

# INFORMATION SYSTEMS (IS)

## IS 201 | INTRODUCTION TO INFORMATION SYSTEMS | 4 quarter hours (Undergraduate)

This course demonstrates how information is used by organizations to conduct business and solve problems. This course presents information systems principles and demonstrates how they form an integral part of modern organizations. Topics include systems concepts; organizational processes; technological aspects of information systems; the Internet; IT security and ethical issues; database management; and systems development life cycle. In addition, students familiarize themselves with the DePaul computing environment and demonstrate competency at navigating that environment.

## IS 208 | INFORMATION TECHNOLOGY, ECONOMY AND SOCIETY | 4 quarter hours (Undergraduate)

Introduction to emerging information technologies and their impact on modern society. This course discusses the latest technologies used in the evolving IT environment and how these technologies are changing the modern world. Emphasis is placed on investigating issues using a variety of sources, case studies, and writing.

## IS 215 | ANALYSIS AND DESIGN TECHNIQUES | 4 quarter hours (Undergraduate)

This course presents a structured approach to analysis and design of an information system for a business. The systems development life cycle will be defined and described. Process descriptions, user and task analysis for interface development, prototyping, data flow and entity relationship diagramming will be presented. Case studies that promote critical-thinking skills provide the context for these techniques.

## IS 250 | COMPUTING IN DIGITAL COMMERCE | 4 quarter hours (Undergraduate)

An introduction to digital commerce and computing technologies behind it. Digital innovations, development methodology, business strategies, and impact of computing are discussed. This course focuses on how computational thinking is applied in digital commerce contexts.

## IS 280 | COMMUNICATION FOR THE GLOBAL IT PROFESSIONAL | 4 quarter hours (Undergraduate)

Development of professional communication and collaboration skills for the global IT workplace. Students cultivate proficiency with traditional in-person and electronic communications, modeling the conflict resolution, personal initiative, and personal presentation behaviors necessary for career advancement. Students become comfortable users of virtual communication and collaboration toolsets such as VoIP, collaborative editors, web presentation software, virtual team portals, and virtual scheduling tools. PREREQUISITE(S): WRD 104. For students required to take LSP 120, it is also a prerequisite.

## IS 324 | ENTERPRISE ARCHITECTURE | 4 quarter hours (Undergraduate)

This course explores the characteristics, selection, implementation and management of enterprise architecture frameworks, focusing primarily on the evaluation and planning of information systems from a top-down perspective. Major topics include enterprise architecture, Web 2.0, Enterprise 2.0, social media and networking, software as a service, content management systems, cloud computing, and portals; each is studied in terms of its characteristics and potential applications within an organization.

IS 215 is the prerequisite for this class

## IS 331 | FUNDAMENTALS OF DIGITAL PRODUCT MANAGEMENT | 4 quarter hours (Undergraduate)

This course focuses on the creation and management of intangible technology products and services throughout the entire product management lifecycle. The benefits of the product management process along with the role of the Product Manager throughout the digital product lifecycle, main tasks, key reports and relationships, and the relationship between product management and product marketing will be examined.

## IS 335 | INTRODUCTION TO ORGANIZATIONAL MODELING FOR DIGITAL TRANSFORMATION | 4 quarter hours (Undergraduate)

An introduction to analysis and modeling of organizational goals, workflows, users and data for digital transformation enabled by information systems. The emphasis is placed on how an organization should respond to its business challenges with a strategy and transformational organizational workflows. Students will learn how to design workflows and metrics using Business Process Model and Notation (BPMN) for different organizational and contextual factors. Process simulation software is used to evaluate workflow designs.

IS 215 is a prerequisite for this class.

## IS 344 | IT AUDITING | 4 quarter hours (Undergraduate)

Management and boards continue to recognize the importance of effectively managing information technology (IT) assets - to meet business objectives and to thoughtfully manage IT related business risks. This course examines the key principles related to auditing information technology processes and related controls and is designed to meet the ever increasing needs of IT audit and IT governance professionals. In addition, this course aids in the preparation for the Certified Information Systems Auditor (CISA) exam.

## IS 352 | INTRODUCTION TO BUSINESS INTELLIGENCE AND ANALYTICS SYSTEMS | 4 quarter hours (Undergraduate)

Introduction to systems for business intelligence and analytics applications. The emphasis is placed on understanding end-user needs, technology life cycles, platforms, tools, vendors, and services in the market. Survey of data lake, data warehouse, data discovery, and visualization tools. Methodologies for analysis, design, and implementation of business intelligence and analytics systems. Discussions on data management and alignment between corporate and local-unit needs. Case studies and lab activities to understand the characteristics of tools and their business impact.

