ISTM - MGMT INFO SYSTEMS (ISTM)

ISTM 209 Business Information Systems Concepts

Credits 3. 3 Lecture Hours. Introduction to the use of computers in data and document management and as a problem-solving tool for business; fundamental concepts of information technology and theory; opportunities to use existing application software to solve various business information systems oriented problems. May not be used to satisfy degree requirements for majors in business. **Prerequisite:** For students other than business and agribusiness majors.

ISTM 210 Fundamentals of Information Systems

Credits 3. 3 Lecture Hours. (BCIS 1305 and 1405) Fundamentals of Information Systems. Introduction to information systems concepts; study of information systems in the functional areas of business; overview of hardware, software and popular operating systems; study of problem solving tools; human factors. **Prerequisite:** Business and Maritime Business Administration majors; also taught at Galveston campus.

ISTM 250 Business Programming Logic and Design

Credits 3. 3 Lecture Hours. Development of structured and object-oriented program logic and design in solving business programming problems; writing, documenting, debugging and testing computer code; emphasis on good coding techniques and logical thinking. **Prerequisite:** ISTM 210 or concurrent enrollment.

ISTM 281 Professional Development Information Systems Seminar

Credit 1. 1 Other Hour. Exposure to professional issues, contemporary information systems topics, potential MIS careers and employers. May be taken three times for credit. **Prerequisite:** Admission to Mays Business School; intend to major in management information systems.

ISTM 310 Network Communications and Infrastructure

Credits 3. 3 Lecture Hours. Concepts, technologies and applications of on-line and network-based systems; analysis and design of data communications; requirements in an information system environment; impact on business organizations; installation, configuration and management of virtual servers. **Prerequisite:** ISTM 250; ACCT 230 and BUSN 203, or concurrent enrollment; admission to upper division in Mays Business School, or approval of instructor if major is outside of Mays Business School.

ISTM 313 Foundations of Data Analytics for Non-MIS Majors

Credits 3. 3 Lecture Hours. Use and application of data modeling, Structured Query Language (SQL), Database Management Systems (DBMS) and data visualization in the solution of business problems. Only one of the following will satisfy the requirements for a degree: ISTM 313 or ISTM 315. **Prerequisites:** Admission to upper division in Mays Business School.

ISTM 315 Database Programming

Credits 3. 3 Lecture Hours. Use and application of Structured Query Language (SQL); Database Management Systems (DBMS) in the solution of business problems; database programming. Only one of the following will satisfy the requirements for a degree: ISTM 313 or ISTM 315. **Prerequisites:** ISTM 310; ISTM 320; or approval of instructor.

ISTM 320 Business Systems Analysis and Design

Credits 3. 3 Lecture Hours. Techniques and methods currently used in system analysis and design including object oriented methods; use of automated tools to support systems development. **Prerequisite:** ISTM 250; ACCT 230 and BUSN 203, or concurrent enrollment; admission to upper division in Mays Business School or approval of instructor if major is outside of Mays Business School.

ISTM 325 Business Object Oriented Programming with Java

Credits 3. 3 Lecture Hours. Introduction of abstract data types, inheritance, object identity, polymorphism as they relate to building business objects and business classes; use of Java programming language depicting the object orientation concepts; use of class libraries and Java packages for business object construction. **Prerequisites:** Admission to upper division in Mays Business School; ISTM 250.

ISTM 360 Applied Predictive Analytics

Credits 3. 3 Lecture Hours. Development and application of predictive analytics to business problems using state-of-the-art software tools; implementation, validation and testing of models that employ machine learning methods and artificial intelligence; hands-on, practical approach to project-based predictive analytics using real-world data sets. **Prerequisite:** ISTM 313 or ISTM 315; BUSN 203 or equivalent; admission to upper division in Mays Business School.

ISTM 365 Fundamentals of Cloud Computing

Credits 3. 3 Lecture Hours. Overview of cloud computing concepts; examination of information systems in the cloud impacting functional areas of business; topics include Infrastructure as a Service (IaaS), Platform as a Service (PaaS), Software as a Service (SaaS); focus on how changes in computing towards commodity services drive impact across business systems, Line of Business (LoB) applications, cost efficiency, and top-line revenue growth. **Prerequisites:** Admission to upper division in Mays Business School.

ISTM 380 Human-Computer Interaction

Credits 3. 3 Lecture Hours. Techniques, principles and theory involved in designing, implementing and evaluating interactive technologies based on humans' physical, cognitive and emotional resources; focus on the role of task and context as key to understanding interaction phenomena at the individual, group, organizational and societal levels; accessibility, cultural and ethical implications of human-computer interaction. **Prerequisite:** ISTM 320; admission to upper division in Mays Business School.

