Department of Information and Decision Sciences

Jack Brown Hall, Room 460
(909) 537-5723 Department of Information and Decision Sciences website (http://ids.csusb.edu)

The university offers concentrations in Business Analytics, Information Systems and Technology, and Supply Chain and Transportation Management within the Bachelor of Arts in Administration (http://bulletin.csusb.edu/colleges-schools-departments/business-public-administration/#degreeextratext) and focus areas in Business Intelligence and Information Technology, Cyber Security, and Supply Chain Management in the Master of Business Administration (http://bulletin.csusb.edu/colleges-schools-departments/business-public-administration/#graduatedegreeextratext). Information Systems and Technology and Supply Chain Management courses are offered in support of these programs. Further information is available from the Department of Information and Decision Sciences.

BS in Information Systems and Technology

with options in:

• Computer Information Systems
• Cyber Security
• Intelligence
• Public Administration

MS in Information Systems Technology

Current Faculty

Anthony Coulson, Professor
B.A. 1992, M.B.A. 1993, California State University, San Bernardino
Ph.D. 2002, Claremont Graduate School

Kamvar Farahbod, Professor
B.A. 1976, University of Tehran
M.S. 1979, Ph.D. 1986, Oklahoma State University

Frank M. Lin, Professor, Associate Dean
B.S. 1981, Tatung Institute of Tech at Buffalo

Conrad Shayo, Professor
B. of Commerce 1981, University of Dar-Es-Salaam, Tanzania
M.B.A. 1985, University of Nairobi, Kenya
Ph.D. 1995, Claremont Graduate University

Barbara Sirotnik, Professor
A.B., B.S. 1973, M.S. 1979, Ph.D. 1980, University of California, Riverside

Javad Varzandeh, Professor, Chair
B.S. 1974, National University, Iran
M.S. 1976, St. Mary's University
Ph.D. 1981, Oklahoma State University

Jun (Jake) Zhu, Professor
B.A. 1988, Hunan Educational Institute, China
M.A. 1991, University of Redlands
Ph.D. 1997, University of California, Riverside

Emeriti

Harold Dyck, Professor
Robert D. Wilson, Professor

Undergraduate Degree

Bachelor of Science

• Information Systems and Technology (http://bulletin.csusb.edu/colleges-schools-departments/business-public-administration/information-decision-sciences/information-systems-technology-bs) with options in:
  • Computer Information Systems
  • Cyber Security
  • Intelligence
  • Public Administration

Graduate Degree

Master of Science

• Information Systems and Technology (http://bulletin.csusb.edu/colleges-schools-departments/business-public-administration/information-decision-sciences/information-systems-technology-ms)

Information Systems and Tech Courses

IST 101. Introduction to Information Technology. 4 Units.
Introduction to information technology concepts and skills. Survey of current computer hardware and software, their use in organizations, and attending ethical issues. An introduction to popular software applications (word processing, spreadsheets, and presentation graphics). No prior computer experience required. May not be taken for credit by students who have received credit for both INFO 102 and 103. Three hours lecture and two hours activity laboratory.

IST 150. Web Publishing. 4 Units.
Prerequisites: IST 101 or consent of instructor
Basic web page development and web site planning. Topics include web site planning, web page design and HTML. Students will demonstrate proficiency in web design tools, skills and practices.

IST 160. Computer Graphics for the Internet. 4 Units.
Prerequisites: IST 101 or consent of instructor
Introduction to computer graphic design and tools for web page development. Topics include digital photography, graphic design, animation and digital sound for the Internet. Students will demonstrate proficiency in graphic design tools, skills and practices geared to digital and world wide web publishing.
IST 215. Cyber Security. 4 Units.
Prerequisites: IST 101 or consent of instructor
Study in information assurance and systems security for information systems professionals. Creates a sensitivity to the threats and vulnerabilities to information systems, recognition of the need to protect data, and information for processing them. Topics include concepts of systems security, network infrastructure, access control, assessment and audits, cryptography and organizational security. Formerly IST 410.

IST 274. Data Base Management and Policies. 4 Units.
Prerequisites: IST 101 or consent of instructor
Fundamentals of data base design and use. Topics include data base application in organizations, end user needs analysis, logical data base design, data integrity and data base security. Students design and create working applications using a popular business data base program. Information classification, management and disposal practices are explored.

