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 Security, Information Systems and Technology, and Supply Chain and Transportation Management within the Bachelor of Arts in Administration and concentrations in Cyber Security and Global Supply Chain Management within the Master of Business Administration. 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.

Emerita

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

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

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 (https://catalog.csusb.edu/colleges-schools-departments/business-public-administration/information-decision-sciences/information-systems-technology-bs/) with concentrations in:

- Business Intelligence and Analytics
- Cyber Security
- National Security

Graduate Degree

Master of Science

- Business and Data Analytics (https://catalog.csusb.edu/colleges-schools-departments/business-public-administration/information-decision-sciences/bus-data-ms/) (offered through College of Extended and Global Education) *(pending Chancellor's Office approval)*
- Cybersecurity and Analytics (https://catalog.csusb.edu/colleges-schools-departments/business-public-administration/information-decision-sciences/cybersecurity-analytics-ms/) (offered through College of Extended and Global Education)
- Information Systems and Technology (https://catalog.csusb.edu/colleges-schools-departments/business-public-administration/information-decision-sciences/information-systems-technology-ms/) with concentrations in:
  - Business Intelligence and Analytics
  - Cyber Security
- Logistics and E-Commerce (https://catalog.csusb.edu/colleges-schools-departments/business-public-administration/information-decision-sciences/logistics-e-commerce-ms/) (offered through College of Extended and Global Education)

Minors

Business Analytics (https://catalog.csusb.edu/colleges-schools-departments/business-public-administration/information-decision-sciences/business-analytics-minor/)

Information Systems and Technology (https://catalog.csusb.edu/colleges-schools-departments/business-public-administration/information-decision-sciences/information-systems-technology-minor/)

Supply Chain Management (https://catalog.csusb.edu/colleges-schools-departments/business-public-administration/information-decision-sciences/supply-chain-management-minor/)

Certificates

Cyber Security (https://catalog.csusb.edu/colleges-schools-departments/business-public-administration/cyber-security-certificate/)

Cyber Security Professional (https://catalog.csusb.edu/colleges-schools-departments/business-public-administration/cyber-security-professional-certificate/) (Offered through the College of Extended Global Education (https://cel.csusb.edu/))

Information Systems Management (https://catalog.csusb.edu/colleges-schools-departments/business-public-administration/information-systems-management-certificate/)

Supply Chain Management (https://catalog.csusb.edu/colleges-schools-departments/business-public-administration/supply-chain-management-certificate/)

Information Systems and Tech Courses

IST 1110. Introduction to Information Technology. Unit: 1

The course introduces students to information technology concepts and skills. Topics include hardware and software fundamentals and their use in organizations, how to become better global digital citizens, online safety and the attending ethical issues emanating from the use of computers in business and society. Hands-on lab sessions on popular software applications and enterprise resource planning systems are provided. Materials fee required.

IST 2110. Information Technology. Units: 3

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 offered as IST 372. Materials fee required.

IST 2210. Computer Networks and Security. Units: 3

Semester Prerequisite: IST 1110 or consent of instructor. Quarter Prerequisite: IST 101 or consent of instructor

This course covers the fundamentals of computer networks for business students. Topics include: layered network architecture, communication protocols, local and wide area networks, hardware basics, network security, traffic monitoring, packet level analysis and operating system command line. Students will learn much of this through hands-on experience using popular packet analyzer tools and simulators. Formerly offered as IST 275.

IST 2310. Applications Development. Units: 3

Semester Prerequisite: IST 1110 or consent of instructor. Quarter Prerequisite: IST 101 or consent of instructor

This course introduces object-oriented techniques for business application design and development. The objective of this course is to make students understand application development concepts including data type, strings, control statements, loops, functions, lists, tuples, classes & objects and basic algorithms. This course highlights the problem-solving aspects of developing business applications. Formerly offered as IST 282.

IST 2410. Database Management for Business. Units: 3

Semester Prerequisite: IST 1110. Quarter Prerequisite: IST 101

This course covers the fundamental concepts and technologies of database systems for business applications. Students will learn database concepts and skills including: data modeling (ER and relational model), normalization, Structured Query Language (SQL), transaction management, data base system administration issues, security, and implementation techniques using a popular database management systems software package. Formerly offered as IST 274.

IST 2510. Big Data Analytics. Units: 3

Semester Prerequisite: IST 2310, ADMN 2100 or consent of instructor

An overview of the wide area of business analytics, including the extensive use of data, methods, and fact-based management to support and improve decision making. Students are introduced to the most important methods used to manipulate, store, clean, visualize, and analyze big data. Topics include: The analytics life cycle, basic tools for statistical analysis, programming, machine learning algorithms and report generation for technical and non-technical audiences.

IST 2610. Cybersecurity. Units: 3

Semester Prerequisite: IST 1110 or consent of instructor. Quarter Prerequisite: IST 101 or consent of instructor

Study in information assurance and systems security for information systems professionals. This course covers several key domains of knowledge essential to becoming a cybersecurity professional. The topics include (but are not limited to): threats, attacks and vulnerabilities; technologies and tools; architecture and design; identity and access management; risk management/cryptography and PKI. This course will include hands-on, applied technical labs. Formerly offered as IST 215.

IST 3050. Enterprise Resource Planning. Units: 3

Semester Prerequisite: SCM 3040

This course introduces students to the concept and usage of Enterprise Resource Planning (ERP) to support organizational processes. It emphasizes how businesses are using ERP systems to integrate their business processes. Students will learn and understand business process data flows, and how that impacts the functional areas of an organization. Students will have hands-on experience using an ERP system. Formerly offered as SCM 305. Also offered as IST 3050. Students may not receive credit for both.

