

SUPPLY CHAIN MANAGEMENT (SCM)

SCM 530: Supply Chain Analysis

3 Credits

Methods and tools to support supply chain decision making with emphasis on forecasting, inventory analysis, and demand planning.

Prerequisite: SCM 800 , SCM 810 , and SCM 820

SCM 540: Transportation in Supply Chains

2 Credits

Strategies and processes for design and implementation of transportation service links in supply chain networks.

Prerequisite: B A 510 or permission of program

SCM 546: Strategic Procurement

2 Credits

Development of procurement and supply management strategies to support synchronized supply chains.

Prerequisite: B A 510 or permission of program

SCM 556: Manufacturing Strategy

2 Credits

Development of service-sensitive manufacturing strategies to support synchronized supply chains.

Prerequisite: B A 510 or permission of program

SCM 566: Demand Fulfillment

2 Credits

Demand fulfillment strategies, operations, and methods in supply chain networks.

Prerequisite: B A 510 or permission of program

SCM 570: Supply Chain Modeling

2 Credits

Explore current modeling methods and software for design, analysis, execution and integration of supply chains.

Prerequisite: SCM 556

SCM 594: Research Topics

1-15 Credits/Maximum of 15

Supervised student activities on research projects identified on an individual or small-group basis.

SCM 595: Internship

1-9 Credits/Maximum of 9

Supervised off-campus, nongroup instruction, including field experiences, practicums, or internships.

SCM 596: Individual Studies

1-9 Credits/Maximum of 9

Creative projects, including nonthesis research, that are supervised on an individual basis and which fall outside the scope of formal courses.

SCM 597: Special Topics

1-9 Credits/Maximum of 9

Formal courses given on a topical or special interest subject which may be offered infrequently; several different topics may be taught in one year or semester.

SCM 800: Supply Chain Management

4 Credits

Introduction to the strategic framework, issues, and methods for integrating supply and demand management within and across companies. SCM 800 Supply Chain Management (4) SCM 800 provides an enhanced understanding of key principles, concepts, and methodologies for effective supply chain management. Supply chain management is the integration of core business processes from the end user through original suppliers that provides products, services and information that add value for customers. The systems viewpoint and a process orientation are explored at the firm level and from the perspective of inter-firm collaboration among participants in supply chains. Case studies explore supply chain management and its critical role in business. The course provides opportunities to investigate important topics such as the bullwhip effect, the key approaches to planning and managing inventory across supply chains, the creation of value through alignment and realignment of supply chain capabilities, and the key supply chain performance metrics. After completing this course, students should have the knowledge, skills, and abilities to: a. Articulate the essential principles and concepts of the supply chain approach b. Understand the potential role of supply chains in creating value and in sustaining competitive positions of firms c. Explain the impact of the bullwhip effect on supply chain performance d. Understand the underlying causes of the bullwhip effect and articulate the principal approaches to ameliorating its impacts on supply chain performance e. Articulate differences in the principal approaches to managing inventories across supply chains f. Articulate the principal benefits and challenges associated with collaborative approaches to supply chain management g. Understand the principal metrics used to manage supply chain performance The evaluation of students is based on small group case study submissions, short paper and problem assignments, on-line discussion postings, and peer reviews.

SCM 801: Supply Chain Performance Metrics and Financial Analysis

1 Credits/Maximum of 999

Performance metrics used in supply chain management, both within the enterprise and across the extended enterprise. Performance metrics are essential for effective planning and management of supply chain operations. Clear understanding of the relationship between supply chain decisions/initiatives and the firm's primary financial measures is

an increasingly important competency for all supply chain managers. SCM 801 provides professional-level coverage of essential supply chain performance and financial metrics applied both within the firm and across the extended enterprise. The course helps students develop the ability to choose and utilize the correct set of performance and financial metrics for varying supply chain decision-making situations. Students learn how to leverage key supply chain decision variables to impact performance and financial metrics. Students also learn to apply appropriate accounting tools and techniques and conduct financial analyses to evaluate and optimize supply chain decisions. Topics addressed include inventory and financial metrics, measures of supply chain velocity, working capital, ratio analysis, the Strategic Profit Model, total cost of ownership, the Balanced Scorecard, and the SCOR Model.