IST 275. Information Networking and Security. 4 Units.
Prerequisites: IST 101 or consent of instructor
Data communications field for the business student including the introductory topics of hardware, software, protocols, channels, modems, local area networks, wide area networks and various applications. Students will gain hands-on experience with current popular data communication systems. Security concepts including policies, access control and network assessment are covered.

IST 276. Systems Analysis and Design. 4 Units.
Prerequisites: IST 101 or consent of instructor
Traditional systems analysis and design methods and tools, including the role of the systems analyst, feasibility studies, modeling technique systems design, reporting and documentation, documentation standards, certification testing and system accreditation practices, and implementation strategies. Students will develop conceptual, analytical and practical skills in modeling organizational processes.

IST 280. Information Mapping and Data Visualization. 4 Units.
Prerequisites: IST 101 or consent of instructor
Introduction to concepts and tools of data visualization. Together with traditional charting and graphing methods, students are introduced to the use of geographic information systems (GIS). Using spatial modeling tools and quantitative methods, the course provides students with practical applications for converting data into information.

IST 282. Business Systems I. 4 Units.
Prerequisites: IST 101 or consent of instructor
An introduction to business system development in an object-oriented environment. Emphasizes object-oriented programming in a graphical user interface environment. Object-oriented concepts are applied to computer problem solving. Knowledge of computer programming is not essential.

IST 305. Enterprise Systems. 4 Units.
Prerequisites: IST 101
Foundation for enterprise systems resource planning and implementation, including supply chain management modeling and operations planning. Students will learn to configure and apply an enterprise systems software. (Also offered as SCM 305. Students may not receive credit for both.)

IST 309. Information Systems and Technology. 4 Units.
Prerequisites: IST 101
Application of computer systems in organizations. Topics include information systems planning, information forecasting, information technology, information processing, information assurance and security, risk assessment, allocating resources and legal concepts.

IST 372. Information Technology. 4 Units.
Prerequisites: IST 309 or consent of instructor
Basic computer hardware, software, maintenance and training technologies including hardware components, operating system functions, information systems maintenance strategies for the organization, and end-user training options. Security practices such as network access, data disposal, introductory forensics and facilities planning are also explored. Hands-on experience with different computer hardware, operating systems and software utilities. Formerly INFO 472.

IST 378. Problem Solving and Risk Management. 4 Units.
Prerequisites: IST 309 or consent of instructor
Systematic approaches to problem solving and decision making. Students will learn behavioral and organizational decision making processes relating to their roles as both manager and information systems designer. Topics include recognizing and defining the problem, troubleshooting, individual and group decision making, risk management, incident handling, threat assessment, allocating resources, and implementation strategies. Formerly INFO 478.

IST 415. Security Systems Management. 4 Units.
Prerequisites: IST 215 or consent of instructor
Advanced study in the theory and practice of security systems management and the process of approval to operate. Analyze and judge information for the validity and reliability to ensure the system will operate at the proposed level of trust. Topics include information systems architecture, security measures, system operations policy, system security management planning, legal and ethical considerations, and provisions for system operator and end user training. Course meets Senior Systems Manager (SSM) standards established by the federal government (CNSS 4012).

IST 474. Advanced Data Base Management and Information Assurance. 4 Units.
Prerequisites: IST 274 and IST 309, or consent of instructor
Advanced computer data base concepts and skills including: data modeling, Structured Query Language (SQL), and client-server applications. Also covers Data Base System Administration issues: data certification/classification, life cycle, access control, and legal requirements. Students will create applications using an advanced data base program package.

IST 475. Advanced Information Networking and Security. 4 Units.
Prerequisites: IST 275 and IST 309, or consent of instructor
Advanced computer networking and their application in organizations. Students will learn current computer network strategies and create advanced network applications. Security emphasis includes threats and countermeasures, wireless security, security requirements, access control practices.
IST 476. Advanced Systems Analysis and Design. 4 Units.
Prerequisites: IST 276 and IST 309, or consent of instructor
Advanced analysis, design and implementation of information systems for organizations, including data, process and network modeling techniques; structured, information engineering and object-oriented approaches to systems design; systems testing methods; documentation standards; certification testing and system accreditation practices; copyright and legal issues; implementation strategies and project management.