IST 3110. Management of Information Technology. Units: 3

Semester Prerequisite: IST 1110. Quarter Prerequisite: IST 101

This course focuses on how best practice organizations use information technology to gain competitive advantage and accomplish mission. The course exposes students to numerous examples of IT applications in finance, accounting, marketing, public administration, human resource, entrepreneurship, and supply chain operations. Topics include: enterprise information systems; ethics of IT use; cybersecurity, IT laws and risk management, cloud computing, data warehousing and business intelligence, social media, customer/supplier relationship management systems, IT project management, and impact of contemporary IT technologies such as AI and blockchain technologies. Formerly offered as IST 309. Materials fee required.

IST 3420. Systems Analysis and Design. Units: 3

Semester Prerequisite: IST 1110 or consent of instructor. Quarter Prerequisite: IST 101 or consent of instructor

This course introduces students to the principles and methods of systems analysis and design. Topics include: systems development life cycle, prototyping, planning and managing projects, systems evaluation, interface design with controls, and object-oriented design concepts and tools. The course exposes students to UML (Unified Modeling Language) and other graphical modeling tools to model information systems based on user requirements and specification. Formerly offered as IST 276.

IST 3500. Problem Solving and Decision Making. Units: 3

Semester Prerequisite: ADMN 2100. Quarter Prerequisite: ADMN 210
This course covers many approaches in solving business problems from a managerial point of view. Students experiment with typical techniques and learn why/how these techniques work. Spreadsheets are used to experiment with such techniques. Emphasis is placed on input requirements and interpretation of results. Topics include: what-if analysis, networks, decision trees, sensitivity analysis, and goal seeking. Formerly offered as SCM 350. Also offered as IST 3500. Students may not receive credit for both.

IST 4120. Information Systems Planning and Policy. Units: 3

Semester Prerequisite: IST 2210 and IST 2610. Quarter Prerequisite: IST 372 and IST 215
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. Formerly offered as IST 490.

IST 4210. Advanced Networking and Security. Units: 3

Semester Prerequisite: IST 2210 Quarter Corequisite: IST 309. Quarter Prerequisite: IST 275 and IST 309; or consent of instructor
Advanced computer networks and their application in organizations. Students are introduced to the technology of routed and switched networks, wireless networks and network security. Through hands-on experience and using popular packet analyzer tools and simulators, students learn how to design, configure, administer, secure and debug heterogeneous IP networks. Topics include: routing protocols, configuring routers and switches, VLANs, network management techniques, routing IP traffic, wireless networks, network security, access control list. Formerly offered as IST 475.

IST 4310. Web Technologies. Units: 3

Semester Prerequisite: IST 2310 or consent of instructor. Quarter Prerequisite: IST 282
This course is designed to give students exposure to and experience with several modern web development principles and technologies used on the Internet today. Topics include XML, web protocols, client-side & server-side technologies, back-end data management, and web service. If time permits, topics in semantic web may be included.

IST 4320. Advanced Applications Development. Units: 3

Semester Prerequisite: IST 2310 or consent of instructor. Quarter Prerequisite: IST 282 or consent of instructor
Advanced applications development in an object-oriented environment. Advanced object-oriented concepts are applied to design and implement various applications for business information systems. Focuses on developing complex applications that address a business problem or opportunity. Formerly offered as IST 483.

IST 4410. Advanced Database Management and Information Assurance. Units: 3

Semester Prerequisite: IST 2410 or consent of instructor. Quarter Prerequisite: IST 274 and IST 309, or consent of instructor
Advanced computer data base concepts and skills including: data modeling, advanced Structured Query Language (SQL), client-server application, database security, and emerging database technologies. Also covers Database System Administration issues: data certification/classification, life cycle, access control and legal requirements. Students will create applications using an advanced database program package. Formerly offered as IST 474.

IST 4510. Advanced Data Analytics. Units: 3

Semester Prerequisite: IST 2510 or consent of instructor
Topics include: univariate and multivariate statistical methods to analyze data, relational databases and SQL, predictive analytics, descriptive analytics, linear regression, text processing and sentiment analysis, data visualization and other emerging data analytics methods.

IST 4520. Data Mining. Units: 3

Semester Prerequisite: IST 2510
This course introduces students to concepts, principles and techniques related to data mining and the knowledge discovery process. Students will learn methods to manipulate and explore data through learning the basic ideas of clustering, regression and classification. The course will provide hands-on experience with a variety of different techniques and applications (e.g., intrusion detection, text mining, customer segmentation). Topics include: data processing, pattern discovery, logistic regression, classification methods, association analysis and cluster analysis.

IST 4610. Cybersecurity Management. Units: 3

Semester Prerequisite: IST 2610 or consent of instructor. Quarter Prerequisite: IST 215 or consent of instructor
This course covers the technical and managerial knowledge required to effectively design, engineer, and manage the overall security posture of an organization. Topics include: Security and risk management, asset security, communication and network security, identity and access management, security assessment and testing, security operations, software development security. Formerly offered as IST 415.

IST 4620. Penetration Testing and Ethical Hacking. Units: 3

Semester Prerequisite: IST 2610 and IST 2210. Quarter Prerequisite: IST 215 and IST 275
This course covers the process and methods for assessing the security posture of information systems. It reviews in depth the phases of penetration testing to include but not limited to: planning, reconnaissance, scanning, exploiting, post-exploitation and reporting. Tools techniques and procedures for each of the phases will be discussed, demonstrated and used in lab exercises. Formerly offered as IST 511.