CONCURRENT: SCM 800

SCM 810: Transportation and Distribution

4 Credits

Role of transportation and distribution operations in matching supply with demand; principles of transport industry analysis and competitive positioning. SCM 810 Transportation and Distribution (4) The course is set against a background of microeconomic theory and in a framework of supply chain management. Course design is directed toward graduate students with relatively little or no previous academic work in transport management and economics. Subject coverage includes both conceptual and applied material, such as the principles of industry analysis and competitive positioning; theory and practice of transport demand, costing, pricing, and revenue and demand management in distribution settings. After completing this course, students should have the knowledge, skills, and abilities to: a. Perform an industry analysis and assess a firm's competitive positioning in its industry b. Explain the principal categories of cost in a transport/distribution operation and how those cost categories behave with changes in the level of activity c. Perform a basic activity-based costing analysis for a transport/distribution operation d. Articulate the principal characteristics of transport demand e. Understand the measure of price elasticity of demand and to use this measure to quantify the revenue impact of price changes f. Articulate principal distribution strategies g. Calculate a cost-based price and a differential price h. Explain the principles and primary applications of revenue and demand management The evaluation of students is based on small team case study submissions, individual short paper and problem assignments, on-line discussion postings, and peer reviews. This course is a prescribed course for the on-line Master of Professional Studies in Supply Chain Management (MPS/SCM). The course is the second course in the first year of study, building on foundation knowledge developed in the first course but with a focus on the deliver portion of the supply chain.

Prerequisite: SCM 800

SCM 812: Demand Fulfillment

2 Credits

This course covers the forecasting and inventory management activities involved in the fulfillment of demand for finished goods. This course covers the supply chain activities related to demand planning and inventory management involved in the fulfillment of demand for finished goods. This will include an introduction to the Sales and Operations Planning (S&OP) framework and the role of demand planning in this framework. The students will develop a basic understanding of forecasting and inventory models, including how to evaluate the

performance of these models and manage demand and lead time variability. The course will also help students understand the implications of setting service level targets on inventory, as well as manage cost and service tradeoffs in the demand fulfillment process.

Prerequisite: SCM 801

SCM 813: Sustainable Supply Chain Management

3 Credits

Traditional supply chain fundamentals are necessary but not sufficient in understanding and strategically managing emergent environmental and social costs, risks, and opportunities. Driving this change is a combination of pressures from customers, suppliers, competitors, employees, regulations, and resource constraints. This course is designed to equip supply chain students with the latest tools, concepts, and business practices for managing an environmentally and economically sustainable supply chain.

SCM 814: Logistics and Transportation Management

4 Credits

The role of logistics and transportation in matching supply with demand.

Prerequisite: SCM 812

SCM 815: Product Realization: Development, Manufacturing, and the Supply Chain

4 Credits

Integration of product development, production, and supply chain processes required to launch products from design concept to steady state manufacturing.

SCM 820: Strategic Procurement

4 Credits

Strategic planning for the source/buy process, including developing and managing supplier relationships, global issues, and e-procurement. SCM 820 Strategic Procurement (4) The course provides a special emphasis on the development and management of strategic sourcing relationships and promotes an understanding of the strategic role of supply management in effective supply/demand/value chain operations. Students learn through the application of course materials to relevant supply management case problems and scenarios. Collaboration in case preparation is required. Online discussions, "what if scenarios," and contemporary problems enhance the learning experience. After completing this course, students should have the knowledge, skills, and abilities to: a. Understand the strategic role of supply management in effective supply/demand/value chain management. b. Understand the potential impact of supply management on the competitive success and profitability of business organizations. c. Articulate supply management best practices and understand the circumstances under which they work or do not work as well. d. Understand key issues and approaches in relation to strategic supply management, including: supply relationship management, supply segmentation, and the outsourcing decision. e. Plan and execute negotiation strategies. f. Explain developments and technologies in e-Business and e-Procurement and their implications for supply chain management. View and examine future trends in both e-Business and e-Procurement. g. Understand basic issues related to global sourcing. h. Articulate the challenges and opportunities for supply management

in the future. The evaluation of students is based on small group case study submissions, individual case study submissions, a small group negotiation exercise, on-line discussion postings, and peer reviews.

