# INFORMATION SYSTEMS (ISMG)

ISMG 1001 - Exploring Cybersecurity (1 Credit)
Students will explore various aspects of cybersecurity with hands-on exercises and games, including ethical hacking, social engineering, computer and digital forensics, networking fundamentals, cyber threats, cybersecurity careers, ethics in cybersecurity, and online safety. No previous cybersecurity knowledge is required. Term offered: summer. Max hours: 1 Credit.
Grading Basis: Satisfactory/Unsatisfactory
Typically Offered: Summer.

ISMG 2050 - Business Problem Solving Tools (3 Credits)
This course focuses on the technology and problem-solving skills necessary for students to succeed both at school and in the business world. This course teaches how to make business decision using spreadsheets, databases and web tools. Students solve problems in statistics, accounting, finance, marketing, management and information systems. The objective is to provide students with problem solving methods and tools necessary to succeed in the business community. Restrictions: As a business core course, a grade of a 'C-' or better must be earned to satisfy Business graduation and prerequisites for other business courses. Max hours: 3 Credits.
Grading Basis: Letter Grade
Typically Offered: Fall, Spring.

ISMG 2075 - Introduction to Business Data (1 Credit)
Introduction to Business Data prepares students to use data sources to analyze and solve real-life business problems. It challenges students to use critical thinking and analysis to find efficient and effective solutions to real-life business situations. Students will use data to solve problems in accounting, finance, and information systems. It is intended for business students that have not satisfied the business data requirements of ISMG 2050. Prereq: Computer Competency and prior coursework covering spreadsheet software. Max hours: 1 Credit.
Grading Basis: Letter Grade
Typically Offered: Fall, Spring.

ISMG 2800 - Designing for the Web (3 Credits)
Students examine how the Web is evolving to support a variety of business needs. The course covers the design and usability principals necessary for improving online interactions via traditional websites as well as using technologies promoting collaboration and information sharing (e.g. social networks, blogs, wikis, forms). Topics include: the principles of web page and web site design; hypertext markup language, cascading style sheets, streaming video, online collaboration technologies; client and server scripting; and the process of testing and publishing web sites. Prereq or Coreq: ISMG 2050. If completed prior, must earn a C- or higher. Max hours: 3 Credits.
Grading Basis: Letter Grade
Prereq or Coreq: ISMG 2050. If completed prior, must earn a C- or higher.
Typically Offered: Spring.

ISMG 3000 - Technology In Business (3 Credits)
Provides an introduction on how various technologies are utilized by organizations to drive business decisions and gain a competitive advantage. Students will learn how organizations can leverage information technology to streamline operations and become more efficient & effective. Students will be exposed to the concepts of: artificial intelligence, business intelligence, cybersecurity, data and information, e-business, ethical use of data, enterprise information systems, organizational responsibilities related to information technology, project management, systems development life cycle, and wireless communications. Note: Business core course therefore a grade of a 'C-' or better must be earned to satisfy graduation requirements. Restriction: Restricted to undergraduate students with 45 credit hours or more. Max hours: 3 Credits.
Grading Basis: Letter Grade
Restriction: Restricted to undergraduate students with 45 credit hours or more.
Typically Offered: Fall, Spring.

ISMG 3050 - Intermediate Excel for Business (1 Credit)
Spreadsheet software remains one of the essential digital skills required by businesses. In this course, you will learn key Excel skills including creating charts/graphs, filtering information, using pivot tables to summarize data, mastering Excel functions including sumif, countif, and vlookup. Cross-listed with ISMG 5050. Max hours: 1 Credit.
Grading Basis: Letter Grade
Typically Offered: Fall, Spring.