IST 4910. Enterprise System Administration. Units: 3

Semester Prerequisite: IST 4210 or consent of instructor. Quarter Prerequisite: IST 475 or consent of instructor

This course is a capstone course that will integrate the various topics as it relates to the administration of an information system. This course may include but is not limited to: installing, managing and maintaining network based operating systems, installing and configuring network services, user and group account management, automating network tasks with scripts, managing a database, modifying a system for improved performance and security, and securing the system in preparation for a penetration test. Because of the dynamic nature of information systems and the rapid development that takes place continually, this course will cover topics that are timely as determined by current conditions and future trends.

IST 5050. Advanced Enterprise Resource Planning. Units: 3

Semester Prerequisite: SCM/IST 3050

This course will discuss the concepts, principles, and techniques for configuring and implementing organizational processes in enterprise resource planning (ERP). Emphasis will be placed on the cross-functional business processes and critical integration points that are necessary for the success of a company. Students will learn how to create relevant databases and configure an ERP system from the ground up. Formerly SCM 505. Also offered as IST 5050.

IST 5150. Project Management. Units: 3

This course introduces students to project management theory, terms and concepts. Students will learn about project management constraints and their impact on a project's ability to meet business goals: time, cost, and performance. Students will learn techniques to manage people and how the workforce will impact, and be impacted by, the project management constraints. Topics include: project life cycle, how to build a successful project from pre-implementation to completion, sequencing and budgeting, project evaluation and control, project feasibility, risk analysis, resource allocation and project management tools. Formerly offered as SCM 515. Also offered as IST 5150. Students may not receive credit for both.

IST 5250. Incident Handling and Cyber Investigation. Units: 3

Semester Prerequisite: IST 2610. Quarter Prerequisite: IST 215 or consent of instructor

A systematic inspection of systems for evidence of a crime and use in civil litigation. Identify sources of digital evidence, preserve and analyze digital evidence, present findings (deposition of legal evidence in a court of law), and learn tools forensics experts use. The topics may include terrorism, identify theft, fraud, hacking, societal issues and embezzlement. Students will learn best practices with hands-on experience in identifying and preserving digital evidence. Formerly offered as IST 525.

IST 5753. Apprenticeship. Units: 3

Supervised work and study in private or public organizations in a department of labor registered apprenticeship. May be taken two times for six units. A total of six units of IST/SCM 5753 courses may be applied toward graduation. Graded credit/no credit.

IST 5755. Internship. Unit: 1

Semester Prerequisite: Consent of college internship coordinator. Quarter Prerequisite: senior standing preferred; consent of instructor and the departments internship coordinator

Supervised work and study in private or public organizations. May be repeated for credit. A total of six units of Jack H. Brown College of Business and Public Administration 5753 or 5755 courses may be applied toward graduation. Graded credit/no credit.

IST 5915. Seminar in Information Systems and Technology. Unit: 1

Semester Prerequisite: Consent of instructor. Prerequisite: Consent of instructor

An intensive study of some aspect of information systems and technology to be proposed by the instructor. May be repeated for credit as topics change.

IST 5930. Seminar in Information Systems and Technology. Units: 3

An intensive study of some aspect of information systems and technology to be proposed by the instructor. May be repeated for credit as topics change. Formerly offered as IST 590.

IST 5951. Independent Study. Unit: 1

Semester Prerequisite: Junior status, or graduate status

Special topics involving library and/or field research. A total of 8 units in any Jack H. Brown College of Business and Public Administration 5951, 5952, 5953, 5955 may be applied toward graduation. Consent of instructor and approval by the department of a written project/proposal submitted to the appropriate department in the Jack H. Brown College of Business and Public Administration on a standard application filed in advance of the semester in which the course is to be taken. Course is cross-listed across different departments within the college.

IST 5952. Independent Study. Units: 2

Semester Prerequisite: Junior status, or graduate status

Special topics involving library and/or field research. A total of 8 units in any Jack H. Brown College of Business and Public Administration 5951, 5952, 5953, 5955 may be applied toward graduation. Consent of instructor and approval by the department of a written project/proposal submitted to the appropriate department in the Jack H. Brown College of Business and Public Administration on a standard application filed in advance of the semester in which the course is to be taken. Formerly offered as 595B. Course is cross-listed across different departments within the college.

IST 5953. Independent Study. Units: 3

Semester Prerequisite: Junior status, or graduate status

Special topics involving library and/or field research. A total of 8 units in any Jack H. Brown College of Business and Public Administration 5951, 5952, 5953, 5955 may be applied toward graduation. Consent of instructor and approval by the department of a written project/proposal submitted to the appropriate department in the Jack H. Brown College of Business and Public Administration on a standard application filed in advance of the semester in which the course is to be taken. Formerly offered as 595D. Course is cross-listed across different departments within the college.

IST 5955. Independent Study. Unit: 1

Semester Prerequisite: Junior status, or graduate status
Special topics involving library and/or field research. A total of 8 units in any Jack H. Brown College of Business and Public Administration 5951, 5952, 5953, 5955 may be applied toward graduation. Consent of instructor and approval by the department of a written project/proposal submitted to the appropriate department in the Jack H. Brown College of Business and Public Administration on a standard application filed in advance of the semester in which the course is to be taken. Course is cross-listed across different departments within the college.

