MANAGEMENT INFORMATION SYSTEMS

Degree Programs Offered

- Management Information Systems, MS (http://catalog.unomaha.edu/graduate/degree-programs-certificates-minors/management-information-systems/management-information-systems-ms/)
- Business Administration, MBA and Management Information Systems, MS (MBA/MIS (http://catalog.unomaha.edu/graduate/degree-programs-certificates-minors/business-administration/mba-ms-management-information-systems/))
- Public Administration, MPA and Management Information Systems, MS (MPA/MIS (http://catalog.unomaha.edu/graduate/degree-programs-certificates-minors/public-administration/mpa-mis/))

Certificates Offered

- Data Analytics Certificate (http://catalog.unomaha.edu/graduate/degree-programs-certificates-minors/management-information-systems/data-analytics-certificate/)
- Data Management Certificate (http://catalog.unomaha.edu/graduate/degree-programs-certificates-minors/management-information-systems/data-management-certificate/)
- Information Assurance Certificate (http://catalog.unomaha.edu/graduate/degree-programs-certificates-minors/management-information-systems/information-assurance-certificate/)
- Project Management Certificate (http://catalog.unomaha.edu/graduate/degree-programs-certificates-minors/management-information-systems/project-management-certificate/)
- Systems Analysis and Design Certificate (http://catalog.unomaha.edu/graduate/degree-programs-certificates-minors/management-information-systems/systems-analysis-design-certificate/)

ISQA 8016 BUSINESS INTELLIGENCE (3 credits)

This course intends to provide graduate students in-depth exposure to the growing field of business intelligence. Business intelligence (BI) consists of the set of concepts and techniques used to analyze business data in support of decision-making and planning. BI spans a number areas of management information systems, including Decision Support Systems (DSS), Enterprise Resource Planning (ERP), Data Warehousing, Knowledge Management, Customer Relationship Management, Data Mining, and others.
Prerequisite(s): (ISQA 4150 or ISQA 8156) and ISQA 8040 and ISQA 8050. Not open to non-degree graduate students.

ISQA 8030 INFORMATION SYSTEMS AND ETHICS (3 credits)

This course gives you an introduction to organizations and the role that information and information systems play in supporting an organization's operations, decision-making processes, quality management, and strategic activities. The course provides an introduction to the management of information systems function, the strategic and regulatory issues of telecommunications, and ethical and legal issues related to information systems.
Prerequisite(s): Admission into the MS in MIS program.

ISQA 8040 AN OVERVIEW OF SYSTEMS DEVELOPMENT (3 credits)

The course presents an overview of the systems development lifecycle and database development. The course will focus on theory, current tools and techniques that the system developer can use to develop and document information systems. The purpose of this course is to prepare the student for further graduate-level study of information systems. This course may not be used in a plan of study for any graduate program at UNO.

ISQA 8050 DATA ORGANIZATION AND STORAGE (3 credits)

The course will provide concepts of data organization, data storage, and data transfer through computer networks. The performance implications of various design decisions will be explored. The purpose of this course is to prepare the student for further graduate-level study of information systems. This course may not be used in a plan of study for any graduate program at UNO.

ISQA 8060 RESEARCH IN MIS (3 credits)

This course covers research methods and their application to the development and evaluation of management information systems. Also covered is the relationship between organization theory and IS research.
Prerequisite(s): CIST 2500, CIST 2100, and ISQA 8040, or permission of the instructor.

ISQA 8070 SEMINAR IN MANAGEMENT INFORMATION SYSTEMS (1 credit)

This course is designed to acquaint students with issues which are current to the field or harbingers or emerging trends in the information systems area. Topics will vary across terms. This course may be repeated, but no topic may be taken more than once.
Prerequisite(s): Permission of the instructor. Additional prerequisite courses may be required for particular course offerings.

