

OM 368: LOGISTICS AND INVENTORY MANAGEMENT
Spring 2014
SYLLABUS

Unique No. 04415: MW 3:30 – 5:00 PM in UTC 4.104

Professor: Douglas Morrice

Office: CBA 3.242

Phone: 512-471-7857

e-mail: Douglas.Morrice@mcombs.utexas.edu

Office Hours: Please see Blackboard

Mail Box: IROM Dept., CBA 5.202

Web: All web material is on Blackboard

TA: Ester Wang

e-mail: Dongyang.Wang@phd.mcombs.utexas.edu

COURSE DESCRIPTION

Supply Chain Management is the management of all activities governing the flow and transformation of resources from initial suppliers to ultimate consumers to make products and services available to customers at the right time, place, price, and condition in the most profitable and cost effective manner. Logistics and inventory management activities enable supply chain management; they are the “backbone” of the supply chain. This course covers the main concepts in logistics and inventory management, specifically, forecasting, transportation, facility location, inventory management, storage, and material handling. Methodologically, the course emphasizes cost modeling, logistics network optimization, and risk management. Using case studies, skill building exercises, and industry guest speakers, students will learn to apply these concepts to solve real-life problems.

COURSE OBJECTIVES

The main objectives of this course are:

- To provide students with an understanding of the role and importance of logistics and inventory management in today’s successful product and service companies.
- To familiarize students with the basic logistics and inventory management concepts, techniques, and methods to solve strategic, tactical, and operational problems in the supply chain.
- To enhance analytical skills of students by using economic and optimization models to solve real-life logistics and inventory management problems.

Prerequisites: OM335 or OM335H.

COURSE MATERIALS

This course is a mixture of lectures and case-discussions. The readings for the class come from the following sources:

1. Chopra, Sunil and Peter Meindl. 2013. *Supply Chain Management: Strategy, Planning, and Management*, 5th Edition. Boston, MA: Peason/Prentice Hall. (This is the required course textbook and will be referred to as the “Textbook” throughout the rest of this document.)
2. Handouts from the Professor.

The following is an **optional** reference:

1. Ballou, Ronald H. 2004. *Business Logistics/Supply Chain Management*, 5th Edition. Upper Saddle River, New Jersey: Peason/Prentice Hall.

The course schedule at the end of this document lists, for every class session, the topic, readings, cases, assignments, and anything else of importance. Please read this schedule carefully before every session. If the schedule changes, I will provide updates. Because class time is our most precious and inelastic resource, **please come to every class prepared. Essential preparation includes reading the assigned readings and cases, doing the assignments, and bringing these resources and materials to each class.**

I will provide electronic copies of the PowerPoint slides (and other materials available in electronic format) at Blackboard before each class session.

PERFORMANCE EVALUATION

The performance criteria are weighted as follows:

Test 1 (see course schedule for the date)	15%
Test 2 (see course schedule for the date)	15%
Final Exam (Registrar Schedule: Friday, May 9, 7:00–10:00 pm)	30%
Individual Homework Assignments (see course schedule for due dates)	20%
Group Homework Assignments (see course schedule for due dates)	12%
Essay	3%
Class Participation	5%

Homework assignment, tests, and exam grades will be posted at Blackboard shortly after they are graded. Please check your grades repeatedly throughout the semester and report any discrepancies to me immediately.

Final letter grades in this course will be assigned according to the following final numeric grades:

A	A-	B+	B	B-	C+	C	C-	D+	D	D-	F
≥93.3	≥90.0	≥86.6	≥83.3	≥80.0	≥76.6	≥73.3	≥70.0	≥66.6	≥63.3	≥60.0	<60.0

Tests and Final Exams: The exams will require both quantitative and qualitative responses. The split will, however, be weighed more to the quantitative due to the emphasis in this class and on the homework assignments. For the tests, you will be allowed to bring in *one* (1) sheet of 8 ½”x11” paper (double sided) with your formulas and notes and your calculator. For the final exam, you will be allowed to bring in *three* (3) sheets of 8 ½”x11” paper (double sided) with your formulas and notes and your calculator. Any probability distribution or other tables will be provided with the exam, so you needn’t waste your sheets on these details.

The final exam will be a comprehensive exam covering materials from the class notes, readings, and assignments although more emphasis will be given to material not covered on previous tests. I will make a statement about this in advance of the final exam.