IST 6030. Foundations of Business Systems. Units: 3

An introduction to business systems hardware components, operating system functions, information systems maintenance strategies for the organization, and end-user training options. Programming and scripting techniques as the basis for application development. Security practices such as network access, data disposal, introductory forensics and facilities planning are also explored. The students' understanding is reinforced during the course through the development of standalone applications and systems.

IST 6090. Information Systems and Technology Management. Units: 3

Advanced applications of computer and information systems in organizations. Topics include analyzing information technology impact on organizational business models, making a business case for information technology, information management planning, information technologies infrastructure, cyber security, IT project risk assessment, and IT leadership and governance. Policy issues surrounding project management, information classification, IT audit, and legal issues related to privacy and security will also be covered. Formerly offered as IST 609.

IST 6110. Foundations of Analytics and Big Data. Units: 3

Business analytics is the scientific process of transforming data into insight for making informed decisions. Any organization in the public or private sector that wishes to accomplish its mission and maintain competitive advantage uses data-driven decision making metrics/analytics. This course uses hands-on tools, and a series of readings, videos, quizzes and discussion to assist students in understanding quantitative management tools used to drive business performance and security. In this course you will review the basic statistical concepts, learn data visualization and storytelling through big data, and use advanced statistical techniques for clustering, forecasting, and predicting. The design, development, validation and organization of metrics using hands-on tools.

IST 6115. Fundamentals of Cyber Security. Units: 4

This course provides a broad introduction to a variety of topics in computer security. These include applied cryptography, access control, various security policy models, identification and authentication methods, protection against external and internal threats, security management and Internet security.

IST 6117. Network Security 1. Units: 3

This course introduces basic network protocols such as TCP/IP, IP addressing, switching, routing, LAN, etc. via popular network simulation or/and packet analysis tools. Covers how the various layers of the network protocol stack contribute to security and basic network attacks and threats.

IST 6125. Law and Policy. Units: 3

This course provides an overview of the legal rights and liabilities associated with operation and use of computers and information, including the legal and regulatory compliance issues critical for cybersecurity managers. Approaches to reducing risk of potential legal liability for computer security or information privacy failures, and methods of enforcing security and privacy rights against other parties will also be covered. The course will include discussion of case studies and best practices.

IST 6215. Network Security 2. Units: 3

Semester Prerequisite: IST 6115 and IST 6117
This course is designed to help students develop a deeper understanding of modern network security protocols and threats present in computer networks and will look at security in the enterprise. Topics include cryptographic network protocols such as SSL, PKI, IPSec VPN, network authentication, network security architecture and management concepts, network forensics via packet analysis, and network attacks and defense strategies.

IST 6232. Risk Assessment & Management. Units: 4

Semester Prerequisite: IST 6115 and IST 6117
This course will discuss and apply risk management frameworks. It will cover methods for assessing, managing and reducing risk to include detection, recovery, and damage control. Methods of and procedures for contingency planning and security policy formulation and enforcement will also be discussed. Practical/applied exercises will be used in this course.

IST 6235. Cyber Analytics and Visualization. Units: 3

Semester Prerequisite: IST 6115 and IST 6117
This course covers visual and fundamental data analytics techniques of electronically generated data. Topics include: data sources, data collection, the threat visualization process, data visualization tools, and analytics techniques for malware detection and analysis.

IST 6385. Capstone. Units: 4

Semester Prerequisite: IST 6215, IST 6232, and IST 6235
This capstone course will integrate the various topics covered in the prior courses into an integrative project.

IST 6395. Contemporary Issues and Practices in Cybersecurity 1. Units: 3

Semester Prerequisite: IST 6215, IST 6232, and IST 6235
An intensive study of current issues and practices in Cybersecurity. This is the first course in a sequence.

IST 6397. Contemporary Issues and Practices in Cybersecurity 2. Units: 3

Semester Prerequisite: IST 6215, IST 6232, and IST 6235
An intensive study of current issues and practices in Cybersecurity. This is the second course in a sequence.

IST 6415. Information Resources and Project Management. Units: 3

This course focuses on project management in the context of IT projects, including large software development projects. Using the framework of project life cycle, the course covers: (i) project initiation, (ii) project planning and scheduling, (iii) project monitoring and control, and (iv) project termination. The use of project network and software development cost and personnel time estimation are covered in detail. Risk assessment methods including simulation and risk reduction approaches are also be covered. Students are required to use software tools to simulate project completion times. The waterfall, Object Oriented, Agile, Rapid Application Development, Joint Application Development, and Lean models are covered.

IST 6450. Systems Analysis, Design and Implementation. Units: 3

Semester Prerequisite: IST 6090. Quarter Prerequisite: IST 609
Students will gain an appreciation of the importance of effective systems analysis and design to enable and support an organization's mission and its competitive priorities. Problem formulation, decomposition and software project effort estimation (requirements and analysis) and secure solution building (design and implementation) will be covered. Students will work in small groups, each group having the responsibility for requirements elicitation, analysis, secure design and implementation of a system prototype. CASE and project management tools will be used in all stages of the learning process. Formerly offered as IST 645.

IST 6470. Database Management and Policies. Units: 3

Semester Prerequisite: IST 6090. Quarter Prerequisite: IST 609
This course uses a project based approach to prepare students for real life conception, design, and implementation of secure databases in organizations. Focus is on how databases support organization mission and strategic priorities. Topics include managerial information needs, techniques of conceptual database modeling, database system architecture, data models (ER, relational, and others); query languages (relational algebra, SQL, and others); implementation techniques of database management systems, database administration, and management of semi-structured and complex data; distributed and no-SQL databases. Formerly offered as IST 647.