ISMG 3060 - Prompt Engineering for Generative AI (1 Credit)
Prompt Engineering for Generative AI is a dynamic and interactive course designed to equip students with the skills and knowledge needed to effectively leverage generative AI for a wide range of business tasks. Throughout the course, students will learn how to harness the power of natural language processing and artificial intelligence to optimize their workflows, enhance productivity, and solve real-world business and IT problems. From resume optimization to website creation, from data analysis to marketing content development, students will explore various applications of generative AI in diverse business contexts. By the end of the course, students will have the proficiency to craft tailored prompts, interact with generative AI efficiently, and maximize the utility of this powerful tool. Cross-listed with ISMG 5060. Max hours: 1 Credit.
Grading Basis: Letter Grade

ISMG 3070 - Introduction to Tableau (1 Credit)
Tableau is a widely used business intelligence (BI) and analytics software that makes it easier for people to explore and understand data. This class introduces data management concepts and terminology, provides basic proficiency in analyzing and exploring data in Tableau. Students will transform raw data to meaningful visualizations and insights, create interactive dashboards and stories, and handle multiple data sources in Tableau. Cross-listed with ISMG 5070. Max hours: 1 Credits.
Grading Basis: Letter Grade
Typically Offered: Fall, Spring.

ISMG 3080 - SQL Foundations (1 Credit)
Structured Query Language (SQL or "Sequel") is a special-purpose language designed for managing data in a relational database and is necessary for careers dealing with data across many business roles. This class introduces students to data management concepts and terminology. This class will prepare you to extract data from relational databases using SQL syntax shared by many types of databases, such as PostgreSQL, MySQL, SQL Server, and Oracle. Cross-listed with ISMG 5080. Max hours: 3 Credits.
Grading Basis: Letter Grade
Typically Offered: Fall, Spring.

ISMG 3090 - Introduction to Python for Business (1 Credit)
Python is a high-level programming language used by companies like Google, Facebook, and JP Morgan to solve common business and decision problems. This course introduces the Python programming language and the Pandas data analysis package to enable students to write simple data manipulation and analysis programs. The course uses business applied cases and dataset to enable students to increase decision making efficiency and productivity. It introduces algorithmic thinking skills that are beneficial for every manager in today's data-rich economy and can also serve as a starting point for learning more advanced programming skills. Cross-listed with ISMG 5090. Max hours: 1 Credit.
Grading Basis: Letter Grade
Typically Offered: Fall, Spring.

ISMG 3110 - Data Governance and Ethics (3 Credits)
Most businesses and organizations recognize that data is valuable, yet many don't know what to do with their vast amounts of data. In this course, students will learn to recognize the roles and responsibilities of data stakeholders, understand data's ethical, legal, fiscal, and strategic implications, plan and create ethical data governance programs, and understand how to manage, monitor, and measure the effectiveness of such programs. Max hours: 3 Credits.
Grading Basis: Letter Grade
Typically Offered: Spring.

ISMG 3500 - Business Data and Database Management (3 Credits)
The success of today's business often hinges on the ability to turn mountains of data into critical information to make right decisions quickly and efficiently. Databases are ubiquitous in today's business environment and are the backbone of today's organizations. This course introduces students to data storage, data retrieval, and data management using current business data management tools. This course emphasizes database design and Structured Query Language (SQL) with hands-on exercises. Prereq: Requires prerequisite course of ISMG 2050 (minimum grade C-). Restriction: Restricted to students with 45 credits or more only. Max hours: 3 Credits.
Grading Basis: Letter Grade
Requires prerequisite course of ISMG 2050 (minimum grade C-). Restricted to students with 45 credits or more only.
Typically Offered: Fall.

ISMG 3600 - System Strategy, Architecture and Design (3 Credits)
This course is designed to provide the understanding of current concepts related to information systems development in an organizational context. It emphasizes the interactive nature of the analysis and design process. Topics include: requirements analysis, model based analysis and design; evaluating outsourcing, COTS and other systems acquisition options; and quality, six-sigma, and ethics in design. New concepts such as agile modeling and extreme programming are covered. ISMG 3500, database, is a recommended but not required co-requisite. Prereq: ISMG 2050 with a grade of C- or higher or department approved equivalent transfer credit (may need 1-credit ISMG 3050 and/or 3070 as supplement). Max hours: 3 Credits.
Grading Basis: Letter Grade
Prereq: ISMG 2050 with a C- or higher.
Typically Offered: Spring.