## IS 353 | SURVEY OF MANAGING NON-RELATIONAL DATABASES | 4 quarter hours (Undergraduate)

Survey of the managerial topics on non-relational database systems such as NoSQL, NewSQL, and big data analytic databases. Understanding of data organizations, business use cases, major vendors, and product trends of NoSQL, NewSQL, and big data analytic databases. Hands-on sessions on database creations and queries to familiarize key features and managerial requirements of those database systems.

**IS 356 | SYSTEMS THINKING FOR BUSINESS DYNAMICS | 4 quarter hours****(Undergraduate)**

This course introduces students to system thinking and system dynamics modeling for the analysis of organizational strategy and decision making. It will teach how to use systems thinking and modeling to visualize and analyze an organization in terms of the structures and policies that create dynamics and regulate performance. This is a conceptual as well as a hands-on course that will draw on system dynamics modeling and simulation concept and tools as well as real-world case studies to explain management of organizational dynamics. Learnings from this course can be applied for analyzing organizations in different industries.

**IS 215 is the prerequisite for this class**

**IS 360 | SYSTEMS FOR CLOUD COMPUTING AND BIG DATA | 4 quarter hours****(Undergraduate)**

This course surveys the basic system characteristics of cloud-based business applications and large-scale, non-traditional data management technologies such as Hadoop and NoSQL. Key concepts, benefits and challenges, domains of managerial applications are discussed. Students understand firsthand the features of cloud and big data technologies through lab sessions. Students will work within a project team following the principles of project management to analyze the needs of a firm, to propose the functionality of a cloud-based data management application, and to present a detailed implementation plan for the system with its cost-benefit analysis.

**IT 240 is a prerequisite for this class.**

**IS 370 | IT APPLICATIONS IN BUSINESS | 4 quarter hours****(Undergraduate)**

An exploration of applications of Information Technology within business and non-profit organizations, with emphasis upon the following topics: ways managers, work groups, and organizations acquire and use information; typical business applications and their deployment in organizations; and information flows within common business systems. Additional topics include the role and structure of supply chains, IT support for Web-enabled enterprises, and global considerations for information system design. Coverage also includes standards for software acquisition, including evaluation of commercial software products. An introduction to the major principles of decision support and expert systems, business intelligence, and knowledge management, as well as risk, security, and disaster recovery within an organizational setting are also covered. PREREQUISITE(S): IS 215 or IS 201.

**IS 371 | INTRODUCTION TO IT SYSTEM MANAGEMENT | 4 quarter hours****(Undergraduate)**

This course focuses on implementation and post-implementation support for information systems. Topics include testing, deployment, user training, help desk, software upgrades, and staffing for support teams. Case studies and team projects.

**IS 215 is the prerequisite for this class**

**IS 372 | SOFTWARE PROJECT MANAGEMENT | 4 quarter hours****(Undergraduate)**

An introduction to the concept and techniques of project management (PM) for a broad range of systems, including those in the web/mobile application development environment. Topics include PM processes, methodologies, communications, resource management, organizational factors, stakeholder management, project manager responsibilities, team building, and risk management. An emphasis is placed on the agile approach and its comparison with the waterfall approach. Tools and techniques for project estimating and scheduling will be presented. Case study and group projects.

**IS 215 is the prerequisite for this class**

**IS 373 | INTRODUCTION TO ENTERPRISE SYSTEMS | 4 quarter hours****(Undergraduate)**

A course on technical and management aspects of enterprise systems. It incorporates hands-on experience on enterprise resource planning (ERP) systems. Topics include: characteristics and selection of ERP systems, ERP implementation, customer relationship management (CRM), supply chain management (SCM), ERP systems administration, cloud computing and ERP, and enterprise integration with ERP.

**IS 335**

**IS 375 | OBJECT-ORIENTED ANALYSIS AND DESIGN | 4 quarter hours****(Undergraduate)**

This course focuses on object-oriented modeling techniques for analysis and design. Emphasis will be on the creation of well-designed, robust and maintainable software systems. UML (Unified Modeling Language) will be examined for modeling the system. Case studies will promote critical-thinking skills as well as provide the foundation for a student project that incorporates the skills attained throughout the quarter.

**IS 215 is the prerequisite for this class**

**IS 376 | INFORMATION SYSTEMS PROJECT | 4 quarter hours****(Undergraduate)**

This senior project course requires students to apply prior learning in project management and systems development lifecycle by developing a complete system from business case, analysis, and design, through implementation strategies. Team project, documentation, presentation, the use of development as well as project management tools will be emphasized.

**IS 372 is the prerequisite for this class**

**IS 379 | VIRTUAL SOFTWARE TEAMS | 4 quarter hours****(Undergraduate)**

Fundamentals of software development in a virtual environment (if possible with students from different countries). Using an open source development environment; working across time, language, and culture; effective use of collaborative tools. PREREQUISITE(S): IS 215 or program development experience.