ISQA 8080 SEMINAR IN MANAGEMENT INFORMATION SYSTEMS (3 credits)

This course is designed to acquaint students with issues which are current to the field or harbingers or emerging trends in the information systems area. Topics will vary across terms. This course may be repeated, but no topic may be taken more than once.
Prerequisite(s): 1) Permission of the instructor. 2) Additional prerequisite courses may be required for particular course offerings.

ISQA 8086 SPECIAL TOPICS: INFORMATION SYSTEMS & QUANTITATIVE ANALYSIS (1-5 credits)

This course is designed to acquaint students with issues which are current to the field or harbingers or emerging trends in the information systems area. Topics will vary across terms. This course may be repeated, but no topic may be taken more than once. (Cross-listed with ISQA 4000)
Prerequisite(s): Permission of instructor. Additional prerequisites may be required for particular topic offerings.

ISQA 8090 SEMINAR IN MANAGEMENT INFORMATION SYSTEMS (2 credits)

This course is designed to acquaint students with issues which are current to the field or harbingers or emerging trends in the information systems area. Topics will vary across terms. This course may be repeated, but no topic may be taken more than once.
Prerequisite(s): Permission of the instructor. Additional prerequisite courses may be required for particular course offerings.

ISQA 8106 INFORMATION SYSTEMS ARCHITECTURE AND ORGANIZATION (3 credits)

This course examines the frameworks and tools used to develop an organization's information system architecture. It provides the analytical skills and conceptual frameworks with which to make recommendations and decisions regarding the integration of information technology components into an information system architecture. (Cross-listed with ISQA 4100)
Prerequisite(s): CIST 2100 and ISQA 3310

ISQA 8136 INFORMATION TECHNOLOGY FOR DEVELOPMENT (3 credits)

Information Technology for Development (ITD) is the implementation and evaluation of information technology infrastructures to stimulate economic, social and human development. In this service-learning course, students will learn and apply ITD concepts for developing and adding value through IT by working with small business entrepreneurs in Omaha or rural Nebraska. Students will evaluate micro-business technology needs, prepare business technology plans, provide training, and implement appropriate solutions, to the extent possible within a semester class. (Cross-listed with ISQA 4130)
Prerequisite(s): Though not required, the following courses or their equivalent would provide the necessary background : CIST 1100, CIST 1300, ISQA 3210, ISQA 3310, ISQA 3400. Not open to non-degree graduate students.

ISQA 8156 ADVANCED STATISTICAL METHODS FOR IS&T (3 credits)

This course emphasizes the application and interpretation of statistical methods including design of experiments, analysis of variance, multiple regression, and nonparametric procedures and the use of statistical computer packages. The intent is to develop quantitative abilities needed for quantitatively intensive jobs and for advanced study in management information systems, computer science and information technology. (Cross-listed with ISQA 4150)
Prerequisite(s): CIST 2500 or equivalent (at least one course in statistics)

ISQA 8160 APPLIED DISTRIBUTION FREE STATISTICS (3 credits)

The primary objective of this course is to expose students to methods of analyzing data from non-normal populations including binomial tests, contingency tables, use of ranks, Kolmogorov-Smirnov type statistics and other selected topics.
Prerequisite(s): Admission to MS program in Management Information Systems or permission of instructor. This course assumes prior knowledge with basic descriptive and inferential statistics from an introductory undergraduate course (e.g., CIST 2500).

ISQA 8166 INTRODUCTION TO ENTERPRISE RESOURCE PLANNING (3 credits)

Introduction to Enterprise Resource Planning (ERP) is designed to expose students to the primary enterprise application that forms the information systems (IS) infrastructure for most large organizations today. The primary purpose of this course is for students to gain an understanding of the enterprise wide, cross functional nature of ERP software. In the process of learning about ERPs, the students develop "hands on" experience with the largest and most well-known ERP application, SAP. (Cross-listed with ISQA 4160, SCMT 4160)
Prerequisite(s): CIST 2100 or equivalent. Not open to non-degree graduate students.