IST 6480. Information Networking Systems and Security. Units: 3

Semester Prerequisite: IST 6090 or consent of instructor. Quarter Prerequisite: IST 609 or consent of instructor
Advanced study of developing, implementing, securing and managing information networks. Systems architecture, models, standards and security are emphasized. Topics include use of hardware, software, routers, wireless communications, and Voice over IP. Management issues such as access control, privacy, connection security and policies are also explored using industry analytic and management tools. Formerly offered as IST 648.

IST 6620. Business Analytics and Decision Making. Units: 3

Semester Prerequisite: IST 6090 or consent of instructor. Quarter Prerequisite: IST 609
The course provides an overview of the wide area of data analytics, with a particular focus on to the tools required to store, clean, manipulate, visualize, model, and ultimately extract information from various sources of data as well as an introduction to deterministic decision-making, decision making under uncertainty/risk, and application of optimization decision analysis tools. Topics include the analytics life cycle, data integration and modeling, the use of univariate and multivariate statistical methods to analyze data, relational databases and SQL, text processing and sentiment analysis, data visualization and the use of Business Intelligence Tools for modeling and decision support. Offered as IST 6620 and SCM 6620, students may not receive credit for both. Formerly offered as IST 650.

IST 6670. Data Warehousing and Business Intelligence. Units: 3

Semester Prerequisite: IST 6030, IST 6110 and IST 6470, or Consent of Instructor. Quarter Prerequisite: ADMN 601, ADMN 602, and IST 647, or Consent of Instructor
Design and management of data warehouse (DW) and business intelligence (BI) systems. Using DW tools to collect, integrate, and mine the organization's data. Focus is on aggregation of data to enhance visualization, Extract, Transform and Load (ETL), data schema design, data security, on demand data access, ERP systems, report generation, managing the ERP project, OLAP, cube design, and big data. Formerly offered as IST 684.

IST 6680. Business Applications Using Web Technologies. Units: 3

Semester Prerequisite: IST 6030 and IST 6450. Quarter Prerequisite: IST 603 and IST 645
This course provides a comprehensive theoretical and practical knowledge in the area of web based business applications. This course covers the concepts of internet communications, various web technologies and their applications in e-business and standard method of communicating between applications and across the web. If time permits, a number of advanced topics such as semantic web and web security will be covered.

IST 6700. Cybersecurity Policy and Risk Management. Units: 3

Semester Prerequisite: IST 6090, or Consent of Instructor. Quarter Prerequisite: IST 609
This course discusses information security from a system-wide perspective, including policies, procedures and functions necessary to organize and administer ongoing security functions in an organization as well as explore the principles of risk management. Topics include security practices, architecture and models, continuity planning, resiliency and risk identification, risk analysis, risk management, incident handling, threat assessment, and supply chain security. NIST and other risk management frameworks are applied in combination with legal and ethical requirements. Formerly offered as IST 610.

IST 6720. Cyber Defense and Vulnerability Analysis. Units: 3

Semester Prerequisite: IST 6090 and IST 6480, or Consent of Instructor. Quarter Prerequisite: IST 609 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 teaming methods, countermeasures, practices and law. Students will work in simulated environments and will investigate crimes and experience various security scenarios.

IST 6730. Cybersecurity Theory and Practice. Units: 3

Semester Prerequisite: IST 6720 or Consent of Instructor
A comprehensive course on the application of cybersecurity tools, techniques and procedures. Students will apply concepts of confidentiality, integrity and availability in order to protect information. Topics may include, but are not limited to: cryptography, identification, analysis, and mitigation of threats to internal information technology (IT) systems or networks; assessments of threats and vulnerabilities, level of risk, identification of deviations from acceptable configurations, and recommendations appropriate mitigation countermeasures.

IST 6755. Internship. Unit: 1

Semester Prerequisite: Consent of college internship coordinator. Quarter Prerequisite: senior standing preferred; consent of instructor and the departments internship coordinator
Supervised work and study in private or public organizations. May be repeated for credit. A total of six units of Jack H. Brown College of Business and Public Administration 5753 or 5755 courses may be applied toward graduation. Graded credit/no credit.

IST 6780. Risk Management. Units: 3

Semester Prerequisite: IST 6090 and IST 6110 or Consent of Instructor. Quarter Prerequisite: IST 609 and ADMN 601, or Consent of Instructor
The course explores the principles of risk management. It focuses on ways how businesses assess, control, and transfer risk. Topics include risk identification, risk analysis, risk management, incident handling, threat assessment, troubleshooting, allocating resources and system certification, the National Institute of Science and Technology (NIST) Risk Management Framework and strategies to treat risk. Formerly offered as IST 678.

IST 6800. Advanced E-commerce Technologies. Units: 3

Semester Prerequisite: IST 6090 Information Systems and Technology Management and MKTG 6500 E-commerce, or consent of instructor
This course focuses on electronic commerce technologies, applications and tools which are used to conduct business on the World Wide Web. Topics include: e-commerce technology and system security, scripting technologies, web site design and deployment strategies, robotics and mobile commerce technologies, online transaction processing, electronic data interchange (EDI), customer relationship management technologies and applications, and multi-carrier parcel management applications. Additional topics include major issues associated with e-commerce such as: privacy, intellectual property rights, authentication, encryption, acceptable use policies, and legal liabilities.