IST 480. Advanced Information Mapping and Visualization. 4 Units.
Prerequisites: IST 280 and 309, or consent of instructor
Advanced study in and implementation of data visualization methods. Integration of information mapping, forecasting and data base tools and concepts to solve problems and support decision making. Students will learn and apply a popular geographic information system (GIS) to typical organizational problems.

IST 483. Advanced Business Systems. 4 Units.
Prerequisites: IST 282 or consent of instructor
Advanced study of secure information systems development in an object-oriented environment. Advanced object-oriented concepts are applied to design and implement various applications for business information systems. In addition, the course covers techniques that business application developers can use to write new code securely. Knowledge of computer programming is essential. Formerly IST 283.

IST 485. E-Business. 4 Units.
Prerequisites: IST 150 and 309, or consent of instructor
Advanced technical and business skills for designing, developing and managing e-business applications. Topics include enterprise systems, business to business exchanges, and implementation strategies.

IST 490. Information Systems Planning and Policy. 4 Units.
Prerequisites: completion of all other courses in chosen concentration program and the upper-division writing requirement
Advanced study of information systems planning and policy formation for top management. Covers strategic use of information technology in organizations; the theory, methods and practices of enterprise systems planning; and design and implementation of information systems policy. Policy issues surrounding project management, information classification, IT audit, and legal issues related to privacy and security will also be covered.

IST 505. Advanced Enterprise Resource Planning. 4 Units.
Prerequisites: SCM 304 or 607
Advanced study of enterprise systems planning in different stages of organizational operations. Students use enterprise planning technology to examine cases in different organizational settings. (Also offered as SCM 505. Students may not receive credit for both.) Formerly IST 405.

IST 511. Cyber Defense. 4 Units.
Prerequisites: IST 215 and IST 275, or IST 610 and IST 648, or consent of instructor
Advanced study of information assurance and security including methods and practices used by federal and state agencies, and private sector best practices. Topics include: threat assessment, red teeming methods, countermeasures, practices and law. Students will work in simulated environments and will investigate crimes and experience various security scenarios. Formerly a topic under IST 590.

IST 525. Computer Forensics. 4 Units.
Prerequisites: IST 215 or consent of instructor
A systematic inspection of computer systems for evidence of a crime and use in civil litigation. Identify sources of digital evidence, preserve and analyze digital evidence, present findings, and learn tools computer forensics experts use. Formerly a topic under IST 590.

IST 575. Internship. 4 Units.
Prerequisites: senior standing preferred; consent of instructor and the departments internship coordinator
Supervised work and study in private or public organizations. May be repeated once for credit. A total of two College of Business and Public Administration 575 courses may be applied toward graduation. Graded credit/no credit.

IST 590. Seminar in Information Systems and Technology. 4 Units.
Prerequisites: the upper-division writing requirement
An intensive study of some phase of information systems and technology to be developed by the instructor. May be repeated for credit as topics change.

IST 595B. Independent Study. 2 Units.
Prerequisites: a minimum overall grade point average of 3.0, consent of instructor and approval by the department of a written project/proposal submitted to the appropriate department in the College of Business and Public Administration on a standard application filed in advance of the quarter in which the course is to be taken
Special topics involving library and/or field research. A total of 10 units in any College of Business and Public Administration 595 may be applied toward graduation. Marketing (1-5 units).

IST 595D. Independent Study. 4 Units.
Prerequisites: a minimum overall grade point average of 3.0, consent of instructor and approval by the department of a written project/proposal submitted to the appropriate department in the College of Business and Public Administration on a standard application filed in advance of the quarter in which the course is to be taken
Special topics involving library and/or field research. A total of 10 units in any College of Business and Public Administration 595 may be applied toward graduation. Marketing (1-5 units).

IST 609. Information Systems and Technology Management. 4 Units.
Advanced applications of computer and information systems in organizations. Topics include information management planning, information technologies, information assurance and security, risk assessment, resource allocation and information based management.
IST 610. Information Assurance Policy and Management. 4 Units.
Information security from a system-wide perspective, beginning with a strategic planning process. Includes policies, procedures and functions necessary to organize and administer ongoing security functions in an organization. Topics include security practices, architecture and models, continuity planning and disaster recovery. Designed to incorporate the Committee for National Security Systems (CNSS) 4011 and 4012 standards.