ISQA 8176 DIGITAL SUPPLY CHAIN & LOGISTICS (3 credits)

Global Supply Chains are being disrupted by digital transformation driven by emerging technologies such as IoT (internet of things) and AI/ML (Artificial Intelligence/Machine Learning). This course will take a closer look at global supply chains and logistics with an emphasis on the impact of digitalization. We will explore the typical global supply chain processes and how state-of-the-art and emerging technologies impact them. Thus, the class views global digital supply chains by integrating business and technological perspectives. The course will start with an overview of technologies relevant to digital supply chains. We will then discuss digitalization strategy and digital supply chains, fundamental GSCM (Global Supply Chain Management) processes and their potential for digitalization, and discussion of IT/software systems, ioT, AI/ML, Data Analytics/Visualization, and related facets that impact digital supply chains. The course will culminate with an integrated case study and/or research paper (graduate). (Cross-listed with ISQA 4170).
Prerequisite(s): Permission of instructor. It is preferable that students have taken an introductory supply chain class or have some experience in the transportation, logistics and supply chain management sector. Undergraduate students must have Junior standing.

ISQA 8180 ELECTRONIC COMMERCE (3 credits)

Electronic Commerce is the digital enablement of transactions between multiple parties.A multitude of technologies, tools and applications have brought about changes in business, and society that require careful consideration. Students are given an overview of electronic commerce business models and required to apply these to solve business problems or take on opportunities presented. They will cover topics such as social networking, electronic markets, and political and ethical issues associated with electronic commerce, and business plans for technology ventures. They will apply these concepts using Web 2.0 tools, mobile applications and website design assignments.

ISQA 8196 PROCESS REENGINEERING WITH INFORMATION TECHNOLOGY (3 credits)

Business process reengineering issues are examined. Reengineering concepts and methods are introduced. Additional special project(s) are required. SAP will be introduced. (Cross-listed with ISQA 4190)
Prerequisite(s): CIST 2500; prerequisite/co-requisite ISQA 4110.

ISQA 8206 INFORMATION AND DATA QUALITY MANAGEMENT (3 credits)

The course primarily focuses on developing an in-depth understanding of Data and Information Quality (DQ and IQ) concepts and issues. On completing this course students will be able to understand and use DQ and IQ Concepts in Information Systems projects, be able to recognize various patterns of Data and Design Deficiencies in Systems and be able to suggest appropriate DQ and IQ improvement plans in light of known deficiencies in systems. (Cross-listed with ISQA 4200)
Prerequisite(s): CIST 2500

ISQA 8210 MANAGEMENT OF SOFTWARE DEVELOPMENT (3 credits)

This course should encourage you to think critically about aspects of software development that make it difficult and strategies to mitigate these challenges. This course integrates concepts from software engineering, management science, psychology, and organizational behavior to identify, understand, and propose solutions to problems associated with software development. We examine and consider issues from various perspectives, such as the project manager, development team, senior management, and project sponsor. This course prepares students for various roles within a software development effort including leadership positions in software development. Students will practice software project management and agile methods of managing projects in a semester long team project using contemporary project and development methods.
Prerequisite(s): ISQA 8040 or equivalent. Not open to non-degree graduate students.

ISQA 8220 ADVANCED SYSTEMS ANALYSIS AND DESIGN (3 credits)

This course is a systems analysis and design course for systems and business analysts. The course presents an overview of object-oriented system analysis and design. The course will then focus on theory, best practices, and modern methodologies that analysts can use to analyze and design information systems.
Prerequisite(s): ISQA 8040 or (ISQA 4110 and ISQA 4120) or equivalent and ISQA 8050 or ISQA 3310 or equivalent

ISQA 8306 DATABASE ADMINISTRATION (3 credits)

This course is designed to give students an applied, practical introduction to database administration. Students will gain an understanding of the functioning of a database management system and its relationship to the computing environment in which it runs. They will learn the concepts, principles, and techniques necessary to carry out such functions as database object creation, storage management, capacity planning, performance tuning, backup and recovery, and security management. Each semester the course will focus on one commercial database management system (DBMS), such as Oracle. (Cross-listed with ISQA 4300)
Prerequisite(s): ISQA 8040 or ISQA 3310 or CSCI 4850. Not open to non-degree graduate students.

