SUPPLY CHAIN MANAGEMENT (SCM)

Courses primarily for undergraduates:

SCM 3010: Supply Chain Management
Credits: 3. Contact Hours: Lecture 3.
Prereq: ECON 1010.
Introduction to a wide range of supply chain management (SCM) terminology, analytical tools, and theories as related to the supply chain operations reference model (SCOR). The SCOR model focuses on planning, sourcing, making, delivering, returning, and integrating key aspects within SCM. Using an analytical approach to solve real world problems, specific topics include: strategic sourcing, supply management, demand forecasting, inventory management, process management, logistics, process integration, and returns.

SCM 3030: Healthcare Quality Management
(Cross-listed with HCM 3030).
Credits: 3. Contact Hours: Lecture 3.
Prereq: Credit or enrollment in HCM 3010
Addresses the manager's role in improving healthcare quality and outcomes, including clinical and organizational improvement,#and quality improvement practices. Explores how healthcare delivery systems can better measure outcomes from both patient and organizational perspectives.#Analyzes quality improvement programs and examines their adaptability to the healthcare environment. (Typically Offered: Fall, Spring)

SCM 3400: Project Management
(Cross-listed with MIS 3400).
Credits: 3. Contact Hours: Lecture 3.
Prereq: Credit or enrollment in MIS 3010
Equips students to support team activities in the general project management environment and better manage their careers. Practical experience using project management techniques and tools. Course topics include project initiation and execution, risk assessment, estimating and contracts, planning, human factors, and standard methods.

SCM 4240: Process Management, Analysis, and Improvement
Credits: 3. Contact Hours: Lecture 3.
Prereq: SCM 3010
The design, analysis, and management of production processes to improve performance. Performance measures and their relationships; process design and evaluation; and managerial levers for improving and controlling process performance.

SCM 4280: Special Topics in Operations Management
Credits: 3. Contact Hours: Lecture 3.
Repeatable.
Prereq: SCM 3010
In-depth analysis of current issues, problems, and systems in operations management with emphasis on new theoretical and methodological developments. Topics may include in different semesters, supply chain management, productivity and quality improvement, management of technology and innovation, information technology in operations management, quick response manufacturing, and service operations management.

SCM 4300: Supply Chain Analytics
Credits: 3. Contact Hours: Lecture 3.
Prereq: SCM 3010
Introduces key methods and tools (i.e., analytics) applied to decision making in supply chain practice. Use of data, statistical and quantitative analysis, explanatory and predictive models, and fact-based management to drive decisions and actions. Descriptive, prescriptive or predictive use activities. Use of software (e.g., R and AnyLogic) to learn key concepts and techniques in analytics and apply those concepts to examples of supply chain decision making. Offered irregularly. (Typically Offered: Spring)

SCM 4340X: Implementing Process Improvement
Credits: 3. Contact Hours: Lecture 3.
Repeatable.
Prereq: SCM 4240
Provides hands-on opportunity to practice process improvement drawing on the most frequently used tools from Six Sigma and Lean. Students apply tool in local firms and use them in a final project. Emphasis on the practical application of Six Sigma and Lean techniques. (Typically Offered: Fall, Spring)

SCM 4400: Supply Chain Information Systems
(Cross-listed with MIS 4400).
Credits: 3. Contact Hours: Lecture 3.
Prereq: MIS 3010, SCM 3010
Internal and inter-organizational information systems necessary for a supply chain to achieve competitive advantage. Topics include: design, development, implementation, and maintenance of supply chain information systems; enterprise resource planning; advanced planning and scheduling, manufacturing execution systems; and the interface between manufacturing planning and control processes, logistics processes, and the information system.

SCM 4500: Enterprise Resource Planning Systems in Supply Chain
(Cross-listed with MIS 4500).
Credits: 3. Contact Hours: Lecture 3.
*Prereq: (*MIS 3010 *and* SCM 3010*) or (*IE 1480 *and* IE 3410*)*
Enterprise Resource Planning Systems in Supply Chain.