Prerequisite: SCM 800

SCM 822: Supply Management

2 Credits/Maximum of 999

An overview of the strategic role that supply management has in effective supply, demand, and value chain operations. SCM 822 provides an overview to the sourcing processes in supply chain management. The course focuses on the establishment of an effective supply base and relationships with suppliers. Specific topics include supply market analysis, spend analysis and supplier segmentation, supplier selection and evaluation, and buyer-supplier negotiation.

Prerequisite: SCM 801

SCM 824: Strategic Procurement

4 Credits/Maximum of 999

Alignment of suppliers with the strategic needs and direction of the organization. This course examines the alignment of an organization with its suppliers. Topics covered include an intensive analysis of outsourcing and offshoring decisions, evaluation and selection of appropriate transportation alternatives, determination of resiliency in the design of the supplier network, measurement of supplier performance and methods, and future issues and developments.

Prerequisite: SCM 822

SCM 840: Supply Chain Project Management

4 Credits

The fundamentals and tools of managing supply chain projects, with special emphasis given to related information technology projects. SCM 840 Supply Chain Project Management (3) This course explores the principles, concepts, and tools of managing supply chain projects, including project activity that requires a commitment of resources and people to an often strategically important undertaking that is not repetitive and short term. Special emphasis is given to IT related projects in supply chains. After completing this course, students should have the knowledge, skills, and abilities to: a. Articulate the critical project management elements and the sequence of these elements in bringing a project to fruition and success. b. Charter and organize a cross-supply-chain project teams capable of achieving project success. c. Use and apply the essential project management tools such as CPM, PERT, and Project to complete supply chain projects. d. Determine project risks, costs, and advantageous alternative project paths. Evaluation methods include a combination of written assignments and case studies, exercises, projects, and on-line discussion postings. This course is a prescribed course for the on-line Master of Professional Studies in Supply Chain Management (MPS/SCM). The course is taken in the second year of study, building on supply chain management knowledge developed in three foundation courses taken in the first year.

Prerequisite: SCM 800 , SCM 810 and SCM 820

SCM 842: Manufacturing and Service Operations Planning

2 Credits/Maximum of 999

Planning strategies for managing manufacturing and service operations within supply chains. This course provides foundation concepts necessary for understanding the production function in supply chains. It introduces the student to the strategic position of the operations function of a firm and gives an understanding of best principles and practices. The course covers the mission and strategy of a company and how that strategy feeds into the operations strategy ensuring that manufacturing and service delivery contribute to the success of the firm.

Prerequisite: SCM 801

SCM 844: Global Manufacturing and Service Operations

4 Credits/Maximum of 999

A detailed review of concepts, tools, and strategies for managing global manufacturing and service operations. This course builds upon topics introduced in SCM 842 (Manufacturing and Service Operations Planning), as well as exposure to theory and higher-level topics in the manufacturing and services sectors. Key production functions of the supply chain along with the tools and techniques used for optimal manufacturing and operations management are reviewed within the framework of current and emerging supply chain theories and optimization processes. Specific topics include Project Management, Quality Management, Theory of Constraints, Planning and Execution, and Environmental Health and Safety issues, along with Sustainability Management.

Prerequisite: SCM 842

SCM 846: Topics in Supply Chain Management

4 Credits

Emerging issues in supply chain management, from procurement through manufacturing, logistics, and sales. SCM 846 Topics in Supply Chain Management (4) SCM 846 provides an enhanced understanding of emerging concepts in supply chain management. For this course, supply chain management is defined as "the integration of key business processes from the end user through original suppliers that provide products, services, and information that add value for customers." Beginning with this lifecycle understanding, the course will identify emerging developments that have the potential to alter competitive balance, planning assumptions, cost structures, and conventional timelines. Given trends in globalization, information technology, demographics, and supply chain practice, new innovations have the potential to facilitate both improvement in the performance of existing systems and the disruption of current sources of competitive advantage. Thus, the course focuses on "weak signals" that have yet to enter the mainstream of supply chain management theory or practice. As a result, the selection of topics will evolve with the state of practice.