**IS 380 | ESSENTIALS OF TECHNOLOGY ENTREPRENEURSHIP | 4 quarter hours****(Undergraduate)**

Introduction to the entrepreneurial process within technology intensive ventures. Roles of entrepreneurs and their start-up teams. Suitable business models and strategies. Legal issues and intellectual property. Financial issues and venture resources. Role of the customer and entrepreneurial marketing. Course will include group case studies of technology entrepreneurial ventures. Students will work in teams to develop a marketing plan and a business plan for a technology-intensive entrepreneurial venture of their choice. Course requires a prior foundational understanding of IT as is typically developed by the start of junior year.

**IS 381 | INTEGRATION OF BUSINESS PROCESSES USING ERP | 4 quarter hours****(Undergraduate)**

This workshop describes business process integration using the SAP S/4HANA. It introduces students to financial and management accounting, enterprise asset management, procurement, manufacturing, sales and distribution, warehouse management, human resources, and project management components of SAP S/4HANA and how they are integrated.

**IS 335 and IS 373 are prerequisites for this course.**

**IS 382 | INTRODUCTION TO LEGAL ISSUES IN INFORMATION TECHNOLOGY | 4 quarter hours****(Undergraduate)**

Introduction to the legal standards to which people and organizations are held under laws and regulations that concern computing and information technology. Topics include government and laws, business regulations, healthcare regulations, education regulations, data breach reporting and notification, privacy laws, laws of search and seizure, freedom of speech and association, defamation, cyber crimes, contracts, and intellectual property.

**IS 386 | INTRODUCTION TO CYBERSECURITY LAW | 4 quarter hours****(Undergraduate)**

This course introduces a range of topics related to the intersection of law and cybersecurity. Topics include federal and state compliance, contracts, legal duties, theories of civil liability, administrative and criminal prosecutions, evidence, and adequacy of legal remedies.

**IS 387 | INTRO TO DATA PRIVACY LAW:US & EU | 4 quarter hours****(Undergraduate)**

This course introduces both U.S. data privacy law and EU data privacy law. It covers technology concepts/privacy principles relevant to the law. The U.S. portion primarily focuses on a variety of U.S. statutes (e.g., FTC Act, GLBA, HIPAA, FCRA, FERPA, BSA, COPPA, CAN-SPAM, etc.) and some state law. The EU portion particularly focuses on the EU GDPR (General Data Protection Regulation). The course serves as helpful background for CIPP/US and CIPP/E (Certified Information Privacy Professional US and Europe).

**IS 396 | TOPICS IN INFORMATION SYSTEMS | 4 quarter hours****(Undergraduate)**

Specific topics will be selected by the instructor and will vary with each quarter. See syllabus.

**IS 398 | INTRODUCTION TO IS MANAGEMENT SEMINAR | 1 quarter hour****(Undergraduate)**

This one-credit seminar examines the concepts of information and technology management and career options in this field. Students will assess their own interests and skill requirements for various careers. They will also analyze the impacts of IS trends and emerging technologies on their career choices. All new IS master's students are required to take this seminar as the first course. PREREQUISITE(S): None (1 quarter hour)

**Status as a Graduate student in the Information Systems Prerequisite Phase is a prerequisite for this class.**

**IS 399 | INDEPENDENT STUDY | 1-8 quarter hours****(Undergraduate)**

Independent study supervised by an instructor. Independent study form required. Can be repeated for credit. Variable credit.

**IS 400 | INTRODUCTION TO IS MANAGEMENT SEMINAR | 1 quarter hour****(Graduate)**

This one-credit seminar examines the concepts of information and technology management and career options in this field. Students will assess their own interests and skill requirements for various careers. They will also analyze the impacts of IS trends and emerging technologies on their career choices. All new IS master's students are required to take this seminar as the first course. (1 quarter hour)

**IS 411 | INTRODUCTION TO PROGRAMMING FOR BUSINESS APPLICATIONS | 4 quarter hours****(Graduate)**

An introduction to the features and characteristics of programming languages for business application systems. Students will learn the basic concepts of programming such as variables, conditions, loops, functions, classes, and libraries by using a few common programming languages. The emphasis is placed on the business contexts and examples of those programming concepts. Tools for different integrated development environment are examined.

**IS 421 | SYSTEMS ANALYSIS AND DESIGN | 4 quarter hours****(Graduate)**

The course focuses on traditional and contemporary systems analysis and design methodologies, emphasizing developing competency in a wide range of modeling techniques. Specific topics include: overview of the software development environment and project management; determining requirements; process modeling, including data flow diagrams and use cases; logic modeling including decision tables, UML diagrams; introduction to database designs; and low-code application development.