ISQA 8310 IT INFRASTRUCTURE & CLOUD COMPUTING (3 credits)

This course provides a graduate-level introduction to the business and technical decisions around technical infrastructure. It covers topics related to computer and systems architecture and communications networks, with a focus on the technical and business decisions around technology. Students completing the course will be able to understand and design network infrastructure, evaluate cloud computing offerings, and communicate their decisions. The course covers hardware, software, and cloud computing technologies.

ISQA 8340 APPLIED REGRESSION ANALYSIS (3 credits)

The primary objective of this course is to expose students to regression models and applications with particular emphasis on applying these concepts to IT research. Topics to be discussed include: Foundations of regression analysis using least squares procedures; model formulation, stepwise regression, transformations; graphical methods, estimation; inference; influence diagnosis; matrix formulation, multicollinearity, time series, and nonlinear models.

Prerequisite(s): ISQA 4150 or ISQA 8156, not open to non-degree graduate students.

ISQA 8380 ENTERPRISE ARCHITECTURE AND SYSTEMS INTEGRATION (3 credits)

This course is designed to give students grounding in the concepts, issues, and tools needed to manage enterprise architecture, distributed systems & Internet-based environments. The goal of the course is to equip students to make the architecture and infrastructure-related decisions needed for successful development and use of contemporary client/server and Internet-based systems. Topics include middleware, architecture, XML, JSON, web services, service-oriented architecture, enterprise application integration, distributed computing services, Model View Controller (MVC) development frameworks.

Prerequisite(s): ISQA 8310 and ISQA 8050 or equivalent; permit required.

ISQA 8410 DATA MANAGEMENT (3 credits)

The course provides in-depth coverage of such areas as: the relational model, SQL, data modeling, data quality management, database design, data warehousing, business intelligence, document and content management, NoSQL systems, and data governance. The course offers a mix of theoretical treatment and hands-on application. Current DBMS and data modeling software will be used.

Prerequisite(s): ISQA 8050 or equivalent, permit only.

ISQA 8420 MANAGING THE I.S. FUNCTION (3 credits)

The course provides a focus on the business management implications of the information explosion. The course is organized around a management audit of the information services activity to help present and future managers recognize and implement effective information services management.

Prerequisite(s): CIST 2100 and ISQA 8040. Not open to non-degree graduate students.

ISQA 8450 NOSQL AND BIG DATA TECHNOLOGIES (3 credits)

The course will cover topics in the area of NoSQL and Big Data management. The course is intended to get students familiarized with NoSQL and Big Data technologies, explore how these database technologies differ conceptually from traditional relational database technologies, understand their applications, uses, advantages, and disadvantages, and provide hands-on experience with NoSQL and Big Data databases. The course offers a mix of theoretical treatment and hands-on application of the discussed NoSQL and Big Data technologies.

Prerequisite(s): Prior exposure to data management is expected. The prereq is: ISQA 3310, ISQA 8040, CSCI 4850, or work experience that has given you a comparable grounding in database concepts and technologies; in this case permission by the instructor is needed.

ISQA 8460 INTERNET OF THINGS (IOT), BIG DATA AND THE CLOUD (3 credits)

This course introduces the Internet of Things (IoT). It provides an overview of a number of technologies and research disciplines that enable the Internet to reach out into the real world of physical objects. In the future, the "Things" in question may have identities and virtual personalities, operating in smart spaces using intelligent interfaces to connect and communicate with the social, environmental, and user context.

Prerequisite(s): Basic Web Development using HTML/CSS and some MVC framework. The equivalent of two semester exposure to programming.

