



SUPPLY CHAIN MANAGEMENT AND ANALYTICS (SCMA)

SCMA 831 Advanced Enterprise Systems

Description: Analytical approach to the design, planning, and control of operations management systems, including domestic and international, manufacturing and service operations.

Credit Hours: 3

Max credits per semester: 3

Max credits per degree: 3

Grading Option: Graded

SCMA 832 Planning and Controlling Supply Chain Systems

Prerequisites: GRBA 815 (Supply Chain Management Strategies)

Description: Taught predominately by the case method with a few classes for review and summary lectures. Concentrates on higher management decisions involving the manufacturing, service, and public sectors. Facilities planning, labor, aggregate planning, strategic planning, capacity management, and trade-off analysis.

Credit Hours: 3

Max credits per semester: 3

Max credits per degree: 3

Grading Option: Graded

SCMA 833 Advanced Topics in Supply Chain Management

Prerequisites: GRBA 815

Description: Advanced conceptual and methodological practices in designing and planning supply chain systems. Advances and strategies in supply chain procurement, transportation, distribution and warehousing, globalization, outsourcing, and technology.

Credit Hours: 3

Max credits per semester: 3

Max credits per degree: 3

Grading Option: Graded

SCMA 834 Advanced Topics in Lean Supply Chain Management

Prerequisites: GRBA 815

Description: Focus on the improvement of supply chain operations through the application of lean management principles. Topics include just-in-time, six-sigma, theory of constraints, and associated tools and applications. The course would be offered primarily in the on-line MBA program.

Credit Hours: 3

Max credits per semester: 3

Max credits per degree: 3

Grading Option: Graded

SCMA 836 Project Management and Implementation

Notes: Department Supply Chain Management and Analytics not Management

Description: Planning and managing projects from initiation through implementation. Use of tools and techniques for bidding, planning budgeting scheduling, risk management and implementation.

Credit Hours: 3

Max credits per semester: 3

Max credits per degree: 3

Grading Option: Graded

SCMA 837 Risk and Simulation Modeling

Description: Analytical and simulation models for decision making in functional areas such as finance, accounting, marketing, personnel, operations, and inventory. Construction of decision models for practical applications. Emphasis on analyzing alternatives and implementing solutions that result in increased productivity.

Credit Hours: 3

Max credits per semester: 3

Max credits per degree: 3

Grading Option: Graded

Course and Laboratory Fee: \$40

SCMA 839 Global Supply Chain Management

Prerequisites: GRBA 815

Description: Focus on global aspects of supply chain managing with primary emphasis on sourcing and distribution strategies. Topics will include sourcing strategies, concepts and tools. Specific issues include make versus buy decisions, supplier evaluation and selection, total cost of ownership, contracts and legal terms, negotiation, and purchasing ethics.

Credit Hours: 3

Max credits per semester: 3

Max credits per degree: 3

Grading Option: Graded

SCMA 844 Managing Logistics in the Supply Chain

Prerequisites: GRBA 815

Description: Examination of physical distribution activities in the marketing mix from the viewpoints of both providers and users of components of logistics systems. Logistics problems of concern to the marketing manager include time and place utility concepts, spatial relationships of markets, channel design, transportation modes, and inventory management.

Credit Hours: 3

Max credits per semester: 3

Max credits per degree: 3

Grading Option: Graded

SCMA 847 Information Technologies for Operations and Innovation

Description: Business leaders must understand how to leverage advanced information technology (IT) for operations and innovation. Learn the foundations of IT, advanced IT trends, and how IT is used to operate, innovate, grow, and transform organizations.

Credit Hours: 3

Max credits per semester: 3

Max credits per degree: 3

Grading Option: Graded

SCMA 851 Predictive Analytics

Prerequisites: GRBA 851

Description: This course will focus on how knowledge management has been successfully applied in business in the form of predictive analytics. Predictive analytics extends statistical and/or artificial intelligence to provide forecasting capability. It will also describe in non-technical terms the statistical and artificial intelligence-based tools commonly used in forecasting and other business decisions involving big data.

