

SUPPLY CHAIN MANAGEMENT SCM

Department of Supply Chain Management 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 undergraduate students in the Accounting major or in the Finance Major or in the Human Resource Management Major or in the Management Major or in the Marketing Major or in the Business - Admitted major or in the Supply Chain Management Major or in the Applied Engineering Sciences 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.

304 Survey of Supply Chain Management

Fall, Spring, Summer. 3(3-0) R: Open to juniors or seniors and not open to students in the Accounting major or in the Business - Admitted major or in the Business-Preference major or in the Finance Major or in the Hospitality Business Major or in the Human Resource Management Major or in the Management Major or in the Marketing Major or in the Supply Chain Management Major. Not open to students with credit in SCM 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 Supply Chain Management Major or in the Applied Engineering Sciences Major or in the Sales Leadership Minor or approval of department. 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 and Service Operations Management

Fall, Spring, Summer. 3(3-0) P: SCM 303 and MKT 317 R: Open to juniors or seniors in the Supply Chain Management Major or in the Applied Engineering Sciences Major or approval of department. 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 Supply Chain Management Major or in the Applied Engineering Sciences Major. SA: MSC 442, MSC 373

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. 1 to 3 credits. 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.

460 Procurement Contracting

On Demand. 1(1-0) P: SCM 371 or concurrently R: Open to juniors or seniors in the Department of Supply Chain Management or approval of department.

Workshop in procurement contracting including terms and conditions, legal terms and conditions, and contracting negotiation

461 Customs, Compliance and Security

On Demand. 1(1-0) R: Open to juniors or seniors in the Department of Supply Chain Management or approval of department.

Workshop in customs including the role of customs and border protection, supply security programs, export programs and tariffs, brokers, and trusted traders.

462 End-to-End Supply Chain Analytics Using Simulation

Spring. 1(1-0) R: Open to seniors in the Department of Supply Chain Management or approval of department.

Simulation exercise and competition in the design and operation of global supply chains

463 Supply Chain Enterprise Resource Planning Technology Applications

On Demand. 1 to 3 credits. R: Open to seniors in the Department of Supply Chain Management or approval of department.

Workshop with hands-on experience in enterprise resource planning applications.

470 Integrated Supply Chain Management Capstone (W)

Fall, Spring, Summer. 3(3-0) 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, specifically purchasing, operations, and logistics problems.

471 Advanced Supply Chain Project Management

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

Project management concepts related to planning, execution, and control of projects in supply chain environments.

472 Experiential Learning with Industry Problems in Supply Chain (W)

Spring. 3(3-0) P: (SCM 371 and SCM 372 and SCM 373) and completion of Tier I writing requirement R: Open to seniors in the Department of Supply Chain Management. Not open to students with credit in SCM 470.

Integrated analysis and problem solving of supply chain management applications in collaboration with Engineering. Purchasing, manufacturing, logistics, and transportation as an integrated supply chain.

474 Negotiations

Fall, Spring. 2(2-0) Interdepartmental with Management. Administered by Management. R: Open to juniors or seniors in the Supply Chain Management Major or approval of department. SA: SCM 474 Not open to students with credit in MGT 475.