ISMG 3939 - Internship (1-3 Credits)
Supervised experiences involving the application of concepts and skills in an employment situation. To enroll in an internship, students must work with the Experiential Learning Center on campus and have a 2.40 GPA or higher. Restriction: Restricted to undergraduate Business majors with junior standing or higher. Repeatable. Max Hours: 9 Credits.
Grading Basis: Satisfactory/Unsatisfactory
Repeatable. Max Credits: 9.
Restriction: Restricted to undergraduate Business majors with junior standing or higher

ISMG 4028 - Travel Study Topics (3 Credits)
Join your classmates in an international travel study course to understand the business operations of another culture. Restriction: Restricted to undergraduate Business majors with junior standing or higher. Repeatable. Max Hours: 9 Credits.
Grading Basis: Letter Grade
Repeatable. Max Credits: 9.
Restriction: Restricted to undergraduate Business majors with junior standing or higher

ISMG 4200 - Building Business Applications (3 Credits)
Examines how software platforms for mobile business applications are designed and implemented. Usability, logic, and platform selection issues are highlighted through the development of simple mobile business systems. Includes programming concepts, interface design; storing, retrieving, and manipulating information; real time decision making; platform selection, testing and deployment. Prereq: ISMG 2800 with a D- or higher. Coreq: ISMG 3500. As a corequisite, ISMG 3500 can be taken concurrently or completed prior. If completed prior, must earn a D- or higher. Restriction: Restricted to undergraduate Business majors at a junior standing or higher. Max hours: 3 Credits.
Grading Basis: Letter Grade
Prereq: ISMG 2800 Coreq: ISMG 3500 Restriction: Restricted to undergraduate Business majors at a junior standing or higher
Typically Offered: Fall.

ISMG 4300 - Information Systems Security and Privacy (3 Credits)
This course is designed to develop knowledge and skills for security of information and information systems within organizations. This course focuses on concepts and methods associated with planning, designing, implementing, managing, and auditing security at all levels and on all systems platforms, including enterprise systems. This course presents techniques for assessing risk associated with accidental and intentional breaches of security as well as disaster recovery planning. The ethical treatment of data is discussed. Prereq or Coreq: ISMG 3000. As a prerequisite, a grade of C- or higher is required. Restriction: Restricted to undergraduate Business majors with junior standing or higher. Cross-listed with ISMG 6430. Max hours: 3 Credits.
Grading Basis: Letter Grade
Prereq or Coreq: ISMG 3000. As a prerequisite, a grade of C- or higher is required. Restriction: Restricted to undergraduate Business majors with junior standing or higher
Typically Offered: Spring.

ISMG 4400 - Programming Fundamentals with Python (3 Credits)
This course is designed to provide a thorough introduction to Python and fundamental programming concepts like data structures, networked application program interfaces, files and databases. Principles of object-oriented programming and secure programming practices are demonstrated using programming constructs taken from the business domain. Students are required to design and create their own applications for data retrieval, processing, and visualization. Restriction: Restricted to undergraduate Business majors at a junior standing or higher. Max hours: 3 Credits.
Grading Basis: Letter Grade
Restriction: Restricted to undergraduate Business majors with junior standing or higher
Typically Offered: Fall, Spring.

ISMG 4700 - IT Infrastructure (3 Credits)
This course provides in-depth knowledge of data communications and networking requirements utilized in an organization. Networking models, devices, optimization, and security of those devices, including troubleshooting, is covered. Management of telecommunications networks, cost-benefit analysis, and evaluation of connectivity options is covered. Students learn to evaluate, select, and implement different communication devices within an organization. Restriction: Restricted to undergraduate Business majors with junior standing or higher. Max hours: 3 Credits.
Grading Basis: Letter Grade
Restriction: Restricted to undergraduate Business majors with junior standing or higher
Typically Offered: Spring.

