THOMPSON RIVERS UNIVERSITY

Course Outline

Department of Management
School of Business and Economics

SCMN 3320-3
Supply Chain Management (3,0,0)

Calendar Description

Students examine the strategic fit of supply chains with organizational goals; this course lays the foundation for advanced study in the field. Topics include an introduction to supply chain management; supply chain strategy; demand management, inventory management; inventory modeling; supply chain network design and facility location; warehouse management; and transportation management.

Educational Objectives/Outcomes

Upon completing this course, students will be able to:

1. Discuss the basic principles of supply chain management.
2. Describe the main issues and challenges in managing supply chains.
3. Recognize the strategic importance of supply chains in achieving organizational goals.
4. Explain the demand management in supply chain phenomenon.
5. Apply inventory management analytical tools and strategies.
6. Discuss the qualitative factors and analytical tools important in choosing facility locations.
7. Effectively manage, plan and operate warehouse facilities.
8. Explain various shipment terms, modes of transportation, and criteria for mode selection.
9. Apply simple transportation algorithms in solving transportation problems.

Prerequisites

ACCT 2250; MIST 2610; ECON 2320~~ECON 2330 or equivalent??~~

Co-requisites

None

Texts/Materials

S. Chopra, P. Meindl, Supply Chain Management: Strategy, Planning & Operation, Prentice-Hall.

Student Evaluation

Participation	0-10%

Assignments/quizzes/case studies	15-25%
Term test(s)	20-30%
Final exam	30-50%

Course Topics

1. Introduction to Supply Chain Management
   - Definition of supply chain management (SCM)
   - Historical evolution of SCM
   - Types of supply chains
     - External versus internal supply chains
     - Supply chains versus demand chains
     - Various tiers in supply chains
   - Material & information flows in supply chains
   - Supply chain risks
   - Supply chain performance metrics
   - Supply chain objectives

2. Supply Chain Strategy
   - Supply chain view
     - Process versus cyclic view of supply chains
     - Push versus pull view of supply chains
   - Hierarchy of supply chain decisions
     - Strategic decisions
     - Tactical decisions
     - Operational decisions
   - Supply chain responsiveness and supply chain efficiency
     - Efficiency-responsiveness frontier in supply chains
     - Efficiency-responsiveness balance
   - Major drivers of supply chain performance

3. Demand Management
   - Demand management and forecasting
   - Types of forecasting by time horizon
   - Qualitative versus quantitative forecasting
   - Forecasting seasonal demand products
   - Bull-whip effect in supply chains
     - Causes of bull-whip effect
     - Managing the bull-whip effect in supply chains

4. Inventory Management
   - Definition of inventory management
   - Strategic importance of inventory in supply chains
   - Functions of inventory
     - Anticipation, demand-supply coordination, decoupling inventory stocks
     - Hedge against price increase
   - Various types of inventory
     - Raw materials

- Work-in-process (WIP)
- Finished goods
- In-transit inventory
- Maintenance, repair and operating (MRO) supplies

5. Inventory Modeling
   - Types of inventory models
     - Single versus multiple period models
     - Dependent versus independent models
     - Deterministic versus probabilistic models
   - Overview of ordering, holding and stock-out costs
   - Economic order quantities
   - Quantity discounts

6. Supply Chain Network Design & Facility Location
   - Strategic and functional roles played by facilities
   - Importance and objective of facility location
   - Location decision hierarchy
     - Factors influencing country selection decision
     - Factors influencing region selection decision
     - Factors influencing site selection decision
   - Analytical facility location models
     - Center of gravity (COG) method
     - Cross-over break-even method

7. Warehouse Management
   - Warehouse definition
   - Production warehouses versus distribution centers
   - Distribution strategies
     - Direct shipment
     - Warehousing
     - Cross-docking (JIT) distribution
   - Warehouse ownership
     - Private warehouse
     - Public warehouse
     - Contract and leased warehouses
   - Warehouse sizing issues
   - Product storage strategies
     - Random storage
     - Dedicated storage
       - Product storage using popularity criteria
       - Product storage using CPO (cubic-per-order) criteria
     - Hybrid class-based storage
   - Product access & space utilization

8. Transportation Management
   - Transportation legal forms (common, exempt, contract, private carriers)
   - Transportation shipment terms (FOB and Freight Collection Terms)

- Transportation modes
  - Motor or Road Carriers
  - Rail Carriers
  - Air Carriers
  - Water Carriers
  - Pipelines
- Inter-modal strategy
- Transportation mode selection criteria
- Analytical models in transportation planning
  - Shortest route problem
  - Transportation algorithm (least cost heuristic)
  - Vehicle route planning using sweep method

Methods for Prior Learning Assessment and Recognition

As per TRU policy

Attendance Requirements – Include if different from TRU Policy

As per TRU policy

Special Course Activities – Optional

Use of Technology – Optional