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

SCM—Supply Chain Management

- 475 Data Analytics in Supply Chain Management**
Fall, Spring. 3(3-0) P: SCM 372 R:
Open to juniors or seniors in the Supply Chain Management Major. SA: MSC 475
Application of descriptive, predictive, and prescriptive data analytics to supply chain problems. Quality management, forecasting, operations management, sourcing management, logistics/transportation management, supply network design using advanced spreadsheet modeling tools and programming for manipulating big data.
- 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 Supply Chain Cost Analysis and Application**
Fall, Spring. 2(2-0) P: SCM 371 R:
Open to juniors or seniors in the Supply Chain Management Major. SA: MSC 479
Pricing and cost management basics, cost models, parametric cost modeling, process mapping for cost management, total cost of ownership, target costing for purchased materials, value analysis and value engineering, using cost analysis to support purchase negotiations, current trends in cost management.
- 490 Independent Study**
Fall, Spring, Summer. 1 to 3 credits. A student may earn a maximum of 6 credits in all enrollments for this course. 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**
On Demand. 1 to 3 credits. A student may earn a maximum of 6 credits in all enrollments for this course. SA: MSC 491
Advanced aspects of supply continuity and supply risk, environmentally friendly manufacturing, total quality management, supply chain metrics, electronic markets, relationship management, interfaces with research and development, innovation and other 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 831 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 831 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 831 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.
- 825 Strategic Sourcing**
Spring. 1.5(1.5-0) P: MBA 831 R: Open to MBA students in the Eli Broad College of Business and The Eli Broad Graduate School of Management or approval of department. SA: MSC 825 C: SCM 826 concurrently or SCM 827 concurrently.
Strategic sourcing process. Opportunity assessment, spend and requirements analysis, supply market analysis, category sourcing strategy development and implementation. Supplier evaluation and selection.
- 826 Manufacturing Design and Analysis**
Spring. 1.5(1.5-0) P: MBA 831 R: Open to MBA students in the Eli Broad College of Business and The Eli Broad Graduate School of Management 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. 1.5(1.5-0) P: MBA 831 R: Open to MBA students in the Eli Broad College of Business and The Eli Broad Graduate School of Management 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**
Spring. 1 to 3 credits. P: SCM 800 or MBA 831 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.
- 834 Supply Chain Process Modeling and Simulation**
Spring. 1 to 3 credits. P: SCM 800 or MBA 831
Code simulation models in software to support decision making. Simulation concepts, programming, design methods, and results interpretation. Offered second half of semester.
- 842 Total Quality Management**
Fall. 1 to 3 credits. P: MBA 831 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. 1 to 3 credits. RB: SCM 800 or MBA 831 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**
Fall, Spring, Summer. 2(2-0) R: Open to master's students in the Supply Chain Management Major. 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 Supply Management**
Fall. 1.5(1.5-0) P: SCM 825 RB: SCM 826 and SCM 827 R: Open to MBA students in the Eli Broad College of Business and The Eli Broad Graduate School of Management or approval of department. SA: MSC 852
Procurement and supply management. Insourcing and outsourcing decisions. Global sourcing. Supply chain risk management. Cost analysis and management tools. Purchase negotiation, contract management and purchasing ethics. Supplier relationship management and supplier development.