IST 623. Entrepreneurial Information Management. 4 Units.
Prerequisites: IST 609
Explores the use of current personal computing technology upon entrepreneurial organizations and management. Topics will include e-commerce, web-based business strategies, commerce security and privacy, and computer software used by entrepreneurs.

IST 645. Information Systems Analysis and Design. 4 Units.
Prerequisites: IST 609
Managerial perspective of the methods used in the design and maintenance of computer based information systems. Issues in systems design, from project identification to implementation and maintenance, documentation standards, certification testing and system accreditation practices, copyright and legal issues will be presented. Tools and principles related to newer techniques such as joint application development and object oriented data base design.

IST 646. Information Systems Planning, Strategy and Policy. 4 Units.
Prerequisites: IST 609
Information systems planning, strategy and policy are necessary for an organization to deploy, manage and control its information resources. Takes the view of the Chief Information Officer integrating information systems with the business strategy and information needs of the organization through the process of information systems strategic planning and policy development. Information and security architecture theory, tools, assessments, methodologies and practice are applied.

IST 647. Information Based Management. 4 Units.
Prerequisites: IST 609
Advanced theory and application of data base management in organizations. Topics include managers need for information, elements of a data base, types of data bases, difference in data bases, administration issues, data certification/classification, life cycle, access control, and legal requirements.

IST 648. Information Networking Systems and Security. 4 Units.
Prerequisites: IST 609 or consent of instructor
Advanced study of developing, implementing, securing and managing information networks. Topics include use of hardware, software, routers, wireless communications, and Voice over IP. Management issues such as access control, privacy, protocol security and policies are also explored.

IST 650. Information Decision Systems. 4 Units.
Prerequisites: IST 609 and SCM 607
Concepts, principles, practices and tools needed to support the management decision making process. Both static and dynamic models of information management related to decision making will be explored. Specific topics include risk management, incident handling, threat assessment, allocating resources and system certification. (Also offered as SCM 650. Students may not receive credit for both.).

IST 670. Business Geographical Information Systems Strategies. 4 Units.
Prerequisites: IST 609 or consent of instructor
Advanced studies in the use of geographical information systems (GIS) for developing solutions to business problems. Topics include the role of location on various organizational performance measures, how to analyze, interpret and display business related spatial data, and various methodological issues in deploying GIS in an organizational environment.

IST 675. Internship. 4 Units.
Prerequisites: consent of instructor and department's internship coordinator
Supervised work and study in private or public organizations. May be repeated once for credit. A total of two College of Business and Public Administration 675 courses may be applied toward graduation. Graded credit/no credit.

IST 678. Risk Management and Problem Solving. 4 Units.
Advanced study to critical thinking, problem solving, decision making and risk management. Students will learn behavioral and organizational decision making processes relating to their roles as both information systems analyst, designer, and risk manager. Topics include recognizing and defining the problem using structured analysis techniques, troubleshooting, individual and group decision making, the NIST risk management framework, risk analysis, incident handling, threat assessment, allocating resources, and implementation strategies.

IST 680. International Electronic Commerce. 4 Units.
Prerequisites: IST 609
Information technology in international business including: electronic data interchange, information technology in transnational firms. Managing information through international strategic alliances, corporate factors affecting global IT requirements, transnational information technology policy issues, transborder data flows and IT architecture for electronic commerce.

IST 684. Data Warehousing and Business Intelligence. 4 Units.
Design and management of data warehouse (DW) and business intelligence (BI) systems. Using DW tools to collect, integrate, and mine the organization's big data. Focus is on aggregation of data to enhance visualization, Extract, Transform, Load (ETL), data schema design, data security, on demand data access, ERP systems, report generation, managing the ERP project, OLAP, cube design, and understanding big data.
IST 691. MSIST Culminating Project. 4 Units.
Prerequisites: completion of 40 units in the program or the consent of the College of Business and Public Administration Director of Graduate Programs
Culminating experience course provides the student an opportunity to become skilled practitioners and managers by applying knowledge gained from the MSIST program to solve a substantive business problem. Only full-time tenured and tenure-track faculty are allowed to serve as the chairs of the student's MSIST culminating project. Two hours seminar and two hours business assessment project.

