DEPARTMENT OF SUPPLY CHAIN MANAGEMENT AND ANALYTICS

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Associate professor and chair


Faculty in the Department of Supply Chain Management and Analytics are passionate about providing impeccable academic instruction and research that advances knowledge related to production, product development and the information systems needed to direct these endeavors. The department’s undergraduate and graduate programs prepare students to immediately take important positions related to supply chain management and business analytics. The department remains involved with the corporate community through a partnership with the Commonwealth Center for Advanced Logistics Systems.

Students interested in production, distribution, and the engineering and finances supporting large-scale operations will be prepared by VCU’s programs in supply chain management and analytics to enter an exciting field with plentiful job opportunities. For additional information contact the department by emailing scma@vcu.edu.

- Business, Bachelor of Science (B.S.) with a concentration in supply chain management and analytics (http://bulletin.vcu.edu/undergraduate/business/supply-chain-management/business-bs-concentration-supply-chain-management-analytics)

SCMA 171. Mathematical Applications for Business. 3 Hours.
Semester course; 3 lecture hours. 3 credits. Prerequisite: MATH 141 or satisfactory score on the VCU Mathematics Placement Test within the one-year period immediately preceding the beginning of the course. Pre- or corequisite: INFO 162. Mathematics equivalency may be validated by a satisfactory score on the VCU Mathematics Placement Test within the one-year period immediately preceding the beginning of the course. Formulation and solution of problems using a spreadsheet and algebra, mathematics of finance, matrices and introductory linear programming. Instruction will include spreadsheet use as a calculation and graphing tool.

SCMA 212. Differential Calculus and Optimization for Business. 3 Hours.
Semester course; 3 lecture hours. 3 credits. Prerequisite: SCMA 171 or MATH 151 or satisfactory score on the VCU Mathematics Placement Test within the one-year period immediately preceding the beginning of the course. Univariate and bivariate differential calculus and optimization of algebraic functions that model business phenomena. Students should take SCMA 212 immediately after completing SCMA 171. Students may not receive degree credit for both SCMA 212 and MATH 200.

SCMA 301. Business Statistics I. 3 Hours.
Semester course; 3 lecture hours. 3 credits. Prerequisite: SCMA 212 or MATH 200. Statistical methods for collection, visualization and analysis of business and economic data from populations and processes. Statistical thinking, concepts of variability, sampling, descriptive measures, contingency tables, probability and introduction to regression, correlation, confidence intervals and hypothesis testing. Students may receive credit toward graduation for only one of STAT 206, STAT 208, STAT 210, STAT 212, STAT 312 or SCMA 301.

SCMA 302. Business Statistics II. 3 Hours.
Semester course; 3 lecture hours. 3 credits. Prerequisite: SCMA 212 or MATH 200 and SCMA 301, STAT 210 or STAT 212. Statistical methods employed in the collection and analysis of business and economic data. Continuation of statistical inference for means and variable relationships using t-tests, analysis of variance, contingency tables, regression and correlation analysis with emphasis on problem formulation and interpretation of computational results.

SCMA 303. Business Analytics. 3 Hours.
Semester course; 3 lecture hours. 3 credits. Prerequisites: INFO 162; SCMA 212 or MATH 200; and SCMA 301, STAT 210 or STAT 212. Descriptive analysis (Excel models and pivot tables, summary statistics, data visualization and regression analysis), predictive analysis (time series and forecasting) and prescriptive analysis (optimization models, decision trees and sensitivity analysis).

SCMA 320. Production/Operations Management. 3 Hours.
Semester course; 3 lecture hours. 3 credits. Prerequisite: SCMA 301, STAT 210 or STAT 212. This course is restricted to students who have completed at least 54 credit hours (junior standing). Discipline of management and the management process within the operations of an organization. Planning and controlling of operations through decision analysis, forecasting, aggregate planning, inventory management and quality management.

SCMA 339. Quantitative Solutions for Supply Chain Management. 3 Hours.
Semester course; 3 lecture hours. 3 credits. Prerequisite: SCMA 301, STAT 210 or STAT 212. Enrollment is restricted to students who have completed at least 54 credit hours (junior standing). Modeling business-related problems using quantitative techniques. Focus is on applications to problems in the service and manufacturing sectors. Typical problem situations involve management of inventory, scheduling of people and processes and allocation of scarce resources.