**IS 411 or IT 411 or CSC 401 is a prerequisite for this course.**

**IS 422 | SYSTEM DESIGN, IMPLEMENTATION, AND MAINTENANCE | 4 quarter hours****(Graduate)**

Course focus is on both traditional and object oriented systems design. Specific topics include: database design, including logical and physical design; Entity-Relationship diagrams, class diagrams, form and report design; interface and dialogue design; design specifications, including structure charts and prototypes; designing for LANs and distributed systems, as well as the Internet; system implementation, including parallel and phased implementation, testing, documentation, and user training; system maintenance, including types of maintenance, controlling and coordinating maintenance requests, and configuration management. Course ends with a multi-week case study applying the principles from both this course and IS 421, Systems Analysis.

**IS 421 and CSC 451 are prerequisites for this class.**

**IS 424 | ENTERPRISE INFRASTRUCTURE | 4 quarter hours****(Graduate)**

Introduction to modern infrastructure and the evolving technology environment. Major topics include: computer networks, Internet infrastructure, Web 2.0, Enterprise 2.0, social media and networking, software as a service, content management systems, cloud computing, and portal.

**IS 430 | FUNDAMENTALS OF IT PROJECT MANAGEMENT | 4 quarter hours****(Graduate)**

This course concentrates on monitoring, managing and controlling assets and resources on a single IT project. Topics covered are project methodologies; risk management; procurement and contract management; time and cost estimating; controlling and tracking techniques; quality assurance; testing and audit. Students will use common project management software for resource allocation and balancing.

**IS 431 | DIGITAL PRODUCT DEVELOPMENT AND MANAGEMENT | 4 quarter hours****(Graduate)**

This course focuses on the central role of the Product Manager in creating and sustaining compelling products and services throughout the product lifecycle. Special emphasis is placed on the creation and management of intangible technology products and services throughout the entire product management lifecycle. Product managers act as the focal point for value creation within their organizations leading cross functional product activities from the conception of an idea to the ultimate product retirement.

**IS 433 | INFORMATION SECURITY MANAGEMENT | 4 quarter hours****(Graduate)**

Managing information assets and the security function. Emphasis on managing security-related risk, as well as the process of developing, implementing, and maintaining organizational policies, standards, procedures, and guidelines as they relate to security. Role of the CISO. Identifying and evaluating information assets, threats, and vulnerabilities. Quantitative and qualitative risk analysis, risk mitigation, residual risk, and risk resolution, as they relate to information security. Incident response. Consideration of the role and implementation of security controls during the process of analysis, design, and development. The application of policy development principles to security risk management. Introduction to compliance, as well as the CISSP domains.

**IS 435 | ORGANIZATION MODELING FOR DIGITAL TRANSFORMATION | 4 quarter hours****(Graduate)**

The course explores contemporary approaches to analyzing and modeling organizational problems, processes, workflow, users and data for digital transformation. The emphasis is on the initial stages of analysis where the root causes of problems are identified, formulated and modeled. Students will acquire an array of modeling skills and be able to prescribe the proper modeling approach based on a variety of organizational and contextual factors. Business process modeling, management and metrics will be covered. Object-oriented and user-centered approaches will be introduced.

**IS 421 or SE 430 is a prerequisite for this class**

**IS 436 | SOCIAL MARKETING AND SOCIAL NETWORKING APPLICATIONS | 4 quarter hours****(Graduate)**

Online social media and culture, online social marketing concepts, online social networking applications and their design/development. Students develop dynamic web sites and applications on social networking platforms using server-side programming technology to meet strategic marketing goals.

**IT 403 is a prerequisite for this course.**

**IS 440 | COLLABORATIVE TECHNOLOGIES FOR LEADING PROJECTS | 4 quarter hours****(Graduate)**

Study of the process of virtual teaming with emphasis on facilitation of different time project activities and facilitation of same time meetings. Students will learn how small group psychology and group communication theories inform specific behaviors in the design and leadership of meetings. Several meeting types including information briefing, focus group, document writing, decision making, requirements gathering, and teaching/training will be explored. In addition, the course surveys current collaboration technologies and discusses how to select among those technologies usability and fit to purpose of a meeting agenda. DL students may be required to schedule same time sessions with the instructor and other DL students; see current quarter syllabus for more information on this point.

**IS 444 | IT AUDITING | 4 quarter hours****(Graduate)**

Management and boards continue to recognize the importance of effectively managing information technology (IT) assets - to meet business objectives and to thoughtfully manage IT related business risks. This course examines the key principles related to auditing information technology processes and related controls and is designed to meet the ever increasing needs of IT audit and IT governance professionals. In addition, this course aids in the preparation for the Certified Information Systems Auditor (CISA) exam.

**IS 451 | DATABASE DESIGN FOR INFORMATION SYSTEMS | 4 quarter hours****(Graduate)**

Requirement analysis, conceptual design, logical design and implementation of relational databases. Emphasis will be on E-R modeling and E-R mapping, along with basic normalization and SQL for database implementation.