IST 6890. Enterprise Architecture Planning, Strategy, Security and Policy. Units: 3

Semester Prerequisite: IST 6030, IST 6110, IST 6450, IST 6470, and IST 6480; or Consent of Instructor. Quarter Prerequisite: ADMN 601, ADMN 602, IST 645, IST 647, and IST 648; or Consent of Instructor
The course provides students with the knowledge and skills they need to understand how an Enterprise Architecture assists in integrating strategic, business, policy, and technology planning methods, which in turn support enterprise-wide information technology resource development and governance based on needed business requirements. The course first covers the theory, frameworks, principles and use-case based best practices of enterprise architecture planning, strategy, security and policy; and then the students complete projects as they learn the art of designing Enterprise Architectures for real organizations. Formerly offered as IST 646.

IST 6960. MSIST Culminating Project. Units: 3

Semester Prerequisite: Completion of 30 units in the MSIST program
The culminating experience will be a comprehensive project to be directed, reviewed, and assessed by tenure track faculty and selected professionals to ensure students ability to integrate the knowledge of the area, show critical and independent thinking and demonstrate mastery of the subject matter. Can be taken in fall or spring semester after advancement to candidacy. The graduation writing requirement is met upon successful completion of IST 6960. Formerly known as IST 691.

IST 6980. MSIST Portfolio. Units: 0

Semester Prerequisite: Completion of 30 units in the program. Quarter Prerequisite: Completion of 32 units in the program
Preparation and submission of a portfolio folder containing graded assignments representing successful work in the MSIST program, accompanied by a reflective essay showing how the portfolio demonstrates the accomplishment of the goals and objectives of the student and that of the MSIST program. Graded Credit/no credit. Formerly offered as IST 995.

IST 6990. Continuous Enrollment for Graduate Candidacy Standing. Units: 0

Quarter Prerequisite: 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 a Continuous Enrollment for Graduate Candidacy Standing course each quarter until the project or thesis is accepted or the comprehensive examination passed. Students who enroll 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. Continuous Enrollment for Graduate Candidacy Standing 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 6991. Continuous Enrollment for Graduate Candidacy Standing. Unit: 1

Quarter Prerequisite: 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 a Continuous Enrollment for Graduate Candidacy Standing course each quarter until the project or thesis is accepted or the comprehensive examination passed. Students who enroll 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. Continuous Enrollment for Graduate Candidacy Standing 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 6992. Continuous Enrollment for Graduate Candidacy Standing. Units: 2

Quarter Prerequisite: 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 a Continuous Enrollment for Graduate Candidacy Standing course each quarter until the project or thesis is accepted or the comprehensive examination passed. Students who enroll 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. Continuous Enrollment for Graduate Candidacy Standing 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 6993. Continuous Enrollment for Graduate Candidacy Standing. Units: 3

Quarter Prerequisite: 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 a Continuous Enrollment for Graduate Candidacy Standing course each quarter until the project or thesis is accepted or the comprehensive examination passed. Students who enroll 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. Continuous Enrollment for Graduate Candidacy Standing 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 6994. Continuous Enrollment for Graduate Candidacy Standing. Units: 4

Quarter Prerequisite: 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 a Continuous Enrollment for Graduate Candidacy Standing course each quarter until the project or thesis is accepted or the comprehensive examination passed. Students who enroll 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. Continuous Enrollment for Graduate Candidacy Standing 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 6995. Continuous Enrollment for Graduate Candidacy Standing. Units: 5

Quarter Prerequisite: 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 a Continuous Enrollment for Graduate Candidacy Standing course each quarter until the project or thesis is accepted or the comprehensive examination passed. Students who enroll 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. Continuous Enrollment for Graduate Candidacy Standing 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 6996. Continuous Enrollment for Graduate Candidacy Standing. Units: 6

Quarter Prerequisite: 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 a Continuous Enrollment for Graduate Candidacy Standing course each quarter until the project or thesis is accepted or the comprehensive examination passed. Students who enroll 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. Continuous Enrollment for Graduate Candidacy Standing 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 3040. Principles of Supply Chain Management. Units: 3

Semester Prerequisite: ADMN 2100. Quarter Prerequisite: 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 offered as SCM 304.

SCM 3050. Enterprise Resource Planning. Units: 3

Semester Prerequisite: SCM 3040
This course introduces students to the concept and usage of Enterprise Resource Planning (ERP) to support organizational processes. It emphasizes how businesses are using ERP systems to integrate their business processes. Students will learn and understand business process data flows, and how that impacts the functional areas of an organization. Students will have hands-on experience using an ERP system. Formerly offered as SCM 305. Also offered as IST 3050. Students may not receive credit for both.

SCM 3500. Problem Solving and Decision Making. Units: 3

Semester Prerequisite: ADMN 2100. Quarter Prerequisite: ADMN 210
This course covers many approaches in solving business problems from a managerial point of view. Students experiment with typical techniques and learn why/how these techniques work. Spreadsheets are used to experiment with such techniques. Emphasis is placed on input requirements and interpretation of results. Topics include: what-if analysis, networks, decision trees, sensitivity analysis, and goal seeking. Formerly offered as SCM 350. Also offered as IST 3500. Students may not receive credit for both.

SCM 4400. Logistics and Transportation Management. Units: 3

Semester Prerequisite: SCM 3040
Logistics operations including demand management, inventory management, facility location, warehouse management, packaging and material handling, transportation management, and international freight movement planning in global supply chains. Formerly SCM 440.

SCM 4450. International Logistics. Units: 3

Semester Prerequisite: SCM 3040. Quarter Prerequisite: 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. Formerly offered as SCM 445.