- 853 Operations Strategy**
Fall. 1.5(1.5-0) P: SCM 826 RB: SCM 825 and SCM 827 R: Open to MBA students in the Eli Broad College of Business and The Eli Broad Graduate School of Management 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. 1.5(1.5-0) P: SCM 827 RB: SCM 825 and SCM 826 R: Open to MBA students in the Eli Broad College of Business and The Eli Broad Graduate School of Management 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 I**
Spring. 1.5(1.5-0) P: SCM 852 and SCM 853 and SCM 854 or approval of department R: Open to MBA students in the Eli Broad College of Business and The Eli Broad Graduate School of Management or approval of department. 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.
- 856 Supply Chain Management Technology and Applications II**
Spring. 1.5(1.5-0) P: SCM 855 R: Open to MBA students in the Eli Broad College of Business and The Eli Broad Graduate School of Management or approval of department.
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.
- 860 Procurement Contracting**
Fall, Spring. 1(1-0) P: SCM 825 or concurrently R: Open to graduate students in the Department of Supply Chain Management or approval of department.
Workshop in procurement contracting including terms and conditions, legal terms and conditions, and contracting negotiation
- 861 Customs, Compliance and Security**
Fall, Spring. 1(1-0) R: Open to graduate students in the Department of Supply Chain Management or approval of department.
Workshop in customs including the role of customs and border protection, supply security programs, export programs and tariffs, brokers, and trusted traders.
- 869 Service Supply Chains**
Spring. 1 to 3 credits. P: MBA 831 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**
Fall, Spring, Summer. 3(3-0) R: Open to master's students in the Supply Chain Management Major. Approval of department. 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**
Fall, Spring, Summer. 3(3-0) R: Open to master's 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**
Fall, Spring, Summer. 2(2-0) P: SCM 870 R: Open to master's 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**
Fall, Spring, Summer. 3(3-0) P: SCM 870 R: Open to master's 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**
Fall, Spring, Summer. 2(2-0) P: SCM 870 R: Open to master's 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**
Fall, Spring, Summer. 2(2-0) P: SCM 870 R: Open to master's 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.
- 879 Supply Chain Management-Strategy and Applications**
Fall, Spring, Summer. 3(3-0) P: SCM 870 RB: 15 credits in MS Supply Chain Management R: Open to master's 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**
On Demand. 2(2-0) P: SCM 870 R: Open to master's 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 Project Management Research Paper**
Fall, Spring. 3 credits. P: SCM 870 RB: Completion of 21 credits of Master of Science in Supply Chain Management program. R: Open to master's students in the Department of Supply Chain Management or in the Supply Chain Management Major. SA: MSC 882
Practical application of course material to a problem or situation in the student's organization. Development of project management skills and application with other course material to a situation in the student's organization.
- 883 Technology and Product Innovation Management**
Fall, Spring, Summer. 2(2-0) P: SCM 870 R: Open to master's 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**
Fall, Spring, Summer. 2(2-0) P: SCM 870 R: Open to master's 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.
- 887 Packaging Design/Engineering Optimization in Supply Chain**
Fall, Spring, Summer. 2(2-0) P: SCM 870 R: Open to master's students in the Supply Chain Management Major. Approval of department.
Overview of engineering and packaging functions that directly affect supply chain efficiency and functionality. Familiarize students with tools to solve supply chain based engineering and packaging applications.

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- 888 Product Protection and Safety for Supply Chain Managers**
Fall, Spring, Summer. 2(2-0) P: SCM 870
R: Open to master's students in the Supply Chain Management Major. Approval of department.
Introduction to general issues related to product safety and protection and how these problems affect supply chain management. Foundational discussion of brand protection, anti-counterfeiting, and food safety requirements and challenges.
- 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.
- 910 Supply Chain Theory**
Fall of odd years. 3(3-0) R: Open to doctoral students in the Department of Supply Chain Management or approval of department.
Seminar in supply chain theory, history and development.
- 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.
Theoretical models explaining procurement and sourcing strategy. Frameworks to guide research.
- 923 Topics in Operations Management**
Spring of odd years. 3(3-0) R: Open to doctoral students.
Current research in the field. Topics vary.
- 930 Foundations in Logistics Research**
Fall of even years. 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. Explores foundational research in the logistics management field.
- 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.
- 932 Emerging Thought and Current Trends in Logistics**
Fall of odd years. 3(3-0) RB: SCM 930 R: Open to doctoral students. SA: MSC 932
Development and management of opportunities and challenges related to the financial and service implications of designing and delivering logistical solutions in global markets. Policy and business elements affecting strategic outsourcing, supply chain relationship management, global compliance, business analytics, and the use of information technology and decision support systems.
- 941 Seminar on Empirical Research**
On Demand. 3(3-0)
Empirical research published in the field of operations and sourcing management.
- 942 Seminar on Analytical Research**
On Demand. 3(3-0)
Analytical research published in the field of operations and sourcing management.
- 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
- 999 Doctoral Dissertation Research**
Fall, Spring, Summer. 1 to 12 credits. A student may earn a maximum of 36 credits in all enrollments for this course. R: Open to doctoral students in the Department of Supply Chain Management or approval of department. SA: MSC 999
Doctoral dissertation research.