

## SUPPLY CHAIN MANAGEMENT SCM

### Department of Supply Chain Management The Eli Broad College of Business and The Eli Broad Graduate School of Management

#### 293 Cooperative Education for Business Students

Fall, Spring. 1(1-0) A student may earn a maximum of 3 credits in all enrollments for this course. Interdepartmental with Accounting and Economics and Finance and Hospitality Business and Management. Administered by Supply Chain Management. R: Approval of department. SA: MSC 293

Integration of pre-professional educational employment experiences in industry and government with knowledge and processes taught in the student's academic program. Educational employment assignment approved by the Department of Supply Chain Management.

#### 303 Introduction to Supply Chain Management

Fall, Spring, Summer. 3(3-0) R: Open to juniors or seniors in the Eli Broad College of Business and The Eli Broad Graduate School of Management and not open to undergraduate students in the School of Hospitality Business and open to students in the Agribusiness Management major or in the Applied Engineering Sciences major or in the Construction Management major or in the Food Industry Management major or in the Packaging major. SA: MGT 303, MSC 303

Objectives, processes, and functions of supply chain management activities including procurement, manufacturing, and logistics. The role of supply chain processes in creating competitive advantage with respect to quality, flexibility, lead-time, and cost.

#### 371 Procurement and Supply Management

Fall, Spring, Summer. 3(3-0) P: SCM 303 R: Open to juniors or seniors in the Eli Broad College of Business and The Eli Broad Graduate School of Management or in the Applied Engineering Sciences major or in the Sales Communication Specialization. SA: MGT 401, MSC 401, MSC 371

Strategic issues in procurement and supply management. Purchasing process, procurement cycle, purchasing research, relationships with suppliers, negotiation, and commodity planning. Cost, price, and value analysis.

#### 372 Manufacturing Planning and Control

Fall, Spring, Summer. 3(3-0) P: (SCM 303 and MKT 317) or (SCM 303 and STT 351) R: Open to juniors or seniors in the Eli Broad College of Business and The Eli Broad Graduate School of Management or in the Applied Engineering Sciences major. SA: MGT 402, MSC 402, MSC 372

Production planning, demand management, master scheduling, materials requirements, and capacity planning. Shop floor control, computer-integrated manufacturing, and just-in-time systems.

#### 373 Logistics and Transportation Management

Fall, Spring, Summer. 3(3-0) P: SCM 303 and (MKT 317 or concurrently) R: Open to juniors or seniors in the Eli Broad College of Business and The Eli Broad Graduate School of Management or in the Applied Engineering Sciences major. SA: MSC 373, MSC 442

Microanalysis of logistics and transportation services. Customer service, distribution operations, purchasing, order processing, facility design and operations, carrier selection, transportation costing, and negotiation.

#### 393 Introduction to International Business

Fall, Spring, Summer. 3(3-0) Fall: Abroad. Spring: Abroad. Summer: Abroad. Interdepartmental with Accounting and Finance and General Business and Business Law and Hospitality Business and Management and Marketing. Administered by Marketing. R: Open to students in the Eli Broad College of Business and The Eli Broad Graduate School of Management or in the School of Hospitality Business.

Introduction to the context of international business delivered on-site in foreign settings. Fundamental concepts and principles of globalization such as multinational corporations, foreign markets and economies, internal and external market transactions, international law, cultural influences, and multinational business strategies.

#### 470 Supply Chain Application and Policy (W)

Fall, Spring, Summer. 2(2-0) P: (SCM 371 and SCM 372 and SCM 373) and completion of Tier I writing requirement R: Open to seniors in the Supply Chain Management major. SA: MSC 470

Analysis and problem solving of supply chain management cases. Purchasing, manufacturing, logistics, and transportation as an integrated supply chain.

#### 474 Negotiations

Fall, Spring. 2(2-0) Interdepartmental with Management. Administered by Supply Chain Management. P: SCM 371 or concurrently R: Open to juniors or seniors in the Eli Broad College of Business and The Eli Broad Graduate School of Management and open to students in the Sales Communication Specialization or approval of department. SA: MSC 474

Strategic negotiation, negotiation preparation, buyer-supplier relationship assessment, international negotiations, and negotiation simulation.

#### 475 Supply Chain Decision Modeling

Fall, Spring. 2(2-0) P: SCM 372 R: Open to juniors or seniors in the Supply Chain Management major. SA: MSC 475

Decision modeling in supply chains with emphasis on forecasting, aggregate planning, material requirement planning, inventory management, transportation, supply network design, quality management, and sourcing decisions. Use of traditional and advanced spreadsheet modeling tools.