SCM 4700. Advanced Supply Chain and Logistics Management. Units: 3

Semester Prerequisite: SCM 3040. Quarter Prerequisite: 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, risk management, inventory control, warehouse and distribution management. Formerly offered as SCM 470.

SCM 4750. Supply Chain Business Analytics. Units: 3

Semester Prerequisite: ADMN 2100. Quarter Prerequisite: IST 274
Comprehensive practice of the Business Analytics process, including forecasting, data extraction and mining, analytical modeling, detailed analysis, and reporting utilizing business cases. Formerly offered as SCM 475.

SCM 5050. Advanced Enterprise Resource Planning. Units: 3

Semester Prerequisite: SCM/IST 3050
This course will discuss the concepts, principles, and techniques for configuring and implementing organizational processes in enterprise resource planning (ERP). Emphasis will be placed on the cross-functional business processes and critical integration points that are necessary for the success of a company. Students will learn how to create relevant databases and configure an ERP system from the ground up. Formerly SCM 505. Also offered as IST 5050.

SCM 5150. Project Management. Units: 3

This course introduces students to project management theory, terms and concepts. Students will learn about project management constraints and their impact on a project's ability to meet business goals: time, cost, and performance. Students will learn techniques to manage people and how the workforce will impact, and be impacted by, the project management constraints. Topics include: project life cycle, how to build a successful project from pre-implementation to completion, sequencing and budgeting, project evaluation and control, project feasibility, risk analysis, resource allocation and project management tools. Formerly offered as SCM 515. Also offered as IST 5150. Students may not receive credit for both.

SCM 5250. Quality Management. Units: 3

Semester Prerequisite: SCM 3040 or SCM 6070
Description and analysis of quality assurance programs and techniques and their many applications in supply chain management from a total quality management perspective. Topics include quality planning, statistical quality control, quality design and measurement, management of quality and reliability, employee involvement for total quality management, and management of six sigma quality and inspection. Formerly offered as SCM 480 and 4800.

SCM 5753. Apprenticeship. Units: 3

Supervised work and study in private or public organizations in a department of labor registered apprenticeship. May be taken two times for six units. A total of six units of IST/SCM 5753 courses may be applied toward graduation. Graded credit/no credit.

SCM 5755. Internship. Unit: 1

Semester Prerequisite: Consent of college internship coordinator. Quarter Prerequisite: senior standing preferred; consent of instructor and the departments internship coordinator
Supervised work and study in private or public organizations. May be repeated for credit. A total of six units of Jack H. Brown College of Business and Public Administration 5753 or 5755 courses may be applied toward graduation. Graded credit/no credit.

SCM 5915. Seminar in Supply Chain Management. Unit: 1

Semester Prerequisite: SCM 3040 and consent of instructor. Quarter Prerequisite: SCM 304 and consent of instructor
An intensive study of some phase of supply chain management to be developed by the instructor. May be repeated for credit as topics change.

SCM 5930. Seminar in Supply Chain Management. Units: 3

Semester Prerequisite: SCM 3040 and consent of instructor. Quarter Prerequisite: SCM 304 and consent of instructor
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 offered as SCM 590.

SCM 5951. Independent Study. Unit: 1

Semester Prerequisite: Junior status, or graduate status
Special topics involving library and/or field research. A total of 8 units in any Jack H. Brown College of Business and Public Administration 5951, 5952, 5953, 5955 may be applied toward graduation. Consent of instructor and approval by the department of a written project/proposal submitted to the appropriate department in the Jack H. Brown College of Business and Public Administration on a standard application filed in advance of the semester in which the course is to be taken. Course is cross-listed across different departments within the college.

SCM 5952. Independent Study. Units: 2

Semester Prerequisite: Junior status, or graduate status
Special topics involving library and/or field research. A total of 8 units in any Jack H. Brown College of Business and Public Administration 5951, 5952, 5953, 5955 may be applied toward graduation. Consent of instructor and approval by the department of a written project/proposal submitted to the appropriate department in the Jack H. Brown College of Business and Public Administration on a standard application filed in advance of the semester in which the course is to be taken. Formerly offered as 595B. Course is cross-listed across different departments within the college.

SCM 5953. Independent Study. Units: 3

Semester Prerequisite: Junior status, or graduate status
Special topics involving library and/or field research. A total of 8 units in any Jack H. Brown College of Business and Public Administration 5951, 5952, 5953, 5955 may be applied toward graduation. Consent of instructor and approval by the department of a written project/proposal submitted to the appropriate department in the Jack H. Brown College of Business and Public Administration on a standard application filed in advance of the semester in which the course is to be taken. Formerly offered as 595D. Course is cross-listed across different departments within the college.

SCM 5955. Independent Study. Unit: 1

Semester Prerequisite: Junior status, or graduate status
Special topics involving library and/or field research. A total of 8 units in any Jack H. Brown College of Business and Public Administration 5951, 5952, 5953, 5955 may be applied toward graduation. Consent of instructor and approval by the department of a written project/proposal submitted to the appropriate department in the Jack H. Brown College of Business and Public Administration on a standard application filed in advance of the semester in which the course is to be taken. Course is cross-listed across different departments within the college.

SCM 6070. Managing the Supply Chain. Units: 3

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 offered as SCM 607.

SCM 6110. Global Supply Chain Management and Logistics. Units: 3

Semester Prerequisite: SCM 6070. Quarter Prerequisite: 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. Formerly offered as SCM 611.