ISMG 4720 - Enterprise Security (3 Credits)
This course introduces the concepts of enterprise security. Students will gain the knowledge required to assess and secure the enterprise. This class uses hands-on labs to help students develop and demonstrate skills for: implementing appropriate security solutions; an awareness of applicable laws and regulations; the principles of governance, risk, data protection, and compliance; and an introduction to vulnerability management and incident response. Prereq: Requires prerequisite courses of ISMG 4300 and ISMG 4700 (all minimum grade D-). Max hours: 3 Credits.
Grading Basis: Letter Grade
Requires prerequisite courses of ISMG 4300 and ISMG 4700 (all minimum grade D-).

ISMG 4750 - Business Intelligence for Financial Modeling (3 Credits)
This course integrates financial concepts with Python programming to provide students with key business intelligence skills relevant to finance. Students will learn to code financial models, manipulate financial data, and apply basic machine learning techniques to forecast financial trends. The course focuses on four primary areas: (1) Python fundamentals for financial applications, including time value of money calculations and other financial functions, (2) data acquisition from financial sources to prepare data for analysis, (3) data visualization and analysis using Python libraries to uncover patterns and insights, and (4) machine learning models, such as K-Nearest Neighbors, Naive Bayes, and Support Vector Machines, for predictive modeling in finance. Through hands-on exercises and projects using real financial concepts and datasets, students will reinforce their learning. By the end of the course, students will have gained proficiency in fundamental Python coding for financial analysis and decision-making. Prereq: ISMG 2050 with a grade of 'C-' or higher, FNCE 3000 and ISMG 3000 (ACCT 4054 may substitute for ISMG 3000) all with a grade of 'C-' or higher. Cross-listed with FNCE 4750
Grading Basis: Letter Grade
Prereq: ISMG 2050 with a grade of 'C-' or higher, FNCE 3000 and ISMG 3000 (ACCT 4054 may substitute for ISMG 3000) all with a grade of 'C-' or higher. Restriction: Restricted to undergraduate Business majors at a junior standing or higher.

ISMG 4760 - Customer Relationship Management (3 Credits)
This marketing-theory driven course examines customer relationship management (CRM) as a key strategic process for organizations. Composed of people, technology and processes, effective CRM optimizes the selection or identification, acquisition, growth and retention of desired customers to maximize profit. Besides presenting an overview of the CRM process, its strategic role in the organization and its place in marketing, students have an opportunity to create simulated CRM database using popular software package that help to illustrate what CRM can do, its advantages and limitations. Prereq: MKTG 3000 and ISMG 3000 both with a grade of C- or higher. Restriction: Restricted to undergraduate Business majors with junior standing or higher. Cross-listed with MKTG 4760. Max hours: 3 Credits.
Grading Basis: Letter Grade
Prereq: MKTG 3000 and ISMG 3000 both with a grade of C- or higher. Restriction: Restricted to undergraduate Business majors with junior standing or higher.

ISMG 4785 - Ethics: A Formula for Success (3 Credits)
Students will learn how to spot and address red flags that foster unethical behavior in both publicly-traded and privately-held businesses. Governance and stakeholder management techniques that incentivize ethical behavior will be highlighted using examples of companies that are financially successful by “doing the right thing.” Principle-based ethics are emphasized, namely, integrity, trust, accountability, transparency, fairness, respect, viability, and compliance with the rule of law. Cross-listed with MGMT 3420, MGMT 6420, ISMG 6885. Restriction: Restricted to undergraduate Business majors with junior standing or higher. Max hours: 3 Credits.
Grading Basis: Letter Grade
Restriction: Restricted to undergraduate Business majors with junior standing or higher

ISMG 4840 - Independent Study (1-8 Credits)
Restriction: Restricted to undergraduate Business majors with junior standing or higher. Repeatable. Max Hours: 8 Credits.
Grading Basis: Letter Grade
Repeatable. Max Credits: 8.
Restriction: Restricted to undergraduate Business majors with junior standing or higher