**IS 411 or IT 411 or CSC 401 is a prerequisite for this course.**

**IS 452 | BIG DATA & THE INTERNET OF THINGS (IOT) | 4 quarter hours****(Graduate)**

This course surveys system design concepts, techniques, and algorithms in Machine to Machine (M2M), Internet of Things (IoT), and Internet of Everything (IoE). Topics covered include system architecture for big data, sensors and embedded technologies, IoT architecture, consumer vs. industrial IoT, wearable and mobile systems, tracking systems, IoT and big data analytics, market dynamics and entrepreneurial opportunities. Special emphasis is placed on identifying best practices in using big data and IoT through case studies and hands-on exercises.

**IS 453 | INTRODUCTION TO MANAGING EMERGING DATABASES | 4 quarter hours****(Graduate)**

An introduction to the managerial issues of emerging non-traditional database systems such as NoSQL, NewSQL, and big data analytic databases. An understanding of data organizations, business use cases, major vendors, and product trends of non-traditional database systems. Hands-on sessions to familiarize key features and managerial requirements of select non-traditional database systems.

**IS 451 or CSC 453 is a prerequisite for this class.**



**IS 455 | ELECTRONIC BUSINESS | 4 quarter hours  
(Graduate)**

An introduction to electronic business. The topics include business models, technologies, business and social impact of e-business. It explores the tools, skills, business and social implications of emerging electronic business. In addition to acquiring basic skills for identifying electronic business opportunities and creating a presence in the online marketplace, the student reexamines fundamental processes of business as they are performed in cyberspace in contrast to the marketplace. This helps them understand changes as the cyberspace grows increasingly important in the global economy.

**Status as a MS-Business Information Technology student or Kellstadt student is a prerequisite for this class.**

**IS 456 | SYSTEMS THINKING PERSPECTIVE FOR UNDERSTANDING BUSINESS DYNAMICS | 4 quarter hours  
(Graduate)**

This course introduces students to systems thinking and system dynamics modeling for the analysis of business strategy and decision making. Students will learn how to use systems thinking and modeling to visualize and analyze organizations and institutions in terms of the structures and policies that create dynamics and regulate performance. The course will draw on system dynamics modeling and simulation concepts and tools as well as real-world case studies to explain the management of business dynamics.

**IS 421 is a prerequisite for this class.**

**IS 460 | ENTERPRISE CLOUD COMPUTING (FORMERLY IS 536) | 4 quarter hours  
(Graduate)**

Cloud concepts, architecture, and service management, with particular emphasis upon identifying and analyzing potential business applications of cloud computing. Students will conduct feasibility studies, detailing the advantages and disadvantages of implementing a cloud computing platform for specific applications, with particular emphasis upon financial considerations, business benefits, and security risks. Students will develop the ability to evaluate alternatives and effectively argue in favor of their choices within the cloud computing knowledge domain. They will be able to define, apply, and defend the need for standards and best practices. Students will work within a project team following the principles of project management to design, build, and implement cloud applications.

**IS 468 | ENTERPRISE SYSTEMS (FORMERLY IS 560) | 4 quarter hours  
(Graduate)**

An introduction to enterprise systems for data and process integration, including ERP systems. Topics include the requirements of enterprise systems, application architecture, tools, and functionality of leading enterprise systems, life cycle and methodologies for systems integration, selection, and implementation strategies. Also addressed are emerging trends for enterprise systems and relationship among component systems.

**CSC 401 or IS 411 or IT 411 is a prerequisite for this class.**

**IS 478 | INFORMATION TECHNOLOGY CONSULTING | 4 quarter hours  
(Graduate)**

This course focuses on how IT consulting works in the industry. The emphasis is on examining the models, techniques, and skill development for providing effective IT consulting services. Students will also learn client-facing skills and approaches to giving advice professionally. The course examines the structure of IT consulting markets; leading IT consulting practices; models and approaches for providing internal IT consulting services; sourcing strategies, thought leadership, evaluation of RFPs and response process contract formulation, client relations and project management; knowledge management and collaboration and IT strategies.

**IS 482 | LEGAL RESPONSIBILITIES IN INFORMATION TECHNOLOGY | 4 quarter hours  
(Graduate)**

This course examines the legal standards to which people and organizations are held under laws and regulations that concern computing and information technology. This course is a complement to CNS 477, which focuses on governance policies and business costs. Topics include government and laws, business regulations, healthcare regulations, education regulations, data breach reporting and notification, privacy laws, laws of search and seizure, freedom of speech and association, defamation, cyber crimes, contracts, and intellectual property.