Homework Assignments: Homework assignments will be downloadable off Blackboard. Each homework assignment will be posted on the web about one to two weeks in advance of the due date (see the course schedule at the end of this document for assignment due dates). Each question on an homework assignment will be graded as a 10 (perfect), 9 (minor errors), 8 (good attempt), 6.5 (attempt) and 0

(otherwise). All assignments are due at the *beginning* of class on the date listed in the course schedule at the end of this syllabus. No late assignments will be accepted.

Homeworks are designed to promote class preparedness, provide learning reinforcement, and extend the knowledge you have gained in class and from your readings. You will find that the homeworks provide excellent learning feedback and are a confidence-building tool. The assignments will also help with your preparation for the tests and exams.

There are two types of homework assignments: individual and group. **Individual homework assignments** are skill building exercises. As the name suggests, you will turn in your homework as individuals. For these assignments, you are permitted to work with other students in the course because an important element of this course is teamwork. However, the solution that you turn in must be your own. At the end of the semester, your lowest individual homework assignment grade will be dropped. Each individual homework will weigh equally into your final individual homework grade.

Group homework assignments are more substantial case exercises completed in self-selected groups of four or five people. Teamwork on these assignments is not only beneficial but essential. Each group will work as a team to answer the assignment questions and submit a single group solution set. The group homework needs to be typed doubled-spaced in 12pt font. Please form your groups and email this information to the TA, Ester Wang (Dongyang.Wang@phd.mcombs.utexas.edu). Since the first group homework report is due on 2/12/14, your groups should be formed as soon as possible. Each group homework will weigh equally into your final group homework grade.

Note, I will not add an assignment beyond what is already listed in the course schedule but I may choose to shift an assignment later in the schedule or eliminate it altogether, if necessary.

Essay: This is an individual exercise in which you are to identify and research a current business problem that is related to this course. In the essay, you must describe a problem, discuss its importance, justify that it is a significant logistics and/or inventory management issue, and discuss how it might be addressed. Please limit yourself to three typed pages with 1.5 line spacing and 12pt font. The essay will be graded on content, persuasiveness, and style. I would encourage you to discuss your proposed topic with me.

Class Participation: Sixty percent of your class participation grade will be based on attendance at certain critical class sessions during the semester (case discussions and industry guest lectures – see course schedule for class sessions with an “*”). The remaining 40 percent will be used to encourage a productive learning environment. It is important that everyone come to class prepared and willing to contribute to discussion. Ideally, you will make concise, insightful, and eloquent comments in every class. However, I also recognize the importance of making smaller contributions, including asking good questions. I believe that the learning environment is best when the discussion is not dominated by a few, but moved along incrementally by all of us. Do not be afraid to make points that you may regard as minor, ask clarifying questions, or otherwise contribute in small ways. Lastly, at the beginning of most classes, we will start with a discussion of what is going on in the news related to supply chain and logistics. *This a great way to contribute to class discussions and earn your participation grade.*

Regrade Requests: If you would like a regrade of any homework assignment, test, or exam, please appeal it within SEVEN (7) CALENDAR DAYS of:

- a) For the tests and homework assignments, the date that I attempt to return it to you in class.
- b) For the final exam, the first class day of the semester immediately following your course.

After these seven days, I will consider all grades final unless they have been appealed.

Please realize that there are standard policies for point deductions for each problem with any exam or assignment, so unless the grader has misapprehended your intent or misread your work, any partial credit is unlikely to change.

OTHER IMPORTANT INFORMATION:

Feedback: You and I will work together to create the best learning environment possible. Your informal feedback is very important to me. Please let me know throughout the semester if there is anything I can do to make this class better for you.

Logistics: Attendance at each class session is expected unless otherwise noted. If you are unable to attend a class on a given day, please check with your classmates to find out whether any in-class announcements were made. Please use e-mail for questions wherever feasible versus the telephone.

Blackboard: Password-protected class sites will be available for all accredited courses taught at The University. Syllabi, handouts, assignments and other resources are types of information that may be available within these sites. Site activities could include exchanging e-mail, engaging in class discussions and chats, and exchanging files. In addition, class e-mail rosters will be a component of the sites. Students who do not want their names included in these electronic class rosters must restrict their directory information in the Office of the Registrar, Main Building, Room 1. For information on restricting directory information see: <http://www.utexas.edu/student/registrar/catalogs/gi02-03/app/appc09.html>.