ISQA 8525 GRAPHICAL USER INTERFACE DESIGN (3 credits)

This course is an introduction to interaction design with a primary emphasis on designing usable and useful computer interfaces. Students will learn the principles of interface design grounded in a fundamental understanding of human cognitive processes. They will learn how end-users develop and use mental models of interaction and will apply this knowledge to the design of interfaces for real-world applications. A design project will challenge students to plan their own designs, to develop interfaces and to integrate them into a working application prototype, to test their application with real users, and to effectively communicate the overall results. (Cross-listed with ISQA 3520)

Prerequisite(s): CIST 1300

ISQA 8546 COMPUTER SECURITY MANAGEMENT (3 credits)

The purpose of this course is to integrate concepts and techniques from security assessment, risk mitigation, disaster planning, and auditing to identify, understand, and propose solutions to problems of computer security and security administration. (Cross-listed with CIST4540, CYBR 4540, CYBR 8546)

Prerequisite(s): IASC 4360 or permission of the instructor.

ISQA 8560 INFORMATION WARFARE AND SECURITY (3 credits)

This course will study the nature of information warfare, including computer crime and information terrorism, as it relates to international, national, economic, organizational, and personal security. Information warfare policy and ethical issues will be examined.

Prerequisite(s): CIST 2100 or BSAD 8030 or ISQA 8030, or permission of instructor required.

ISQA 8570 INFORMATION SECURITY POLICY AND ETHICS (3 credits)

The course will cover the development and need for information security policies, issues regarding privacy, and the application of computer ethics. (Cross-listed with IASC 8570)

Prerequisite(s): CIST 2100 or BSAD 8030, or permission of instructor.

ISQA 8580 SECURITY RISK MANAGEMENT AND ASSESSMENT (3 credits)

The purpose of this course is to prepare the student for managing information security at the organizational level. This course will combine concepts from strategic management, decision science and risk analysis to prepare the student to integrate security issues into an organizational strategic planning process.

Prerequisite(s): CIST 2100 or ISQA 8030. Not open to non-degree graduate students.

ISQA 8600 FROM DATA TO DECISIONS (3 credits)

This course focuses on inquiry-driven data preparation and exploratory analysis skills for audience-driven, decision-oriented data analysis.Students gain experience in data evaluation, cleaning, documentation, and exploration with basic descriptive statistics and visualizations.

ISQA 8700 DATA MINING: THEORY AND PRACTICE (3 credits)

This course provides students theoretical issues as well as practical methods for conducting data mining process, including the implementation of a warehouse. After covering the essential concepts, issues, techniques to build an effective data warehouse, this course emphasizes the various techniques of data mining, such as association, classification, clustering and prediction for on-line analyses within the framework of data warehouse architectures. This course also promotes students to conduct a real-life data analyzing project in Big Data Era.

Prerequisite(s): ISQA 8050 and ISQA 8310 and ISQA 8040, not open to non-degree graduate students.

ISQA 8720 APPLIED STATISTICAL MACHINE LEARNING (3 credits)

This course focuses on advanced techniques in the analysis and evaluation of data, using both supervised and unsupervised methods. It covers the main types of statistical learning models needed for complex data analytics problems, as well as aspects of model development and optimization. Topics include: Linear and Non-Linear Regression Models, Classification, Resampling Methods, Model Selection and Regularization, Decision Trees, Model Boosting and Bagging, Support Vector Machines, and Clustering methods. This is an applied, hands-on course that will use a state-of-the-art statistical tool to implement the discussed approaches in assignments and a course project and focuses on the understanding and application of the concepts.

Prerequisite(s): ISQA 8156 (B- grade or better) and the following topics: The equivalent of two classes of statistics and/or advanced mathematics and a minimum of one semester of applying R in courses and/or projects

ISQA 8736 DECISION SUPPORT SYSTEMS (3 credits)

This course examines a set of information systems which specifically support managerial decision makers: Decision Support Systems, Group Decision Support Systems, Executive Information Systems, Data Warehouses, Expert Systems, and Neural Networks. This course explores the development, implementation, and application of these systems, how these systems can be applied to current business problems, as well as how organizational issues impact the implementation and usage of these systems. (Cross-listed with ISQA 4730)

Prerequisite(s): ISQA 8030 or equivalent.