**IS 483 | INFORMATION SERVICES AND OPERATIONS | 4 quarter hours  
(Graduate)**

This course focuses on the operational aspects of information systems in organizations by examining the concepts, tools and techniques available to IS professionals responsible for the delivery of IT services. Topics include the organization of the IT services; the procurement of hardware, software and vendor services; operation of data centers, help desks and user training, the development and use of RFPs (Request for Proposals) and SLAs (Service Level Agreements), the integration of services and operations with application development project needs, and the role of capital and operating budgets.

**Completion of five or more School of Computing MS level courses is required.**

**IS 485 | REQUIREMENTS ELICITATION, ANALYSIS, AND SPECIFICATION | 4 quarter hours  
(Graduate)**

This course focuses on the concepts and skills needed to elicit, analyze, specify, and manage requirements for a software or systems level project. Students will learn to identify and work with stakeholders through conducting a variety of requirements gathering techniques including interviewing, surveying, ethnography, and Joint Application Design (JAD) sessions, to identify and analyze requirements conflicts and negotiate solutions, to model requirements and specify them in unambiguous ways, and to manage requirements throughout the software lifecycle using change controls, traceability, and impact analysis techniques. The requirements process will be examined in both traditional and agile environments. Current topics such as requirements for product lines or distributed development teams will also be explored as time permits. A student may not take both SE 482 and IS 485 for credit toward a degree.  
**IS 422 or IS 430 or PM 430 are prerequisites for this class**

**IS 486 | CYBERSECURITY LAW | 4 quarter hours  
(Graduate)**

This course discusses a range of topics related to the intersection of law and cybersecurity. Topics include federal and state compliance, contracts, legal duties, theories of civil liability, administrative and criminal prosecutions, evidence, and adequacy of legal remedies.

**IS 487 | DATA PRIVACY LAW: US & EU | 4 quarter hours  
(Graduate)**

This course surveys both U.S. data privacy law and EU data privacy law. It covers technology concepts/privacy principles relevant to the law. The U.S. portion primarily focuses on a variety of U.S. statutes (e.g., FTC Act, GLBA, HIPAA, FCRA, FERPA, BSA, COPPA, CAN-SPAM, etc.) and some state law. The EU portion particularly focuses on the EU GDPR (General Data Protection Regulation). The course serves as helpful background for CIPP/US and CIPP/E (Certified Information Privacy Professional US and Europe).

**IS 500 | INFORMATION TECHNOLOGY LEADERSHIP | 4 quarter hours  
(Graduate)**

Managing people ethically and effectively by applying a broad range of creative approaches to individual and team leadership within an Information Technology context. Leadership methods studied include trait-based, skills-based, situational, contingency theory, path-goal theory, leader-member exchange theory, transformational, psychodynamic, and authentic leadership, as well as team leadership and the international, cultural, and ethical dimensions of leadership. Students assess their leadership styles and design individualized development plans to strengthen existing skills and expand IT leadership capabilities by incorporating additional leadership dimensions.

**IS 430 or PM 430 or SE 477 is a prerequisite for this class**

**IS 505 | BUSINESS CONTINUITY/DISASTER RECOVERY THEORIES AND STRATEGIES | 4 quarter hours  
(Graduate)**

This course focuses on the knowledge necessary for an organization to prepare for a variety of major disruptions (floods, earthquakes, terrorist attacks, etc.). The goal is survival of the organization and its daily workflow despite major disruption. Students learn to analyze and prioritize risks and determine criticality ratings that are used to determine survival strategies. Students also learn how to organize employees to respond to a major disruption and how to document recovery plans. Course content includes coverage of current industry trends, as well as planning for the survival of Information Technology functions within an organization.

**IS 506 | BUSINESS CONTINUITY/DISASTER RECOVERY MANAGEMENT AND TACTICS | 4 quarter hours  
(Graduate)**

The course prepares students to lead an organization's business continuity and disaster recovery plans. Students learn the methodology needed to organize this function within an organization, evaluate an organization's business continuity and disaster recovery program according to established industry standards, and conduct a variety of quick-recovery drills. Students also focus upon industry-related human resources issues, crisis communications, and policies and procedures for setting up a command center. Course content includes coverage of current industry trends, as well as managing the survival of Information Technology functions within an organization.

**IS 505 is the prerequisite for this class**

**IS 511 | SOCIAL ISSUES OF COMPUTING | 4 quarter hours  
(Graduate)**

This course aims to provide a broad survey of the individual, organizational, and cultural impacts of computers and to stimulate reflection upon the social and ethical issues provoked by current and projected uses of computers. Some topics include an in-depth look at computers as they relate to workplaces, communities, public policy, legal issues, education, privacy, and moral values. PREREQUISITE(S): NONE.

**IS 531 | DIGITAL INNOVATION STRATEGIES, PROCESSES AND TOOLS | 4 quarter hours  
(Graduate)**

This course provides students with the core and fundamental concepts of digital innovation strategies, processes, and tools. The course will cover how companies create and execute a digital innovation strategy. Topics include innovation key concepts and how to apply them, innovation strategies and models, analysis of current innovation state and design of future innovation state, key elements of an innovation initiative and programs, the role of design thinking, and product road map.