Honor Code: The McCombs School of Business has no tolerance for acts of scholastic dishonesty. The responsibilities of both students and faculty with regard to scholastic dishonesty are described in detail in the BBA Program's Statement on Scholastic Dishonesty at <http://www.mcombs.utexas.edu/BBA/Code-of-Ethics.aspx>. By teaching this course, I have agreed to observe all faculty responsibilities described in that document. By enrolling in this class, you have agreed to observe all student responsibilities described in that document. If the application of the Statement on Scholastic Dishonesty to this class or its assignments is unclear in any way, it is your responsibility to ask me for clarification. Students who violate University rules on scholastic dishonesty are subject to disciplinary penalties, including the possibility of failure in the course and/or dismissal from the University. Since dishonesty harms the individual, all students, the integrity of the University, and the value of our academic brand, policies on scholastic dishonesty will be strictly enforced. You should refer to the Student Judicial Services website at <http://deanofstudents.utexas.edu/sjs/> to access the official University policies and procedures on scholastic dishonesty as well as further elaboration on what constitutes scholastic dishonesty.

McCombs Classroom Professionalism Policy: The highest professional standards are expected of members of the McCombs community. The collective class reputation and the value of the McCombs experience hinges on this.

Faculty are expected to be professional and prepared to deliver value for each and every class session. Students are expected to be professional in all respects. Classroom expectations of students include:

- Students will arrive on time.
- Students will be fully prepared for each class.
- Students will attend the class section to which they are registered.
- Students will respect the views and opinions of their colleagues. Disagreement and debate are encouraged. Intolerance for the views of others is unacceptable.
- Phones and wireless devices are turned off unless otherwise instructed by the professor.

Academic Accommodations: The University of Texas at Austin provides upon request appropriate academic accommodations for qualified students with disabilities. Students with disabilities may request appropriate academic accommodations from the Division of Diversity and Community Engagement, Services for Students with Disabilities, 512-471-6259, <http://www.utexas.edu/diversity/ddce/ssd/>. Additionally, accommodation for observance of religious holidays is also possible. Following UT Austin

policy, please notify me of your pending absence at least fourteen days prior to the date of observance of a religious holy day. If you must miss a class, an examination, a work assignment, or a project in order to observe a religious holy day, you will be given an opportunity to complete the missed work within a reasonable time after the absence.

Campus Safety: Please note the following recommendations regarding emergency evacuation from the Office of Campus Safety and Security, 512-471-5767, <http://www.utexas.edu/safety/>:

- Occupants of buildings on The University of Texas at Austin campus are required to evacuate buildings when a fire alarm is activated. Alarm activation or announcement requires exiting and assembling outside.
- Familiarize yourself with all exit doors of each classroom and building you may occupy. Remember that the nearest exit door may not be the one you used when entering the building.
- Students requiring assistance in evacuation should inform their instructor in writing during the first week of class.
- In the event of an evacuation, follow the instruction of faculty or class instructors.
- Do not re-enter a building unless given instructions by the following: Austin Fire Department, The University of Texas at Austin Police Department, or Fire Prevention Services office.
- Behavior Concerns Advice Line (BCAL): 512-232-5050
- Further information regarding emergency evacuation routes and emergency procedures can be found at: www.utexas.edu/emergency/.”

Miscellaneous Information: On February 13-14 and May 10-12, 2014, I may have professional commitments off-site. On these dates, it is likely that I will have an email connection but it may be limited.