SCM 4530: Supply Chain Planning and Control
Credits: 3. Contact Hours: Lecture 3.
Prereq: SCM 3010
Supply chain planning and control is the process which synchronizes demand with manufacturing and distribution. This course will cover sales and operations planning with emphasis on forecasting, master scheduling, materials requirements planning, inventory management and demand planning. Linking business plans and information systems for integration and distribution channels are also covered. (Typically Offered: Fall)

SCM 4600: Decision Tools for Logistics and Operations Management
Credits: 3. Contact Hours: Lecture 3.
Prereq: SCM 3010
Technical tools and skills required for problem solving and decision making in logistics and operations management. Transportation and network planning, inventory decision making, facility location planning, vehicle routing, scheduling, and production planning. Quantitative tools include linear and integer programming, non-linear programming, and simulation. Emphasis on the use of PC-based spreadsheet programs.

SCM 4610: Principles of Transportation
Credits: 3. Contact Hours: Lecture 3.
Prereq: SCM 3010
Economic, operating, and service characteristics of the various modes of transportation, with a special emphasis on freight transportation. Factors that influence transport demand, costs, market structures, carrier pricing, and carrier operating and service characteristics and their influence on other supply chain costs and supply chain performance.

SCM 4620: Transportation Carrier Management
Credits: 3. Contact Hours: Lecture 3.
Prereq: Credit or enrollment in SCM 4610
Analysis of transport users' requirements. Carrier management problems involving ownership and mergers, routes, competition, labor, and other decision areas.

SCM 4660: Global Trade Management
Credits: 3. Contact Hours: Lecture 3.
Prereq: SCM 3010
The global nature of a supply chain causes many sustainability issues. This course will consider how supply chain design and execution affect sustainability. Some discussion of governmental policy will be included. Offered irregularly. (Typically Offered: Fall, Spring)

SCM 4710: Sustainable Supply Chain Management
Credits: 3. Contact Hours: Lecture 3.
Prereq: SCM 3010
The global nature of a supply chain causes many sustainability issues. This course will consider how supply chain design and execution affect sustainability. Some discussion of governmental policy will be included. Offered irregularly. (Typically Offered: Fall, Spring)

SCM 4730: War and Peace and Supply Chains
Credits: 3. Contact Hours: Lecture 3.
Prereq: SCM 3010
Explore how supply chains do or do not support sustainable peace and human flourishing. Topics include how supply chain operations affect peace; how supply chains can be incentivized to encourage peace; how supply chain choices affect peace and what affects these choices; how supply chain certifications affect peace; tools available to supply chain managers to evaluate their decisions with regard to peace; and what business or supply chain models encourage peace.

SCM 4860: Principles of Purchasing and Supply Management
Credits: 3. Contact Hours: Lecture 3.
Prereq: SCM 3010
Sourcing strategies, concepts, tools and dynamics in the context of the integrated supply chain. Make or buy decision, supplier evaluation and selection, global sourcing, the total cost of ownership, contracts and legal terms, negotiation, purchasing ethics, and information systems requirements.

SCM 4900: Independent Study
Credits: 1-3. Repeatable.
Prereq: Instructor Permission for Course

SCM 4910: International Live Case and Study Tour
Credits: 3. Contact Hours: Lecture 1.
Prereq: SCM 3010
Students follow supply chain of major firm from overseas manufacturer to domestic point-of-sale. Students are expected to complete projects and present findings to senior leadership. (Typically Offered: Spring)

SCM 4950: Executive Analysis and Presentations
Credits: 3. Contact Hours: Lecture 3.
Repeatable.
Prereq: SCM 3010
Students explore different practical scenarios related supply chain projects and cases. Students acquire necessary skills and knowledge to solve practical issues associated with presented cases and problems. Students compete at different venues around the country. Graduation Restriction: Only 3 credits of SCM 4950 may count as a Supply Chain Management major choice elective. (Typically Offered: Fall, Spring)

Courses primarily for graduate students, open to qualified undergraduates:

SCM 5010: Supply Chain Management
Credits: 3. Contact Hours: Lecture 3.
Introduction to supply chain management including aspects of operations, logistics and global supply chain strategy development. Topic areas include lean manufacturing and value stream mapping; supplier development and measurement; sustainable supply chain operations; process measurement, management and improvement; supply chain risk and uncertainty; visibility and integration in the supply chain; and inventory control.