ISMG 4860 - Ethical Hacking Concepts and Methodologies (3 Credits)
From a technical perspective, organizations need to know how hackers work so that they can build their security around it and take preemptive measures against future attacks. The goal of ethical hacking is to understand current exploits and assess weaknesses and vulnerabilities of various organizational information systems by attacking them within legal limits. This course is designed to provide students an insight into current hacking tools and techniques used by hackers and security professionals to break into any computer systems. Throughout the course, students will engage in offensive and defensive hands-on exercises stressing ethical hacking and penetration testing that will be conducted in a vendor-neutral virtual environment. Topics include security threats and attack vectors, footprinting and reconnaissance, Google hacking, social engineering, insider threat, network scanning and enumeration techniques, vulnerability assessment, the Dark Web, and attack and defense strategies in emerging technologies, such as the Internet of Things (IoT) and cloud computing. Recommendation: ISMG 4700 or equivalent is advised, but not required, to take course. As a recommendation, ISMG 4700 can be taken concurrently or completed prior. Cross-listed with ISMG 6860. Max hours: 3 Credits.
Grading Basis: Letter Grade
Typically Offered: Fall, Spring.

ISMG 4865 - Digital Forensics Analysis (3 Credits)
From cyberterrorism to identity theft, the digital age has brought about a change in how crime is being committed. The usage of computers and the Internet in crime has led to the emerging field of digital forensics. Most businesses employ digital forensic experts to identify cyber threats, protect against insider threats, reinforce data loss prevention, reduce the risk of identity theft, fraud, and other digital crimes, and aid in the collection of digital evidence for various investigations. This course is designed to provide students the necessary skills to perform an effective digital forensics investigation. It presents a methodological approach to digital forensics, including searching and seizing, chain-of-custody, acquisition, preservation, analysis, and reporting of digital evidence. It covers major forensic investigation scenarios that enable students to acquire necessary hands-on experience on various forensic investigation techniques and standard forensic tools required to successfully carry out a digital forensic investigation leading to the prosecution of perpetrators. Cross-listed with ISMG 6865. Max hours: 3 Credits.
Grading Basis: Letter Grade
Typically Offered: Fall, Spring.

ISMG 4900 - Project Management and Practice (3 Credits)
Covers the factors necessary for successful management of enhancement projects. Both technical and behavioral aspects of project management are discussed. The focus is on management of development for enterprise-level systems. Topics include: managing the system lifecycle; requirements determination, logical design, physical design, testing, implementation; metrics for project management; managing expectations: superiors, users, team members and others related to the project; determining skill requirement and staffing the project; cost-effectiveness analysis; reporting and presentation techniques; effective management of both behavioral and technical aspects of the project; change management. Oral and/or written communication skills are applied in this course. Oral and/or written communication skills are applied in this course. Note: Successful completion of this course meets the educational requirements to sit for both the PMP and CAPM exams. Prereq: Students must be a junior status and have completed either: 1. ISMG 3000 or ACCT 4054 and MGMT 3000 and MKTG 3000, OR 2. ISMG 3000 and ISMG 3500 and ISMG 3600. Restriction: Restricted to undergraduate students in the Business School. Max hours: 3 Credits.
Grading Basis: Letter Grade
Prereq: Students must be a junior status and have completed either: 1. ISMG 3000 or ACCT 4054 and MGMT 3000 and MKTG 3000, OR 2. ISMG 3000 and ISMG 3500 and ISMG 3600. Restriction: Restricted to undergraduate students in the Business School.

ISMG 4950 - Special Topics (3 Credits)
Seldom offered. This course varies from offering to offering. Typically, it is a research-oriented course exploring new developments in information systems. Prerequisites vary according to topic. Restriction: Restricted to undergraduate Business majors with junior standing or higher. Repeatable. Max Hours: 9 Credits.
Grading Basis: Letter Grade
Repeatable. Max Credits: 9.
Restriction: Restricted to undergraduate Business majors with junior standing or higher