ISTM 381 Ethics of Information Systems

Credits 3. 3 Lecture Hours. Exposure to the main ethical issues surrounding information, data and the systems and artifacts that are used; examination of information in multiple business areas, including marketing, accounting, finance, HR, sales, operations, and information systems. **Prerequisite:** Admission to upper-division in Mays Business School.

ISTM 410 Management of Information Systems

Credits 3. 3 Lecture Hours. Strategic management of information systems; change and risk management processes during information systems implementation; role of information systems to support business goals; writing business cases for request for proposals and responses; project management techniques. **Prerequisite:** ISTM 310; ISTM 320; or approval of instructor.

ISTM 415 Information Systems Capstone Project

Credits 3. 3 Lecture Hours. Design and development of information system software based on technical specifications; multi-platform environment; database server and web server software deployment. **Prerequisites:** ISTM 315; ISTM 410; or approval of instructor.

ISTM 420 Web-Enabled Applications

Credits 3. 3 Lecture Hours. Distributed business applications using the World Wide Web; advanced discussions of the concepts of internet, intranet, extranet; different methods to design web-enabled applications; active web applications; cutting edge website design; legacy to web integration; use of web-oriented languages. **Prerequisites:** Admission to upper division in Mays Business School.

ISTM 440/IBUS 440 International Technology Management

Credits 3. 3 Lecture Hours. Examines global information and communications technology (ICT) business environment; challenges and opportunities for technology companies in the region; history, culture, politics, economic issues, and infrastructure influencing ICT support and innovation in the region; combination of classroom work in the spring and a field trip to the selected country in the summer; repeatable for credit if taken in a different country. **Prerequisites:** Junior or senior classification; approval of instructor. **Cross Listing:** IBUS 440/ISTM 440.

ISTM 444 Computer Trading for Non-Finance Majors

Credits 3. 3 Lecture Hours. Overview of quantitative investing using algorithmic trading for investment management; exploration of collecting and preparing financial trading data, time series analysis, trend systems, momentum and mean reversal, arbitrage, backtesting, order execution, and reporting of risk and performance measures; tools, methods, and trading techniques using R programming language and R Studio. **Prerequisites:** ISTM 313 or ISTM 315; BUSN 203; admission to upper division in Mays Business School.

ISTM 450 Business Intelligence and Data Mining

Credits 3. 3 Lecture Hours. Rationale for Business Intelligence and data mining through business case studies; lab training using data mining software; and process of data mining by using commercial data mining software on large data sets. **Prerequisites:** Grade of "C" or better in BUSN 203 or equivalent; junior or senior classification.

ISTM 455/SCMT 455 Cybersecurity Management

Credits 3. 3 Lecture Hours. Explores business, managerial and technological aspects of information and cybersecurity; analysis, design, implementation and management issues surrounding effective information security; includes risk management, business continuity planning, and security policy development. **Prerequisite:** ISTM 310 or SCMT 375. **Cross Listing:** SCMT 455/ISTM 455.

ISTM 481 Information Systems Seminar

Credit 1. 1 Other Hour. Exposure to professional issues, contemporary information systems topics, potential MIS careers and employers. May be taken three times for credit. **Prerequisite:** Admission to upper division in Mays Business School; or approval of instructor.

ISTM 482 Data Analytics Platforms

Credits 3. 3 Lecture Hours. Coding platforms used for data analytics; data wrangling, exploration and visualization; model testing and validation; machine learning techniques. **Prerequisite:** BUSN 203 or equivalent.

ISTM 484 Management Information Systems Internship

Credits 1 to 4. 1 to 4 Other Hours. A directed internship in an organization to provide students with a learning experience supervised by professionals in organizational settings appropriate to the student's professional objectives. Must be taken on a satisfactory/unsatisfactory basis. **Prerequisites:** Management Information Systems major and approval of academic advisor and instructor.

ISTM 485 Directed Studies

Credits 1 to 4. 1 to 4 Other Hours. Directed study of selected problems in an area of management information systems not covered in other courses. **Prerequisites:** Admission to upper division in Mays Business School and approval of academic advisor and instructor.

ISTM 489 Special Topics in...

Credits 1 to 4. 1 to 4 Lecture Hours. 0 to 4 Lab Hours. Selected topic in an identified field of management information systems. **Prerequisites:** Admission to upper division in Mays Business School and approval of academic advisor and instructor.

ISTM 601 Fundamentals of Business Programming

Credits 3. 3 Lecture Hours. Business Application Development using both procedural and object-oriented programming techniques; use of component based software design and development for distributed business software systems. **Prerequisite:** Graduate business classification or approval of instructor.

ISTM 610 Network and Cloud Infrastructure

Credits 3. 3 Lecture Hours. Concepts and technology of network and cloud systems in business; analysis of networking and cloud requirements, design, selection and application of technologies including wide and local area networks, distributed processing, network and cloud architecture, and systems management and control; software simulation projects emphasized. **Prerequisites:** Graduate classification.