SCM 5030: Healthcare Supply Chain Management
Credits: 3. Contact Hours: Lecture 3.
Healthcare supply chain management presents unique challenges for administrators and providers. Exploration of common supply chain management topics in a healthcare context including purchasing, operations, and logistics. Specific topics include operations in a highly regulated environment, professional services outsourcing, clinical integration via information technologies, service process design, capacity management, and quality and process improvement in a healthcare setting. (Typically Offered: Fall)

SCM 5130: Biorenewables Supply Chain Management
Credits: 3. Contact Hours: Lecture 3.
Evaluation of supply chain logistics related to the field of biorenewables. Unique challenges associated with the biorenewables supply chain are emphasized and examined: cost analysis, market demand & prices, life cycle analysis, environmental impacts, as well as the technological, social, and political factors related to society. (Typically Offered: Spring)

SCM 5200: Decision Models for Supply Chain Management
Credits: 3. Contact Hours: Lecture 3.
The application of decision models for supply chain management. Topics include business applications of decision theory, inventory theory, business forecasting, optimization models, transportation and network models, routing problems, and project management.

SCM 5240: Strategic Process Analysis and Improvement
Credits: 3. Contact Hours: Lecture 3.
Analysis, management, and improvement of the business processes used to produce and deliver products and services that satisfy customer needs. Process attributes that managers can control to influence the key operational performance measures of throughput time, inventory, cost, quality, and flexibility are discussed. Topics such as theory of constraints, lean production, and six sigma are included.

SCM 5260X: Lean Operations in Healthcare
Credits: 3. Contact Hours: Lecture 3.
Now more than ever, the healthcare industry is committed to providing better but cheaper care services, often characterized by increasing efficiency and reducing costs. Toward that goal, the identification and elimination of waste in health care delivery processes are necessary. Lean could be the answer. The course educates on the Lean tools and techniques, enabling the students to look for ways to heal health care from within. The course aims to combine rigor with relevance that prepares practitioners to identify waste in their health care delivery processes and then fabricate processes to reduce or eliminate that waste. Lean methodology has already helped health care organizations to realize many benefits, including reduced patient wait times, shorter hospital stays, decreased risk of medication errors, less inventory, and more patient-focused processes.

SCM 5300X: Applied Supply Chain Analytics
Credits: 3. Contact Hours: Lecture 3.
Supply chain analytics course showcasing real life applications of analytics (prescriptive, predictive, and descriptive) in various fields of supply chain management, including demand forecasting for supply chain planning, multi-echelon inventory management, and capacity planning for service and manufacturing operations. Students will be using various free software, such as R and AnyLogic, to learn key concepts and techniques in analytics. These learnt skills will then be applied to examples of supply chain decision making. (Typically Offered: Fall)

SCM 5400: Enterprise Supply Chain Information Systems
Credits: 3. Contact Hours: Lecture 3.
The purpose of this course is to examine the role of enterprise resource planning systems (ERP) in the supply chain. This course will provide students with hands-on experience with a major software application in use by many corporations to manage and improve the efficiency of their supply chain. In particular, this class will utilize an ERP system to help students develop a more process-centric perspective about how a supply chain operates. Students will have the opportunity to use the SAP ERP software package on key processes that most ERP systems utilize (i.e., purchasing, MRP, forecasting, order fulfillment and pricing). The course is also dedicated to understanding the tactical and operational management of supply chains. This course will discuss issues related to the creation of end-user value through supply chain cost reductions, service improvements, or both.

SCM 5530: Supply Chain Planning and Control
Credits: 3. Contact Hours: Lecture 3.
Supply chain planning and control is the process which synchronizes demand with manufacturing and distribution. Sales and operations planning with emphasis on forecasting, master scheduling, materials requirements planning, inventory management and demand planning. Linking business plans and information systems for integration and distribution channels are also covered. Emphasis on the strategic advantages of linking business plans and demand forecasts. Offered irregularly. (Typically Offered: Fall, Spring)

SCM 5600: Strategic Logistics Management
Credits: 3. Contact Hours: Lecture 3.
Positions logistics vis-a-vis supply chain management (SCM). Presents different perspectives on SCM vs. logistics. Describes primary logistics functions: transportation, warehousing, facility location, customer service, order processing, inventory management and packaging. Benefits of and obstacles to the integration of these functions.

