to access assignments etc.

or if you want to surf this site you can click on View or Retrieve Files.

If you click on Link to Prof. Steve DeLurgio's Courses and Resources, simply scroll down the page until you find either the syllabus or assignment page of this class.

If you click on View or Retrieve Files, then click on appropriate course. Feel free to view the other courses also.

Once in the appropriate course directory then using whatever method that you usually use, you can download or view any file. To get a file in my web browser, I just right click on a file and its extension is recognized.

I hope that this system is easy for you to use, it should be.

Good Luck.

## GENERAL CLASS POLICIES

The following guidelines are provided to make your learning experience at UMKC and in this course as enjoyable and enriching as possible. Significant time and effort have been expended on my part to make your time and effort in this class as productive, purposeful, and, I hope, enjoyable as possible. If you have sufficient time to devote to this class, then I believe you will feel, after completion of the course, that we have both been successful in this endeavor.

ATTENDANCE --Students are responsible for class attendance.

--Excessive absences adversely affect grades, 7 excused or unexcused absences results in loss of one letter grade in the course grade.--All students are responsible for class assignments and class lecture materials regardless of attendance. Call a classmate. Your work schedule may require you to travel, in such cases you are responsible for getting assignments from classmates. Class sizes and the many absences of those who work preclude me from routinely giving out individual assignments. Please help and be helped by a fellow classmate in collecting handouts, taking notes, and recording homework assignments.

EXAMS--All exams will be taken on the scheduled date unless a prior arrangement is made with the instructor.

--Exams will cover the assigned materials and class lecturers.

--DO NOT MISS SCHEDULED EXAMS!!

--IF A STUDENT MISSES A SCHEDULED EXAM, HE OR SHE MAY HAVE TO TAKE THE EXAM NEXT SEMESTER AND RECEIVE AN INCOMPLETE GRADE OR MAY HAVE A LARGER PERCENTAGE OF HIS OR HER COURSE GRADE DETERMINED FROM THE FINAL. IN NO CASES WILL MAKE-UP FINALS BE GIVEN. A STUDENT MISSING THE FINAL WILL RECEIVE AN INCOMPLETE AND WILL BE REQUIRED TO TAKE THE FINAL NEXT SEMESTER.

WRITTEN ASSIGNMENTS, PROBLEMS, PROJECTS, REPORTS, ETC.

--As in "real life", written assignments are expected when due. -- Late assignments will be penalized two (2) points per calendar day --Assignments submitted by mail are received when postmarked and received by Professor Stephen A. DeLurgio

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--All pages of assignments must be secured together (stapled or clipped), and the earned grade will be penalized for the failure of the pages to be secured.

--All written assignments must be done in good English style and grammar, and must be LEGIBLE!!

> --Papers that already have been used in other classes can not be used in this class without prior knowledge of both teachers of said classes. Dual submittals of identical papers or papers which have contents which are significantly related must be approved prior to submittal. To submit the same or similar papers for different classes is a form of academic dishonesty and will be penalized as discussed below.
>
> --All quoted material in any paper must be shown in full quotation marks and fully cited with appropriate footnotes or references.
>
> --Under no circumstances can one "borrow" or use the works of others without full and open disclosures and credit for the sources of the information. To use others written or creative works with out giving full credit to the author is academic dishonesty. See the note below for the possible consequences of Academic Dishonesty.

--Students completing major or minor papers for courses should use a consistent and acceptable style sheet for all papers submitted. In almost all cases I will provide you with a handout of the acceptable style sheet of the class. When none is provided, you can assume that the style sheets used in other courses will be acceptable. In all cases, your papers should be well structured, coherent, cohesive, without significant misspellings, well documented with footnotes or references, inclusive of a cover page (with name, address, and phone number), introduction, problem statement, in depth discussion, results (where appropriate), summary and conclusion, and bibliography.

DROPPING THIS CLASS--Any student may drop this course at any time with a passing grade (WP) if three conditions are met: 1) the drop occurs before final exam week (or before the day of final exams in the summer term); 2) the student can still theoretically pass the course at that point in time; and 3) the student receives my permission to "drop".