#### 476 Transportation Management

Fall, Spring. 2(2-0) P: SCM 373 R: Open to juniors or seniors in the Department of Supply Chain Management or approval of department. SA: MSC 476

Current issues and strategies in transportation management and policy. Carrier management problems and opportunities, and economic characteristics of the various modes of transportation.

#### 479 Advanced Topics in Supply Chain Management

Fall, Spring. 2(2-0) P: (SCM 371 or concurrently) and ((SCM 372 or concurrently) and (SCM 373 or concurrently)) R: Open to juniors or seniors in the Supply Chain Management major. SA: MSC 479

Advanced aspects of supply continuity and supply risk, advanced project management, environmentally friendly manufacturing, total quality management, supply chain metrics, electronic markets, relationship management, interfaces with research and development, innovation, and markets. Topics vary.

#### 490 Independent Study

Fall, Spring, Summer. 1 to 3 credits. SA: MSC 490

Supervised program of independent library or field research designed to supplement classroom study.

#### 490H Honors Independent Study

Fall, Spring, Summer. 1 to 3 credits. SA: MSC 490H

Supervised program of library or field research designed to supplement classroom study

#### 491 Topics in Supply Chain Management

Fall, Spring. 3(3-0) SA: MSC 491

Current issues in supply chain management.

#### 800 Supply Chain Management

Fall, Spring. 3(3-0) R: Open to graduate students and not open to students in the Master of Business Administration in Business Administration or in the Supply Chain Management major. SA: MSC 800

Fundamentals of materials and logistics management. Strategic impact of the transformation process in a global economy. Quality, inventory management, logistics strategy, customer service, international procurement, management of technology.

#### 815 Emerging Topics in Supply Management

Spring. 1 to 12 credits. A student may earn a maximum of 12 credits in all enrollments for this course. RB: SCM 800 or MBA 821 R: Open to MBA students and open to master's students in the Supply Chain Management Major or approval of department. SA: MSC 815

Perspectives on new and emerging issues of supply management. Topics vary.

#### 816 Emerging Topics in Operations Management

Spring. 1 to 12 credits. A student may earn a maximum of 12 credits in all enrollments for this course. RB: SCM 870 or MBA 821 R: Open to MBA students and open to master's students in the Supply Chain Management Major or approval of department. SA: MSC 816

Perspectives on new and emerging issues in operations management. Topics vary.

#### 817 Emerging Topics in Logistics Management

Spring. 1 to 12 credits. A student may earn a maximum of 12 credits in all enrollments for this course. RB: SCM 870 or MBA 821 R: Open to MBA students and open to master's students in the Supply Chain Management Major or approval of department. SA: MSC 817

Perspectives on new and emerging issues in logistics management. Topics vary.