SCMA 350. Introduction to Project Management. 3 Hours.
Semester course; 3 lecture hours. 3 credits. Prerequisite: junior standing. Introductory exposure to and practice with the concepts of project management, the activities and skills of project managers, the prevalence of projects in organizations, and the value of project management skills for all managers. Students will employ project management terminology, participate in project work and engage in the appropriate technical and interpersonal processes for managing successful projects.

SCMA 386. Global Supply Chain Management. 3 Hours.
Semester course; 3 lecture hours. 3 credits. Enrollment is restricted to students who have completed at least 54 credit hours (junior standing). Introduction to supply chains with emphasis on management, e-commerce and globalization. Topics covered include achievement of strategic fit among members of the chain; managing information system requirements; managing economies of scale, role of cycle inventory, impact of aggregation on risk and inventory; determining the optimal level of product availability, coordination and performance measurement.
SCMA 410. Logistics and Distribution Strategy. 3 Hours.
Semester course; 3 lecture hours. 3 credits. Prerequisite: SCMA 320.
This course provides an introduction to the principal analytical tools
and methods used in supply chain management, including experience in
solving relevant supply chain and logistics problems. The course content
includes a heavy emphasis on the use of Microsoft Excel functions to
develop modeling skills, including decision analysis, linear programming,
heuristics and simulation for supply chain decision-making. Context
areas for problem solving include supply chain network design, inventory
management, transportation management, purchasing and demand
management.

SCMA 420. Strategic Sourcing. 3 Hours.
Semester course; 3 lecture hours. 3 credits. Prerequisite: SCMA 320.
Procurement and strategic sourcing address the processes that facilitate
the structure, creation and management of value-added transactions and
relationships between supplier and customer organizations in a channel,
supply chain and integrated value system context.

SCMA 427. Employment Law. 3 Hours.
Semester course; 3 lecture hours. 3 credits. Prerequisite: BUSN 323 or
MGMT 331. Enrollment is restricted to students who have completed at
least 54 credit hours (junior standing). A survey of legislation and court
and administrative-body decisions affecting the employer/employee
relationship.

SCMA 430. Data Management and Visualization. 3 Hours.
Semester course; 3 lecture hours. 3 credits. Prerequisite: SCMA 303.
This course is designed with the goal of equipping students with
competencies in data management and visualization, with the intended
product being an individual capable of developing analytically rigorous
decision support tools, catered to specific managerial environments,
which can be easily handed off for robust application by a range of
intended users in those environments.

SCMA 439. Process Management and Quality Control. 3 Hours.
Semester course; 3 lecture hours. 3 credits. Prerequisite: SCMA 320.
Enrollment is restricted to students who have completed at least 54
credit hours (junior standing). Critical concepts of process management
from quality management and Six Sigma; service quality; systems
thinking; process improvement strategy and methods; fact-based
decision-making; collection and use of data in improvement projects;
introduction to data analysis tools and techniques; statistical process
control.

SCMA 440. Data Mining and Forecasting. 3 Hours.
Semester course; 3 lecture hours. 3 credits. Prerequisite: SCMA 302
or STAT 314. Enrollment is restricted to students who have completed
at least 54 credit hours (junior standing). This course introduces
nonmathematical managers to the major quantitative models designed
for sound demand, competitive and system forecasting in today's
complex and increasingly uncertain business environment. The course is
useful for multiple business disciplines, including general management,
marketing and finance. Topics include game theory, Markov processes,
statistical quality control, exponential smoothing and seasonally adjusted
trend analysis. Emphasis is placed on a general understanding of theory,
mechanics, application potential, available software packages and
templates.

SCMA 491. Topics in Supply Chain Management and Analytics. 1-3
Hours.
Semester course; variable hours. 1-3 credits. Students are restricted to
a maximum total of 6 credits for all topics courses. Prerequisite: junior
standing. An in-depth study of a selected business topic related to the
disciplines in supply chain management and analytics, to be announced
in advance.

SCMA 492. Independent Study in Supply Chain Management and
Analytics. 1-3 Hours.
Semester course; 1-3 credits. Maximum total of 3 credits. Prerequisites:
junior or senior standing as a major in a business curriculum and
approval of adviser and department chair prior to course registration.
Intensive study under supervision of a faculty member in an area not
covered in depth or contained in the regular curriculum.

SCMA 493. Internship in Supply Chain Management and Analytics. 3
Hours.
Semester course; 3 credits. Prerequisites: senior standing in the major
offering the internship and permission of the department chair. Intention
to enroll must be indicated to the instructor prior to or during advance
registration for semester of credit. Involves students in a meaningful
experience in a setting appropriate to the major.