Credit Hours: 3

Max credits per semester: 3

Max credits per degree: 3

Grading Option: Graded

Prerequisite for: SCMA 854

SCMA 852 Data Management and Organization**Prerequisites:** GRBA 851**Description:** Technology of databases and related human and managerial considerations. Databases are studied from the perspective of the logical organization, as well as from the perspective of managers and applications programmers, in the use of organizational data. Consideration of physical organization and SQL. Practical applications of databases.**Credit Hours:** 3**Max credits per semester:** 3**Max credits per degree:** 3**Grading Option:** Graded**SCMA 853 Data Mining and Descriptive Analytics****Prerequisites:** GRBA 851**Notes:** The Supply Chain Management Analytics department is changing the name to be more reflective of the content.**Description:** Data mining applies quantitative analysis to support humans in identifying actionable information from large amounts of data. Actionable means that value can be obtained, which for businesses usually relates to making money. This course will focus on how data mining has been successfully applied in business. It will also describe in non-technical terms how the statistical and artificial intelligence-based tools commonly used in data mining work. The course will also address ethical issues related to use of information obtained through data mining.**Credit Hours:** 3**Max credits per semester:** 3**Max credits per degree:** 3**Grading Option:** Graded**SCMA 854 Advanced Analytics and Big Data****Prerequisites:** SCMA 851**Description:** Covers advanced business analytics topics, including data cleansing, classification, clustering, reduction, exploration and visualization. Big data analysis platforms and tools are also covered.**Credit Hours:** 3**Max credits per semester:** 3**Max credits per degree:** 3**Grading Option:** Graded**SCMA 855 Prescriptive Analytics****Prerequisites:** GRBA 851**Description:** This course will focus on how optimization modeling techniques can be used to make the best decisions in a variety of business analytics applications. The emphasis will be on the formulation of different optimization problems and the use of the correct quantitative techniques to solve these problems.**Credit Hours:** 3**Max credits per semester:** 3**Max credits per degree:** 3**Grading Option:** Graded**SCMA 935 Decision Theory****Prerequisites:** Admission to PhD program and permission.**Notes:** This course will take place over an 8-week period.**Description:** Provides an overview of decision theory and decision analysis with a focus on decision-making under uncertainty. Topics covered may include decision theory, which includes a set of mathematical tools for describing and reasoning about decisions, and decision analysis, which involves the application of decision theoretic tools to real world problems. Considers both the mathematical and statistical foundations of decision theory, including Bayesian inference, and the application of these techniques to problems in business.**Credit Hours:** 1-3**Min credits per semester:** 1**Max credits per semester:** 3**Max credits per degree:** 3**Grading Option:** Graded**SCMA 937 Simulation Modeling and Analysis****Prerequisites:** Admission to PhD program and permission.**Notes:** This course will take place over an 8-week period.**Description:** Overview of the uses of simulation and computation for analyzing stochastic models and interpreting real phenomena. Topics covered may include discrete-event simulation, Monte Carlo simulation, generating discrete and continuous random variates, the statistical analysis of simulated data, variance reduction techniques, and simulation optimization. Applications will be drawn from areas such as manufacturing, supply chain management and finance.**Credit Hours:** 1-3**Min credits per semester:** 1**Max credits per semester:** 3**Max credits per degree:** 3**Grading Option:** Graded**SCMA 939 Inventory Management and Procurement****Prerequisites:** Admission to PhD program and permission.**Notes:** This course will take place over an 8-week period.**Description:** Overview of the research literature in inventory management, including topics such as deterministic and stochastic models for inventory control and multi-echelon inventory theory. Introduce the research literature in the area of procurement, including topics such as supplier management and contract design.**Credit Hours:** 1-3**Min credits per semester:** 1**Max credits per semester:** 3**Max credits per degree:** 3**Grading Option:** Graded**SCMA 944 Transportation and Logistics Management****Prerequisites:** Admission to PhD program and permission.**Notes:** This course will take place over an 8-week period.**Description:** Provides an overview of the research literature in transportation and logistics modeling, including heuristic and optimization models with both single and multiple objectives, as well as empirical applications. Introduces the research literature in areas such as vehicle routing and location analysis.**Credit Hours:** 1-3**Min credits per semester:** 1**Max credits per semester:** 3**Max credits per degree:** 3**Grading Option:** Graded

SCMA 945 Service System Design

Prerequisites: Admission to PhD program and permission.

