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. Preparation: 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, matrices and introductory linear programming. Instruction will include spreadsheet use as a calculation and graphing tool.

SCMA 213. Business Statistics I. 3 Hours.
Semester course; 3 lecture hours. 3 credits. Prerequisites: BUSN 171 or MATH 151. Mathematical 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, with implementation in spreadsheet software. Students may receive credit toward graduation for only one of STAT 206, STAT 208, STAT 210, STAT 212, STAT 312 or SCMA 301.

SCMA 301. 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 302. 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 303. Business Analytics II. 3 Hours.
Semester course; 3 lecture hours. 3 credits. Prerequisites: 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 304. Production/Operations Management. 3 Hours.
Semester course; 3 lecture hours. 3 credits. Prerequisite: SCMA 301, STAT 210 or STAT 212. Taking SCMA 212 immediately after completing SCMA 171. Students may not receive degree credit for both SCMA 212 and MATH 200.

SCMA 305. 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 306. 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; and 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 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.