ISQA 8750 STORYTELLING WITH DATA (3 credits)

This course provides an in-depth study of how to build a compelling story using data for business professionals to make winning arguments, it provides an overview of a number of technologies and research disciplines that enabled the power of data visualization. Data visualization is critical to managing large volumes of data, and can be defined as the science (analytical) and art (design) of manipulating and presenting data for expression and cognitive recognition. Data visualization involves using data in a way that humans can clearly understand, supporting efforts by organization to gain competitive advantage by changing operations, decision-making, and strategic initiatives.

Prerequisite(s): CSCI 1620 or equivalent. Admission into the UNO graduate program, basic web development or work experience with comparable grounding in programing, scripting concepts & technologies and permission by the instructor is needed.

ISQA 8810 INFORMATION TECHNOLOGY PROJECT FUNDAMENTALS (3 credits)

The course will integrate concepts and techniques from management science, psychology, organizational behavior, & administration change to identify, understand & propose solutions to the problems of project management. The purpose of the course is to prepare the graduate for project participation and leadership.

Prerequisite(s): CIST 2100 and ISQA 8040. Not open to non-degree graduate students.

ISQA 8820 PROJECT RISK MANAGEMENT (3 credits)

This course will cover project risk management, i.e., the process of measuring or assessing risk in projects and then developing strategies to manage the risk. The topics covered will include: Risk Management Planning, Risk Identification, Quantitative Risk Analysis, Qualitative Risk Analysis, Risk Response Planning, and Risk Monitoring and Control will be covered in detail. Students will learn how to apply and use the tools and techniques needed to perform these project management tasks. A collection of readings on risk management from the empirical literature coupled with risk management standards from organizations such as IEEE and the Project Management Institute (PMI) will be used to provide the student with an excellent foundation in risk management and control.

Prerequisite(s): ISQA 8810 or permission of instructor.

ISQA 8900 INDEPENDENT RESEARCH IN MANAGEMENT INFORMATION SYSTEMS (1-3 credits)

The content of the course will vary. However, both the student and the faculty member must sign an Independent Research Agreement and file it with the Master of Science in Management Information Systems Graduate Program Committee before registration for the course. This agreement will detail the project, the schedule for its completion, the form of the output, the method of evaluation and other relevant information pertaining to the project.

Prerequisite(s): Permission of instructor, and at least 12 hours of course work toward a M.S. in MIS should be completed.

ISQA 8910 INFORMATION SYSTEMS INTERNSHIP (1-3 credits)

Information Systems Internship provides students with an opportunity for practical application and further development of knowledge and skills acquired in the MS MIS degree program. The internship gives students professional work experience and exposure to the challenges and opportunities faced by IT professionals in the workplace.

Prerequisite(s): Permission of the instructor required. Students must have completed a minimum of 18 credit hours towards the MS MIS program. Not open to non-degree graduate students.

ISQA 8950 CAPSTONE MANAGEMENT INFORMATION SYSTEMS (3 credits)

The course consists of a student executed Information Systems design project providing an in-depth practical experience. It typically covers system conceptualization, analysis, and design. It may also involve prototyping. The project will typically not include the actual implementation of the system. This course replaces the MS in MIS comprehensive exam requirement.

Prerequisite(s): Students must have 6 credit hours or fewer left in the program. Students must have completed all core classes. Not open to non-degree graduate students.

ISQA 8990 THESIS (1-6 credits)

This course is a research project designed and executed under supervision of a thesis supervisory committee. Student will develop skills, including the ability to design, conduct, analyze, and report results in writing (i.e., thesis) of an original, independent, scientific investigation. The student's thesis supervisory committee must approve the project plan.

Prerequisite(s): ISQA 8060 research methods or equivalent. Graduate major in MIS and approval of the thesis supervisory committee. Not open to non-degree graduate students.

