

IT 376 001
Supply Chain Operations and Logistics
Fall 2015

Instructor Information

Instructor: Dr. Feng-Chang Roger Chang (fcchang@siu.edu)
Class Meeting Times: 2:00-3:15pm, TR
Course Location: ASA118C
Office Hours: 9:00am-12:00noon, TR or by appointment, EGRD129
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Course Objective

The objective of this course is to introduce the basic principles and techniques of supply chain operations and logistics. Major topics covered include overview of supply chain management, roles of logistics in supply chains, global dimensions of supply chains, demand management, order management and customer service, managing inventory in the supply chain, transportation, distribution, and other modern supply chain management techniques and issues. Prerequisite: MATH 111.

Course Materials

- Course Text: Supply Chain Management: A Logistics Perspective, ninth edition, by John J. Coyle, C. John Langley, Jr., Robert A. Novack, and Brian J. Gibson, South-Western, 2013, ISBN 978-0-538-47918-9.
- Equipment: A hand-held scientific calculator

Graded Items

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| • Exam 1 | 30% |
| • Final Exam (2:45-4:45pm, 12/15/2015 Tuesday) | 30% |
| • Quizzes | 20% |
| • Homework | 15% |
| • Class Participations and Attendances | 5% |

Grading Scale

A: 90-100%
B: 80-89%
C: 70-79%
D: 60-69%
F: <60%

Lessons (Topics)

1. Lesson 1: Supply chain management: an overview
2. Lesson 2: Role of logistics in supply chains
3. Lesson 3: Global dimensions of supply chains
4. Lesson 4: Demand management

5. Lesson 5: Order management and customer service
6. Lesson 6: Managing inventory in the supply chain
7. Lesson 7: Transportation: managing the flow of the supply chain
8. Lesson 8: Distribution: managing fulfillment operations

Student Learning Objectives

At the end of the course, the student should be able to:

- Understand the major external change drivers in the global economy and explain their impacts on global supply chains.
- Understand the development of supply chain management in leading organizations and its contribution to financial viability.
- Appreciate the significance and role of supply chain management among private, public and nonprofit organizations.
- Understand the contributions of a supply chain approach to organizational efficiency and effectiveness for competing successfully in the global marketplace.
- Explain the benefits that can be achieved from implementing supply chain best practices.
- Understand the major challenges and issues facing organizations currently and in the future.
- Understand the role and importance of logistics in private and public organizations.
- Discuss the impact of logistics on the economy and how effective logistics management contributes to the vitality of the economy.
- Understand the value-added roles of logistics on both a macro and micro level.
- Explain the relationships between logistics and other functional areas such as manufacturing, marketing, and finance.
- Discuss the importance of management activities in the logistics function.
- Analyze logistics systems from several different perspectives to meet different objectives.
- Determine the total costs and understand the cost tradeoffs in a logistics system.
- Describe the complexity of a company's global supply chain network and understand what questions need to be addressed for the supply chain to be competitive.
- Understand the three major phases of globalization and understand the underlying economic and political forces driving each phase.
- Appreciate the complexity and magnitude of the operations of successful global companies and why global expansion is important to their growth and financial viability.
- Explain how technology and service specialists can help companies, especially small- to medium-size firms, penetrate the global marketplace and contribute to their competitive success.
- Appreciate the importance and contributions of the trading partner countries of the United States and how they support our global prosperity.
- Understand the complexity of global markets and how competitive strategy can help mitigate complexity.
- Explain the need for global security measures and the flexibility necessary to ensure that such security measures do not impede trade but rather enhance the flow of goods and services.
- Understand the critical importance of outbound-to-customer logistics systems.

- Appreciate the growing need for effective demand management as part of an organization's overall logistics and supply chain expertise.
- Know the types of forecasts that might be needed and understand how collaboration among trading partners will help the overall forecasting and demand management processes.
- Understand the basic principles underlying the sales and operations planning process.
- Identify the key steps in the order fulfillment process and appreciate the various channel structures that might be used in the fulfillment process.
- Discuss global transportation options and strategic intermediaries and their role in global in supply chains.
- Understand the relationships between order management and customer service.
- Appreciate how organizations influence customers' ordering patterns as well as how they execute customers' orders.
- Realize that activity-based costing (ABC) plays a critical role in order management and customer service.
- Identify the various activities in the SCOR process D1 (deliver stocked product) and how it relates to the order-to-cash cycle.
- Know the various elements of customer service and how they impact both buyers and sellers.
- Calculate the cost of a stockout.
- Understand the major outputs of order management, how they are measured, and how their financial impacts on buyers and sellers are calculated.
- Be familiar with the concept of service recovery and how it is being implemented in organizations today.
- Appreciate the role and importance of inventory in the economy.
- List the major reasons for carrying inventory.
- Discuss the major types of inventory, their costs, and their relationships to inventory decisions.
- Understand the fundamental differences among approaches to managing inventory.
- Describe the rationale and logic behind the economic order quantity (EOQ) approach to inventory decision making, and be able to solve some problems of a simple nature.
- Understand alternative approaches to managing inventory—just-in-time (JIT), materials requirement planning (MRP), distribution requirements planning (DRP), and vendor-managed inventory (VMI).
- Explain how inventory items can be classified.
- Know how inventory will vary as the number of stocking points changes.
- Make needed adjustments to the basic EOQ approach to respond to several special types of applications.
- Explain the role transportation plays in the supply chain.
- Discuss the service and cost characteristics of the primary transportation modes.
- Discuss the key activities involved in transportation planning and execution.
- Explain current transportation management strategies used to improve supply chain performance.
- Use service and cost metrics to analyze transportation performance.

- Describe how information technology supports transportation planning and execution.
- Discuss the strategic value-adding role distribution plays in the supply chain.
- Recognize the tradeoffs between distribution and other supply chain functions.
- Understand the analytical framework for distribution planning decisions.
- Evaluate fulfillment strategies and distribution methods.
- Describe the primary fulfillment processes and support functions in distribution center (DC) operations.
- Use productivity and quality metrics to analyze fulfillment performance.
- Describe how information technology supports distribution operations.
- Discuss materials-handling objectives, principles, and equipment uses.

Late Work Policy

No late homework will be accepted and missed exams have a 20% penalty unless an appropriate, prior excuse is given to the instructor. The missed exam must be completed on the make-up date set by the instructor.