## Supply Chain Management—SCM

- 825 Supply Management Tools**  
Spring. 1(1-0) P: MBA 821 R: Open to students in the Master of Business Administration in Business Administration or approval of department. SA: MSC 825 C: SCM 826 concurrently or SCM 827 concurrently.  
Analytical tools to support procurement strategy development and supplier management. Spend analysis, supplier cost and price analysis, 'should cost' models, cost analysis for make-versus-buy decisions.
- 826 Manufacturing Design and Analysis**  
Spring. 1(1-0) P: MBA 821 R: Open to students in the Master of Business Administration in Business Administration or approval of department. SA: MSC 826 C: SCM 825 concurrently or SCM 827 concurrently.  
Designing and analyzing operations processes. Capacity planning and management, process flow and mapping, value-mapping, quality tools and techniques, dependent demand inventory techniques. Recent developments and data.
- 827 Competing Through Supply Chain Logistics**  
Spring. 1(1-0) P: MBA 821 R: Open to graduate students in the Master of Business Administration in Business Administration or approval of department. SA: MSC 827 C: SCM 825 concurrently or SCM 826 concurrently.  
Logistics as a value-adding process that synchronizes demand and supply. Supply chain logistics strategy, information technology, segmental positioning, forecasting and collaborative planning, and customer accommodation.
- 833 Decision Support Models**  
Fall. 2(2-0) P: SCM 800 or MBA 821 SA: MGT 833, MSC 833  
Analytical models to support decision making with specific supply chain focus. Topics include multiple regression, linear optimization, decisions under uncertainty, and forecasting.
- 835 Supply Chain Management II**  
Spring, Summer. 3(3-0) P: SCM 870 R: Open to masters students in the Supply Chain Management major. SA: MSC 835  
Review of customer supply chain expectations and the processes used to fulfill them.
- 842 Total Quality Management**  
Fall. 2(2-0) P: MBA 821 or SCM 800  
Total quality management principles and practices, tools and techniques, implementation of continuous quality improvement programs, links to manufacturing and competitive strategies. Six Sigma and statistical quality control.
- 843 Sustainable Supply Chain Management**  
Spring. 2(2-0) RB: SCM 800 SA: MSC 843  
Sustainability within business and supply chain contexts. Balancing ecology/waste, economy, and equity. Supply chain sustainability from design and resource management through transformation processes, to delivery to the final customer.
- 848 Analysis of Supply Markets and Suppliers**  
Summer. 2(2-0) P: SCM 870 R: Open to graduate students in the Supply Chain Management major. Approval of department. SA: MSC 848  
Methods for supply market analysis to support sourcing strategy development, contract negotiations and cost management initiatives. Analysis of supply market conditions and structure. Buyer and supplier power. Supply risk. Benchmarking. Value analysis and value engineering.
- 852 Procurement and Sourcing Strategy**  
Fall. 2(2-0) P: SCM 825 RB: SCM 826 and SCM 827 R: Open to graduate students in the Master of Business Administration in Business Administration or approval of department. SA: MSC 852  
Developing and implementing procurement strategy. Commodity strategy, insourcing and outsourcing strategy. Supplier evaluation and selection, supplier relationship management and supplier development. Strategic cost management, global sourcing, negotiation, contract management, and purchasing ethics.
- 853 Operations Strategy**  
Fall. 2(2-0) P: SCM 826 RB: SCM 825 and SCM 827 R: Open to graduate students in the Master of Business Administration in Business Administration or approval of department. SA: MSC 853  
Developing and implementing operations strategy. Matching of competitive priorities with operational investments and decisions. Manufacturing process choice, capability development, technology management, process simulation, linking supply chain with product type and inventory management decisions. Recent developments such as synchronized flow management, E-commerce, and advanced performance measurement.
- 854 Integrated Logistics Systems**  
Fall. 2(2-0) P: SCM 827 RB: SCM 825 and SCM 826 R: Open to graduate students in the Master of Business Administration in Business Administration or approval of department. SA: MSC 854  
Logistics systems and operations that achieve synchronized demand and supply. Transportation, inventory analysis, warehousing, materials handling, and logistics network design. Integrated performance measurement and organizational structure.
- 855 Supply Chain Management Technology and Applications**  
Spring. 2(2-0) P: SCM 852 and SCM 853 and SCM 854 or approval of department R: Open to master's students in the Supply Chain Management Major. SA: MSC 855  
Integration of logistics, procurement, and operations strategy in the supply chain. Problem solving approaches, decision support tools, and analytical methods. Applications through case studies and computer simulations of supply chain situations in consumer and industrial settings.
- 863 Negotiations**  
Summer. 1 to 2 credits. Interdepartmental with Management. Administered by Management. R: Open to master's students in the Supply Chain Management major.  
Strategic negotiations, negotiation preparation, buyer-supplier relationship assessment, international negotiations, and negotiation simulation.
- 864 Supply Chain Innovation Project Management**  
Fall. 2(2-0) P: MBA 821 or SCM 800  
Role of product and process innovation in firm competitiveness. Innovation projects in various parts of supply chain, including radical, incremental and continuous process improvement projects. Project management techniques addressing the definition, planning, and execution of innovation related projects.
- 866 Railway Business Management**  
Summer. 3(3-0) P: SCM 872 R: Open to master's students in the Supply Chain Management major.  
Procedures for railway productivity and methods for consumer satisfaction. Measuring financial performance, pricing strategies, and forces in railway economics. Current and future environmental impact of railway management.
- 867 Railway Operations Management**  
Summer. 3(3-0) P: SCM 872 R: Open to master's students in the Supply Chain Management major.  
Discussion of railway infrastructure. Railway management techniques in train control, locomotive management, scheduling, dispatching and signaling. Operational strategies for labor, regulation, safety, security, and technology.
- 869 Service Supply Chains**  
Spring. 2(2-0) P: MBA 821 or SCM 800  
Service supply chains. Application of supply chain principles in a service environment. Service design and resource management. Management of the transformation processes. Management of delivery to the final customer.
- 870 Introduction to Supply Chain Management I**  
Spring, Summer. 3(3-0) R: Open to masters students in the Supply Chain Management Major. SA: MSC 870  
Integrated view of procurement, operations, and logistics management. Management of the flow of products from raw material sourcing and acquisition through delivery to the final customer.
- 871 Applied Data Analysis**  
Summer. 3(3-0) R: Open to masters students in the Supply Chain Management major. SA: MSC 871  
Quantitative and statistical methods for decision making. Hypothesis testing, regression and correlation analysis, forecasting, linear programming, decision analysis, and project management.
- 872 Distribution Fulfillment**  
Summer. 2(2-0) P: SCM 870 R: Open to masters students in the Supply Chain Management major. SA: MSC 872  
Management of the firm's value-creation process from product development through order receipt and delivery to consumer. Alternative approaches to developing customer value and the role of the demand and supply chain in providing it.
- 874 Total Quality Management and Lean Enterprise**  
Summer. 3(3-0) P: SCM 870 R: Open to masters students in the Supply Chain Management major. SA: MSC 874  
Total quality management and lean enterprise principles, practices, and techniques. Implementation of quality and lean enterprise improvement programs. Relationship to manufacturing and competitive strategies.