ISQA 9010 FOUNDATIONS OF INFORMATION SYSTEMS RESEARCH (3 credits)

This course covers the following areas: (1) information systems as an academic discipline including classic readings in IS and its reference disciplines, (2) theory development and evaluation, (3) research methods applicability in IS.

Prerequisite(s): Doctoral student standing in the information systems areas or with the permission of the instructor; ISQA 8060 or equivalent. Not open to non-degree graduate students.

ISQA 9020 TECHNICAL AND PROCESS ISSUES IN INFORMATION SYSTEMS RESEARCH (3 credits)
This seminar is a survey course on the technical and process issues in information systems research. The course balances the acquisition of knowledge about the conduct of research in technical and process issues with the application of that knowledge to research on information systems. Major topics include: software engineering, programming, data base systems, decision support systems, data warehousing and mining systems, object-oriented systems, adaptive and expert systems, client-service systems, information filtering and multimedia systems, information agents, mobile computing, telecommunications, and electronic commerce.
Prerequisite(s): Doctoral student standing in the information systems area or with the permission of the instructor; ISQA 9010 is recommended. Not open to non-degree graduate students.

ISQA 9030 BEHAVIORAL AND ORGANIZATIONAL ISSUES IN INFORMATION SYSTEMS (3 credits)
This seminar is a survey course on behavioral and organizational issues in information systems research. The course balances the acquisition of knowledge about the conduct of research in behavioral and organizational issues with the application of that knowledge to research on information systems. The course is intended for doctoral students in Information Technology or related areas.
Prerequisite(s): Doctoral student standing in the information systems area or with the permission of the instructor; ISQA 9010 is recommended. Not open to non-degree graduate students.

ISQA 9120 APPLIED EXPERIMENTAL DESIGN AND ANALYSIS (3 credits)
Constructing and analyzing designs for experimental investigations; completely randomized, randomized complete block and Latin-square designs, split-plot designs, incomplete block designs, confounded factorial designs, nested designs, and treatment of missing data, comparison of designs. The course will use computer-assisted analysis and graphic techniques included in software such as Statistical Analysis Software (SAS) or Statistical Package for Social Sciences (SPSS) or R (a programming language that provides a wide variety of statistical and graphical techniques. Similar to the S language).
Prerequisite(s): ISQA 4150 or ISQA 8156 or consent of instructor. Not open to non-degree graduate students.

ISQA 9130 APPLIED MULTIVARIATE ANALYSIS (3 credits)
The use of multivariate analysis for solving business problems. Multivariate Analysis of Variance (MANOVA), factor, cluster, and discriminant analysis techniques in IT research. The course will use computer-assisted analysis and graphic techniques included in software such as Statistical Analysis Software (SAS) or Statistical Package for Social Sciences (SPSS) or R (A programming language that provides a wide variety of statistical and graphical techniques. Similar to the S language).
Prerequisite(s): ISQA 4150 or ISQA 8156 or consent of instructor. Not open to non-degree graduate students.

ISQA 9150 RESEARCH IN INFORMATION TECHNOLOGY (3 credits)
Research methods in Information Technology involves an overview of the research process specific to problems in IT. Students will learn about theories in IT relevant to their areas of research. They will identify key components of research problems in IT, understand different types of research processes, develop research questions, and design research projects. They will learn to construct research instruments that enable them to collect data. They will also learn about the different data collection and analysis tools and techniques. As part of this course, students will take the CITI training and achieve the research readiness they need to succeed in the PhD in IT program.
Prerequisite(s): Permission of the instructor. Not open to non-degree graduate students.

ISQA 9900 ADVANCED RESEARCH IN INFORMATION SYSTEMS (3 credits)
This course provides a format for exploration of advanced research areas that are of interest to doctoral students in the information systems and/or information technology area. The specific research area will vary from semester to semester, in keeping with research interests of faculty and students. Examples of areas include, but are not limited to, e-business technology, mobile commerce, intelligent agents e-enabled decision support, electronic collaboration, computer-mediated communications, human-computer interaction and information assurance.
Prerequisite(s): Admission to PhD program in Information Technology or permission of instructor