A REMINDER ABOUT UNIVERSITY POLICY ON SCHOLASTIC HONESTY - UMKC assumes that all students are enrolled to learn; therefore, any cheating is basically at variance with the purposes of both the student and this institution. Any dishonesty detected in a course (including during examinations or in submitting plagiarized material) may result in an "F" grade in the course and may be cause for dismissal or suspension.

MAKE UP WORK--At times some students mistakenly believe that additional work can be given in order for that student to increase his or her grade. In no circumstances can individual make-up assignments be given in order to increase ones grade. My syllabus clearly defines the criteria used to assess a student's grade in this course. This criteria is used for all students except those with prior approval who must miss a scheduled examination.

FINAL NOTE--All major papers, projects and final exams will be retained by the instructor; physical possession of papers and projects by the instructor in no way affect legal rights and future use by the student authors in any subsequent application; however, any student who wants a personal copy of a project or paper should make a copy prior to submittal.

**--These papers and materials will be retained up to and including the end of the eighth (8) week of the next academic term. Therefore, all questions about final grades or papers, etc., must be settled by that time.**

## Suggested Projects from the Authors of Our Book

This is a project that can be done individually or in groups (It would be best to use the same groups that you are using for class assignments. However this is not a requirement). There are three possible outcomes from a project report as follows:

- to analyze an existing logistics process and suggest any improvements that need to be made Examples include a study of the distribution system and store deliveries at McDonalds, design of a logistics system for a manufacturer of refrigeration equipment, and an analysis of intermodal movement for a railroad.
- to study logistics practices in industry from the point of describing risks, benefits, best practices along with industry examples of each.
- To identify a business opportunity (for example selling furniture on line) involving a product and build a business plan with a focus on supply chain issues. The goal is to identify the business opportunity and design the ideal supply chain for it. The project should include implementation details.

My expected outline for the three types of projects are discussed below:

### *Analyze an existing logistics process and suggest improvement*

The project report should not be a detailed description of everything you have done but a specific set of observations and recommendations. It should begin with an

executive summary no longer that 250 words. All details are to be put in an appendix in the form of exhibits, tables etc. The general guidelines for the project are as follows:

Abstract/Executive summary

1. Define the process and the context (business unit) in which it operates.
2. What is the strategy / market of the business unit?
3. What does this imply in terms of the logistics process you are studying? What must this process be able to do particularly well in terms of cost, time, quality, and flexibility? The headings mentioned here are broad. You are expected to identify specific dimensions along which the process is expected to do particularly well.
4. Describe the current process structure in terms of information, inventory, transportation, and location.
5. Discuss the process capabilities, given the current structure, in terms of the specific dimensions identified by you in 4.
6. Discuss existing problems and weaknesses in the current process. What additional capabilities does the process need to develop.
7. How should the process be restructured to develop these capabilities? Discuss why the changes suggested by you will have the desired effect along the key dimensions identified by you.
8. Discuss how the suggested changes should be implemented with a time line. Explain any resistance you may face in implementing the changes.

Please note that these are general guidelines. I am not looking for a project report with nine points in the sequence listed above. I have listed the points that I feel are important in most reports. Please feel free to add to or alter the above list as best fits your project.

***Study logistics practices in industry***

The objective here is to study logistics practices in industry such as

- E-commerce and it's impact on logistics and supply chain in an industry or company
- EDI Systems including other supporting systems that it makes possible, e.g. CAO (computer assisted ordering systems) etc.
- Coding and Scanning Technologies (Bar coding, SCM, etc.), RF
- Third party logistics
- Warehouse management systems
- Warehouse design and management

Please do not restrict yourself to the above list. It is meant simply as a starting point. In each report I expect the following:

1. A description of the logistical practice including its key elements and its role in the overall supply chain
2. Major benefits of the practice.
3. Major risks/cost of the practice
4. Key issues in designing and implementing the practice
5. Which companies is this practice ideally suited for? Which companies may it not be suitable for?
6. Examples of companies that are successfully using the practice including best practices.
7. Examples of companies that have been unsuccessful in their implementation of the practice and possible reasons.

Once again, please do not feel bound by the above structure. It is simply meant to help you get started.

***Build a business plan with a product focus***

The objective of this report is to identify a business opportunity (preferably on the web) involving products where supply chain issues are significant. This could be done for a particular company or an industry in general. The business plan should detail the supply chain opportunity and how it will help the business position itself strategically. The report should also detail implementation issues.