IST 695. Graduate Project. 4 Units.
Prerequisites: advancement to candidacy, written approval of students graduate project committee and graduate director
Independent graduate research in information systems and technology. Project will be under direction of a faculty member.

IST 698A. Continuous Enrollment for Graduate Candidacy Standing. 1 Unit.
Prerequisites: advancement to candidacy and approval of program graduate coordinator or, if an interdisciplinary studies major, consent of the Dean of Graduate Studies
Independent study leading to completion of requirements (other than course work) for the master's degree. To retain classified standing in the master's program, a student must enroll in 698 each quarter until the project or thesis is accepted or the comprehensive examination passed. Students who enroll in 698 through the university have full use of all university facilities. See Culminating Experience: Exam, Thesis, or Project in Graduate Degree and Program Requirements section of the Bulletin of Courses. 698 is a variable unit course, see fee schedule in the Financial Information section of the Bulletin of Courses. Earned units are not degree-applicable nor will they qualify for financial aid.

IST 698B. Continuous Enrollment for Graduate Candidacy Standing. 2 Units.
Prerequisites: advancement to candidacy and approval of program graduate coordinator or, if an interdisciplinary studies major, consent of the Dean of Graduate Studies
Independent study leading to completion of requirements (other than course work) for the master's degree. To retain classified standing in the master's program, a student must enroll in 698 each quarter until the project or thesis is accepted or the comprehensive examination passed. Students who enroll in 698 through the university have full use of all university facilities. See Culminating Experience: Exam, Thesis, or Project in Graduate Degree and Program Requirements section of the Bulletin of Courses. 698 is a variable unit course, see fee schedule in the Financial Information section of the Bulletin of Courses. Earned units are not degree-applicable nor will they qualify for financial aid.

IST 698C. Continuous Enrollment for Graduate Candidacy Standing. 3 Units.
Prerequisites: advancement to candidacy and approval of program graduate coordinator or, if an interdisciplinary studies major, consent of the Dean of Graduate Studies
Independent study leading to completion of requirements (other than course work) for the master's degree. To retain classified standing in the master's program, a student must enroll in 698 each quarter until the project or thesis is accepted or the comprehensive examination passed. Students who enroll in 698 through the university have full use of all university facilities. See Culminating Experience: Exam, Thesis, or Project in Graduate Degree and Program Requirements section of the Bulletin of Courses. 698 is a variable unit course, see fee schedule in the Financial Information section of the Bulletin of Courses. Earned units are not degree-applicable nor will they qualify for financial aid.

IST 698D. Continuous Enrollment for Graduate Candidacy Standing. 4 Units.
Prerequisites: advancement to candidacy and approval of program graduate coordinator or, if an interdisciplinary studies major, consent of the Dean of Graduate Studies
Independent study leading to completion of requirements (other than course work) for the master's degree. To retain classified standing in the master's program, a student must enroll in 698 each quarter until the project or thesis is accepted or the comprehensive examination passed. Students who enroll in 698 through the university have full use of all university facilities. See Culminating Experience: Exam, Thesis, or Project in Graduate Degree and Program Requirements section of the Bulletin of Courses. 698 is a variable unit course, see fee schedule in the Financial Information section of the Bulletin of Courses. Earned units are not degree-applicable nor will they qualify for financial aid.

IST 698E. Continuous Enrollment for Graduate Candidacy Standing. 5 Units.
Prerequisites: advancement to candidacy and approval of program graduate coordinator or, if an interdisciplinary studies major, consent of the Dean of Graduate Studies
Independent study leading to completion of requirements (other than course work) for the master's degree. To retain classified standing in the master's program, a student must enroll in 698 each quarter until the project or thesis is accepted or the comprehensive examination passed. Students who enroll in 698 through the university have full use of all university facilities. See Culminating Experience: Exam, Thesis, or Project in Graduate Degree and Program Requirements section of the Bulletin of Courses. 698 is a variable unit course, see fee schedule in the Financial Information section of the Bulletin of Courses. Earned units are not degree-applicable nor will they qualify for financial aid.
Supply Chain Management Courses

SCM 304. Principles of Supply Chain Management. 4 Units.
Prerequisites: ADMN 210
Introduction to supply chain management concepts and techniques. Methods that aid the manager in making rational decisions in manufacturing and service industries are discussed. Emphasis is on the application of models to managerial decision making. Formerly MSCI 304 and OM 304.