SCM 6200. Integrated Logistics Management. Units: 3

Semester Prerequisite: SCM 6070 or consent of instructor
This course is a comprehensive study of integrated logistics including: supply chain strategy, competitiveness and sustainability, strategic procurement, material management, purchasing and supply management, third-party relationships, logistics information systems technologies, demand management, order processing systems and customer service management, inventory management, packaging and material handling systems, transportation modes, and forward and reverse logistics.

SCM 6300. Warehouse and Distribution Management. Units: 3

Semester Prerequisite: SCM 6070 or consent of instructor
This course covers order fulfillment management, distribution, omnichannel network design, warehouse design, materials handling, movement of goods and packaging in the warehouse, freight transportation, demand and cost factors, market structure, domestic and global policies and regulations, warehouse cost management, LEEDS, optimization, social and environmental impacts warehouse management systems, robots and technologies, inbound processes, storage, and outbound processes. Consent required.

SCM 6400. Supply Chain Security and Blockchain. Units: 3

Semester Prerequisite: IST 6090
Supply chain security is the part of supply chain management that focuses on minimizing risk for supply chain, logistics, and transportation management systems. The distributed ledger-driven blockchain technology has the potential to enhance supply chain visibility and transparency. Students will learn the importance of creating a secure end-to-end supply chain infrastructure and the use of blockchain-enabled smart contracts to integrate business processes, promote data standardization and protect operational technologies, systems, and resources. Additional topics include the purpose and requirements of ISO 28000, NIST-Cyber Supply Chain Risk Management (C-SCRM), and C-TPAT Supply Chain Risk Management System.

SCM 6600. Transportation and Supply Chain Management. Units: 3

Semester Prerequisite: SCM 6070. Quarter Prerequisite: 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 offered as SCM 660.

SCM 6620. Business Analytics and Decision Making. Units: 3

Semester Prerequisite: IST 6090 or consent of instructor. Quarter Prerequisite: IST 609

The course provides an overview of the wide area of data analytics, with a particular focus on to the tools required to store, clean, manipulate, visualize, model, and ultimately extract information from various sources of data as well as an introduction to deterministic decision-making, decision making under uncertainty/risk, and application of optimization decision analysis tools. Topics include the analytics life cycle, data integration and modeling, the use of univariate and multivariate statistical methods to analyze data, relational databases and SQL, text processing and sentiment analysis, data visualization and the use of Business Intelligence Tools for modeling and decision support. Offered as IST 6620 and SCM 6620, students may not receive credit for both. Formerly offered as IST 650.

SCM 6755. Internship. Unit: 1

Semester Prerequisite: Consent of college internship coordinator. Quarter Prerequisite: senior standing preferred; consent of instructor and the departments internship coordinator

Supervised work and study in private or public organizations. May be repeated for credit. A total of six units of Jack H. Brown College of Business and Public Administration 5753 or 5755 courses may be applied toward graduation. Graded credit/no credit.

SCM 6910. Culminating Experience Project. Units: 3

Semester Prerequisite: Completion of 24 semester equivalent units or consent of the Program Director

The culminating experience will be a comprehensive logistics/e-commerce project to be directed, reviewed, and assessed by faculty and selected professionals to ensure students ability to integrate the knowledge of the area and to show critical and independent thinking and demonstrate mastery of the subject matter. Can be taken in fall or spring semester after advancement to candidacy.

SCM 6990. Continuous Enrollment for Graduate Candidacy Standing. Units: 0

Quarter Prerequisite: 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 a Continuous Enrollment for Graduate Candidacy Standing course each quarter until the project or thesis is accepted or the comprehensive examination passed. Students who enroll 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. Continuous Enrollment for Graduate Candidacy Standing 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 6991. Continuous Enrollment for Graduate Candidacy Standing. Unit: 1

Quarter Prerequisite: 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 a Continuous Enrollment for Graduate Candidacy Standing course each quarter until the project or thesis is accepted or the comprehensive examination passed. Students who enroll 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. Continuous Enrollment for Graduate Candidacy Standing 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 6992. Continuous Enrollment for Graduate Candidacy Standing. Units: 2

Quarter Prerequisite: 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 a Continuous Enrollment for Graduate Candidacy Standing course each quarter until the project or thesis is accepted or the comprehensive examination passed. Students who enroll 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. Continuous Enrollment for Graduate Candidacy Standing 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 6993. Continuous Enrollment for Graduate Candidacy Standing. Units: 3

Quarter Prerequisite: 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 a Continuous Enrollment for Graduate Candidacy Standing course each quarter until the project or thesis is accepted or the comprehensive examination passed. Students who enroll 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. Continuous Enrollment for Graduate Candidacy Standing 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 6994. Continuous Enrollment for Graduate Candidacy Standing. Units: 4

Quarter Prerequisite: 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 a Continuous Enrollment for Graduate Candidacy Standing course each quarter until the project or thesis is accepted or the comprehensive examination passed. Students who enroll 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. Continuous Enrollment for Graduate Candidacy Standing 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 6995. Continuous Enrollment for Graduate Candidacy Standing. Units: 5

Quarter Prerequisite: 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 a Continuous Enrollment for Graduate Candidacy Standing course each quarter until the project or thesis is accepted or the comprehensive examination passed. Students who enroll 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. Continuous Enrollment for Graduate Candidacy Standing 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 6996. Continuous Enrollment for Graduate Candidacy Standing. Units: 6

Quarter Prerequisite: 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 a Continuous Enrollment for Graduate Candidacy Standing course each quarter until the project or thesis is accepted or the comprehensive examination passed. Students who enroll 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. Continuous Enrollment for Graduate Candidacy Standing 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.