- 875 Manufacturing Planning and Control**  
 Summer. 2(2-0) P: SCM 870 R: Open to masters students in the Supply Chain Management major. SA: MSC 875  
 Planning and control functions required to match supply and demand in a manufacturing firm. Tools and methods for planning production and the resources and capacity needed to support production. Role of information and information systems in planning and control. Coordination of plans across organizations supply chain.
- 876 Logistics Operations Methods and Systems**  
 Summer. 2(2-0) P: SCM 872 or SCM 835 R: Open to masters students in the Supply Chain Management major. SA: MSC 876  
 Micro-analysis of logistics and transportation services including customer service and order fulfillment, distribution operations, purchasing or operation of transportation services, third-party logistics providers, and network design.
- 877 Supply Chain Management Information Technology**  
 Summer. 2(2-0) P: SCM 872 and SCM 875 and SCM 886 R: Open to masters students in the Supply Chain Management major. SA: MSC 877  
 Role of information technology in supply chain management, planning, and operations. Requirements, capabilities, and considerations for using information technology applications in supply chain management.
- 878 Logistics Systems Analysis**  
 Summer. 2(2-0) P: SCM 870 R: Open to masters students in the Supply Chain Management major. SA: MSC 878  
 Process of solving logistics problems. Applications of analysis tools and techniques to identify benefits and costs of logistics change.
- 879 Supply Chain Management-Strategy and Applications**  
 Summer. 3(3-0) P: SCM 870 RB: 15 credits in MS Supply Chain Management R: Open to masters students in the Supply Chain Management major. SA: MSC 879  
 Analysis and solution of supply chain management cases and simulations. Teamwork, communication, and job skills. Situations involving purchasing, manufacturing, logistics and transportation as an integrated supply chain.
- 881 Global Supply Chain Management**  
 Fall. 3(3-0) P: SCM 870 R: Open to masters students in the Supply Chain Management major. SA: MSC 881  
 Requirements for global operations and strategy development. Similarities and differences of international and domestic supply chain operations.
- 882 Supply Chain Management Field Study**  
 Fall. 5 credits. P: SCM 879 RB: Completion of 24 credits of Master of Science in Supply Chain Management program. R: Open to masters students in the Supply Chain Management major. SA: MSC 882  
 Practical application of course material to a problem or situation in the student's organization.
- 883 Technology and Product Innovation Management**  
 Summer. 2(2-0) P: SCM 874 R: Open to masters students in the Supply Chain Management major. SA: MSC 883  
 Management of technology and product development for high technology firms. Creating new product ideas, designing high technology products, managing cross-functional teams, developing and implementing marketing plans, interpreting marketing data, sales forecasting for new products, testing new products, assessing competitive dynamics, and coping with uncertain environmental forces.
- 886 Strategic Sourcing**  
 Summer. 2(2-0) P: SCM 870 R: Open to masters students in the Supply Chain Management major. SA: MSC 886  
 Fundamentals of strategic sourcing and supply chain management. Integration and coordination of product innovation, sourcing, manufacturing, distribution, and logistics for global competitiveness.
- 890 Independent Study**  
 Fall, Spring, Summer. 1 to 3 credits. A student may earn a maximum of 6 credits in all enrollments for this course. R: Approval of department. SA: MSC 890  
 Faculty-supervised independent study.
- 893 Operations Strategy**  
 Summer. 2(2-0) P: SCM 870 R: Open to masters students in the Supply Chain Management major. SA: MSC 893  
 Manufacturing strategy as a competitive weapon. Link between manufacturing strategy and corporate strategy. Alignment of manufacturing strategy with corporate strategy, and structural and infrastructural decisions. Development and deployment of global manufacturing strategy. Adaptation of strategy to position the competitive capabilities of the firm appropriately.
- 894 Supply Chain Inventory Management**  
 Spring. 3(3-0) P: SCM 835 R: Open to masters students in the Supply Chain Management major. SA: MSC 894  
 Inventory management concepts and technologies. Development of forecasting, demand planning, inventory policy, and inventory modeling skills.