SCM 305. Enterprise Resource Planning. 4 Units.
Prerequisites: SCM 304 or consent of instructor
Foundation for enterprise resource planning and implementation, including supply chain and transportation management modeling and operations planning. Configuration and application of an enterprise system. Formerly SCM 205. (Also offered as IST 305. Students may not receive credit for both.)

SCM 350. Decision Making in Supply Chain and Transportation Management. 4 Units.
Prerequisites: SCM 304
Decision making process used by supply chain and transportation managers. Different perspectives of individual and organizational decision making, and analysis and interpretation of data to make effective decisions.

SCM 440. Transportation Systems Management. 4 Units.
Prerequisites: SCM 304
Analysis of alternative transportation modes, carriers, services, rates and policies as related to overall operation of an organizations shipping and/or traffic departments. Formerly MKTG 452.

SCM 445. International Logistics. 4 Units.
Prerequisites: SCM 304
Logistics management involving goods and services in different countries. International business environment, international transportation, intermediaries, import/export regulations, payment and risks, and cultural differences of the global supply chain.

SCM 446. Operations Planning and Control. 4 Units.
Prerequisites: SCM 304
Analytical approach to traditional and modern concepts in operations analysis and planning. Includes application of techniques to accomplish the organizations mission by using productive resources. Formerly OM 466.

SCM 470. Supply Chain Management. 4 Units.
Prerequisites: SCM 304
Comprehensive study of all activities and processes to supply products or services to final customers. Topics include: purchasing, logistics and supply chain optimization, inventory control, warehouse and distribution management. Formerly OM 470.

SCM 475. Business Analytics Practicum/Practices. 4 Units.
Prerequisites: SCM 305, SCM 350, IST 282, and IST 274
Comprehensive practice of the Business Analytics process, including data extraction, analytical modeling, detailed analysis, and reporting utilizing business cases.

SCM 480. Quality Management. 4 Units.
Prerequisites: SCM 304
Description and analysis of quality assurance programs and techniques and their many applications in supply chain and transportation from a total quality management perspective. Topics include quality planning, statistical quality control, quality design and measurement, and management of six sigma quality and inspection. Formerly OM 480.

SCM 490. Logistics Strategy. 4 Units.
Prerequisites: the upper division writing requirement and completion of all other courses in concentration program or consent of instructor
Development, implementation and integration of strategies in supply chain and transportation management. Capstone course for the fields of supply chain and transportation management. Includes case studies and use of current technology.
SCM 505. Advanced Enterprise Resource Planning. 4 Units.
Prerequisites: SCM 304 or SCM 607
Advanced study of enterprise systems planning in different stages of organizational operations. Students use enterprise planning technology to examine cases in different organizational settings. (Also offered as IST 505. Students may not receive credit for both.) Formerly SCM 405.

SCM 515. Project Management. 4 Units.
Developing and implementing a plan that completes a project on time, under budget, and meets project objectives. Topics include: project feasibility, risk analysis, resource allocation, control with earned value, managing project stakeholders, and project management tools. Formerly SCM 615.

SCM 575. Internship. 4 Units.
Prerequisites: senior standing preferred; consent of instructor and the departments internship coordinator
Supervised work and study in private or public organizations. May be repeated once for credit. A total of two College of Business and Public Administration 575 courses may be applied toward graduation. Graded credit/no credit.

SCM 590. Seminar in Supply Chain Management. 4 Units.
Prerequisites: the upper-division writing requirement
An intensive study of some phase of supply chain management to be developed by the instructor. May be repeated for credit as topics change. Formerly MSCI 590.

SCM 595B. Independent Study. 2 Units.
Prerequisites: a minimum overall grade point average of 3.0, consent of instructor and approval by the department of a written project/proposal submitted to the appropriate department in the College of Business and Public Administration on a standard application filed in advance of the quarter in which the course is to be taken
Special topics involving library and/or field research. A total of 10 units in any College of Business and Public Administration 595 may be applied toward graduation. Marketing (1-5 units).