OM 368: Tentative Schedule

Date*	Topic	Readings**	Hwk. Due
1/13	Course Introduction	Chapters 1 and 2	
1/15	Supply Chain and Logistics Frameworks	Chapter 3; Chapter 4 (Sections 4.1-4.2)	
1/22	Transportation, Location, and Storage Fundamentals (Part I)	Chapter 14 (Sections 14.1-14.4)	Individual Hwk 1
1/27	Transportation, Location, and Storage Fundamentals (Part II); Supply Chain Network Design: Transportation Decisions; The Texas Transportation Case; Excel Solver	Chapter 5; The Texas Transportation Case (Handout)	
1/29	Supply Chain Network Design: Transshipment Decisions; The MTI Distribution Case; Excel Solver	Chapter 5; The MTI Distribution Case (Handout);	Individual Hwk 2
2/3	Supply Chain Network Design: Facility Location and Capacity Allocation; The Good Tire Case; Excel Solver	Chapter 5; The Good Tire Case (Handout);	
2/5	Supply Chain Network Design: Preparation for Southern Brewery Case Study; Gravity Location Models; Weighted Factor Checklist Models	Chapter 5; Southern Brewery Case Study (Handout)	
2/10	Routing and Scheduling Problems; Supply Chain Risk Management (Part I)	Chapter 14 (Section 14.4); Chapter 6 (Sections 6.1- 6.3)	Individual Hwk 3
2/12	Supply Chain Risk Management (Part II): Douglas-Biehl Case Study (Handout), an Example of Storage Capacity Flexibility	Douglas-Biehl Case Study (Handout)	
2/17*	Discussion of Southern Brewery Case Study (Handout); Review for Test 1	Southern Brewery Case Study (Handout)	Group Hwk 1: Southern Brewery Case Study Report
2/19	Demand Management/Planning/Forecasting; Introduction to Time Series Forecasting (Static Methods)	Chapter 7 (pages 178-187)	Individual Hwk 4
2/24	Test 1		
2/26	Time Series Forecasting (Dynamic Methods, Part I): Moving Averages and Exponential Smoothing; Forecast Error and Bias; StatTools	Chapter 7 (pages 188-191, Section 7.6)	
3/3	Time Series Forecasting (Dynamic Methods, Part II): Exponential Smoothing with Trend and Seasonality; StatTools	Chapter 7 (pages 191-203)	Individual Hwk 5
3/5	Time Series Forecasting (Dynamic Methods, Part III): Exponential Smoothing with Trend and Seasonality; StatTools	Chapter 7 (pages 191-206)	
3/17	Aggregate Planning (Part I)	Chapter 8	Individual Hwk 6
3/19	Aggregate Planning (Part II); Sales and Operations Planning	Chapter 8; Chapter 9; Sales and Operations Planning article (Handout);	
3/24*	Discussion of Shumway, Horch, and Sager Case Study; Metro Hospital Exercise	Shumway, Horch, and Sager Case Study (Handout); Metro Hospital Exercise (Handout)	Group Hwk 2: Shumway, Horch, and Sager Case Study Report

3/26*	Guest Speaker: Mike Wallace, Upstream Business Strategy and Exploration Manager, Shell		
3/31	Introduction to Inventory Management; Single Period Inventory Management (The Newsvendor Model); Metro Health Exercise;	Metro Hospital Exercise (Handout)	Individual Homework 7
4/2	Multiple Period Inventory Management: Continuous Review (The Economic Order Quantity Model); Review for Test 2	Chapter 11 (pages 271-280)	
4/7	Independent versus Joint Ordering	Chapter 11 (pages 280-285)	
4/9*	Guest Speaker: Robert Damarodas, Wal-Mart		Individual Hwk 8
4/14	Test 2		
4/16	Quantity Discounts; In-Transit Inventory	Chapter 11 (pages 289-293)	Essay
4/21	Safety Inventory for Managing Uncertainty; Preparation for Innovative Distribution Company: A Total Cost Approach to Understanding Supply Chain Risk Case Study	Chapter 12 (pages 314-329) Innovative Distribution Company: A Total Cost Approach to Understanding Supply Chain Risk Case (Handout)	
4/23	Aggregate Inventory Control and Risk Pooling	Chapter 12 (pages 329-335)	Individual Hwk 9
4/28	Discussion of Innovative Distribution Company: A Total Cost Approach to Understanding Supply Chain Risk Case Study; Inventory Model Variants Used in Practice	Innovative Distribution Company: A Total Cost Approach to Understanding Supply Chain Risk Case (Handout); Chapter 12 (Section 5)	Group Hwk 3: Innovative Distribution Company: A Total Cost Approach to Understanding Supply Chain Risk Case Study Report; Group Evaluation Form
4/30*	Course Evaluations; Course Wrap-up and Review for Final		Individual Hwk 10

* Attendance will be counted as class participation.

** Chapters are from the Textbook; Handout refers to a handout from the Professor (most handouts will be available at Blackboard).