SCM 5610: Transportation Management and Policy
Credits: 3. Contact Hours: Lecture 3.
Analysis of contemporary issues and strategies in transportation management and policy. Emphasis on evaluation of the impacts of transportation policies, new technologies, and strategic carrier and shipper management practices on the freight transportation industry and logistics systems.

SCM 5630: Purchasing and Supply Management
Credits: 3. Contact Hours: Lecture 3.
Mechanics, procedures and tools used in purchasing. Recruiting, selecting, developing and managing supply chain partners in order to achieve competitive advantage via superior supply chain management. Factors and information needs for making supply management decisions.

SCM 5660X: Global Trade Management
Credits: 3. Contact Hours: Lecture 3.
Evaluation of the physical, informational, and behavioral flows involved in global trade. The analysis of international logistics as a vital part of the supply chain includes the study of the environment, structure, and management of international logistics systems and their application to channel management. Instruction will be delivered using online resources and assessments along with in-class lectures and activities.

SCM 5710X: Sustainable Supply Chain Management
Credits: 3. Contact Hours: Lecture 3.
The global nature of a supply chain causes many sustainability issues. This course will consider how supply chain design and execution affect sustainability. Some discussion of governmental policy will be included. (Typically Offered: Fall)

SCM 5900: Special Topics
Credits: 1-3. Repeatable.
Prereq: Instructor Permission for Course
For students who wish to do individual research in a particular area of supply chain management.

Courses for graduate students:

SCM 6010: Theoretical Foundations of Supply Chain Management
Credits: 3. Contact Hours: Lecture 3.
Prereq: MGMT 6010 or Permission of Instructor
An overview of the development of supply chain management (SCM) theory, including review of seminal articles in logistics, operations, and purchasing management and theories from allied disciplines (e.g., economics, marketing, sociology, strategic management). Analysis of trends in SCM research topics and methodologies. Identification of emerging and future areas for research and theory development.

SCM 6030: Seminar in Purchasing
Credits: 3. Contact Hours: Lecture 3.
Review of classic purchasing theories. Discussion of contemporary supply management strategy; the role of supply management and its relationship with other functional areas; its impact on logistics and transportation issues; management of supply uncertainties.

SCM 6040: Seminar in Logistics Management
Credits: 3. Contact Hours: Lecture 3.
Integration of network, economic, and systems theory in the design, management, and control of logistics systems in the context of integrated supply chain management. Functional areas addressed include transportation, inventory order fulfillment, distribution, and warehousing. Facility location analysis will also be covered.

SCM 6050: Seminar in Operations Management
Credits: 3. Contact Hours: Lecture 3.
Review of the research literature on methods of organizing, planning, controlling, and improving manufacturing systems to achieve the desired performance objectives related to cost, quality, speed, and flexibility. The relationship between the performance of the manufacturing system and the performance of the supply chain system will also be discussed.

SCM 6090: Special Topics in SCM
Credits: 3. Contact Hours: Lecture 3.
Repeatable.
Review of current issues in SCM. Provides opportunities to read and discuss research articles that made important contributions in SCM literature. Offered irregularly. (Typically Offered: Fall, Spring)

SCM 6500: Research Practicum I
Credits: 1.
Prereq: Enrollment in Ph.D. program
Preparation of a research manuscript to be submitted to a peer-reviewed academic journal. Students will work with a faculty mentor on a research project.

SCM 6510: Research Practicum II
Credits: 1.
Prereq: Enrollment in Ph.D. program
Preparation of a second research manuscript to be submitted to a peer-reviewed academic journal. Although students work under the supervision of a faculty mentor, the students will take independent responsibility for the research project.

SCM 6990: Dissertation
Credits: 12. Repeatable.
Research.