SCM 595D. Independent Study. 4 Units.
Prerequisites: a minimum overall grade point average of 3.0, consent of instructor and approval by the department of a written project/proposal submitted to the appropriate department in the College of Business and Public Administration on a standard application filed in advance of the quarter in which the course is to be taken
Special topics involving library and/or field research. A total of 10 units in any College of Business and Public Administration 595 may be applied toward graduation. Marketing (1-5 units).

SCM 607. Managing the Supply Chain. 4 Units.
Integration and application of analytical techniques used in logistics and supply chain management. Concepts of decision models are examined for planning, control, forecasting, scheduling, and analysis within an enterprise. Formerly OM 607.

SCM 611. Global Supply Chain Management and Logistics. 4 Units.
Prerequisites: SCM 607
Development, implementation and integration of global supply chain management and operations management strategy with business and other functional strategies of an organization. Topics include: decisions involving positioning, structuring and managing for superior competitive performance.

SCM 614. Advanced Quality Management. 4 Units.
Prerequisites: SCM 607
Technical and managerial issues for implementing total quality management in operations, supply chain and logistics. Topics include the management of quality planning, organizing, motivation and control; employee involvement teams for total quality; the quality of product design; management of quality and reliability; management of inspection and measurement. Formerly OM 614.

SCM 649. Business Analytics. 4 Units.
Introduction to business analytics including querying large datasets, predictive analytics, data visualization using dashboards, decision making under uncertainty/risk, and application of optimization decision analysis tools. Focus is on data manipulation, use of univariate and multivariate statistical methods to analyze data, sensitive analysis, goal seeking, random variables, simulations, queuing, and the use of Excel Power Business Intelligence Tools for modeling and decision support.

SCM 650. Information Decision Systems. 4 Units.
Prerequisites: INFO 609 and SCM 607
Concepts, principles, practices and tools needed to support the management decision making process. Both static and dynamic models of information management related to decision making will be explored. Specific topics include risk management, incident handling, threat assessment, allocating resources and system certification. (Also offered as INFO 650. Students may not receive credit for both.) Formerly OM 650.

SCM 660. Transportation and Supply Chain Management. 4 Units.
Prerequisites: SCM 607
Comprehensive study of managing transportation and the supply chain. Logistics of managing the pipeline of goods from initial contracts with suppliers and control of work-in-process to the movement of finished goods through the channels of distribution. Formerly OM 660.

SCM 675. Internship. 4 Units.
Prerequisites: consent of instructor and department's internship coordinator
Supervised work and study in private or public organizations. May be repeated once for credit. A total of two College of Business and Public Administration 675 courses may be applied toward graduation. Graded credit/no credit.

SCM 690. Seminar in Supply Chain and Transportation Strategy. 4 Units.
Capstone course on supply chain strategic planning, key strategic decisions, industrial and consumer supply chain cases, field trips to local companies, and discussions with professionals.
SCM 695. Graduate Project. 4 Units.
Prerequisites: advancement to candidacy, written approval of student's graduate project committee and graduate director
Independent graduate research in supply chain management, transportation and logistics. Project will be under direction of a faculty member.

SCM 698A. Continuous Enrollment for Graduate Candidacy Standing. 1 Unit.
Prerequisites: advancement to candidacy and approval of program graduate coordinator or, if an interdisciplinary studies major, consent of the Dean of Graduate Studies
Independent study leading to completion of requirements (other than course work) for the master's degree. To retain classified standing in the master's program, a student must enroll in 698 each quarter until the project or thesis is accepted or the comprehensive examination passed. Students who enroll in 698 through the university have full use of all university facilities. See Culminating Experience: Exam, Thesis, or Project in Graduate Degree and Program Requirements section of the Bulletin of Courses. 698 is a variable unit course, see fee schedule in the Financial Information section of the Bulletin of Courses. Earned units are not degree-applicable nor will they qualify for financial aid.