Notes: This course will take place over an 8-week period.

Description: Provides theoretical and methodological background on service system design. Considers the design and delivery of service in industries such as healthcare, banking, retailing, and evolving service sectors, to improve the productivity and quality of the system. Covers different aspects of system design and service delivery, such as technology use and mechanisms to promote individual and organizational learning.

Credit Hours: 1-3

Min credits per semester: 1

Max credits per semester: 3

Max credits per degree: 3

Grading Option: Graded

SCMA 946 Revenue Management

Prerequisites: Admission to PhD program and permission.

Notes: This course will take place over an 8-week period.

Description: Provides an overview of the research literature in demand management and the use of optimization to derive pricing and revenue management decisions in the context of operations management. Topics such as demand and revenue forecasting, customer segmentation, capacity allocation, dynamic pricing, assortment management, discounting, overbooking practices, and auctions that are relevant for industries such as airlines, hotels, restaurants, retailing, online advertising, cloud computing, and ride sharing.

Credit Hours: 1-3

Min credits per semester: 1

Max credits per semester: 3

Max credits per degree: 3

Grading Option: Graded

SCMA 955 Mathematical Programming for Business

Prerequisites: Admission to PhD program and permission.

Notes: This course will take place over an 8-week period.

Description: Provides an overview of mathematical programming theory and techniques, such as linear, integer and nonlinear programming, and will cover both problem formulation and solution approaches. Understanding of formulating and solving large-scale problems in broad application areas of supply chain management and business analytics.

Credit Hours: 1-3

Min credits per semester: 1

Max credits per semester: 3

Max credits per degree: 3

Grading Option: Graded

SCMA 956 Stochastic Models for Operations and Supply Chain Management

Prerequisites: Admission to PhD program and permission.

Notes: This course will take place over an 8-week period.

Description: Provides the theoretical foundation in stochastic processes necessary to analyze complex systems that exhibit random behavior over time, which regularly arise in operations and supply chain management. Introduces the basic concepts of stochastic processes, describe the types of stochastic processes most commonly used in the study of operations and supply chain management, discuss how to identify the appropriate type of process to model a given system, and demonstrate the methods used to model and analyze stochastic systems.

Credit Hours: 1-3

Min credits per semester: 1

Max credits per semester: 3

Max credits per degree: 3

Grading Option: Graded

SCMA 994 Topics in SCMA

Prerequisites: Admission to PhD program and permission.

Notes: This course will meet for 1 hour per week over a 16-week period.

Description: Exposure to the variety of methods used and topics studied in operations management, supply chain management and analytics, with a focus on state-of-the art research. Exposure to on-going research through methods such as attendance and participation in departmental and college seminars, and meetings with visiting speakers and scholars.

Credit Hours: 1

Max credits per semester: 1

Max credits per degree: 12

Grading Option: Pass No-Pass

SCMA 996 Directed Reading or Research

Prerequisites: Admission to PhD program and permission.

Description: Individual research or reading on a selected problem in operations management, supply chain management, or analytics.

Credit Hours: 1-3

Min credits per semester: 1

Max credits per semester: 3

Max credits per degree: 24

Grading Option: Pass No-Pass

SCMA 999 Doctoral Dissertation

Prerequisites: Admission to PhD program and permission.

Description: Research credits required for a doctoral dissertation for completion of degree.

Credit Hours: 1-12

Min credits per semester: 1

Max credits per semester: 12

Max credits per degree: 55

Grading Option: Pass No-Pass