**IS 430**

**IS 535 | INFORMATION TECHNOLOGY INVESTMENT FINANCIAL ANALYSIS | 4 quarter hours  
(Graduate)**

This course focuses on the application of financial analysis and decision-making approaches to aid information technology investment decisions at the operational, project, tactical and strategic levels. Students will learn how to apply a variety of financial methods – breakeven analysis, present value analysis, profitability index, and return on investment to various IT investment decisions. The course will also address cost benefit analysis, outsourcing, balanced scorecard, and multi-factor scoring, benchmarking, and IT investment portfolio methods. These techniques will prepare students to manage capital budgets, acquisition of system and application software, hardware, personnel, and professional services at project and system levels as well as enterprise investment portfolio.

**SE 477 or IS 565 or ACC 500 or IS 430 or PM 430 or ECT 455 is a prerequisite for this class.**

**IS 540 | GLOBAL INFORMATION TECHNOLOGY | 4 quarter hours  
(Graduate)**

A study of the hardware, software, and techniques for using virtual information technologies to support teams working in a distributed, virtual, or global environments. Topics include software survey and evaluation, software deployment within organizational and trans-organizational contexts, trans-national vendor relationships, trans-border data flow, geographically dispersed software development, and integration of diverse technologies.

**Completion of five or more School of Computing MS level courses is required.**

**IS 549 | DATA WAREHOUSING | 4 quarter hours  
(Graduate)**

Introduction to data warehousing and the foundations of understanding the issues involved in building a successful data warehouse. Data warehouse development methodology and issues surrounding the planning of the data warehouse. Data quality and metadata in the data warehouse. Analysis, transformation and loading of data into a data warehouse. Development of the data architecture and physical design. Implementation and administration of the data warehouse.

**IS 451 or CSC 453 or CSC 455 is a prerequisite for this class.**

**IS 550 | ENTERPRISE DATA MANAGEMENT | 4 quarter hours  
(Graduate)**

This course focuses on the technical concepts and managerial knowledge needed to define, integrate and govern centralized and distributed data for a wide range of application systems used at large, multinational corporations. Topics include data repository, data life cycle, DAMA-DMBOK, data stewardship, data asset valuation, enterprise data architecture, data modeling with meta-data, data security standards, master data, and data quality management.

**CSC 451 or CSC 453 or CSC 455 or DSC 450 is a prerequisite for this class.**

**IS 556 | AGILE ENTERPRISE PROJECT MANAGEMENT | 4 quarter hours (Graduate)**

This course covers how an enterprise coordinates and effectively manages all its IT projects and programs through the IT program management office (PMO) in meeting the enterprise business goals. Students will learn the role of the IT PMO in establishing and maintaining the project and program infrastructure and in assisting project managers, program managers, and the executive steering committee. Students will analyze the role of enterprise business goals in coordinating the delivery of expected program and project benefits, in managing stakeholder expectations, and in establishing the agile PMO governance.

**IS 430 or PM 430 is a prerequisite for this class**

**IS 565 | SOURCING FOR IT AND INNOVATION | 4 quarter hours (Graduate)**

This course covers how organizations can use sourcing for IT services and innovation to achieve cost reduction and leverage external IT talent and expertise to deliver efficient, effective and innovative IT solutions. Topics covered include different types of outsourcing and innovation strategies, innovative sourcing techniques, and innovation and sourcing risk management.

**(IS 430 or SE 477) is a prerequisite for this class.**

**IS 568 | IT GOVERNANCE | 4 quarter hours (Graduate)**

This course discusses enterprise governance of IT resources (IT Governance). It focuses on the concepts, structures, processes, and models underlying IT governance toward creating value from IT-enabled business investments. Students will also learn IT governance best practices and how to apply them to real-world cases. This course discusses Control Objectives for Information and related Technology (COBIT), Business/IT alignment, IT-enabled values, and organizational functions and processes in support of IT governance.

**IS 570 | MANAGING CHANGE FOR DIGITAL TRANSFORMATION | 4 quarter hours (Graduate)**

This course is targeted towards information systems professionals who are involved in the planning and implementation of large scale, cross-functional enterprise systems for digital transformation. Students will examine the characteristics of technology efforts that change and transform the way people perform their tasks and how the new technology structures the flows of information and decision-making using workflow modeling methods. Through case studies and exercises students gain insights into the elements of successful implementations leading to the preparation of a change management plan. Emphasis is placed on developing mechanisms for communicating and training all affected agents.