ISTM 612 Management Information Systems

Credits 1 to 3. 1 to 3 Lecture Hours. Concepts, theories, and the strategic role of information systems as applied to business organizations; highly integrative/cross functional in nature. Classification 6 students may not enroll in this course. **Prerequisite:** Enrollment is limited to MBA students.

ISTM 615 Business Database Systems

Credits 3. 3 Lecture Hours. Information processing and management involving applications and user orientation in a business environment using commercially available database management systems. **Prerequisite:** Graduate classification or approval of instructor.

ISTM 620 Systems Analysis and Design

Credits 3. 3 Lecture Hours. Methodologies, techniques, and tools for information systems analysis and design; the analysis and logical design of business processes and management information systems focusing on the systems development life cycle; techniques for logical system design.

ISTM 622 Advanced Data Management

Credits 3. 3 Lecture Hours. Data and database management and advanced SQL techniques; issues of data security, backup and recovery, large scale databases, master data management, concurrent user data access, scalability, and policies. **Prerequisites:** ISTM 615 or equivalent; graduate classification in business.

ISTM 624 Advanced Systems Analysis and Design

Credits 3. 3 Lecture Hours. Advanced topics in business systems analysis and design; alternative methodologies such as agile development, extreme programming, Rational Unified Process; Unified Modeling Language; bench marking and best practices for systems development; cost/benefit analysis, estimation and budgeting for business information systems; testing; patterns, domain-driven design; process modeling; service-oriented architecture and cloud computing. **Prerequisite:** ISTM 620 or equivalent; graduate classification in business.

ISTM 630 MIS Project Management and Implementation

Credits 3. 3 Lecture Hours. Advanced coverage of systems development topics with emphasis on the management and implementation of business computing systems; group project orientation to include feasibility analysis, alternative evaluation and selection, and management approval; use of software engineering tools where appropriate. Classification 6 students may not enroll in this class. **Prerequisite:** ISTM 620.

ISTM 631 Information Systems Design and Development Project

Credits 3. 3 Lecture Hours. Design and delivery of functional, multi-platform application system using current technologies; user interface design emphasized; issues of mobile device forms, software delivery, and development. **Prerequisites:** Graduation classification; ISTM 622; ISTM 630.

ISTM 635 Business Information Security

Credits 3. 3 Lecture Hours. Explores the business, managerial, and technological aspects of information security; analysis, design, and implementation issues surrounding effective information security; authentication, authorization, availability, business continuity planning, confidentiality, disaster recovery, encryption, firewalls, fraud protection, security policy development, integrity, risk management, virus protection, VPNs and wireless security. Classification 6 students may not enroll in this course. **Prerequisite:** ISTM 610.

ISTM 637 Data Warehousing

Credits 3. 3 Lecture Hours. Provides an understanding of the process by which a data warehouse system is designed and developed along with the underlying concepts and software systems; includes OLAP models and their differences with standard OLTP models. **Prerequisite:** ISTM 615 or approval of instructor.

ISTM 643 Corporate Information Planning

Credits 3. 3 Lecture Hours. Concepts regarding the design and use of computer-based management information and decision support systems; combinations of computing hardware and software and design concepts evaluated to meet managers' information needs. Classification 6 students may not enroll in this course. **Prerequisites:** ISTM 615 or equivalent or approval of instructor.

ISTM 644 Computer Trading for Non-Finance Majors

Credits 3. 3 Lecture Hours. Overview of quantitative investing using algorithmic trading for investment management; exploration of collecting and preparing financial trading data, time series analysis, trend systems, momentum and mean reversal, arbitrage, backtesting, order execution, and reporting of risk and performance measures; tools, methods, and trading techniques using R programming language and R Studio. **Prerequisites:** ISTM 601 and ISTM 615, or approval of instructor.

ISTM 645 IT Security Controls

Credits 3. 3 Lecture Hours. Familiarization with planning, design, and implementation of controls to minimize risks to business information; focus on the importance of managing business information security; introduction to the tools, concepts and theories to safeguard an organization's information systems and IT assets; understanding of cryptography and application, operations, and physical security. **Prerequisite:** ISTM 635.

ISTM 650 Business Data Mining

Credits 3. 3 Lecture Hours. Rationale for business Data Mining through case studies of business applications; process of data mining by using commercial Data Mining software on very large data sets; classification, clustering, association rule mining, visualization, and prediction through a hands-on approach. **Prerequisite:** STAT 652 or approval of instructor.

ISTM 652 Customer Relationship Management and Technologies

Credits 3. 3 Lecture Hours. Theory and application of information technology in customer relationship management, construction of CRM infrastructures in organizations. **Prerequisite:** ISTM 615.