Prerequisite: SCM 820

SCM 850: Supply Chain Design and Strategy

4 Credits

Design and management of supply chain networks, emphasizing the alignment of supply chain networks with corporate competitive strategy. SCM 850 Supply Chain Design and Strategy (4) The focus of this course is the strategic design of supply chain networks. Supply chain design decisions have extraordinary impact on the cost and

service value attributes of a product or service over its lifetime. The influence of supply chain design on a firm's profitability and competitive positioning is one reason why competition today extends beyond firm versus firm to supply chain versus supply chain. Supply chain design decisions are among the most financially influential and long lasting business decisions and yet, supply chain designs should not be static. Ever increasing customer requirements, expanding product lines and customer segments, decreasing product life cycles, and competitive pressures enabled by a growing range of flexible supply chain design constantly force supply chain executives to evaluate and modify their current supply chain networks and the role of the supply chain in their firm's overall strategy. This course provides an examination of (1) the role of supply chain network design within the context of the firm's competitive strategy, (2) alternative supply chain designs and the factors that influence network design decisions, (3) a framework for the network design process, and (4) the principal models and techniques used for the design of supply chain networks. After completing this course, students should have the knowledge, skills, and abilities to:

1. Explain the importance of achieving strategic fit between a firm's competitive strategy and the design of the firm's supply chain network.
2. Describe the basic decision making framework for achieving strategic fit.
3. Identify the key questions in network design for supply chains.
4. Identify the principal supply chain network design alternatives.
5. Enumerate the principal factors influencing choices among alternative supply chain designs.
6. Present a framework for the supply chain network design process.
7. Examine the principal models and techniques used for making network design decisions.
8. Consider the influence of demand and supply uncertainties on network design choices.

Evaluation of students is based on individual and team case study submissions, a culminating simulation exercise, on-line discussion postings, and peer reviews. This course is prescribed for the on-line Master of Professional Studies in Supply Chain Management (MPS/SCM) and its taken in the second year of study, building on the supply chain knowledge, skills and abilities developed in previous foundation courses.

Prerequisite: SCM 800 , SCM 810 , SCM 820

SCM 860: Supply Chain Transformation and Innovation

4 Credits

Strategic supply chain transformation and innovation with emphasis on (re)configuration of key capabilities to achieve competitive advantages. SCM 860 Supply Chain Transformation and Innovation (4) This course focuses on strategic supply chain transformation, innovation, and organizational change. The course examines current issues and best practices with respect to supply chain strategy; value creation through design and redesign of supply chain capabilities; transformational outsourcing; supply chain role in new product design, development, and market introduction; technology adoption; and change management. Supply chain transformation initiatives offer firms great potential for improving profitability and competitive positioning, both within the market and within the supply chain. Because sustainable competitive advantage is not found in one set of supply chain capabilities, strategic transformations must constantly assemble and reassemble the key capabilities that give the firm and its supply chain successive temporary advantages. This assembling or redesigning of capabilities chains should be an on-going process as the most significant value producing capabilities in any given industry change over time. The ability to consistently assemble the set of capabilities that produce competitive advantages is what some refer to as the ultimate core capability. After completing this course, students should have the knowledge, skills, and abilities to:

1. Articulate the meaning of competitive strategy in

the context of transformation of supply chain capabilities chains.

2. Understand value creation through transformation of supply chain capabilities over time.
3. Identify the supply chain structure that is appropriate for various business situations.
4. Examine the development of essential elements of rapid response supply chain capabilities.
5. Understand the conditions under which functional activities, such as, manufacturing, product design, and new concept development, are amenable to outsourcing.
6. Assess operational and strategic challenges of vertical integration and outsourcing and in particular, highlight the nature of the strategic tension created by supplier decisions to integrate vertically into capabilities previously performed by critical customers.
7. Articulate the role of supply chain transformation in support of new product development.
8. Identify ways to organize and lead change in organizations.

The evaluation of students is based on individual and team case study submissions, short paper and problem assignments, on-line discussion postings, and peer reviews. This prescribed course in the on-line Master of Professional Studies in Supply Chain Management (MPS/SCM) is the capstone course taken in the second year of study that integrates previous topics.

Prerequisite: SCM 800 , SCM 810 , SCM 820 , SCM 830 , SCM 840 and SCM 850

SCM 896: Individual Studies

1-9 Credits/Maximum of 9

Creative projects, including nonthesis research, which are supervised on an individual basis and which fall outside the scope of formal courses.