- 895 Supply Chain Transportation Management**  
 Spring. 3(3-0) P: SCM 870 and SCM 835 R: Open to masters students in the Supply Chain Management major. SA: MSC 895  
 Current issues in transportation management and policy. Carrier management problems and opportunities, and economic characteristics of various modes of transportation.
- 896 Logistics of Manufacturing and Service Operations**  
 Spring. 3(3-0) P: SCM 876 R: Open to masters students in the Supply Chain Management major. SA: MSC 896  
 Logistics operations in support of manufacturing after-market support, and customer fulfillment operations.
- 897 Supply Chain Integration**  
 Spring. 3(3-0) P: SCM 894 and SCM 895 and SCM 896 R: Open to masters students in the Supply Chain Management major. SA: MSC 897  
 Assessment and development of integrated supply chain strategies. Application of analytical tools to evaluate supply chain alternatives.
- 898 Supply Chain Consulting and Auditing**  
 Spring. 3(3-0) P: SCM 835 R: Open to masters students in the Supply Chain Management major. SA: MSC 898 C: SCM 897 concurrently.  
 Development of supply chain consulting skills. Consultative processes. Role of consulting and consultative selling.
- 916 Supply Chain Statistical Research Methods**  
 Fall. 3(3-0) R: Open to doctoral students in the Eli Broad College of Business and The Eli Broad Graduate School of Management.  
 Statistical research methods and techniques to support supply chain management empirical research. Applications of statistical methods drawn from current literature in procurement, operations management, and logistics.
- 917 Supply Chain Applied Decision Models**  
 Spring. 3(3-0) R: Open to doctoral students in the Eli Broad College of Business and The Eli Broad Graduate School of Management.  
 Linear and non-linear optimization models. Linear programming, integer programming, goal programming, multi-criteria models, and non-linear programming (constrained and unconstrained optimization). Problem formulation and solution procedures.
- 918 Procurement and Sourcing Theory**  
 Spring of odd years. 3(3-0) R: Open to doctoral students. SA: MGT 918, MSC 918  
 Theoretical models explaining procurement and sourcing strategy. Frameworks to guide research.
- 920 Seminar in Manufacturing Strategy**  
 Fall of even years. 3(3-0) R: Open to doctoral students. SA: MGT 920, MSC 920  
 Research in manufacturing strategy. Quality, technology, flexibility, innovation. Theory building.
- 921 Seminar in Inventory Management**  
 Spring of even years. 3(3-0) R: Open to doctoral students. SA: MGT 921, MSC 921  
 Classical, just-in-time, and multi-echelon inventory control models. Forecasting.
- 923 Topics in Operations Management**  
 Spring of odd years. 3(3-0) R: Open to doctoral students. SA: MGT 923, MSC 923  
 Current research in the field. Topics vary.
- 930 Theory of Logistics Systems**  
 Spring. 3(3-0) R: Open to doctoral students. SA: MSC 930  
 Development and management of firm logistics systems within the context of an integrated supply chain strategy. Elements of network, economic, behavioral, and systems theory in the design, management, and control of logistics systems.
- 931 Simulation Methods for Business Research**  
 Spring of odd years. 3(3-0) P: MGT 906 or SCM 916 or approval of department R: Open to doctoral students. SA: MSC 931  
 Techniques and methodology for system design and policy formulation. Methodological focus on simulation and analytical techniques to develop empirical results documenting current and anticipated system performance.

## Supply Chain Management—SCM

### 932 Logistics and Public Policy

Fall of even years. 3(3-0) RB: SCM 930 R:  
Open to doctoral students. SA: MSC 932

History and rationale of government in the development, maintenance, and control of transportation and supply chain infrastructure. Interaction of users, carriers, government, and public to create, interpret, and refine national economic and environmental policies.

### 990 Independent Study

Fall, Spring, Summer. 1 to 3 credits. A student may earn a maximum of 12 credits in all enrollments for this course. R: Open to doctoral students in the Department of Supply Chain Management. SA: MSC 990

Intensive reading and research on a supply chain topic of mutual interest to a faculty member and a doctoral student.

### 995 Directed Research Paper

Fall, Spring, Summer. 1(1-0) R: Open to doctoral students in the Department of Supply Chain Management.

Production of research paper under the direction of a senior faculty member