ISTM 655 Security Management and Compliance

Credits 3. 3 Lecture Hours. Familiarization with managerial and legal aspects of business information security; focus on importance of managing business information security and theories to help safeguard an organization's information systems and IT assets; understanding of Security Architecture and Design, Business Continuity and Disaster Recovery Planning, Laws Investigation and Ethics. **Prerequisite:** ISTM 635.

ISTM 657 Blockchain and Artificial Intelligence Business Transformation

Credits 3. 3 Lecture Hours. Transforming processes and business models through the application of advanced technologies; Blockchain and Artificial Intelligence (AI); focus on underlying technologies, business process design, and business case development; final project presentation of a new process or model and a supporting business case. **Prerequisites:** Graduate classification.

ISTM 660 Applied Predictive Analytics for Business

Credits 3. 3 Lecture Hours. Develop an understanding of the role of predictive analytics in shaping business outcomes; provide hands-on, practical approach to implementing predictive analytics tools for gaining competitive advantage in business. **Prerequisite:** Graduate classification.

ISTM 662 Management of the Technology Organization

Credits 3. 3 Lecture Hours. Corporate management of technology; exploration of Management Information Systems, Operations, Strategic Management, Human Resources, Management, Organizational Behavior, Entrepreneurship, Marketing, Finance, and Accounting from both a strategic and tactical perspective. **Prerequisites:** Graduate classification.

ISTM 665 Cloud Computing Technologies

Credits 3. 3 Lecture Hours. Overview of cloud computing concepts; examination of information systems in the cloud impacting functional areas of business; topics include Infrastructure as a Service (IaaS), Platform as a Service (PaaS), Software as a Service (SaaS); focus on how changes in computing towards commodity services drive impact across business systems, Line of Business (LoB) applications, cost efficiency, and top-line revenue growth. **Prerequisites:** Graduate classification.

ISTM 670 Capstone Information Systems Service Project

Credits 3. 3 Lecture Hours. Philanthropic collaboration with a not-for-profit or non-profit entity in a consultative capacity; hands-on experience with consulting practices, client relationships, systems analysis and design, project-management, IT development and implementation, digital collaboration tools, knowledge management, organizational change, and/or IT security. **Prerequisite:** ISTM 615 or equivalent; ISTM 620 or equivalent; ISTM 630 or equivalent.

ISTM 680 Human-Computer Interaction in Mangement Information Systems

Credits 3. 3 Lecture Hours. Techniques, principles and theory involved in designing and implementing interactive technologies based on humans' physical, cognitive and emotional resources; focus on application of qualitative and quantitative evaluation techniques for interaction phenomena; understanding interaction phenomena at the individual, group, organizational and societal levels; accessibility, cultural and ethical implications of human-computer interaction. **Prerequisite:** Graduate classification.

ISTM 681 Ethics of Information Systems

Credits 3. 3 Lecture Hours. Exposure to the main ethical issues surrounding information, data and the systems and artifacts that are used; examination of information in multiple business areas, including marketing, accounting, finance, HR, sales, operations and information systems.

ISTM 682 Data Analytics Platforms

Credits 3. 3 Lecture Hours. Coding platforms used for data analytics; data wrangling, exploration and visualization; model testing and validation; machine learning techniques. **Prerequisite:** STAT 601 or equivalent.

ISTM 683 Web and Social Media Analytics

Credits 3. 3 Lecture Hours. Study of business challenges faced by modern firms in the new economy; focus on web analytics, unstructured data analytics and social network analytics to derive insights from business data. **Prerequisites:** Graduate classification.

ISTM 684 Professional Internship

Credits 1 to 6. 1 to 6 Other Hours. A directed internship in an organization to provide students with on-the-job training with professionals in organizational settings appropriate to the student's professional objectives. May be repeated for credit. Classification 6 students may not enroll in this course. **Prerequisite:** Approval of committee chair and department head.

ISTM 685 Directed Studies

Credits 0 to 4. 0 to 4 Other Hours. Directed study on selected problems using recent developments in business research methods. Classification 6 students may not enroll in this course. Must be taken on a satisfactory/unsatisfactory basis. **Prerequisites:** Approval of instructor and graduate advisor.

ISTM 689 Special Topics in...

Credits 1 to 4. 1 to 4 Other Hours. Selected topics in identified area of information systems, operations management or management science. Classification 6 students may not enroll in this course. May be repeated for credit.

ISTM 705 Information Management for Decision Making

Credits 1 to 4. 1 to 4 Lecture Hours. Policies, practices and procedures for management corporation information; relational database theory and relationship database management systems; data modeling; structured and unstructured data management; structured query language; secure data practices; information management for managerial decision making. **Prerequisite:** For Master of Science in Business students only.