SCM 698B. Continuous Enrollment for Graduate Candidacy Standing. 2 Units.
Prerequisites: advancement to candidacy and approval of program graduate coordinator or, if an interdisciplinary studies major, consent of the Dean of Graduate Studies
Independent study leading to completion of requirements (other than course work) for the master's degree. To retain classified standing in the master's program, a student must enroll in 698 each quarter until the project or thesis is accepted or the comprehensive examination passed. Students who enroll in 698 through the university have full use of all university facilities. See Culminating Experience: Exam, Thesis, or Project in Graduate Degree and Program Requirements section of the Bulletin of Courses. 698 is a variable unit course, see fee schedule in the Financial Information section of the Bulletin of Courses. Earned units are not degree-applicable nor will they qualify for financial aid.

SCM 698C. Continuous Enrollment for Graduate Candidacy Standing. 3 Units.
Prerequisites: advancement to candidacy and approval of program graduate coordinator or, if an interdisciplinary studies major, consent of the Dean of Graduate Studies
Independent study leading to completion of requirements (other than course work) for the master's degree. To retain classified standing in the master's program, a student must enroll in 698 each quarter until the project or thesis is accepted or the comprehensive examination passed. Students who enroll in 698 through the university have full use of all university facilities. See Culminating Experience: Exam, Thesis, or Project in Graduate Degree and Program Requirements section of the Bulletin of Courses. 698 is a variable unit course, see fee schedule in the Financial Information section of the Bulletin of Courses. Earned units are not degree-applicable nor will they qualify for financial aid.

SCM 698D. Continuous Enrollment for Graduate Candidacy Standing. 4 Units.
Prerequisites: advancement to candidacy and approval of program graduate coordinator or, if an interdisciplinary studies major, consent of the Dean of Graduate Studies
Independent study leading to completion of requirements (other than course work) for the master's degree. To retain classified standing in the master's program, a student must enroll in 698 each quarter until the project or thesis is accepted or the comprehensive examination passed. Students who enroll in 698 through the university have full use of all university facilities. See Culminating Experience: Exam, Thesis, or Project in Graduate Degree and Program Requirements section of the Bulletin of Courses. 698 is a variable unit course, see fee schedule in the Financial Information section of the Bulletin of Courses. Earned units are not degree-applicable nor will they qualify for financial aid.

SCM 698E. Continuous Enrollment for Graduate Candidacy Standing. 5 Units.
Prerequisites: advancement to candidacy and approval of program graduate coordinator or, if an interdisciplinary studies major, consent of the Dean of Graduate Studies
Independent study leading to completion of requirements (other than course work) for the master's degree. To retain classified standing in the master's program, a student must enroll in 698 each quarter until the project or thesis is accepted or the comprehensive examination passed. Students who enroll in 698 through the university have full use of all university facilities. See Culminating Experience: Exam, Thesis, or Project in Graduate Degree and Program Requirements section of the Bulletin of Courses. 698 is a variable unit course, see fee schedule in the Financial Information section of the Bulletin of Courses. Earned units are not degree-applicable nor will they qualify for financial aid.

SCM 698F. Continuous Enrollment for Graduate Candidacy Standing. 6 Units.
Prerequisites: advancement to candidacy and approval of program graduate coordinator or, if an interdisciplinary studies major, consent of the Dean of Graduate Studies
Independent study leading to completion of requirements (other than course work) for the master's degree. To retain classified standing in the master's program, a student must enroll in 698 each quarter until the project or thesis is accepted or the comprehensive examination passed. Students who enroll in 698 through the university have full use of all university facilities. See Culminating Experience: Exam, Thesis, or Project in Graduate Degree and Program Requirements section of the Bulletin of Courses. 698 is a variable unit course, see fee schedule in the Financial Information section of the Bulletin of Courses. Earned units are not degree-applicable nor will they qualify for financial aid.
SCM 698Z. Continuous Enrollment for Graduate Candidacy Standing. 0 Units.

Prerequisites: advancement to candidacy and approval of program graduate coordinator or, if an interdisciplinary studies major, consent of the Dean of Graduate Studies.

Independent study leading to completion of requirements (other than course work) for the master's degree. To retain classified standing in the master's program, a student must enroll in 698 each quarter until the project or thesis is accepted or the comprehensive examination passed. Students who enroll in 698 through the university have full use of all university facilities. See Culminating Experience: Exam, Thesis, or Project in Graduate Degree and Program Requirements section of the Bulletin of Courses. 698 is a variable unit course, see fee schedule in the Financial Information section of the Bulletin of Courses. Earned units are not degree-applicable nor will they qualify for financial aid.