**IS 430 or PM 430 or completion of five or more other SoC MS level courses is a prerequisite for this class; contact instructor or advisor**

**IS 574 | BUSINESS INTELLIGENCE AND ANALYTICS SYSTEMS | 4 quarter hours (Graduate)**

Introduction to the systems concept of business intelligence and analytics as components of a portfolio of information systems. How business problems can be solved strategically by implementing a portfolio of business intelligence and analytics systems including data lake, data warehouse, data discovery and visualization tools to gain new insights into organizational operations. Detailed discussions of the analysis, design, and implementation of business intelligence and analytics systems, including infrastructure for data management, portfolio management of technology life cycle, and alignment between corporate and local-unit needs. Case studies of application software, cloud resources, change management, as well as technical and social issues.

**IT 403****IS 577 | INFORMATION SYSTEMS POLICIES AND STRATEGIES | 4 quarter hours (Graduate)**

This capstone course emphasizes the planning and management of information technologies and related resources at the corporate level. Topics covered include assessment of information technologies, tracking emerging technologies and trends, managing portfolio resources and matching them to business needs, technology transfer, end-user computing, outsourcing, theoretical models, strategic applications and strategic IT planning. Students are encouraged to take this course toward the end of their study. PREREQUISITE(S): Completion of ten or more SoC MS level courses is required.

**IS 579 | VIRTUAL SOFTWARE TEAMS MANAGEMENT | 4 quarter hours (Graduate)**

Application of project management principles, tools, and techniques to a virtual software development project; management of virtual software teams; planning, executing the plan, monitoring and controlling the development process. Work with project office (PMO) to set templates for reporting and common processes and standards; set milestones and their deliverables; establish communication medium for the virtual team.

**IS 430 or PM 430 is a prerequisite for this class**

**IS 580 | TECHNOLOGY ENTREPRENEURSHIP | 4 quarter hours (Graduate)**

In-depth examination of the entrepreneurial process within technology intensive ventures. Roles of entrepreneurs and their start-up teams. Suitable business models and strategies. Legal issues and intellectual property. Financial issues and venture resources. Role of the customer and entrepreneurial marketing. Students will analyze and present case studies of technology entrepreneurial ventures. Students will develop a marketing plan and a business plan for a technology-intensive entrepreneurial venture of their choice. PREREQUISITE(S): Completion of the foundation phase.

**IS 581 | INTEGRATION OF BUSINESS PROCESSES USING ERP | 4 quarter hours (Graduate)**

This course provides students with the opportunity to utilize and integrate acquired knowledge in information technology for media to an applied audio and video engineering project. Students will work in teams to design, create, and test a real world media technology solution. Completed projects will be presented and evaluated by the class.

**IS 435 and IS 560 are prerequisites for this class.**

**IS 586 | CUSTOMER RELATIONSHIP MANAGEMENT TECHNOLOGIES | 4  
quarter hours**

**(Graduate)**

An introduction to customer relationship management (CRM) systems. This course focuses on managing customer lifecycle across online and offline channels through CRM systems. Topics include application architecture and functionality of leading CRM systems, customer identification, data integration, social integration, personalization, call centers, field service and logistics, customer self-service and customer knowledge management.

**CSC 401 or IS 411 or IT 411 is a prerequisite for this class.**

**IS 590 | INFORMATION SYSTEMS RESEARCH METHODS | 4 quarter hours  
(Graduate)**

Introduction of information systems (IS) research methods and theories. The course is taught as a seminar course. Both quantitative and qualitative methods are discussed.

**CSC 424 or DSC 424 is a prerequisite for this class.**

**IS 596 | TOPICS IN INFORMATION SYSTEMS | 4 quarter hours  
(Graduate)**

Specific topics will be selected by the instructor and will vary with each quarter. See syllabus.

**IS 599 | INDEPENDENT STUDY | 1-8 quarter hours  
(Graduate)**

Independent study supervised by an instructor. Independent study form required. Can be repeated for credit. Variable credit.

**IS 690 | RESEARCH SEMINAR | 1-4 quarter hours  
(Graduate)**

Readings and discussion on current research topics. Students may register for this course no more than twice. (PREREQUISTE(S):Consent of advisor). (variable credit)

**IS 696 | MASTER'S PROJECT | 4 quarter hours  
(Graduate)**

Four credit hours. Students may register for this course only after their advisor has approved a written proposal for their project. Independent study form required. (PREREQUISTE(S):Consent of advisor).

**IS 698 | MASTER'S THESIS | 2-4 quarter hours  
(Graduate)**

Two credit hours. Students may register for this course only after their advisor has approved a written proposal for their thesis. Students must continue to register for this course every quarter after their first registration in it until they complete their project or thesis to the satisfaction of their advisor. They earn two hours of credit for each such registration but only four hours of credit will apply for degree credit. Independent study form required. (PREREQUISTE(S):Consent of advisor). (2 quarter hours)